USGS
science for a changing world

Prepared in cooperation with the Institute of Ecosystem Studies

Physical, Chemical, and Isotopic Data from Groundwater in the Watershed of Mirror Lake, and in the Vicinity of Hubbard Brook, near West Thornton, New Hampshire, 1983 to 1997

By James W. LaBaugh, Philip T. Harte, Allen M. Shapiro, Paul A. Hsieh, Carole D. Johnson, Daniel J. Goode, Warren W. Wood, Donald C. Buso, Gene E. Likens, and Thomas C. Winter

Open-File Report 2013–1087

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

U.S. Department of the Interior
SALLY JEWELL, Secretary

U.S. Geological Survey
Suzette M. Kimball, Acting Director

U.S. Geological Survey, Reston, Virginia: 2013

Suggested citation:
LaBaugh, J.W., Harte, P.T., Shapiro, A.M., Hsieh, P.A., Johnson, C.D., Goode, D. J., Wood, W.W., Buso, D.C., Likens, G.E., and Winter, T.C., 2013, Physical, chemical, and isotopic data from groundwater in the watershed of Mirror Lake, and in the vicinity of Hubbard Brook, near West Thornton, New Hampshire, 1983 to 1997: U.S. Geological Survey Open-File Report 2013–1087, 147 p., http://dx.doi.org/10.3133/ofr20131087. (Available only online.)

ISSN 2331-1258 (online)

Acknowledgments

Partial funding for this study was from a National Science Foundation grant to G.E. Likens, Institute of Ecosystem Studies. The U.S. Geological Survey Toxic Substances Hydrology Program provided partial funding for the the study of groundwater in fractured bedrock beginning in 1989.

Contents

Figures

Tables

Conversion Factors

Inch/Pound to SI

Multiply	By	To obtain
inch	2.54	centimeter
foot	0.3048	meter (m)

SI to Inch/Pound

Multiply	By	To obtain
	Length	
centimeter (cm)	0.3937	inch (in.)
millimeter (mm)	0.03937	inch (in.)
meter (m)	3.281	foot (ft)
	Area	
square meter (m2)	0.0002471	acre
	Volume	
liter (L)	0.2642	gallon (gal)
milliliter (mL)	0.0338	ounce, U.S. fluid (oz)
	Flow rate	
liter per minute (L/min.)	0.2642	gallon per minute (gal/min)
	Mass	
gram (g)	0.03527	ounce, avoirdupois (oz)
milligram (mg)	3.527×10^{-5}	ounce, advoirdupois (oz)
kilogram (kg)	2.205	pound avoirdupois (lb)

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows:

$°F=(1.8\times°C)+32$

Vertical coordinate information is referenced to the North American Vertical Datum of 1988 (NAVD 88).

Horizontal coordinate information is referenced to the North American Datum of 1983 (NAD 83).

Altitude, as used in this report, refers to distance above the vertical datum.

Specific conductance is given in microsiemens per centimeter at 25 degrees Celsius (µS/cm at 25°C).

Concentrations of chemical constituents in water are given either in milligrams per liter (mg/L) or micrograms per liter (µg/L), except for Alkalinity or Acid Neutralizing Capacity (ANC) which also is given in microequivalents per liter (eq/L).

Physical, Chemical, and Isotopic Data from Groundwater in the Watershed of Mirror Lake, and in the Vicinity of Hubbard Brook, near West Thornton, New Hampshire, 1983 to 1997

By James W. LaBaugh,[1] Philip T. Harte,[1] Allen M. Shapiro,[1] Paul A. Hsieh,[1] Carole D. Johnson,[1] Daniel J. Goode,[1] Warren W. Wood,[1] Donald C. Buso[2], Gene E. Likens,[2] and Thomas C. Winter[1]

Abstract

Research on the hydrogeologic setting of Mirror Lake near West Thornton, New Hampshire (43° 56.5' N, 71° 41.5' W), includes the study of the physical, chemical, and isotopic characteristics of groundwater in the vicinity of the lake and nearby Hubbard Brook. Presented here are those physical, chemical, and isotopic data for the period 1983 to 1997. Data were collected from observation wells installed in glacial drift and bedrock, as well as from one domestic well in the general area of the lake and Hubbard Brook. Also presented are data for Mirror Lake for August 1, 1993, to place groundwater data in context with chemical and isotopic characteristics of the lake.

Introduction

Physical, chemical, and isotopic data were collected from groundwater in the vicinity of Mirror Lake, and nearby Hubbard Brook near West Thornton, New Hampshire, as part of a study of the hydrogeologic characteristics of the groundwater flow systems in the vicinity of the lake. The study was conducted by the U.S. Geological Survey (USGS) and the Institute of Ecosystem Studies (IES). Mirror Lake and its watershed are being studied, in part, to relate the interaction of the lake with groundwater to hydrologcal, biogeochemical, and ecological characteristics of the lake (Winter, 1984; Likens, 1985; Johnson and Dunstan, 1998; Winter and Likens, 2009). The groundwater flow system in the watershed of Mirror Lake includes flow in glacial drift and fractured bedrock (Winter, 1984; Tiedeman and others, 1997). Detailed investigation of groundwater flow in fractured bedrock was conducted at the study site to improve understanding of groundwater flow in fractured rock in general, as well as groundwater flow in relation to Mirror Lake in particular (Shapiro and others, 1995). Mirror Lake was chosen for detailed research that characterizes groundwater flow in fractured rock so that techniques and methods developed at this pristine site could then be used in the USGS Toxic Substances Hydrology Program to investigate groundwater flow in fractured rocks at contaminated sites. The purpose of this report is to present physical, chemical, and isotopic data collected from groundwater in the observation wells installed in kame terraces, glacial till, and bedrock at the site. Data presented herein were obtained from 1983 to 1997. Readers, thereby, are provided access to the entire set of data that served as the basis for various interpretive studies about the

[1] U.S. Geological Survey.

[2] Cary Institute of Ecosystem Studies (known as the Institute of Ecosystem Studies during the period of study presented herein).

lake and its groundwater flow system (Harte and Winter, 1996; Morganwalp and Aronson, 1996; Harte, 1997; Tiedeman and others, 1997; Goode, 1998; Goode and others, 1999; Morganwalp and Buxton, 1999; Rosenberry and others, 1999; Shapiro, 2001; Wood and others, 2004; Shapiro and others, 2007; Winter and others, 2008; Winter and Likens, 2009; Likens and Buso, 2010).

Well Locations and Nomenclature

The location of wells installed at the site for the purpose of studying the groundwater flow system of Mirror Lake and its watershed and the groundwater flow in the vicinity of Hubbard Brook—and for which data are presented in this report—are shown in figures 1 and 2. Table 1 provides a list of those wells. In some cases, the designation for individual wells changed during the period of study. Table 1 includes the previous designations for those wells to enable readers to correlate information presented in this report with information about these wells contained in earlier publications.

The term "piezometer" generally is associated with wells in which well screens lie either in the range of fluctuations in the water table or are below the range of fluctuations in the water table. For the purpose of this report, however, wells in glacial material in which well screens lie within the range of fluctuations

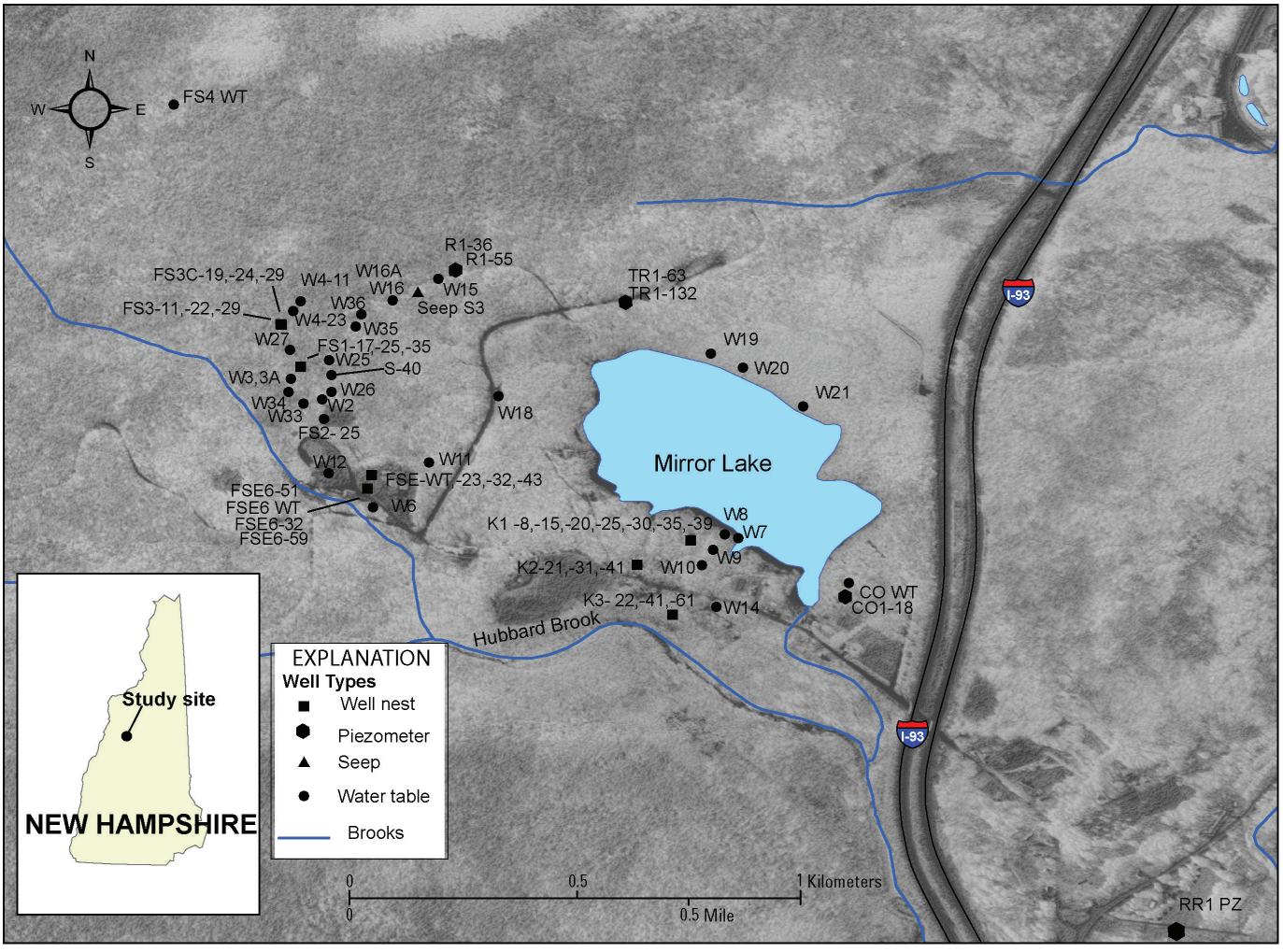

Figure 1. Location of a seep, water-table wells, piezometers, and well nests containing multiple piezometers in close proximity as of 1997, for which data are presented in this report, modified from Tiedeman and others (1997), Goode and others (1999), and Morganwalp and Buxton (1999).

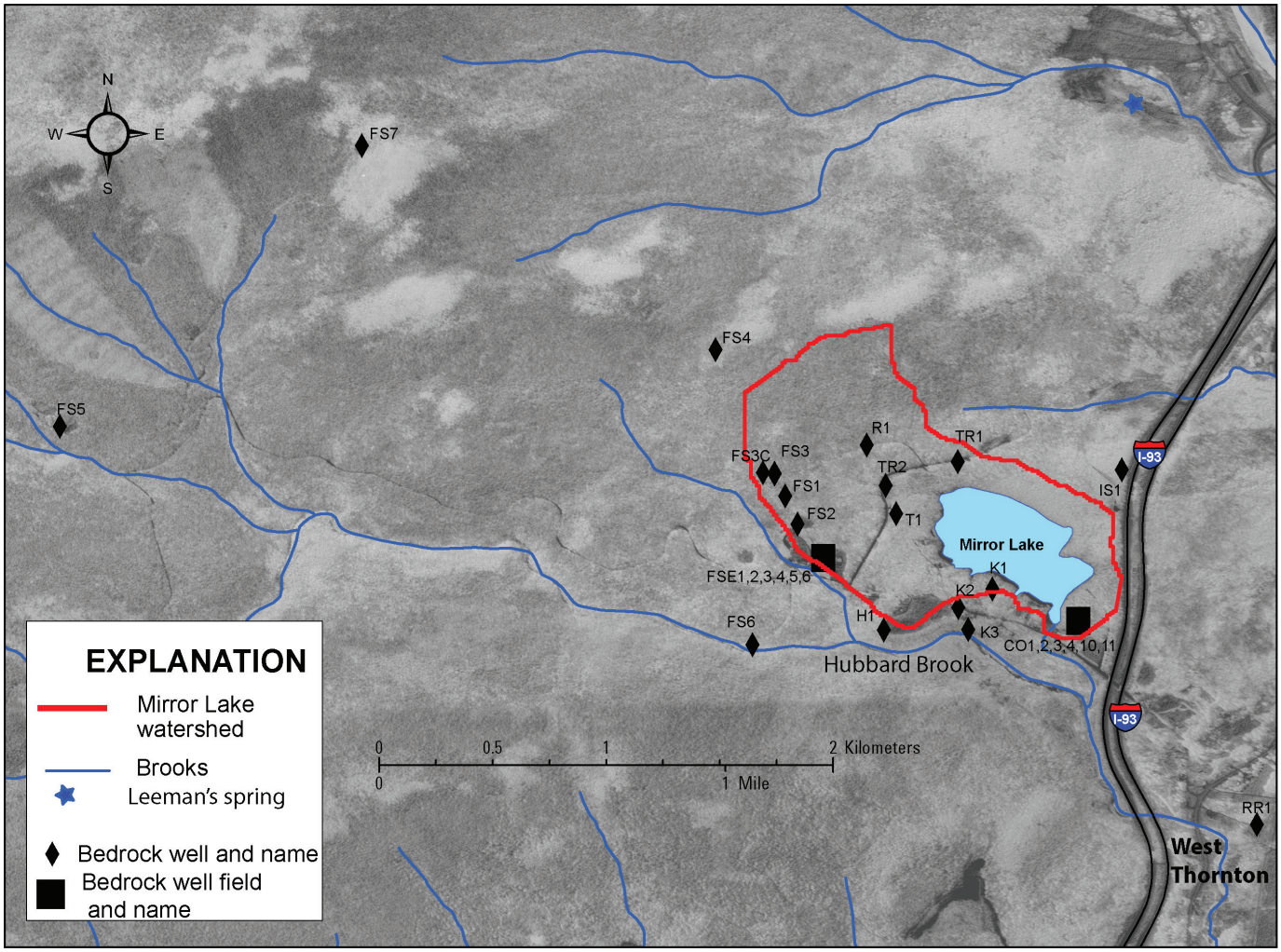

Figure 2. Location of a spring, bedrock wells, and well fields containing multiple bedrock wells in close proximity as of 1997, for which data are presented in this report, modified from Tiedeman and others (1997), Goode and others (1999), and Morganwalp and Buxton (1999).

in the water table are termed "water-table wells". Wells in glacial material in which well screens are below the range of fluctuations in the water table are termed "piezometers". The piezometers include wells that were identified as potentiometers in previous publications about groundwater studies in the vicinity of Mirror Lake, such as Winter (1984).

Groups of bedrock wells were placed in selected locations (fig. 2), commonly in association with a water-table well or a water-table well and piezometers. These groupings, or well fields, included the Camp Osceola (CO) well field and the Hubbard Brook Forest Service Experimental (FSE) Forest well field. Other bedrock wells were associated with various areas of the watershed and in the vicinity of Hubbard Brook, including the Forest Service (FS) area, the Hamlet (H) area, the Interstate (IS) area, the Kendall-Kettaneh (K) area, the Richards (R) area, the Thomas (T) area, the Town Road (TR) area, and the Railroad (RR) area which lies just outside of the watershed of the lake in the vicinity of West Thornton between Hubbard Brook and the Pemigewasset River. The Pemigewasset River is east of the interstate highway shown in figures 1 and 2. The Shattuck (S) area was examined by Patricia Shattuck, University of New Hampshire, to determine the relation of the water-table gradient to the west tributary of the Mirror Lake watershed (Shattuck, 1991). The abbreviations of the well fields and areas noted in parentheses above are used in the well names at the study site.

In this report, water-table wells are identified by the letter W followed by a number, such as W2, or letter designations associated with various well fields as follows: CO WT, FS1-17, FS2-25, FS3-11, FS4 WT, FSE WT, FSE6 WT, K1-8, K2-21, K3-22, R1-36, RR1 PZ, S-40, and TR1-63. Wells designated with a W prefix were those water-table wells not located in close association with a cluster of other wells. Water-table wells designated with a W prefix include a number in that designation that refers to the order in which wells were installed. Water-table wells located in close proximity to a bedrock well are identified by a prefix that is the designation for the bedrock well, followed by either the abbreviation "WT", "PZ", or a number that is the depth of the water-table well in feet below land surface. For example, water-table well FS1-17 is the water-table well located in the vicinity of bedrock well FS1 and has a total depth of 17 feet below land surface.

Piezometers are identified as CO1-18, FS1-25, FS1-35, FS3-22, FS3-29, FS3C-19, FS3C-24, FS3C-29, FSE-23, FSE-32, FSE-43, FSE6-32, FSE6-51, FSE6-59, K1-15, K1-20, K1-25, K1-30, K1-35, K1-39, K2-31, K2-41, K3-41, K3-61, R1-55, and TR1-132. The piezometers are all located in close proximity to a specific bedrock well. Piezometers are identified by a prefix that is the designation of the bedrock well in proximity with the piezometer, followed by a number that is the depth of the piezometer in feet below land surface. For example, piezometer CO1-18 is the piezometer located in the vicinity of bedrock well CO1 and has a total depth of 18 feet below land surface.

Bedrock wells are identified as CO1, CO2, CO3, CO4, CO10, CO11, FS1, FS2, FS3, FS5, FS6, FS7, FS3C, FSE1, FSE2, FSE3, FSE4, FSE5, FSE6, H1, IS1, K1, K2, K3, R1, RR1, T1, TR1, and TR2. The domestic supply well, which is identified as Pleasant View well, lies to the east of Mirror Lake.

Well Construction

Descriptions of these wells (other than the domestic supply well), including details of well construction, are presented in Winter (1984), Shattuck (1991), Harte (1997), Goode (1998), Johnson and Dunstan (1998), and Winter and Likens (2009). Details of well construction are briefly described herein. The wells included water-table wells and piezometers drilled into glacial material overlying bedrock, as well as wells drilled into bedrock. Water-table wells were constructed by placing casing and well screen into holes drilled by hollow-stem auger, without using water or drilling mud during drilling, or rotary drilling without mud for one specific well (FSE6 WT). No Portland cement was used in the construction of water-table wells. In some water-table wells the sides of the augered holes collapsed around the well screen and casing during withdrawal of the auger, and any remaining space between the casing and drilled hole was filled with the drill cuttings – the material removed during drilling (CO WT, FS1-17, FS2-25, FS3-11, FSE6 WT, K2-21, K1-8, K2-21, K3-22, R1-36, S-40,TR1-63, W6, W7, W8, W9, W10, W11, W12, W13, W14, W15, W16, W18, W25, W26, and W27). In wells W16A, W33, W34, W35, W36, and FS4 WT, coarse sand was placed in the annulus around the well screen, followed by natural backfill (drill cuttings), followed by a layer of ground silica flour, followed by natural backfill to the surface. The purpose of the fine-grained ground silica was to minimize vertical flow within the annulus of the drilled hole. In other water-table wells, the space between the well screen and drilled hole was filled with number 10 to number 30 silica sand, with either drill cuttings used as fill above the screen (W2, W3A, W4-23) or 'bentonite" (sodium montmorillonite clay – Driscoll, 1986) and drill cuttings (W3, W4-11).

Piezometers were constructed by placing casing and well screen into holes drilled by the mud-rotary method. In piezometers CO1-18, FS1-25, FS1-35, FS3-22, FS3-29, FSE-23, FSE-32, FSE-43, K1-15, K1-20, K1-25, K1-30, K1-35, K1-39, K2-31, K2-41, K3-41, K3-61, and TR1-132, petal-cement baskets were fixed above the top of the well screen prior to emplacement. After placement, cement (Portland cement and water) was pumped into the annular space between the casing and walls of the hole above the petal-cement basket. In piezometers FS3C-19, FS3C-24, FS3C-29, FSE6-32, FSE6-51, FSE6-59, and

R1-55, sand, or glass beads in the case of FS3C piezometers, were used to fill the annulus around the well screen. The height of the sand or glass beads above the well screen was checked before placing 1 to 2 feet of Bentonite pellets above the sand or glass beads. The pellets were allowed to swell to separate the sand (or glass beads) from the grouted portion of the well prior to pumping cement into the annular space between the casing and walls of the hole above the sand or glass packed around the well screen. Thus, the well screen in all of the piezometers commonly was greater than 10 feet below the water table.

Bedrock wells were open holes drilled into the bedrock that were cased through the overlying glacial drift with casing set into the upper 10 feet of the bedrock. Cement filled the annular space between the outside of the casing and the bedrock wall and drift wall. Below the casing, the bedrock wells were an open hole for the remainder of their depth. Characteristics of fractured bedrock within selected wells are provided by Paillet and Kapucu (1989), Johnson and Dunstan (1998), and in selected articles in Morganwalp and Aronson (1996) and Morganwalp and Buxton (1999).

Data Collection

Collection of Water for Physical, Chemical, and Isotopic Analyses

Water Collection Procedures Used in 1983, 1984, 1986, 1987, and 1988

In 1983 and 1984, selected water-table wells, piezometers, and a bedrock well were sampled (see table 2) to determine the spatial variability in chemical characteristics of groundwater in the Mirror Lake watershed. Water-table wells were sampled to provide information on horizontal variability; at the same time, piezometers were sampled to define vertical variability in the groundwater flow system. The bedrock well was sampled so that the chemical characteristics of groundwater in the bedrock could be compared to the chemical characteristics of groundwater in the glacial drift.

Samples were collected from water-table wells, piezometers, and a bedrock well by use of bailers, a pitcher pump, a peristaltic pump, and a Middleburg pump (bladder pump) during the period July 27 to August 5, 1983. In general, a peristaltic pump was used in wells that had water levels within 30 feet of the top of the well casing. For selected wells, independent of well depth, water was removed from the well using a bailer. In other selected wells in which the water level was too deep to use the peristaltic pump (deeper than 30 feet), water was removed from the well using a bailer until there was sufficient water to prime the pitcher pump. The pitcher pump was then installed, primed, and a specific volume of water was removed (approximately three times the volume of water in the well casing prior to priming) prior to collection of a sample for subsequent chemical analysis. In selected wells, a Middleburg bladder pump was used. The Middleburg pump, constructed of stainless steel and Teflon, was lowered into the well and then sufficient water was removed to assure groundwater being collected was representative of water in the geological material in the vicinity of the well screen.

In 1983 some samples were not filtered prior to analysis. To determine the effect filtering had on analysis, groundwater from selected wells was collected twice, once to provide an unfiltered sample and a second time to provide a filtered sample. All filtered samples were filtered through a 0.4- micrometer (mm) pore-size Nucleopore filter.

During the period June 26 to July 3, 1984, samples were collected from selected water-table wells and piezometers (see table 2) by use of either a peristaltic pump or bailer. Approximately three times the volume of water in the well casing was removed prior to sample collection. A peristaltic pump was used in wells that had water levels within 30 feet of the top of the well casing. A bailer was used in those wells in which levels were deeper than 30 feet below the top of the well casing.

All samples collected in 1984 were filtered through a 0.45-mm pore-size, 142-millimeter (mm) diameter Gelman GA-6 membrane filter (Gelman number 60117, lot 4059054). Water was pumped directly

from the well using a peristaltic pump (portable Masterflex sampling pump) using Nalgene 8000 nontoxic autoclavable laboratory/food grade tubing (1/4-inch interior diameter, 1/8-inch wall) with Masterflex silicone tubing in the pump head. Water pumped from the well was pumped through an acrylic backflush filter assembly containing the membrane filter, and the filtrate was collected for subsequent chemical analysis.

During the period October 22 to October 30, 1986, samples were collected from individual fractures in bedrock well FSE4 and from piezometers FSE-23 and FSE-32. A peristaltic pump was used to collect samples from the piezometers; unfiltered water was pumped directly from the well into sample bottles, while filtered water was obtained by filtration through an acrylic backflush filter assembly containing a 0.45-mm pore-size, 142-mm diameter Gelman membrane filter, type GA-6 (lot number 7). Water was collected from individual fractures by first inflating neoprene rubber bladders (known as packers) to expand to the rock wall of the borehole above and below the fracture to isolate the fracture. Once the fracture was isolated, a Bennett pump (piston pump) placed within the isolated zone was used to lift water to land surface. At land surface, unfiltered water was directed into sample bottles for subsequent analyses of unfiltered water. Also at land surface, unfiltered water was pumped through a filter assembly using a peristaltic pump, and the resulting filtrate was directed into sample bottles for subsequent analyses of filtered water. The peristaltic pump and filter assembly was the same as was used for the collection of water from the piezometers. Descriptions of the types of pumps used (peristaltic, bladder, piston) to collect groundwater samples for chemical analysis are found in Lane and others (2003).

During the period July 7 to July 10, 1987, samples were collected from water-table wells using a peristaltic pump and filter assembly in the same manner as was done for the piezometers sampled in 1986. On July 21, 1988, water was collected from well CO WT in the same way as for wells sampled in 1987. Processing of samples in the field in 1987 and 1988 was the same as in 1986. The same analyses were done on samples collected in 1987 and 1988 as were done for the samples collected in 1986.

Samples collected for analysis by the USGS National Water Quality Laboratory in Denver, Colorado, were packed in ice, placed in an insulated shipping container, and sent to the laboratory for chemical analysis. Prior to shipment to the laboratory for analysis, water was collected as follows. Unfiltered water was collected in a 500-milliliter (mL) high-density polyethylene (HDPE) bottle for subsequent analysis of pH, specific conductance, and total alkalinity. Unfiltered water collected in an amber 250-mL HDPE bottle was preserved with 1 mL of mercuric chloride (HgCl) for subsequent analysis of total phosphorus, total kjeldahl nitrogen, total ammonium, and total nitrate plus nitrite. Filtrate was collected in two additional 500-mL HDPE bottles, one acid rinsed with nitric acid (HNO_3) and the other not acid rinsed, and one amber 250-mL bottle. These bottles were rinsed three times with filtrate prior to sample collection. One milliliter of HNO_3 was added to the acid-rinsed bottle, the contents of which were analyzed for dissolved aluminum, calcium, iron, lithium, magnesium, manganese, molybdenum, potassium, and sodium. The contents of the other 500-mL bottle was analyzed for dissolved bromide, chloride, fluoride, iodide, silica (as SiO_2), and sulfate. One milliliter of HgCl preservative was added to the contents of the amber bottle receiving filtrate for subsequent analysis of dissolved ammonium, nitrate plus nitrite, and orthophosphorus.

An additional 250-mL glass bottle was filled with unfiltered water prior to shipment to the National Water Quality Laboratory for analysis. The contents of this bottle were used to determine the stable isotope composition for oxygen and hydrogen as the ratio between heavier and lighter isotopes of the sample relative to the ratio in a standard (abbreviated as $\delta^{18}O$ for oxygen and $\delta^{2}H$ for hydrogen). An explanation of this nomenclature for stable isotopes is provided in Kendall and others (1995).

Samples collected for analysis by the Institute of Ecosystem Studies (IES) laboratory in Millbrook, New York, were processed in the field as follows. Unfiltered water was put into a 250-mL bottle and fixed with appropriate reagents for subsequent dissolved oxygen analyses at the site by Donald C. Buso (IES). Filtered water was collected in one 250-mL bottle for analysis of dissolved chemical constituents. These bottles were refrigerated after sample collection for subsequent shipment to the IES laboratory

for chemical analysis according to methods described in Buso and others (2000). The concentration of dissolved inorganic carbon (DIC), dissolved organic carbon (DOC), and methane (CH_4) for each sample was determined at the Pleasant View Farm Laboratory (currently known as the Henrietta Kendall Towers Lab of the Hubbard Brook Research Foundation) near West Thornton, New Hampshire, by Scott Nolan and Donald C. Buso after collection in a biological oxygen demand (BOD) bottle, which was refrigerated for 2 days before the contents were analysed.

Water Collection Procedures Used in 1990, 1991, 1992, 1993, 1995, 1996, and 1997

In general, collection procedures for 1990 to 1997 followed existing guidelines (Wood, 1976; Lane and others, 2003). The National Water Quality Laboratory implements quality control on analytical methods.

Geochemical samples were collected in three phases during calendar year 1990. For the first phase, samples were collected from May 9 to June 4 at 10 bedrock wells and 16 glacial drift wells (table 3). In the second phase, 14 samples were collected from June 21 to September 23 from discrete fractures at 6 bedrock wells (table 4). In the third phase, groundwater was collected at 15 drift wells in November through December, 1990 (table 5).

Phase one samples are from large bedrock intervals and may represent a mixed sample from multiple fractures. Phase one samples were collected from either the entire bedrock borehole or from a large, isolated bedrock zone. More than one large, isolated bedrock zone was sampled at 4 of the 10 bedrock wells (table 3) by utilizing packers installed by USGS hydrologists Paul A. Hsieh and Allen M. Shapiro. Multiple zones isolated by packers in a single bedrock well are designated in descending depth, A through D, associated with the bedrock well name (table 3). For example, FS1-A is the upper zone of bedrock well FS1. Samples were analysed for field parameters (temperature, pH, Eh, specific conductance) and water collected for subsequent laboratory analysis of major cations and anions, selected trace metals, selected isotopes [tritium (^3H), uranium (^{234}U, ^{235}U, ^{238}U), radium (^{226}Ra, ^{228}Ra)], and stable isotopes [δ^2H /$\delta^{18}O$, carbon ($\delta^{13}C$), sulfur ($\delta^{34}S$)]).

Phase two samples are from discrete fractures in bedrock and represent the chemistry of discrete fractures (table 4). Discrete fracture samples are designated by the depth zone location (table 4). For example, the set of fractures locate at a depth of 104 feet to 116 feet below the measuring point at CO1 is designated as CO1-B(104-116FT) where B denotes fractures located in isolated (packed off) zone B. The cross-referencing of discrete fractures to packed-off zones allows for comparison of geochemical results between zones and discrete fractures. The purpose for collecting samples from discrete fractures was to (1) minimize borehole storage effects introduced from pumping large intervals of the bedrock borehole, as was done in phase one, (2) provide geochemical information at specific points in the flow system, and (3) compare and contrast sample results from discrete fractures with data collected from pumping boreholes intersected by multiple fractures. Geochemical samples from phase two were analyzed for the same constituents as samples from phase one, excluding sulfur-34 ($\delta^{34}S$). Phase two samples were also analysed for tritium/helium (^3H/He) ratio (Tolstikhin and Kamensky, 1969; Torgersen and others, 1977)—a method that allows more precise dating of waters—and radon (^{222}R) at selected wells.

Phase three samples are all from glacial drift wells (drift wells), which are either water-table wells or piezometers (table 5). The same suite of analyses done in phase two were conducted for 8 of the 15 wells; the remaining 7 samples were analyzed only for field parameters. The drift wells sampled are all located at sites with bedrock wells (the combination of multiple wells in close proximity in the same general location also is described as a well “nest”). In general, the deepest drift wells were analyzed for complete chemical analyses and the shallowest for selected field parameters.

The philosophy behind retrieving samples of groundwater was similar for all three sampling phases—the common goal being to collect a water sample representative of the water in the surrounding geological material. The sample collection procedure varied depending on the type of material in which groundwater

occurred, whether drift or bedrock. Regardless of the sample media, a representative sample satisfied the criteria of adequate purging of the well and stabilization of field parameters.

Bedrock boreholes, including multiple borehole zones, were pumped for only one borehole volume before collecting samples (table 6). Purging one borehole volume instead of three, a quantity recommended for sampling in unconsolidated media, ensures samples are derived from the adjacent fracture(s) close to the borehole. Overpumpage (purging more than one borehole volume) is a concern because storage properties of the bedrock are low, 1 to 2 orders of magnitude less than the drift (Allen Shapiro and Paul Hsieh, U.S. Geological Survey, written commun., February 14, 1990), and conceivably waters pumped from bedrock may be derived from a distant location. Because the intent of sampling is to determine geochemical properties at discrete locations to aid in the interpretation of the flow system, samples must reflect the local environment. Hydraulic information was collected during sampling to assess qualitatively the hydraulic properties of the bedrock. At bedrock wells with multiple packed-off zones, water levels were monitored in the adjacent zones to evaluate vertical leakage.

Glacial drift wells were pumped typically for more than three borehole volumes before collecting samples. However, some drift wells were pumped for less that three borehole volumes if the wells tapped low permeability sediments and recharge to the well was slow; examples include FS3-22, FS1-17, and K1-39. Hydraulic information was collected to determine the hydraulic properties of the drift. At sites with multiple wells in close proximity (well nest sites), water levels were monitored from wells at different depths to evaluate vertical leakage.

Bedrock wells were pumped with positive displacement pumps—a submersible, helical-drive Keck pump and a piston-driven bladder pump. When packers were used to isolate discrete fractures, as noted above, a Bennett pump (piston pump) was used. Drift wells were pumped with a Keck pump at high-yielding wells and a peristaltic pump at low-yielding wells.

Field parameters were monitored according to methods outlined in Wood (1976). Field parameters include pH, Eh (oxidation-reduction potential), specific conductance, and temperature. Dissolved oxygen was monitored only at selected sites. Field parameters were collected intermittently during pumpage to help verify that the water being collected was from aquifer water rather than water present only in the borehole. Chemical stability is attained when two or more successive measurements differ by less than the following amounts: temperature, 0.3 ^{o}C; specific conductance, 5 percent; pH, 0.3 units; Eh, 10 millivolts; and dissolved oxygen, 0.2 mg/L. Physical characteristics of the water such as turbidity, color, and odor were also monitored. A sulfur odor was detected at several wells, likely indicating the presence of hydrogen sulfide.

Chemical constituents sampled are listed in table 7 along with bottle collection type, preservation procedures, and quantity collected. Samples for radiochemical isotopes and trace metals were filtered with a 0.45-micron pore size sieve using a Millipore filter plate. Samples for tritium/helium were collected under pressurized conditions in a copper tube. Discussion of the method for collecting water in copper tubes is presented in Ekwurzel and others (1994) and at the following Web site: *http://water.usgs.gov/lab/3h3he/sampling/*. Other samples were collected without filtration. Radiochemical isotope and trace metal samples were preserved with ultrapure nitric acid to a pH below 2 to prevent precipitation of constituents. Samples for sulfur-34 ($\delta^{34}S$) were preserved with a tablet containing 13 milligrams (mg) of mercury(II) chloride ($HgCl_2$) plus 100 mg of sodium chloride (NaCl) to prevent biochemical reactions.

In 1991, sample collection occurred at selected water table wells, piezometers, and bedrock wells (table 8). Water also was collected at the Pleasant View domestic well. Pumping and sample collection from intervals within the bedrock wells were done in the same manner as in 1990.

There were four components to the program of geochemical sampling during 1992. These were (1) sampling bedrock wells, (2) sampling overburden piezometers, (3) sampling during aquifer and tracer tests in the FSE well field, and (4) sampling low-permeability zones in the bedrock. The wells and zones pumped during 1992 are listed in table 9.

During the period July 19 to 22, 1993, six hydraulically isolated intervals in two bedrock wells were pumped and water samples were collected for geochemical and isotopic analysis. The intervals were hydraulically isolated using inflatable packers, and a Bennett (piston) pump was used to withdraw water from the packed-off interval. The packers were inflated using pressurized nitrogen tanks. The piston pump was also driven using pressurized nitrogen tanks.

In all tested intervals, field parameters (alkalinity titrations, dissolved oxygen, pH, specific conductance, and temperature) were measured as pumping was being conducted. Water samples were also collected for field analysis of radon concentration using portable radon analyzing equipment. At each sampling interval, water samples were collected for major cations and anions, as well as isotopes of hydrogen, oxygen, and carbon. Water samples in copper tubes were collected for $^{3}H/He$ analysis at the Columbia University Lamont-Doherty Earth Observatory. Water samples were collected in glass ampoules for analysis of chlorofluorocarbon concentrations, and evacuated side-arm glass sampling tubes were used to collect water samples for analysis of dissolved gases by Eurybiades Busenberg (USGS Chlorofluorocarbon Laboratory, Reston, Virginia).

Water samples were collected from wells during the summers of 1995 (table 10), 1996 (table 11), and 1997 (table 12). This sampling effort focused primarily on wells screened near the water table, but also included some wells screened in the glacial drift beneath the water table (piezometers) and selected bedrock wells. The general procedures for sampling consisted of pumping at least one borehole volume and then collecting water samples using standard procedures and equipment developed by the USGS (table 13). Chlorofluorocarbon samples were collected using procedures and equipment developed at the USGS Chlorofluorocarbon Laboratory, Reston Virginia (Busenberg and Plummer, 1992). In 1996, water was collected from the bedrock wells through copper tubing using a Bennett pump. Copper tubing was used during sample collection in 1996 to identify if the type of tubing had an influence on the analysis of the concentrations of chlorofluorocarbons used from dating groundwater. Samples collected from bedrock wells in prior years used nylon tubing for sample collection.

Field water-quality parameters included temperature, pH, specific conductivity, dissolved oxygen, and alkalinity. Methods of measurement were similar to those used in 1990. Specific conductivity and pH were measured with separate Orion probes, both of which also measured temperature. In some cases the probes were lowered into the water-table well or piezometer prior to sampling to record in-situ values. Dissolved oxygen was measured in the field using the Winkler titration method (Hach kit) or a Yellow Springs Instrument (YSI) self-stirring BOD probe (model 5905). Alkalinity was measured using a 0.16 normal (*N*) sulfuric acid titration of 50-mL samples.

As part of the study of groundwater processes at the Mirror Lake site in central New Hampshire, water was collected for analysis from a domestic well (Pleasant View) in the general vicinity (southeast) of Mirror Lake and Hubbard Book in 1991. Two sample bottles were used to collect each water sample. One of the bottles was an acid-rinsed bottle; 1 mL of nitric acid (7.5 to 7.7 *N*) was added after the bottle was filled with water from the well. Water collected in the second bottle was left untreated. The water samples were not filtered, and physical and chemical characteristics of the water from the wells were not measured at the time of sample collection. Thus, the water from this well was not collected according to the usual protocols used in the examination of groundwater in the vicinity of Mirror Lake. The goal was to obtain some approximation of characteristics found in a domestic well in the vicinity of Mirror Lake.

Groundwater flows to land surface in some parts of the Mirror Lake watershed (these flows are defined as seeps or springs). In 1997, groundwater was collected from two of these locations, Leeman's spring and Seep S3. Groundwater from these locations was collected to obtain additional information about the characteristics of groundwater within the Mirror Lake watershed.

Methods of Physical, Chemical, and Isotopic Analysis

Methods of Analysis Used in 1983, 1984, 1986, 1987, and 1988

All samples collected in 1983 and 1984 were analysed by the Institute of Ecosystem Studies Laboratory for the following chemical constituents: ammonium, calcium, chloride, magnesium, nitrate, orthophosphorus, potassium, silica (as SiO_2), sodium, and sulfate and according to methods described in Buso and others (2000). Additionally, in 1983, pH and specific conductance were determined using both filtered and unfiltered groundwater. The USGS National Water Quality Laboratory, Denver, Colorado, performed the following analyses on the sample collected in 1983 from the bedrock well K1: pH, specific conductance and total alkalinity using unfiltered water, and dissolved calcium, chloride, iron, magnesium, manganese, potassium, silica (as SiO_2), sodium, and sulfate using filtered water according to methods described in Fishman and Friedman (1989). Samples collected in 1986, 1987, and 1988 were analyzed by the USGS National Water Quality Laboratory, Denver, Colorado, according to methods described in Fishman and Friedman (1989).

Methods of Analysis Used in 1990, 1991, 1992, 1993, 1995, 1996, and 1997

The method of analysis used in 1990, the unit of measurement, and the detection level for each chemical constituent are listed in table 14. Major anions and cations are reported in milligrams per liter. Trace metals are reported in micrograms per liter. Radiochemical isotopes are reported in picocuries per liter—a picocurie is defined as 3.7×10^{-22} disintegrations per second; the approximate specific activity of 1 gram of radium in equilibrium with its disintegration. Both δ^2H and $\delta^{18}O$ are reported relative to a standard (δ) with units of parts per thousand as permil (‰). The standard compostion for δ^2H and $\delta^{18}O$ is that of average seawater (standard mean ocean water, or SMOW). The value of $\delta^{13}C$ is reported relative to a standard, Vienna Pee Dee Belemnite (VPDB), and is expressed in units of parts per thousand as permil (‰). The $\delta^{13}C$ standard is -25 ‰ VPDB; VPDB is the carbonate standard derived from the Rostrum of Belemnitella Americana of the Pee Dee Formation in South Carolina. Tritium (^3H) is reported in concentrations of tritium units (TU) where one TU is equal to one tritium atom in 10^{-18} atoms of hydrogen. The $^3H/He$ ratio is reported as the ratio of tritium units and tritogenic helium. $\delta^{34}S$ is reported as permil (‰) relative to a sulfur-32 sample of the Canyon Diablo Troilite (CDT). Field parameters, specifically alkalinity and pH, were duplicated on 10 percent of samples to ensure accuracy of results.

Methods of analysis for isotopic analyses conducted from 1991 to 1997 were the same as in 1990. Chemical constituents were determined by analyses at the USGS Branch of Regional Research Water Research Laboratory in Reston, Virginia. In 1993, direct current plasma atomic emission spectroscopy (DCP-AES) was used for all cation determinations; ion chromatography (IC) was employed for chloride and sulfate; and an ion selective electrode and standard additions were used for fluoride. In some cases, laboratory alkalinity titrations were performed to either correct suspect field values or to obtain data for those samples in which no field alkalinity data were available. Analyses conducted by the IES laboratory followed procedures provided in Buso and others (2000): atomic-adsorption spectroscopy was used for calcium, magnesium, potassium, and sodium; ion chromatography was used for nitrate and sulfate; automated continuous colorimetry (Technicon and Alpkem instruments) was used for ammonium, chloride, and orthophosphate; and inductively coupled plasma atomic emission spectroscopy (ICP-AES) was used for silicate (silicon) as SiO_2.

Note – Alkalinity, or acid neutralizing capacity (ANC), is reported in different units according to reporting by the laboratories. Therefore the tables containing these data present the data either as milligrams per liter as $CaCO_3$, milligrams per liter as HCO_3^-, or millequivalents per liter. The Institute for Ecosystems Studies Laboratory reported ANC in milliequivalents per liter, determined by the difference between measured cations and anions. The USGS laboratories in Denver and Reston reported alkalinity

in milligrams per liter as $CaCO_3$, determined from titration. Results of alkalinity titrations done at the site, as water was being collected, are reported as alkalinity in milligrams per liter as HCO_3^-. Alkalinity in milligrams per liter as $CaCO_3$ can be converted to milliequivalents per liter by multiplying the alkalinity value by 0.01998. Alkalinity in milligrams per liter as $CaCO_3$ can be converted to alkalinity in milligrams per liter as HCO_3^- by dividing the alkalinity in milligrams per liter as $CaCO_3$ by 0.8202. Alkalinity in milligrams per liter as HCO_3^- can be converted to milliequivalents per liter by multiplying the alkalinity value by 0.01639.

Measurement of Physical and Chemical Characteristics Within Wells in 1987 and 1988.

Most of the measurements for temperature, pH, and specific conductance at wells were made adjacent to each well as groundwater exited the well during pumping. Measurements made at the well are defined as field measurements (field parameters) to distinguish them from measurements made in the laboratory. In addition to measurements made at a well while groundwater was removed from the well, a groundwater probe was used to measure temperature, pH, and specific conductance of groundwater within selected wells in 1987 and 1988. The probe was a Hydrolab 4031-SU sensor unit connected by a cable 100 meters (m) in length to a 4041-DU digital display unit. The sensor unit probes had the following ranges and accuracies: temperature -5 to 45 °C $\pm$ 0.02 °C; pH 0 to 14 units $\pm$ 0.1 unit; and specific conductance 1 to 2,000 microsiemens per centimeter (mS/cm) at 25 °C $\pm$ 20 at 25 °C, 2,000 to 20,000 mS/cm at 25 °C $\pm$ 200 mS/cm at 25 °C , and 20,000 to 200,000 mS/cm at 25 °C $\pm$ 2,000 mS/cm at 25 °C. The probe is designed for use in wells at least 2 inches in diameter. Thus, some wells of smaller diameter in the Mirror Lake watershed were not included in the in situ measurement of temperature, pH, and specific conductance.

Prior to use in the field, the pH sensor of the Hydrolab 4031-SU was calibrated using commercially prepared Hydrion pH buffers 4.0 to 7.0. The specific conductance sensor was calibrated with standards of 1,265 mS/cm at 25 °C and 265 mS/cm at 25 °C. The specific conductance standards were solutions of potassium chloride whose specific conductance had been determined in the laboratory using a Yellow Springs specific conductance meter.

After calibration, the probe was used to make measurements in water-table wells, piezometers, and bedrock wells. In the case of water-table and piezometer wells, the probe was lowered until water was encountered and the depth to water was recorded; then the probe was lowered to the bottom of the well. When the probe was at the bottom of the well, all sensors were below the top of the well screen. Values of temperature, pH, and specific conductance were read from the digital display unit, and once values were stable those data were recorded. After all values were recorded the probe was removed from the well and stored in a 1-L graduated cylinder containing distilled water. In the case of bedrock wells, the first measurements were made when the probe first entered water in the well and was completely submersed. Following the initial measurement just below the surface of the water in the wells, measurements were made at 5-m intervals to either the bottom of the well or to a depth of 100 m in those wells where the depth exceeded 100 m below the top of the well casing. It should be noted that all bedrock wells are cased through the glacial drift and are an open hole for the remainder of their depth.

Results

Physical and chemical characteristics of water measured within the casing/borehole (in situ) of selected glacial drift and bedrock wells are presented in tables 15 to 25. Physical and chemical characteristics of water measured in the field at the time of sample collection are presented in tables 26 and 27. Data obtained during the radon surveys of 1992 and 1993 are presented in table 28. Results of laboratory analyses of water collected from water-table wells, piezometers, bedrock wells, a seep, and a spring are

presented in tables 29 to 33 (chemical characteristics), table 34 (radiochemical isotopic characterisitics), tables 35 and 36 (stable isotope ratios of selected elements), table 37 (isotopic characteristics) and tables 38 and 39 (dissolved gases). Results for dissolved oxygen, dissolved organic carbon, and dissolved inorganic carbon for bedrock well FSE4 are presented in table 40. Water hardness data are contained in table 41. Data for Mirror Lake are presented in table 42. Helium data are contained in table 43.

Note – Some of the piezometers are located in zones of low hydraulic conductivity (FS1-25, FS1-35, FSE-23, FSE-32, FSE-43, FSE6-51, K1-20, K1-39, R1-55). In these piezometers, some chemical characteristics of water in the vicinity of the well screen initially were related to the presence of the cement above the well screen. In cases where the water in the piezometers was collected more than once, the tables indicate where characteristics of that water changed over time and were no longer related to the presence of the cement above the well screen.

References Cited

Busenberg, Eurybiades, and Plummer, L.N., 1996, Concentrations of chlorofluorcarbons and other gases in ground water at Mirror Lake, New Hampshire, *in* Morganwalp, D.W., and Aronson, D.A., eds., U.S. Geological Survey Toxic Substances Hydrology Program—Proceedings of the technical meeting, Colorado Springs, Colorado, September 20–24, 1993: U.S. Geological Survey Water-Resources Investigations Report 94–4015, v. 1, p. 151–158, *http://pubs.er.usgs.gov/publication/wri944015*.

Busenberg, Eurybiades, and Plummer, L.N., 1992, Use of chlorofluorocarbons (CCl_3F and CCl_2F_2) as hydrologic tracers and age-dating tools—The alluvium and terrace system of central Oklahoma: Water Resources Research, v. 28, no. 9, p. 2257–2283.

Buso, D.C, Likens, G.E., and Eaton, J.S., 2000, Chemistry of precipitation, streamwater, and lakewater from the Hubbard Brook Ecosystem Study—A record of sampling protocols and analytical procedures: U.S. Department of Agriculture Forest Service, Northeastern Research Station, General Technical Report NE–275, 52 p.

Drenkard, S., Torgersen, T., Weppernig, R., Farley, K., Schlosser, P., Michel, R.L., Shapiro, A.M., and Wood, W.W. , 1996, Helium isotope analysis and tritium-helium age dating in the Mirror Lake Basin, Grafton County, New Hampshire, *in* Morganwalp, D.W., and Aronson, D.A., eds., U.S. Geological Survey Toxic Substances Hydrology Program—Proceedings of the technical meeting, Colorado Springs, Colorado, September 20–24, 1993: U.S. Geological Survey Water-Resources Investigations Report 94–4015, v. 1, p. 159-165. *http://pubs.er.usgs.gov/publication/wri944015*.

Driscoll, F.G., 1986, Groundwater and wells, 2d ed., St. Paul, Minnesota, Johnson Division, 1,089 p.

Ekwurzel, Brenda, Schlosser, Peter, Smethie, W.M., Jr., Plummer, L.N., Busenberg, Eurybiades, Michel, R.L., Weppernig, Ralf, and Stute, Martin, 1994, Dating of shallow groundwater—Comparison of the transient tracers $^3H/^3He$, chlorofluorocarbons, and ^{85}Kr: Water Resources Research, v. 30, no. 6, p. 1693–1708.

Fishman, M.J., and Friedman, L.C., eds., 1989, Methods for the determination of inorganic substances in water and fluvial sediments: Techniques of Water-Resources Investigations of the United States Geological Survey, book 5, chap. A1, 545 p., *http://water.usgs.gov/pubs/twri/twri5-a1/*.

Goode, D.J., 1998, Ground-water age and atmospheric tracers—Simulation studies and analysis of field data from the Mirror Lake site, New Hampshire: Princeton, N.J., Princeton University, Department of Civil Engineering and Operations Research, Ph.D. thesis, 194 p.

Goode, D.J., Busenberg, Eurybiades, Plummer, L.N., Shapiro, A.M., and Vroblesky, D.A., 1999, CFC's in the unsaturated zone and in shallow ground water at Mirror Lake, New Hampshire, *in* Morganwalp, D.W., and Buxton, H.T., eds., U.S. Geological Survey Toxic Substances Hydrology Program—Proceedings of the technical meeting, Charleston, South Carolina, March 8–12, 1999: U.S. Geological Survey Water-Resources Investigations Report 99-4018C, v. 3, p. 809–820, *http://toxics.usgs.gov/pubs/wri99-4018/Volume3/*.

Harte, P.T., 1997, Preliminary assessment of the lithologic and hydraulic properties of the glacial drift and shallow bedrock in the Mirror Lake area, Grafton County, New Hampshire: U.S. Geological Survey Open-File Report 96–654A, 56 p., *http://pubs.er.usgs.gov/publication/ofr96654A*.

Harte, P.T., and Winter, T.C., 1996, Factors affecting recharge to crystalline rock in the Mirror Lake area, Grafton County, New Hampshire, *in* Morganwalp, D.W., and Aronson, D.A., eds., U.S. Geological Survey Toxics Substances Hydrology Program—Proceedings of the technical meeting, Colorado Springs, Colorado, September 20–24, 1993: U.S. Geological Survey Water-Resources Investigations Report 94–4015, v. 1, p. 141–150, *http://pubs.er.usgs.gov/publication/wri944015*.

Johnson. C.D., and Dunstan, A.H., 1998, Lithology and fracture characterization from drilling investigations in the Mirror Lake area, Grafton County, New Hampshire: U.S. Geological Survey Water-Resources Investigations Report 98–4183, 211 p., *http://pubs.er.usgs.gov/publication/wri984183*.

Kendall, C., Sklash, M.G., and Bullen, T.D., 1995, Isotope tracers of water and solute sources in catchments, *in* Trudgill, S.T., ed., Solute modelling in catchment systems, New York, Wiley, p. 261–303.

Lane, S.L., Flanagan, Sarah, and Wilde, F.D., 2003, Selection of equipment for water sampling (ver. 2.0): U.S. Geological Survey Techniques of Water-Resources Investigations, book 9, chap. A2, March 2003, accessed August 10, 2011, at *http://pubs.water.usgs.gov/twri9A2/*.

Likens, G.E., ed., 1985, An ecosystem approach to aquatic ecology—Mirror Lake and its environment: New York, Springer-Verlag, 516 p.

Likens, G.E., and Buso, D.C., 2010, Salinzation of Mirror Lake by road salt: Water, Air, and Soil Pollution, v. 205, p. 205–214.

Morganwalp, D.W., and Aronson, D.A., eds., 1996, U.S. Geological Survey Toxic Substances Hydrology Program—Proceedings of the technical meeting, Colorado Springs, Colorado, September 20–24, 1993: U.S. Geological Survey Water-Resources Investigations Report 94–4015, v. 1, 176 p., *http://pubs.er.usgs.gov/publication/wri944015*.

Morganwalp, D.W., and Buxton, H.T., eds., 1999, Research in characterizing fractured rock aquifers, section G *of* Morganwalp, D.W., and Buxton, H.T., eds., Subsurface contamination from point sources, v. 3 *of* U.S. Geological Survey Toxic Substances Hydrology Program—Proceedings of the technical meeting, Charleston, South Carolina, March 8–12, 1999: U.S. Geological Survey Water-Resources Investigations Report 99–4018C, p. 667–845, *http://pubs.er.usgs.gov/publication/wri994018*. (Abstracts of papers in section G are available at *http://toxics.usgs.gov/pubs/wri99-4018/Volume3/index.html*.)

Paillet, F.L., and Kapucu, Kemal, 1989, Fracture characterization and fracture-permeability estimates from geophysical logs in the Mirror Lake watershed, New Hampshire: U.S. Geological Survey Water-Resources Investigations Report 89-4058, 47 p., *http://pubs.er.usgs.gov/publication/wri894058*.

Rosenberry, D.O., Bukaveckas, P.A., Buso, D.C., Likens, G.E., Shapiro, A.M., and Winter, T.C., 1999, Movement of road salt to a small New Hampshire lake: Water, Air, and Soil Pollution**,** v. 109, p. 179–206.

Shapiro, A.M., Hsieh, P.A., and Winter, T.C., 1995, The Mirror Lake fractured-rock research site—A multidisciplinary research effort in characterizing ground-water flow and chemical transport in fractured rock: U.S. Geological Survey Fact Sheet 138–95, 2 p., *http://pubs.er.usgs.gov/publication/fs13895*.

Shapiro, A.M., 2001, Effective matrix diffusion in kilometer-scale transport in fractured crystalline rock: Water Resources Research, v. 37, no. 3, p. 507–522.

Shapiro, A M., Hsieh, P.A., Burton, W.C., and Walsh, G.J., 2007, Integrated multi-scale characterization of ground-water flow and chemical transport in fractured crystalline rock at the Mirror Lake Site, New Hampshire, *in* Hyndman, D.W., Day-Lewis, F.D., and Singha, K., eds., Subsurface hydrology—Data integration for properties and processes: American Geophysical Union Geophysical Monograph Series, v. 171, p. 201–225.

Shattuck, P.C., 1991, Shallow water-table response to precipitation and evapotranspiration in an ephemeral stream valley, Woodstock, New Hampshire: Durham, University of New Hampshire, M.S. thesis, 113 p.

Tiedeman, C.R., Goode, D.J., and Hsieh, P.A., 1997, Numerical simulation of ground-water flow through glacial deposits and crystalline bedrock in the Mirror Lake area, Grafton County, New Hampshire: U.S. Geological Survey Professional Paper 1572, 50 p., *http://pubs.er.usgs.gov/publication/pp1572*.

Tolstikhin, I.N., and Kamensky, I.L., 1969, Determination of groundwater age by the T-^{3}He method: Geochemistry International, v. 6, p. 810–811.

Torgersen, T., Top, Z., Clarke, W.B., Jenkins, W.J., and Broecker, W.S., 1977, A new method for physical limnology—tritium-helium-3 ages—Results for Lakes Erie, Huron, and Ontario: Limnology and Oceanography, v. 22, p. 181–193.

Winter, T.C., 1984, Geohydrologic setting of Mirror Lake, West Thornton, New Hampshire: U.S. Geological Survey Water-Resources Investigations Report 84–4266, 61 p., *http://pubs.er.usgs.gov/publication/wri844266*.

Winter, T.C., Buso, D.C., Shattuck, P.C., Harte, P.T., Vroblesky, D.A., and Goode, D.J., 2008, The effect of terrace geology on ground-water movement and on the interaction of ground water and surface water on a mountainside near Mirror Lake, New Hampshire, USA.: Hydrological Processes, v. 22, no. 1, p. 21–32.

Winter, T.C., and Likens, G.E., eds., 2009, Mirror Lake—Interactions among air, land, and water: Berkeley, Calif., University of California Press, 336 p.

Wood, W.W., 1976, Guidelines for the collection and field analysis of ground-water samples for selected unstable constituents: U.S. Geological Survey Techniques for Water-Resources Investigations, book 1, chap. D2, 24 p., *http://pubs.usgs.gov/twri/twri1-d2/*.

Wood, W.W., Kraemer, T.F., and Shapiro, Allen, 2004, Radon (^{222}Rn) in ground water of fractured rocks—A diffusion/ion exchange model: Ground Water, v. 42, no. 4, p. 552–567.

Tables

Table 1. Summary of water-table wells, piezometers, bedrock wells, a seep, a spring, and a domestic bedrock well in the Mirror Lake watershed, New Hampshire, from which water was collected for analysis, or physical and chemical measurements were made within the wells from 1983 to 1997.

[Well locations are shown in figures 1 and 2. Abbreviations for type of well: WT, water table; P, piezometer; BR, bedrock; D, domestic bedrock. Abbreviations for data collection: X, water collected for analysis; Y, physical and chemical measurements made within a well]

Name of well, seep, or spring	Other designation[1]	Type of well	Year of data collection											
			1983	1984	1986	1987	1988	1990	1991	1992	1993	1995	1996	1997
W2	B-2	WT	X	X		Y	Y					X	X	X
W3	B-3	WT	X	X		Y		X				X		X
W3A	B3-A	WT	X	X			Y					X		X
W4-11	B4-11 W4-11(B)	WT	X	X			Y							
W4-23	B4-23 W4-23(A)	WT	X	X			Y							
W6		WT		X		X,Y	Y							X
W7		WT	X	X		X,Y	Y							
W8		WT		X										
W9		WT	X	X		X,Y	Y							
W10		WT	X	X		X,Y	Y							
W11		WT	X	X		X,Y	Y							X
W12		WT					Y							
W14		WT	X	X										
W15		WT	X	X										X
W16		WT	X	X									X	X
W16A		WT											X	X
W18	T1-8	WT	X	X			Y					X		X
W25		WT										X		X
W26		WT						X				X	X	X
W27		WT										X		X
W33		WT											X	X
W34		WT											X	X

Table 1. Summary of water-table wells, piezometers, bedrock wells, a seep, a spring, and a domestic bedrock well in the Mirror Lake watershed, New Hampshire, from which water was collected for analysis, or physical and chemical measurements were made within the wells from 1983 to 1997.—Continued

[Well locations are shown in figures 1 and 2. Abbreviations for type of well: WT, water table; P, piezometer; BR, bedrock; D, domestic bedrock. Abbreviations for data collection: X, water collected for analysis; Y, physical and chemical measurements made within a well]

Name of well, seep, or spring	Other designation[1]	Type of well	Year of data collection											
			1983	1984	1986	1987	1988	1990	1991	1992	1993	1995	1996	1997
W35		WT											X	X
W36		WT											X	X
CO WT	CO87 WT	WT					X,Y	X						
CO1-18		P						X						
CO1	CO87 BR	BR					Y	X		X			X	
CO2	CO89 BR	BR						X						
CO3		BR							X					
CO4		BR								X				
CO10		BR										X		
CO11		BR										X		
FS1-17	FS WT, W17	WT	X	X		Y	Y	X	X			X	X	
FS1-25	FS 25	P	X	X		Y	Y		X				X	
FS1-35	FS 35	P	X	X		Y	Y	X	X				X	
FS1	FS BR FS 79 BR	BR				Y	Y	X	X					
FS2-25	FS 87 P 25	WT					Y							
FS2	FS 87 BR	BR					Y	X		X				
FS3-11	FSE-14	WT						X						
FS3-22	FS3-25	P						X						
FS3-29	FS3-35	P						X						
FS3	FS 89 BR	BR						X		X	X			
FS3C-19		P										X	X	
FS3C-24		P								X		X	X	X

Table 1. Summary of water-table wells, piezometers, bedrock wells, a seep, a spring, and a domestic bedrock well in the Mirror Lake watershed, New Hampshire, from which water was collected for analysis, or physical and chemical measurements were made within the wells from 1983 to 1997.—Continued

[Well locations are shown in figures 1 and 2. Abbreviations for type of well: WT, water table; P, piezometer; BR, bedrock; D, domestic bedrock. Abbreviations for data collection: X, water collected for analysis; Y, physical and chemical measurements made within a well]

Name of well, seep, or spring	Other designation[1]	Type of well	Year of data collection											
			1983	1984	1986	1987	1988	1990	1991	1992	1993	1995	1996	1997
FS3C-29		P								X			X	X
FS4 WT		WT												X
FS5		BR										X		
FS6		BR										X		
FS7		BR											X	
FSE WT		WT		X										
FSE-23		P		X	X	Y	Y	X		X				
FSE-32		P		X	X	Y	Y			X				
FSE-43		P		X		Y	Y	X		X				
FSE1	FS83E BR	BR				Y								
FSE2	FS83E2 BR	BR					Y	X						
FSE3	FS83E3 BR	BR					Y							
FSE4	FS83E4-BR	BR			X	Y	Y		X	X				
FSE5	FSE5 BR	BR							X					
FSE6 WT		WT						X		X				
FSE6-32		P								X				
FSE6-51		P						X		X				
FSE6-59		P								X				
FSE6		BR								X				
H1		BR							X					
IS1		BR								X				
K1-8	KHL8	WT	X	X				X						
K1-15	KHL 15	P	X	X										

Table 1. Summary of water-table wells, piezometers, bedrock wells, a seep, a spring, and a domestic bedrock well in the Mirror Lake watershed, New Hampshire, from which water was collected for analysis, or physical and chemical measurements were made within the wells from 1983 to 1997.—Continued

[Well locations are shown in figures 1 and 2. Abbreviations for type of well: WT, water table; P, piezometer; BR, bedrock; D, domestic bedrock. Abbreviations for data collection: X, water collected for analysis; Y, physical and chemical measurements made within a well]

Name of well, seep, or spring	Other designation[1]	Type of well	Year of data collection											
			1983	1984	1986	1987	1988	1990	1991	1992	1993	1995	1996	1997
K1-20	KHL 20	P	X	X										
K1-25	KHL 25	P	X	X										
K1-30	KHL 30	P	X	X										
K1-35	KHL 35	P	X	X				X						
K1-39	KHL 39	P	X	X				X						
K1	KHLBR Kh-1-BR	BR	X					X						
K2-21	K-21	WT	X	X			Y	X						
K2-31	K-31	P	X	X			Y							
K2-41	K-41	P	X	X			Y	X						
K2	K BR	BR					Y	X						
K3-22	KHB 22	WT	X	X				X						
K3-41	KHB 42	P	X	X										
K3-61	KHB 61	P	X	X				X						
K3	Kh-B BR	BR						X						
R1-36		WT						X	X			X		
R1-55		P						X	X			X		
R1		BR						X		X				
RR1 PZ		WT										X		
RR1		BR										X		
S-40	Well 40	WT						X					X	X
T1		BR							X					
TR1-63	TR1-WT	WT		X			Y	X	X			X		X

Table 1. Summary of water-table wells, piezometers, bedrock wells, a seep, a spring, and a domestic bedrock well in the Mirror Lake watershed, New Hampshire, from which water was collected for analysis, or physical and chemical measurements were made within the wells from 1983 to 1997.—Continued

[Well locations are shown in figures 1 and 2. Abbreviations for type of well: WT, water table; P, piezometer; BR, bedrock; D, domestic bedrock. Abbreviations for data collection: X, water collected for analysis; Y, physical and chemical measurements made within a well]

Name of well, seep, or spring	Other designation[1]	Type of well	Year of data collection											
			1983	1984	1986	1987	1988	1990	1991	1992	1993	1995	1996	1997
TR1-132	TR 132	P		X			Y							
TR1	TR BR	BR					Y	X		X				
TR2		BR								X	X			
Seep S3		Seep												X
Leeman's Spring	S1	Spring												X
Pleasant View well		D							X					

[1] The designation of some wells changed during the period of study; other designations are provided to enable reference to previous publications.

Table 2. Summary of water-table wells, piezometers, and bedrock wells in the Mirror Lake watershed, New Hampshire, including those from which water was collected for chemical analysis or measured within the well from 1983 to 1988.

[—, no sample collected; ——, no measurement made]

Name of well	Year sampled for chemical analysis	Method of sample collection[1]	Year of in situ measurement
W2	1983, 1984	B PP	1987, 1988
W3	1983, 1984	PP PP	1987
W3A	1983, 1984	B PP	1988
W4-11	1983, 1984	PP PP	1988
W4-23	1983, 1984	B PP	1988
W6	1984, 1987	B PP	1987, 1988
W7	1983, 1984, 1987	PP PP	1987, 1988
W8	1984	PP	——
W9	1983, 1984, 1987	PP PP	1987, 1988
W10	1983, 1984 , 1987	PP PP	1987, 1998
W11	1983, 1984, 1987	BP PP PP	1987, 1988
W12	Well was dry	—	1988
W13	Well was dry	—	——
W14	1983, 1984	BP PP	——
W15	1983, 1984	PP PP	——
W16	1983, 1984	B PP	——
W18	1983, 1984	B PP	1988
CO WT	1988	PP	1988
CO1	Not sampled	—	1988
FS1-25	1983, 1984	PP PP	1987, 1988
FS1-35	1983, 1984	M PP	1987, 1988
FS1	Not sampled	—	1987, 1988
FS1-17	1983, 1984	B PP	1987, 1988
FS2-25	Not sampled	—	1988
FS2	Not sampled	—	1988
FSE WT	1984	PP	——
FSE-23	1984, 1986	PP PP	1987, 1988
FSE-32	1984, 1986	PP PP	1987, 1988
FSE-43	1984	PP	1987, 1988
FSE1	Not sampled	—	1987
FSE2	Not sampled	—	1988
FSE3	Not sampled	—	1988
FSE4	1986	H	1987, 1988

Table 2. Summary of water-table wells, piezometers, and bedrock wells in the Mirror Lake watershed, New Hampshire, including those from which water was collected for chemical analysis or measured within the well from 1983 to 1988.—Continued

[—, no sample collected; ——, no measurement made]

Name of well	Year sampled for chemical analysis	Method of sample collection[1]	Year of in situ measurement
K1-8	1983, 1984	M PP	——
K1-15	1983, 1984	M PP	——
K1-20	1983, 1984	M PP	——
K1-25	1983, 1984	M PP	——
K1-30	1983, 1984	M PP	——
K1-35	1983, 1984	M PP	——
K1-39	1983, 1984	M PP	——
K1	1983	M	——
K2-21	1983, 1984	PP	1988
K2-31	1983, 1984	B	1988
K2-41	1983, 1984	BP	1988
K2	Not sampled	—	1988
K3-22	1983, 1984	BP PP	——
K3-41	1983, 1984	BP PP	——
K3-61	1983, 1984	BP PP	——
TR1-63	1984	B	1988
TR1-132	1984	B	1988
TR1	Not sampled	—	1988

[1] Method of sample collection: B – Bailer; BP – Bailed, pitcher pump; H – Paul Hsieh geophysical pump; M – Middleburg bladder pump; PP – Peristaltic Pump.

Table 3. Wells and zones sampled during phase one of a groundwater study in the Mirror Lake watershed, New Hampshire, May 9 to June 4, 1990.

[C, sample zone without interval delineated]

Name of well	Sample zone (feet below measuring point at top of casing) or *feet below land surface*	Constituents sampled[1]	Remarks
W3	Water table	Fp,Gc,Rc, I1, I2, I3	
W26	Water table	Fp,Gc,Rc, I1, I2, I3, I5	
CO WT	Water table	Fp,Gc,Rc, I1, I2	
CO1	B (101-209)	Fp,Gc,Rc, I1, I2, I3	
CO2	A (25-104)	Fp,Gc,Rc, I1, I2, I3, I5	No Eh
FS1-17	Water table	Fp,Gc,Rc, I1, I2	No Eh
FS1-35	*33-35*	Fp,Gc,Rc, I1, I2, I3	
FS1	A (55-105)	Fp,Gc,Rc, I1, I2, I3, I5	
FS1	C (217-450)	Fp,Gc,Rc, I1, I2, I3, I5	
FS2	A (32-105)	Fp,Gc,Rc, I1, I2, I3, I5	
FS3-22	*20-22*	Fp,Gc, I1, I2	
FS3	A (38-84)	Fp,Gc, I1, I2, I3, I5	
FS3	C (197-645)	Fp,Gc, I1, I2, I3, I5	
FSE-23	*21-23*	Fp,Gc, I1, I2	No alkalinity, Eh
FSE-43	*41-43*	Fp,Gc, I1, I2, I5	No alkalinity, Eh
FSE2	A (55-105)	Fp,Gc, I1, I2, I3, I5	
FSE2	B (107-215)	Fp,Gc, I1, I2, I3, I5	
K1-8	Water table	Fp,Gc, I1, I2	
K1-39	*37-39*	Fp,Gc, I1, I2	
K1	borehole	Fp,Gc, I1, I2, I3, I5	
K2-21	Water table	Fp,Gc, I1, I2	
K2-41	*39-41*	Fp,Gc, I1, I2 ,I3	
K2	(55-160)	Fp,Gc, I1, I2, I3, I5	
K3-22	Water table	Fp,Gc, I1, I2	
K3-61	*59-61*	Fp,Gc, I1, I2, I3, I5	
K3	(75-175)	Fp,Gc, I1, I2, I3, I5	
S-40	Water table	Fp,Gc,Rc, I1, I2, I3	
TR1-63	Water table	Fp,Gc, I1, I2, I3	
TR1	A (177-199)	Fp,Gc, I1, I2, I3, I5	
TR1	B (200-299)	Fp,Gc, I1, I2, I3, I5	

[1] Codes:

Fp – Field parameters—Alkalinity, Eh, pH, specific conductance

Table 3. Wells and zones sampled during phase one of a groundwater study in the Mirror Lake watershed, New Hampshire, May 9 to June 4, 1990.—Continued

[C, sample zone without interval delineated]

Gc – General chemistry—Barium, beryllium, cadmium, chromium, chloride, cobalt, copper, fluoride, iron, lead, lithium, magnesium, manganese, molybedenum, nickel, nitrogen (nitrate, ammonia), phosphorus, potassium, silver, sodium, sulfate, uranium, vanadium, zinc

Rc – Radiochemistry—Uranium-234, uranium-235, uranium-238, radium-226, radium-228

I1 – Isotopes—Deuterium and oxygen-18

I2 – Isotopes—Tritium

I3 – Isotopes—Carbon-13

I4 – Isotopes—Tritium/helium (not sampled during phase 1)

I5 – Isotopes—Sulfur-34

I6 – Isotopes—Radon-222 (not sampled during phase 1)

Table 4. Wells and zones sampled during phase two of a groundwater study in the Mirror Lake watershed, New Hampshire, June 21 to September 23, 1990.

Name of well	Sample zone (feet below measuring point at top of casing)	Constituents sampled[1]
CO1	B (104-116)	Fp,Gc,Rc, I1, I2, I3
CO1	C (409-421)	Fp,Gc,Rc, I1, I2, I3
CO2	B (163-171)	Fp,Gc,Rc, I1, I2, I3
FS2	B (133-169)	Fp,Gc,Rc, I1, I2, I3, I4, I6
FS2	C (236-251)	Fp,Gc,Rc, I1, I2, I3, I4
FS3	A (60-75)	Fp,Gc, I1, I2, I3, I4
FS3	C (365-380)	Fp,Gc, I1, I2, I3, I4, I6
FS3	C (530-545)	Fp,Gc, I1, I2, I3, I4, I6
R1	A (57-80)	Fp,Gc, I1, I2, I3, I4
R1	B (102-125)	Fp,Gc, I1, I2, I3, I4
R1	B (148-171)	Fp,Gc, I1, I2, I3, I4
TR1	A (171-190)	Fp,Gc, I1, I2, I3, I4
TR1	B (271-300)	Fp,Gc, I1, I2, I3, I4
TR1	C (299-327)	Fp,Gc, I1, I2, I3, I4

[1] Codes:

Fp – Field parameters—Alkalinity, Eh, pH, specific conductance

Gc – General chemistry—Barium, beryllium, cadmium, chromium, chloride, cobalt, copper, fluoride, iron, lead, lithium, magnesium, manganese, molybedenum, nickel, nitrogen (nitrate, ammonia), phosphorus, potassium, silver, sodium, sulfate, uranium, vanadium, zinc

Rc – Radiochemistry—Uranium-234, uranium-235, uranium-238, radium-226, radium-228

I1 – Isotopes—Deuterium and oxygen-18

I2 – Isotopes—Tritium

I3 – Isotopes—Carbon-13

I4 – Isotopes—Tritium/helium

I5 – Isotopes—Sulfur-34 (not sampled during phase 2)

I6 – Isotopes—Radon-222

Table 5. Wells sampled during phase three of a groundwater study in the Mirror Lake watershed, New Hampshire, November through December, 1990.

Name of well	Constituents sampled[1]
CO1-18	Fp,Gc,Rc, I1, I2, I3, I4, I6
FS1-35	Fp,Gc,Rc, I1, I2, I3, I4, I6
FS3-11	Fp
FS3-22	Fp,Gc,Rc, I1, I2, I3, I4, I6
FS3-29	Fp
FSE6 WT	Fp
FSE6-51	Fp
K1-8	Fp,Gc,Rc, I1, I2, I3, I4
K1-35	Fp
K2-21	Fp
K2-41	Fp,Gc,Rc, I1, I2, I3, I4
K3-61	Fp,Gc,Rc, I1, I2, I3
R1-36	Fp,Gc,Rc, I1, I2, I3, I4
R1-55	Fp
TR1-63	Fp,Gc,Rc, I1, I2, I3, I4

[1] Codes:

Fp – Field parameters—Alkalinity, Eh, pH, specific conductance

Gc – General chemistry—Barium, beryllium, cadmium, chromium, chloride, cobalt, copper, fluoride, iron, lead, lithium, magnesium, manganese, molybedenum, nickel, nitrogen (nitrate, ammonia), phosphorus, potassium, silver, sodium, sulfate, uranium, vanadium, zinc

Rc – Radiochemistry—Uranium-234, uranium-235, uranium-238, radium-226, radium-228

I1 – Isotopes—Deuterium and oxygen-18

I2 – Isotopes—Tritium

I3 – Isotopes—Carbon-13

I4 – Isotopes—Tritium/helium

I5 – Isotopes—Sulfur-34 (not sampled during phase 3)

I6 – Isotopes—Radon-222

Table 6. Water evacuation data for wells in the Mirror Lake watershed, New Hampshire, from which water was collected for physical, chemical, and isotopic analyses in 1990.

[Date pumped is by month/day/year. M.P., measuring point; A,B,C, sample zones]

Name of well	Sample zone (feet below M.P. at top of casing) or *feet below land surface*	Date pumped	Borehole volume, in gallons	Volume pumped, in gallons	Number of volumes evacuated	Pumping time, in minutes	Pumping rate, in gallons per minute	Consecutive (c) or intermittent (i)
W3	Water table	5/30/1990	1.5	24	16	150	0.16	c
W26	Water table	5/23/1990	0.95	6	6.3	126	variable	i
S-40	Water table	5./22/1990	0.5	12.6	25	157	variable	i
CO WT	Water table	5/9/1990	1.1	23	21	84	variable	i
CO1-18	*16-18*	5/9/1990	2.5	1.5	0.6	6	0.25	c
CO1-18	*16-18*	12/3/1990	2.3	6.8	3	62	0.11	c
CO1	B (101-209)	5/10/1990	204	339	1.7	390	variable	i
CO1	B (104-116)	6/21/1990	nr[1]	nr	1	nr	nr	nr
CO1	C (409-421)	6/22/1990	nr	nr	1	nr	nr	nr
CO2	A (25-104)	5/9/1990	133	146	1.1	189	variable	i
CO2	B (163-171)	6/29/1990	nr	nr	1	nr	nr	nr
FS1-17	Water table	5/30/1990	2.6	3.0	1.1	25	variable	i
FS1-35	*33-35*	5/30/1990	5.6	29.3	5.2	234	variable	i
FS1-35	*33-35*	12/5/1990	5.2	10.4	2	94	0.11	c
FS1	A (55-105)	5/31/1990	112	88	0.79	106	variable	i
FS1	C (217-450)	5/25/1990	383	306	0.80	382	0.80	c
FS2	A (32-105)	5/22/1990	103	147	1.4	273	variable	c
FS2	B (133-169)	8/7/1990	nr	nr	1	nr	nr	nr
FS2	C (236-251)	8/6/1990	nr	nr	1	nr	nr	nr
FS3-11	Water table	12/5/1990	0.44	2.1	4.8	19	0.11	c
FS3-22	*20-22*	5/24/1990	2.3	5	2.2	50	variable	i
FS3-22	*20-22*	12/5/1990	2.2	2.2	1.5	nr	variable	i
FS3-29	*27-29*	12/5/1990	3.4	7.7	2.3	100	0.11	i

Table 6. Water evacuation data for wells in the Mirror Lake watershed, New Hampshire, from which water was collected for physical, chemical, and isotopic analyses in 1990.—Continued

[Date pumped is by month/day/year. M.P., measuring point; A,B,C, sample zones]

Name of well	Sample zone (feet below M.P. at top of casing) or *feet below land surface*	Date pumped	Borehole volume, in gallons	Volume pumped, in gallons	Number of volumes evacuated	Pumping time, in minutes	Pumping rate, in gallons per minute	Consecutive (c) or intermittent (i)
FS3	A (38-84)	5/23/1990	90	145	1.6	175	0.82	c
FS3	A (60-75)	8/10/1990	nr	nr	1	nr	nr	nr
FS3	C (197-645)	5/25/1990	687	550	0.8	734	variable	i
FS3	C (365-380)	8/9/1990	nr	nr	1	nr	nr	nr
FS3	C (530-545)	8/9/1990	nr	nr	1	nr	nr	nr
FSE-23	*21-23*	6/1/1990	0.326	3	9.2	17	variable	i
FSE-43	*41-43*	6/1/1990	3.99	4.2	1.1		variable	i
FSE2	A (55-105)	6/1/1990	111	213	1.9	172	variable	i
FSE2	B (107-215)	6/1/1990	173	256	1.5	265	variable	i
FSE6 WT	Water table	11/28/1990	0.25	12.5	50	114	0.11	i
FSE6-51	*49-51*	11/30/1990	5.5	4	0.7	36	0.11	c
K1-8	Water table	5/21/1990	0.72	12.7	18	68	0.19	c
K1-8	Water table	11/2/1990	0.2	11.7	58	87	0.13	c
K1-35	*33-35*	11/2/1990	4.6	22	4.9	200	variable	i
K1-39	*37-39*	5/22/1990	5.3	8	1.5	50	variable	i
K1	borehole	5/17/1990	217	244	1.1	394	0.62	c
K2-21	Water table	5/17/1990	1.5	36	24	211	variable	i
K2-21	Water table	11/30/1990	0.77	17.6	22.8	122	0.14	c
K2-41	*39-41*	5/17/1990	7	19.4	2.8	180	variable	c
K2-41	*39-41*	11/29/1990	4.4	48.4	11	160	0.8	c
K2	(55-160)	5/17/1990	218	390	1.8	453	0.86	c
K3-22	Water table	5/16/1990	10	19.1	1.9	36	0.53	c
K3-61	*59-61*	5/16/1990	33.8	140	4.1	140	1.0	c

Table 6. Water evacuation data for wells in the Mirror Lake watershed, New Hampshire, from which water was collected for physical, chemical, and isotopic analyses in 1990.—Continued

[Date pumped is by month/day/year. M.P., measuring point; A,B,C, sample zones]

Name of well	Sample zone (feet below M.P. at top of casing) or *feet below land surface*	Date pumped	Borehole volume, in gallons	Volume pumped, in gallons	Number of volumes evacuated	Pumping time, in minutes	Pumping rate, in gallons per minute	Consecutive (c) or intermittent (i)
K3-61	*59-61*	11/30/1990	8.7	192	22	240	0.80	i
K3	(75-175)	5/16/1990	266	359	1.4	360	variable	i
R1-36	Water table	11/30/1990	3.7	8.8	2.4	nr	variable	i
R1-55	*53-55*	11/29/1990	6.7	28	4.1	nr	variable	i
R1	A (57-80)	9/16/1990	nr	nr	1	nr	nr	nr
R1	B (102-125)	9/15/1990	nr	nr	1	nr	nr	nr
R1	B (148-171)	9/16/1990	nr	nr	1	nr	nr	nr
TR1-63	Water table	5/15/1990	4.1	54	13	208	variable	i
TR1-63	Water table	11/29/1990	3.75	87	23.2	143	0.6	c
TR1	A (177-199)	5/15/1990	179	200	1.1	200	variable	i
TR1	A (171-190)	9/22/1990	nr	nr	1	nr	nr	nr
TR1	B (200-299)	5/17/1990	170	187	1.1	645	variable	i
TR1	B (271-300)	9/23/1990	nr	nr	1	nr	nr	nr

[1] nr indicates not recorded.

Table 7. Chemical constituents and their collection and preservation procedures for water samples collected in the Mirror Lake watershed, New Hampshire, in 1990.

[USGS, U.S. Geological Survey; —-, no analytical method code associated with the constituent; mL, milliliter; L, liter]

Chemical constituents sampled	Collection procedure; Bottle type	USGS National Water Quality Laboratory analytical method code	Preservation procedure	Quantity collected
Bromide, chloride, fluoride, nitrogen, phosphorus, specific conductance, sulfate	Filtered, untreated; Polyethylene	SH1101	None	250 mL
Barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, lithium, magnesium, manganese, molybdenum, nickel, silver, sodium, vanadium, zinc	Filtered; Polyethylene	SH1043	Nitric acid	100 mL
Potassium	Filtered; Polyethylene	LC0883	None	50 mL
Boron	Filtered/Raw; Polyethylene	LC1183	None/Nitric acid	25 mL/25 mL
Uranium	Raw; Polyethylene	LC 1388	None	125 mL
Deuterium, oxygen-18	Raw; Glass - clear	SH1142	None	125 mL
Sulfur-34	Filtered; Glass - brown	LC0298	Mercury	2 L
Carbon-13	Raw; Glass - clear	LC0440	Strontium chloride	2 L
Uranium – -234, -235, -238	Filtered; Polyethylene	SH1130	Nitric acid	2 L
Radium-226	Filtered; Polyethylene	LC0794	Nitric acid	1 L
Radium-228	Filtered; Polyethylene	LC1364	Nitric acid	2 L
Radon-222	Raw; Glass - septum	—-	None	50 mL
Tritium	Raw; Polyethylene	LC1565	None	1 L
Tritium/helium	Raw; copper tube	—-	None	7 L

Table 8. Wells and zones sampled in the Mirror Lake watershed, New Hampshire, in 1991.

[Date of collection is by month/day/year]

Name of well	Sampled zones (feet below top of casing) or *feet below land surface*	Date of collection	Pumping rate in liters per minute	Constituents sampled[1]	Remarks
CO3	(26-40)	8/17/1991	1.6	Gc, I1, I4, Fr	
CO3	(87-102)	8/17/1991	5.0	Gc, I1, I4, Fr, C	
CO3	(140-155)	8/17/1991	5.1	Gc, I1, I4, Fr, C	
FS1-17	Water table	9/23/1991	nr[2]	I1, I3, Fr, D	
FS1-25	*23-25*	9/25/1991	nr	pH, I2, I4, Fr, D	
FS1-35	*33-35*	9/24/1991	nr	Fr, D	
FS1	*121-136*	8/5/1991	5.5	Gc, I1, I4, Fr, D	
FS1	*309-324*	8/5/1991	0.8	Gc, I1, I4, Fr, D,C	
FS1	*348-363*	8/6/1991	1.2	Gc, I1, I4, Fr, D, C	
FSE4	(436-443)	6/12/1991	nr	Gc, I1	
H1	(178-193)	8/7/1991	1.5	Fr	2 freon samples collected – Bennett pump malfunctioned and could not be started to complete sampling.
H1	(178-193)	8/13/1991	4.4	Gc, I1, I4, Fr, D,C	
H1	(107-122)	8/13/1991	1.2	Gc, I1, I4, Fr, D	
R1-36	Water table	9/26/1991	nr	I1, I2, I3, I4, Fr,D	
R1-55	*53-55*	9/26/1991	nr	Gc, I2, I4, Fr,D	
T1	(57-72)	8/15/1991	4.5	Gc, I1, I4, Fr, D	
T1	(155-172)	8/15/1991	4.7	Gc, I1, I4, Fr, C	
T1	(220-237)	8/15/1991	4.2	Gc, I1, I4, Fr, C	
TR1-63	Water table	9/26/1991	nr	Gc, NO_3, I1, I2, I3, I4, Fr	
Pleasant View well	unknown	5/22/1991	nr	Gc, I1	

[1] Codes:

Gc – General chemistry—Alkalinity, bromide, calcium, chloride, fluoride, iron, magnesium, pH, potassium, silica as SiO_2, sodium, specfic conductance, strontium, and sulfate

I1 – Isotopes—Deuterium and oxygen-18

I2 – Isotopes—Tritium

I3 – Isotopes—Carbon-13

I4 – Isotopes—Tritium/helium

Fr – Freon (Chlorofluorocarbons 11, 112, and 113)

D – Dissolved gas

C – Sample collected for ^{14}C analysis in the event that it was needed for age dating based on tritium presence or absence

[2] nr indicates not recorded.

Table 9. Wells and zones pumped or sampled (or both) in the Mirror Lake watershed, New Hampshire, in 1992 and 1993.

[Date of collection is by month/day/year; R, radon-222; $\delta^{13}C$, isotope ratio of carbon-13 to carbon-12 in comparison to the isotope ratio in a standard – Vienna Pee Dee Belemnite; Mn, manganese; NO_3, nitrate; C-14, carbon-14; ^3H, tritium]

Name of well	Sampled zones (feet below top of casing) or *feet below land surface*	Date of collection	Pumping rate in liters per minute	Constituents sampled[1]	Remarks
CO1	*104-114*	6/16/1992	1.8	^{222}R,Gc, I1	
CO1	*420-430*	6/16/1992	3.3	^{222}R,Gc, I1	
CO4	(92-98.8)	6/11/1992	3.6	^{222}R,Gc, I1	Bottle for $\delta^{13}C$ broken in transit. Duplicate liter sample in glass will be supplied.
FS2	*134-149.3*	7/7/1992	nr[2]	^{222}R,Gc, I1, Fr	
FS2	*236-251.3*	7/8/1992	nr	^{222}R,Gc, I1, Fr	
FS2	*384-399.3*	7/8/1992	nr	^{222}R,Gc, I1, Fr	
FS3	*60-75.1*	7/12/1992	nr	^{222}R,Gc, I1, Fr	
FS3	*294-309.1*	7/12/1992	nr	^{222}R,Gc, I1, Fr	
FS3	*365-380.1*	7/13/1992	nr	^{222}R,Gc, I1, Fr	
FS3	*530-545.1*	7/13/1992	nr	^{222}R,Gc, I1, Fr	
FS3	*60.0-72.4*	7/19/1993	variable	^{222}R,Fp, Gc, Mn, ^{3}H, I1, Fr	
FS3	*294.0-306.2*	7/20/1993	variable	^{222}R,Fp, Gc, Mn, ^{3}H, I1, Fr	
FS3	*365.0-377.2*	7/20/1993	variable	^{222}R,Fp, Gc, Mn, ^{3}H, I1, Fr	
FS3C-24	*23-24*	7/19/1992	variable	^{222}R,Gc, I1	
FS3C-29	*28-29*	7/18/1992	0.045	^{222}R,Gc, I1	
FSE-23	*21-23*	5/19/1992	nr	None	Intermittent pumping to purge well – pH 12 indicates contamination from cement. No chemical or isotope samples.
FSE-32	*30-32*	5/19/1992	nr	None	Intermittent pumping to purge well – pH 12 indicates contamination from cement. No chemical or isotope samples.
FSE-32	*30-32*	5/21/1992	nr	^{222}R, ^{3}H, Fr	Intermittent pumping to purge well. Continued sampling of FSE-32 conducted on May 19, 1992, for age dating water.

Table 9. Wells and zones pumped or sampled (or both) in the Mirror Lake watershed, New Hampshire, in 1992 and 1993.—Continued

[Date of collection is by month/day/year; R, radon-222; $\delta^{13}C$, isotope ratio of carbon-13 to carbon-12 in comparison to the isotope ratio in a standard – Vienna Pee Dee Belemnite; Mn, manganese; NO_3, nitrate; C-14, carbon-14; ^3H, tritium]

Name of well	Sampled zones (feet below top of casing) or *feet below land surface*	Date of collection	Pumping rate in liters per minute	Constituents sampled[1]	Remarks
FSE-43	*41-43*	5/19/1992	nr	^3H, Fr	Intermittent pumping to purge well – pH 12 indicates contamination from cement. No chemical or isotope samples.
FSE4	(438.2-445)	5/18/1992	0.24	^{222}R,Gc, I1, Fr	
FSE6 WT	*10.5-15.5*	5/20/1992	nr	^{222}R,Gc, I1	Intermittent pumping to purge well. Very silty water. Partial sampling conducted.
FSE6-32	*30-32*	5/21/1992	nr	^{222}R	
FSE6-41	*39-41*	5/20/1992	nr	None	Intermittent pumping to purge well. Very silty water. No samples taken.
FSE6-51	*49-51*	5/20/1992	nr	^{222}R	Intermittent pumping to purge well. Water smelled of sewage, probably from leach field west of FSE-6. At end of pumping, gray, silty water. Only radon sample taken.
FSE6-59	*57-59*	5/20/1992	nr	^{222}R	Intermittent pumping to purge well. Water had purple tint. Only radon sample taken.
IS1	(56-58.8)	6/3/1992	3.8	^{222}R,Gc, I1, Fr	
IS1	(364-370.8)	6/4/1992	4.9	^{222}R,Gc, I1, Fr	
IS1	(400-406.8)	6/4/1992	4.6	^{222}R,Gc, I1, Fr	
IS1	(466.5-473.3)	6/4/1992	variable	^{222}R,Gc, I1, Fr	Pumping rate varied. Sediment in water causing pump to clog. Partial sampling conducted.
R1	*65-80.1*	7/14/1992	nr	^{222}R,Gc, I1, Fr	
R1	*110-125.1*	7/14/1992	nr	^{222}R,Gc, I1, Fr	
R1	*147-162.1*	7/15/1992	nr	^{222}R,Gc, I1, Fr	
R1	*480-495.1*	7/15/1992	nr	^{222}R,Gc, I1, Fr	
TR1	*170-190*	6/30/1992	0.69	^{222}R,Gc, NO_3, I1, $\delta^{13}C$, Fr, G1	Water is slightly silty.

Table 9. Wells and zones pumped or sampled (or both) in the Mirror Lake watershed, New Hampshire, in 1992 and 1993.—Continued

[Date of collection is by month/day/year; R, radon-222; $\delta^{13}C$, isotope ratio of carbon-13 to carbon-12 in comparison to the isotope ratio in a standard – Vienna Pee Dee Belemnite; Mn, manganese; NO_3, nitrate; C-14, carbon-14; ^3H, tritium]

Name of well	Sampled zones (feet below top of casing) or *feet below land surface*	Date of collection	Pumping rate in liters per minute	Constituents sampled[1]	Remarks
TR1	*271-299.8*	6/30/1992	3.3	^{222}R,Gc, NO_3, ^{3}H, I1, δ^{13}C, Fr, G1	Significant leakage from above top packer and some leakage from below bottom packer.
TR1	*298.6-327.4*	7/1/1992	nr	^{222}R,Gc, NO_3, ^{3}H, I1, δ^{13}C, Fr, G1	
TR1	*390-397.8*	7/1/1992	nr	^{222}R,Gc, NO_3, ^{3}H, I1, δ^{13}C, Fr, G1	
TR1	*482-489.8*	7/6/1992	nr	^{222}R,Gc, NO_3, ^{3}H, I1, δ^{13}C, Fr, G1	
TR2	(151-170.1)	6/22/1992	6.1	^{222}R,Gc, NO_3, ^{3}H, I1, δ^{13}C, Fr, G1	
TR2	(270-289.1)	6/22/1992	4.4	^{222}R,Gc, NO_3, ^{3}H, I1, δ^{13}C, Fr, G1	
TR2	(426-445.1)	6/23/1992	4.5	^{222}R,Gc, NO_3, ^{3}H, I1, δ^{13}C, Fr, G1	
TR2	(151-170.1)	6/24/1992	6.1	^{222}R	Leakage from above top packer. Sample for C-14 taken.
TR2	(150.1-170.3)	7/21/1993	nr	^{222}R, Fp, Gc, Mn, I1, ^{3}H, Fr	
TR2	(270.0-289.3)	7/21/1993	2.5	^{222}R, Fp, Gc, Mn, I1, ^{3}H, Fr	
TR2	(426.0-445.3)	7/22/1993	nr	^{222}R, Fp, Gc, Mn, I1, ^{3}H, Fr	

[1] Codes:

Fr – Freon (Chlorofluorocarbons 11, 112, and 113)

Fp – Field parameters – Temperature, pH, specific conductance, dissolved oxygen, alkalinity

G1 – Dissolved gases – nitrogen, argon, carbon dioxide, methane

Gc – General chemistry—Alkalinity, bromide, calcium, chloride, fluoride, iron, magnesium, pH, potassium, silica as SiO^2, sodium, specfic conductance, strontium, and sulfate

I1 – Isotopes—Deuterium and oxygen-18

[2] nr indicates not recorded.

Table 10. Wells and zones sampled in the Mirror Lake watershed, New Hampshire, in 1995.

[Date of collection is by month/day/year; NA, not applicable; —-, not available; Sp. Cond., specific conductance; °C, degrees Celsius; L/min; liters per minute; µS/cm, microsiemens per centimeter]

Name of well	Sampled zone (feet below top of casing), or *feet below land surface*	Date of collection	Pumping rate in liters per minute	Constituents sampled[1]	Remarks
W2	Water table	6/20/1995	0.06	Fr,Fp,Gc,I1,I2, I3	Downhole temperature 6.7 °C. Pumped for 6 hours.
W3	Water table	6/23/1995	0.1	Fr,Fp,Gc,I1, I2	Pumped 4 hours. Pumping rate varied between 0.07 and 0.22 L/min. Downhole temperature 6.8 °C.
W3A	Water table	6/23/1995	0.2	Fr, Fp,Gc,I1,I2, I3	Pumping rate varied, mostly around 0.2 to 0.28 L/min. Pumped 3.75 hours. Downhole temperature 9.7 °C.
W18	Water table	7/12/1995	NA	Fp,Gc,I1,I2, I3	Intermittent pumping over 3 days. Downhole temperature 8.2 °C.
W25	Water table	6/21/1995	0.13	Fr, Fp,Gc,I1, I3	Downhole temperature 6.0 °C. Pumped 5 hours. pH ranged from 6.6 to 7.0.
W26	Water table	6/21/1995	0.1	Fr, Fp,Gc,I1, I2	Flow rate ranged between 0.1 and 0.17 L/min. Pumped 4.25 hours. Downhole temperature 6.5 °C.
W26	Water table	8/16/1995	—-	Gc	Field parameters unavailable. Sample taken for comparison with analysis to be conducted by D.A. Vroblesky (USGS, Columbia, S.C.).
W27	Water table	7/16/1995	0.05	Fr, Fp,Gc,I1,I2, I3	Pumped 7 hours.
CO10	(130.0-143.5)	8/15/1995	2.6	Fp,Gc,I1, I2	Sampling fault zone in CO well field.
CO10	(228.0-241.5)	8/15/1995	1.4	Fp,Gc,I1, I2	
CO11	(95.0-108.5)	8/16/1995	3.0	Fp,Gc,I1,I2, I3	
CO11	(242.0-255.5)	8/17/1995	2.6	Fp,Gc,I1, I2	
CO11	(342.6-356.1)	8/17/1995	1.1	Fp,Gc,I1,I2, I3	Slight drop in pH and Sp. Cond. during sampling. At start of sampling pH=8.03, Sp. Cond. = 420 µS/cm.
FS1-17	Water table	7/18/1995	0.05	Fr, Fp,Gc,I1,I2, I3	Intermittent pumping over 5 hours.
FS3C-19	*18-19*	7/14/1995	0.05	Fr,Fp,Gc,I1,I2, I3	Pumping over 2 days, each day at approximately constant rate.
FS3C-24	*23-24*	7/15/1995	0.1	Fr,Fp,Gc,I1,I2, I3	Pumped 4 hours.
FS5	(200.4-218.0)	6/8/1995	2.8	Fp, Gc, I1,I2, I3	
FS5	(142.0-155.5)	6/9/1995	1.8	Fp,Gc,I1,I2, I3	
FS5	(70.0-83.5)	6/9/1995	0.32	Fp,Gc,I1,I2, I3	Alkalinity titration not conducted in the field. Drop in pH at end of sampling (pH=7.7), during last hour of pumping.

Table 10. Wells and zones sampled in the Mirror Lake watershed, New Hampshire, in 1995.—Continued

[Date of collection is by month/day/year; NA, not applicable; —-, not available; Sp. Cond., specific conductance; °C, degrees Celsius; L/min; liters per minute; µS/cm, microsiemens per centimeter]

Name of well	Sampled zone (feet below top of casing), or *feet below land surface*	Date of collection	Pumping rate in liters per minute	Constituents sampled[1]	Remarks
FS6	*44.0-53.5*	8/12/1995	5.0	Fp,Gc,I1, I2	First 15 minutes of pumping, pH 8.4, Sp. Cond. 150 µS/cm. Later, appear to draw water from overburden. Field parameters and samples reflect water drawn at later time.
R1-36	Water table	7/10/1995	0.3	Fr,Fp,Gc,I1,I2, I3	Pumped 3.5 hours. Downhole temperature 5.0 °C.
R1-55	*53-55*	7/11/1995	0.05	Fr,Fp,I1,I2, I3	pH rises throughout sampling. High pH indicative of cement contamination. Samples will not be submitted for analysis because they will not be indicative of formation waters. Pumped 11 hours. Downhole temperature 5.6 °C.
RR1 PZ	Water table	8/21/1995	0.74	Fr,Fp,Gc,I1,I2, I3	pH and Sp. Cond. rise during last 15 minutes of pumping (pH=7.00, Sp. Cond. = 615 µS/cm). Water degassing in discharge line.
RR1	(582.5-596.0)	8/18/1995	2.7	Fp,Gc,I1,I2, I3	Significant degassing of water; looks like seltzer! Unable to perform alkalinity titration with 0.16N sulfuric acid.
TR1-63	Water table	7/8/1995	0.1	Fr,Fp,Gc,I1,I2, I3	Pumped 8.5 hours. Pumping rate variable between 0.04 and 0.2 L/min. Downhole temperature 6.8 °C.

[1] Codes:

Fr – Freon (Chlorofluorocarbons 11, 112, and 113)

Fp – Field parameters—Temperature, pH, specific conductance, dissolved oxygen, alkalinity

Gc – General Chemistry—Alkalinity, aluminum, bromide, calcium, chloride, fluoride, iron, magnesium, manganese, nitrate, pH, potassium, silica as SiO_2, sodium, specfic conductance, strontium, and sulfate

I1 – Isotopes—Deuterium and oxygen-18

I2 – Isotopes—Tritium

I3 – Isotopes—Carbon-13

Table 11. Wells sampled in the Mirror Lake watershed, New Hampshire, in 1996.

[Date of collection is by month/day/year]

Name of well	Date of collection	Pumping rate in liters per minute	Constituents sampled[1]	Remarks
W2	8/26/1996	0.2	Fpa, G1	Pumped sporadically for 6 hours.
W16	8/28/1996	nr[2]	Fpa, Gc, Ba, B, Cu, F, Li, Zn, I1, I2, I3, Fr, G1	
W16A	8/27/1996	nr	Fpa, Gc, Ba, B, Cu, F, Li, Zn, I1, I2, I3, Fr,	
W26	8/26/1996	0.2	Fpa, G1	Pumped for 45 minutes.
W33	8/22/1996	0.4	Fpa, Gc, I1,I2, I3, Fr, Ba, B, Cu, F, Li, Zn, G1	Pumped for 6 hours.
W34	8/22/1996	0.05	Fpt, Gc, I1,I2, Ba, B, Cu, F, Li, Zn, G1	Pumped sporadically for 2 days.
W35	8/27/1996	nr	Fpp, Gc,I1, I2, I3, Ba, B, Cu, F, Li, Zn, G1	
W36	8/26/ 8/27/1996	nr	Fpa, Gc, I3,Ba, B, Cu, F, Li, Zn, Fr, G1	
FS1-17	7/19/1996	0.1	Fpt, Gc, I1,I2, I3, Fr, Ba, B, Cu, F, Li, Zn	Pumped for 8 hours.
FS1-25	7/20/1996	0.1	Fpt, Gc, I1,I2, I3, Fr, Ba, B, Cu, F, Li, Zn	Pumped for 4 hours, 30 minutes.
FS1-35	7/20/1996	0.7	Fpt, Gc, I1,I2, I3, Fr, Ba, B, Cu, F, Li, Zn	Pumped for 2 hours 30 minutes.
FS3C-19	7/18/1996	0.34	Fpt, Gc, I1,I2, I3, Fr, Ba, B, Cu, F, Li, Zn	Pumped for 3 hours.
FS3C-24	7/18/1996	0.13	Fpt, Gc, I1,I2, I3, Fr, Ba, B, Cu, F, Li, Zn	Pumped for 5 hours.
FS3C-29	7/17/1996	0.1 to 0.2	Fp, Gc, I1,I2, I3, Fr, Ba, B, Cu, F, Li, Zn	Pumped for 4 hours.
CO1	6/20/ 6/23/1996	nr	Gc	
FS7	6/22/1996	nr	Gc	
S-40	8/23/1996	nr	I2	

[1] Codes:

Ba – barium B – boron Cu – copper F – fluoride Li – lithium Zn – zinc

Fpa – Field parameters—temperature, pH, specific conductance, dissolved oxygen

Fpt – Field parameters—pH, specific conductance, dissolved oxygen

Fpp – Field parameters—temperature, specific conductance, dissolved oxygen

Fr – Freon (Chlorofluorocarbons 11, 112, and 113)

G1 – Dissolved gases—nitrogen, argon, carbon dioxide, methane

Gc – General chemistry—alkalinity, calcium, magnesium, sodium, potassium, chloride, sulfate, silica as SiO_2, bromide, iron, manganese, aluminum, strontium, nitrate.

I1 – Isotopes—Deuterium and oxygen-18

I2 – Isotopes—Tritium

I3 – Isotopes—Carbon-13

[2] nr indicates not recorded.

Table 12. Wells and zones, a seep, and a spring sampled in the Mirror Lake watershed, New Hampshire, in 1997.

[Date of collection is by month/day/year; *, not pumped, flowing spring]

Name of well	Sampled zone, or *feet below land surface*	Date of collection	Pumping rate in liters per minute	Constituents sampled[1]
W2	Water table	6/7/1997	0.07	Fpa,Gc,I1,I2, I3, G1
W3	Water table	7/14/1997	0.26	Fpa,Gc,I1, I2,I3, G1
W3A	Water table	7/14/1997	0.09	Fpa,Gc,I1,I2, I3.G1
W6	Water table	7/26/1997	0.07	Fpa,Gc,I1,I2, I3, G1
W11	Water table	7/25/1997	0.2	Fpa,Gc, I1, I2, I3, G1
W15	Water table	7/28/1997	0.03	Fpa,Gc,I1, I2, I3, G1
W16	Water table	7/13/1997	0.08	Fpa,Gc,I1, I2, I3, G1
W16A	Water table	7/12/1997	0.09	FpO,Gc,I1, I2, I3, G1
W18	Water table	6/26/1997	0.07	Fpa,Gc,I1, I2, I3, G1
W25	Water table	7/13/1997	0.09	Fpa,Gc,I1, I2, I3, G1
W26	Water table	6/8/1997	0.08	Fpa,Gc,I1, I2, I3, G1
W27	Water table	6/19/1997	0.11	Fpa,Gc,I1, I2, G1
W33	Water table	7/7/1997	0.15	Fpa, I1, I2, I3, G1
W34	Water table	6/10/1997	0.06	Fpa,Gc, I1, I2, I3, G1
W35	Water table	7/11/1997	0.03	Fpa,I1, I2, G1
W36	Water table	6/17/1997	0.1	Fpa,Gc,I1, I2, I3, G1
FS3C-24	*23-24*	6/12/1997	0.11	Fpa,Gc,I1, I2, I3, G1
FS3C-29	*28-29*	6/11/1997	0.04	Fpa,Gc,I1, I2, I3
FS4 WT	Water table	7/8/1997	0.06	Fpa,Gc,I1, I2, I3, G1
S-40	Water table	7/25/1997	0.05	Gc,I1, I2, I3, G1
TR1-63	Water table	6/25/1997	0.15	Fpa,Gc,I1, I2, I3, G1
Seep S3	Water table	8/7/1997	0.07	Fpa,Gc,I1, I2, I3
Leeman's Spring	Water surface	8/6/1997	*	Fpa,Gc,I1, I2, I3, G1

[1] Codes:

Fpa – Field parameters—temperature, pH, specific conductance, dissolved oxygen

FpO – Field parameters—temperature, pH, specific conductance

Gc – General chemistry—alkalinity, calcium, magnesium, sodium, potassium, chloride, sulfate, silica as SiO_2, bromide, fluoride, iron, manganese, aluminum, strontium, nitrate, barium, boron, chromium, cobalt, copper, lead, lithium, nickel, strontium, vanadium, zinc

I1 – Isotopes—Deuterium and oxygen-18

I2 – Isotopes—Tritium

I3 – Isotopes—Carbon-13

G1 – Dissovled gases—nitrogen, argon, carbon dioxide, methane

Table 13. Procedures and equipment used for sample collection from water-table wells and piezometers in the Mirror Lake watershed, New Hampshire, in 1995, 1996, and 1997.

[USGS, U.S. Geological Survey; —, not applicable; L, liter; mL, milliliter; oz, ounce]

Step	Procedures and Parameters	Equipment	Remarks
1	Measure water level and total well length	Electric tape	Compute volume of water in well
2	Install submersible piston pump or intake tubing for peristaltic pump	Stainless steel piston pump or peristaltic pump	Either copper or nylon tubing
3	Purge well of at least 1 well volume	—	Monitor pH, specific conductance temperature, and dissolved oxygen; collect discharge for volume measurements; intermittent water level measurements
4	Tritium	1-L polyethylene bottle	Overflow at least 1 volume
5	Carbon isotopes	1-L brown or clear glass bottle with polyseal cap	Overflow at least 1 volume; small air bubble at top
6	Alkalinity	50 mL in graduated cylinder	Analyze in field by titration
7	Total organic carbon	4-oz brown glass bottle with Teflon cap	Store on ice and express mail to USGS Reston water research laboratory
8	Deuterium and oxygen-18	2-oz glass bottle with polyseal cap	No air bubble
9	Dissolved gases	200-mL clear glass bottles with rubber septum	Duplicate samples; no air bubble; store on ice and express mail to USGS Reston Chlorofluorcarbon laboratory
10	Sulfur hexafluoride	1-L clear glass bottle with polyseal cap	No air bubble, store on ice and express mail to USGS Reston Chlorofluorcarbon laboratory
11	Chlorofluorocarbons	75-mL clear glass ampules	Collect and seal in ultra-pure apparatus provided by USGS Reston Chlorofluorcarbon laboratory; 3-6 samples
12	Shutdown	—	Record final field parameters

Table 14. Analytical methods and reporting procedures for samples collected in the Mirror Lake watershed, New Hampshire, in 1990.

[pH, - log (H+); mmhos/cm, micromhos per centimeter; mg/L, milligrams per liter; µg/L, micrograms per liter; ‰, parts per thousand of deuterium or oxygen-18; piC/L, picocuries per liter; Tu, tritium units; —, no data available; ICP, inductively-coupled plasma emission spectroscopy]

Constituent	Analytical method	Unit of measurement	Detection level
pH	Electrometry	pH	—
Specific conductance	Electrometry	µmhos/cm	1
Alkalinity	Titrimetry, electrometric	mg/L as Ca CO_3	—
Barium, bromide, calcium, magnesium, sodium, silica as SiO_2	Dissolved, atomic emission, ICP, direct	mg/L	0.1
Boron, beryllium, cadmium, chromium, cobalt, copper, iron, lithium, lead, molybdenum, manganese, nickel, silver, dtrontium, vanadium, zinc	Dissolved, atomic emission, ICP, direct	µg/L	0.1
Fluoride	Ion chromatography	mg/L	0.01
Nitrogen, ammonia, phosphorus	Colorimetry	mg/L	0.002
Nitrogen, nitrate	Ion chromotography	mg/L	0.01
Potassium	Dissolved, atomic absorption, direct	mg/L	0.01
Uranium	Dissolved, extract, laser-induced phosphorimetry	µg/L	0.01
Deuterium	Dissolved, protium, mass spectrometry	‰	—
Oxygen-18	Dissolved, mass spectrometry	‰	—
Sulfur-34	Sulfate precipitate, mass spectrometry	‰	—
Uranium–234	Dissolved, alpha spectrometry-speciation	pCi/L	0.1
Uranium-235	Dissolved, alpha spectrometry-speciation	pCi/L	0.1
Uranium-238	Dissolved, alpha spectrometry-speciation	pCi/L	0.1
Radium-226	Dissolved, by de-emanation	pCi/L	0.2
Radium-228	Dissolved, by separation, beta counting	pCi/L	1.0
Radon-222	Dissolved, liquid scintillation	pCi/L	100
Tritium	Dissolved, liquid scintillation	Tu	1
Tritium/helium	—	ratio	—

Table 15. In situ temperature, pH, and specific conductance of groundwater within the casing or borehole of selected wells measured in the Mirror Lake watershed, New Hampshire, July 1987.

[Date of measurement is by month/day/year; Forest Service Station, Hubbard Brook Experimental Forest, United State Department of Agriculture Forest Service Northern Research Station; °C, degrees Celsius; µS/cm @ 25 °C, microsiemens per centimeter at 25 degrees Celsius]

Name of well	Date of measurement	Temperature, in °C	pH	Specific conductance, in µS/cm @ 25 °C	Remarks
W7	7/8/1987	22.0	7.1	45	Wells in area of outflow from Mirror Lake into groundwater.
W9	7/8/1987	18.5	6.2	17	
W10	7/8/1987	10.2	7.8	29	
W2	7/10/87	9.0	7.1	45	Wells in west drainage basin north of Forest Service Station.
W3	7/10/87	11.1	5.4	^[1]	
FS1-17	7/10/87	7.3	10.0	39	
FS1-25	7/10/87	7.1	12.5	1,748	
FS1-35	7/10/87	7.9	12.5	5,280	
FS1	7/10/87	8.5	7.1	112	
W6	7/7/1987	8.2	7.7	72	Wells in west drainage basin east of Forest Service Station in vicinity of acid deposition experiments.
W11	7/7/1987	8.0	5.4	12	
FSE-23	7/7/1987	8.2	12.8	1,684	
FSE-32	7/7/1987	9.5	13.0	6,230	
FSE-43	7/7/1987	10.0	13.2	7,820	
FSE4	7/7/1987	8.6	6.8	659	

[1] ^, indicates value out of range – specific conductance sensor of probe likely not fully immersed.

Table 16. Vertical variation of in situ temperature, pH, and specific conductance of groundwater in the Mirror Lake watershed, New Hampshire, within bedrock wells FS1 (sampled July 10, 1987) and FSE1 (sampled July 7, 1987).

[°C, degrees Celsius; µS/cm @ 25 °C, microsiemens per centimeter at 25 degrees Celsius]

Name of well	Depth below top of casing, in meters	Temperature, in °C	pH	Specific conductance, in µS/cm @ 25 °C
FS1	10	7.4	8.4	67
	20	7.6	8.1	61
	30	7.7	8.0	57
	40	7.8	7.8	53
	50	8.1	7.5	98
	60	8.3	7.4	95
	70	8.4	7.2	93
	76.5	8.5	7.1	112
FSE1	9.5	8.7	7.0	722
	15	8.5	7.0	726
	20	8.6	6.9	700
	25	8.6	6.8	659
	29	9.2	6.7	617
	30	9.1	6.6	611
	31	9.4	6.6	606
	33	10.2	6.5	593
	34	9.3	6.5	568
	35	10.2	6.4	556
	36	10.2	6.4	556
	37	10.0	6.4	552
	40	10.7	6.3	524
	45	10.5	5.9	1,050
	50	10.2	5.9	1,112
	55	10.6	5.9	1,116
	60	10.7	5.9	1,112
	65	10.9	5.9	1,112
	70	10.8	5.9	1,109
	75	10.8	5.9	1,113
	80	11.0	5.9	1,109
	85	11.2	5.9	1,106
	90	11.2	5.9	1,100
	95	11.3	5.8	1,101
	100	11.3	5.8	1,097
	101	11.0	5.8	1,105

Table 17. In situ temperature, pH, and specific conductance of groundwater measured in selected wells in the Mirror Lake watershed, New Hampshire, July 19, 1988.

[°C, degrees Celsius; µS/cm @ 25 °C, microsiemens per centimeter at 25 degrees Celsius]

Name of well	Temperature, in °C	pH	Specific conductance, in µS/cm @ 25 °C
W2	9.7	6.8	74
W3A	10.6	6.7	23
W4-11	10.8	6.8	^[1]
W4-23	7.5	6.9	97
W6	8.2	8.0	73
W7	22.7	6.7	32
W9	19.5	6.1	30
W10	8.8	6.8	84
W11	8.4	7.3	38
W12	14.5	6.8	^
FS1-17	14.6	6.1	^
W18	9.1	7.7	49
CO WT	7.9	6.3	55

[1] ^, indicates value out of range – specific conductance sensor of probe likely not fully immersed.

Table 18. Vertical variation of in situ temperature, pH, and specific conductance of groundwater in the Mirror Lake watershed, New Hampshire, in bedrock well FS1 and adjacent piezometers FS1-25 and FS1-35, July 20, 1988.

[°C, degrees Celsius; µS/cm @ 25 °C, microsiemens per centimeter at 25 degrees Celsius; —, not applicable]

Name of well	Depth below top of casing, in meters	Temperature, in °C	pH	Specific conductance, in µS/cm @ 25 °C
FS1-25	—	7.6	11.8	3,340
FS1-35	—	7.2	11.9	3,400
FS1	6.5	8.1	7.5	92
	10	7.9	7.6	89
	15	7.9	7.6	85
	20	8.0	7.5	80
	25	7.9	7.4	78
	30	8.0	7.2	157
	35	8.0	7.2	155
	40	8.1	7.1	173
	45	8.2	7.0	171
	50	8.3	7.0	169
	55	8.3	6.9	168
	60	8.4	6.9	166
	65	8.5	6.9	164
	70	8.6	6.8	162
	75	8.7	6.8	160
	80	8.8	6.7	159
	85	8.9	6.7	157
	90	9.0	6.7	156
	95	9.2	6.7	156
	100	9.3	6.6	153

Table 19. Vertical variation of in situ temperature, pH, and specific conductance of groundwater in the Mirror Lake watershed, New Hampshire, in bedrock well FS2 and adjacent piezometer FS2-25, July 20, 1988.

[°C, degrees Celsius; µS/cm @ 25 °C, microsiemens per centimeter at 25 degrees Celsius; —, not applicable]

Name of well	Depth below top of casing, in meters	Temperature °C	pH	Specific conductance, in µS/cm @ 25 °C
FS2-25	—	9.0	6.8	341
FS2	11	9.4	8.2	88
	15	8.9	8.5	82
	20	8.7	8.5	79
	25	8.7	8.2	88
	30	8.6	8.0	86
	35	8.6	7.8	83
	40	8.6	7.6	82
	45	8.6	7.5	125
	50	8.7	7.3	148
	55	8.7	7.1	149
	60	8.8	7.0	164
	65	8.8	7.0	162
	70	8.9	7.0	160
	75	9.0	6.9	175
	80	9.1	6.8	174
	85	9.2	6.8	171
	90	9.3	6.8	170
	95	9.4	6.7	168
	100	9.5	6.7	197

Table 20. Vertical variation of in situ temperature, pH, and specific conductance of groundwater in the Mirror Lake watershed, New Hampshire, in bedrock well FSE2 and adjacent piezometers FSE-23, FSE-32, and FSE-43, July 20, 1988.

[°C, degrees Celsius; µS/cm @ 25 °C, microsiemens per centimeter at 25 degrees Celsius; —, not applicable]

Name of well	Depth below top of casing, in meters	Temperature °C	pH	Specific conductance, in µS/cm @ 25 °C
FSE-23	—	7.6	11.6	1,083
FSE-32	—	8.1	11.9	5,730
FSE-43	—	9.0	12.4	6,880
FSE2	8.5	9.0	6.4	451
	10	8.8	6.6	453
	15	8.7	6.6	444
	20	8.9	6.6	415
	25	8.8	6.6	405
	30	9.1	6.6	397
	35	9.1	6.5	392
	40	9.1	6.4	389
	45	9.1	6.3	387
	50	9.2	6.3	571
	55	9.3	6.3	646
	60	9.3	6.3	645
	65	9.3	6.2	643
	70	9.4	6.2	641
	75	9.5	6.3	638
	80	9.6	6.2	636
	85	9.7	6.2	634
	90	9.8	6.2	632
	95	9.9	6.2	630
	100	10.0	6.2	628

Table 21. Vertical variation of in situ temperature, pH, and specific conductance of groundwater in the Mirror Lake watershed, New Hampshire, in bedrock well FSE3, July 20, 1988.

[°C, degrees Celsius; µS/cm @ 25 °C, microsiemens per centimeter at 25 degrees Celsius]

Name of well	Depth below top of casing, in meters	Temperature, in °C	pH	Specific conductance, in µS/cm @ 25 °C
FSE3	8	10.1	6.6	233
	10	8.8	6.6	238
	15	8.9	6.6	294
	20	9.0	6.4	282
	25	8.8	6.3	278
	30	8.8	6.3	276
	35	8.7	6.2	273
	40	9.1	6.2	268
	45	9.1	6.2	265
	50	9.1	6.0	730
	55	9.1	5.9	840
	60	9.2	5.9	839
	65	9.3	5.9	836
	70	9.3	5.9	834
	75	9.4	5.9	833
	80	9.5	5.7	1,207
	85	9.6	5.7	1,204
	90	9.7	5.7	1,203
	95	9.8	5.7	1,200
	100	9.9	5.7	1,221

Table 22. Vertical variation of in situ temperature, pH, and specific conductance of groundwater in the Mirror Lake watershed, New Hampshire, in bedrock well FSE4, July 20, 1988.

[°C, degrees Celsius; µS/cm @ 25 °C, microsiemens per centimeter at 25 degrees Celsius]

Name of well	Depth below top of casing, in meters	Temperature, in °C	pH	Specific conductance, in µS/cm @ 25 °C
FSE4	8.5	9.3	6.4	632
	10	8.8	6.5	628
	15	8.9	6.6	615
	20	9.4	6.7	601
	25	9.3	6.6	556
	30	9.4	6.6	526
	35	9.3	6.5	497
	40	9.3	6.4	472
	45	9.3	6.3	942
	50	9.3	5.8	1,001
	55	9.4	5.8	999
	60	9.4	5.8	996
	65	9.6	5.8	993
	70	9.7	5.7	991
	75	9.7	5.7	988
	80	9.8	5.7	986
	85	9.9	5.7	984
	90	10.0	5.7	982
	95	10.0	5.7	979
	100	10.1	5.7	977

Table 23. Vertical variation of in situ temperature, pH, and specific conductance of groundwater in the Mirror Lake watershed, New Hampshire, in bedrock well TR1 and adjacent water-table well TR1-63 and piezometer TR1-132, July 19, 1988.

[°C, degrees Celsius; µS/cm @ 25 °C, microsiemens per centimeter at 25 degrees Celsius; —, not applicable]

Name of well	Depth below top of casing, in meters	Temperature, in °C	pH	Specific conductance, in µS/cm @ 25 °C
TR1- 63	—	8.3	8.6	46
TR1-132	—	9.2	8.4	^[1]
TR1	15 (in air?)	11.7	7.0	^
	20	8.8	8.4	86
	25	9.0	9.0	80
	30	8.9	9.3	78
	35	9.0	9.4	75
	40	8.5	9.5	75
	45	8.6	9.5	72
	50	8.6	9.4	77
	55	8.7	8.8	125
	60	8.7	8.6	124
	65	8.8	8.5	121
	70	8.8	8.4	120

[1] ^, indicates value out of range – specific conductance sensor of probe likely not fully immersed.

Table 24. Vertical variation of in situ temperature, pH, and specific conductance of groundwater in the Mirror Lake watershed, New Hampshire, in bedrock well K2 and adjacent piezometers K2-21, K2-31, and K2-41, July 19, 1988.

[°C, degrees Celsius; µS/cm @ 25 °C, microsiemens per centimeter at 25 degrees Celsius; —, not applicable]

Name of well	Depth below top of casing, in meters	Temperature, in °C	pH	Specific conductance, in µS/cm @ 25 °C
K2-21	—	8.1	7.0	212
K2-31	—	8.5	7.0	215
K2-41	—	8.9	7.5	158
K2	4 (in air?)	14.0	6.6	^[1]
	5	9.2	7.8	212
	10	8.1	7.8	204
	15	10.2	7.8	198
	20	10.5	7.9	194
	25	10.5	7.9	193
	30	10.4	7.9	192
	35	10.1	7.9	191
	40	10.1	8.0	191
	45	10.0	8.0	188
	50	10.0	8.0	208

[1] ^. indicates value out of range – specific conductance sensor of probe likely not fully immersed.

Table 25. Vertical variation of in situ temperature, pH, and specific conductance of groundwater in the Mirror Lake watershed, New Hampshire, in bedrock well CO1 and adjacent water-table well CO WT, July 19, 1988.

[°C, degrees Celsius; µS/cm @ 25 °C, microsiemens per centimeter at 25 degrees Celsius; —, not applicable]

Name of well	Depth below top of casing, in meters	Temperature, in °C	pH	Specific conductance, in µS/cm @ 25 °C
CO WT	—	7.9	6.3	55
CO1	3	9.6	7.1	67
	5	7.9	7.6	69
	10	7.2	7.7	66
	15	7.5	8.2	63
	20	7.7	8.3	60
	25	7.9	8.3	58
	30	8.2	8.0	201
	35	8.7	7.8	198
	40	9.0	7.7	193
	45	9.3	7.6	192
	50	9.5	7.6	188
	55	9.3	7.6	187
	60	9.5	7.5	185
	65	9.8	7.5	182
	70	9.9	7.5	180
	75	10.0	7.5	178
	80	10.1	7.5	177
	85	10.0	7.5	175
	90	10.1	7.5	175
	95	10.0	7.5	174
	100	10.1	7.5	171

Table 26. Summary of physical and chemical field parameters from groundwater samples collected in the vicinity of Mirror Lake, New Hampshire, in 1990.

[Date of measurement is by month/day/year; °C, degrees Celsius; µS/cm @ 25 °C, microsiemens per centimeter at 25 degrees Celsius; $CaCO_3$, calcium carbonate; A, B, C, sample zones]

Name of well	Sampled zone (feet below top of casing) or *feet below land surface*	Date of measurement	Water level elevation, in feet	Depth below measuring point, in feet	Temperature, in °C	pH	Specific conductance, in µS/cm @ 25 °C	Alkalinity, in milligrams per liter as $CaCO_3$	System Eh, in millivolts[1]	Observed Eh, in millivolts
W3	Water table	5/30/1990	847.0	1.32	8.5	6.9	47	15	+428	+173
W26	Water table	5/23/1990	830.2	16.16	9.0	7.0	79	26	+175	-80
CO WT	Water table	5/9/1990	709.9	4.97	*[2]	5.6	30	22	+390	+137
CO1-18	*16-18*	12/3/1990	708.1	6.80	6.3	5.4	38	8@[3]	+488	+231
CO1	B (101-209)	5/10/1990	711.2	4.02	10.0	7.7	310	87	+86	-167
CO1	B (104-116)	6/21/1990	*	*	9.5	7.7	315	88	+161	-93
CO1	B (409-421)	6/22/1990	*	*	9.5	7.7	253	103	+161	-93
CO2	A (25-104)	5/9/1990	710.1	4.14	8.5	7.5	215	93	*	*
CO2	B (163-170)	6/29/1990	*	*	11.5	8.0	273	107	+284.5	+29.5
FS1-17	Water table	5/30/1990	852.8	8.10	*	7.6	48	28	*	*
FS1-35	*33-35*	5/30/1990	853.9	5.70	8.5	7.7	75	33	+430	+175
FS1-35	*33-35*	12/5/1990	854.0	6.06	6.0	7.4	43	34@	+400.7	+145.7
FS1	A (55-105)	5/31/1990	837.5	20.20	9.5	7.2	85	32	+154	-100
FS1	C (217-450)	5/25/1990	839.6	19.60	10.0	7.3	187	99	+192	-61
FS2	A (32-105)	5/22/1990	811.6	27.37	9.5	8.3	87	40	-32	-286
FS2	B (133-169)	8/7/1990	814.2	24.85	14.0	6.7	200	105	*	*
FS2	C (236-251)	8/6/1990	801.1	37.95	17.0	6.7	400	264	+195	-61
FS3-11	Water table	12/6/1990	893.6	10.0	5.4	5.2	19	4@	+403	+148
FS3-22	*20-22*	5/24/1990	891.3	12.35	10.0	6.9	75	24	*	*
FS3-22	*20-22*	12/5/1990	891.2	12.42	4.8	7.0	55	15@	+227	-29
FS3-29	*27-29*	12/5/1990	*	13.95	*	13.3**[4]	8,500**	*	+121	-135
FS3	A (38-84)	5/23/1990	886.0	16.16	8.5	7.1	115	55	-25	-280
FS3	A (60-75)	8/10/1990	*	*	8.5	7.3	112	51	+197.5	-57.5

Table 26. Summary of physical and chemical field parameters from groundwater samples collected in the vicinity of Mirror Lake, New Hampshire, in 1990.—Continued

[Date of measurement is by month/day/year; °C, degrees Celsius; µS/cm @ 25 °C, microsiemens per centimeter at 25 degrees Celsius; $CaCO_3$, calcium carbonate; A, B, C, sample zones]

Name of well	Sampled zone (feet below top of casing) or *feet below land surface*	Date of measurement	Water level elevation, in feet	Depth below measuring point, in feet	Temperature, in °C	pH	Specific conductance, in µS/cm @ 25 °C	Alkalinity, in milligrams per liter as $CaCO_3$	System Eh, in millivolts[1]	Observed Eh, in millivolts
FS3	C (197-645)	5/25/1990	874.4	27.85	11.0	7.9	185	106	+96	-160
FS3	C (365-380)	8/9/1990	*	*	10.0	7.8	178	97	+138	-115
FS3	C (530-545)	8/9/1990	*	*	10.5	7.4	122	60	+178	-76
FSE-23	*21-23*	6/1/1990	768.9	21.0	12.5	11.4**	500**	*	*	*
FSE-43	*41-43*	6/1/1990	772.2	18.53	12.0	11.8**	590**	*	*	*
FSE2	A (55-105)	6/1/1990	767.8	23.02	11.0	6.6	320	174	+219	-37
FSE2	B (107-215)	6/1/1990	768.0	30.36	12.0	6.3	360	223	+208	-43
FSE6 WT	Water table	11/29/1990	*	14.48	7.8	7.8	86	*	+457	+202
FSE6-51	*49-51*	12/3/1990	*	17.21	6.1	10.7**	158	*	+286	+30
FSE6-59	*57-59*	11/28/1990	*	17.57	*	*	*	*	*	*
K2-21	Water table	5/17/1990	692.6	15.33	8.0	6.3	205	33	+453	+197
K2-21	Water table	11/30/1990	690.6	17.26	9.5	6.1	230	29	+389.5	+135.5
K2-41	*39-41*	5/17/1990	692.4	14.52	9.5	6.7	141	50	+302	+48
K2-41	*39-41*	11/29/1990	690.8	16.58	9.5	6.8	149	40	+242	-11.3
K2	(55-160)	5/17/1990	693.0	12.67	9.5	8.5	220	125	-1	-255
K3-22	Water table	5/16/1990	680.0	6.02	13.0	6.0	46	5	+396	+147
K3-61	*59-61*	5/16/1990	675.6	9.79	13.0	7.2	95	47	+112	-137
K3-61	*59-61*	11/30/1990	675.1	10.20	*	7.4	78	38	+140	-115.7
K3	(75-175)	5/16/1990	684.4	2.29	13.0	8.4	320	188	-3	-253
K1-8	Water table	5/21/1990	698.9	7.68	12.0	5.5	32	5	+438	+187
K1-8	Water table	11/2/1990	697.8	8.83	7.5	5.7	35	5	+467	+212
K1-35	*33-35*	11/21/1990	694.8	11.85	11.5	9.1**	110	*	+250	-2.7
K1-39	*37-39*	5/22/1990	696.3	10.37	9.0	11.6**	525	184	+296	+33

Table 26. Summary of physical and chemical field parameters from groundwater samples collected in the vicinity of Mirror Lake, New Hampshire, in 1990.—Continued

[Date of measurement is by month/day/year; °C, degrees Celsius; µS/cm @ 25 °C, microsiemens per centimeter at 25 degrees Celsius; $CaCO_3$, calcium carbonate; A, B, C, sample zones]

Name of well	Sampled zone (feet below top of casing) or *feet below land surface*	Date of measurement	Water level elevation, in feet	Depth below measuring point, in feet	Temperature, in °C	pH	Specific conductance, in µS/cm @ 25 °C	Alkalinity, in milligrams per liter as $CaCO_3$	System Eh, in millivolts[1]	Observed Eh, in millivolts
K1	borehole	5/17/1990	698.4	5.64#[5]	11.0	8.5	155	67	*	*
R1-36	Water table	11/30/1990	*	16.50	8.2	5.7	25	3	+492	+235
R1-55	*53-55*	11/30/1990	*	16.69	9.5	10.9**	300	*	+184	-70
R1	A (57-80)	9/16/1990	*	*	8.3	7.9	153	75	+127	-129
R1	B (102-125)	9/15/1990	*	*	9.4	7.9	168	87	+219.7	-34.3
R1	B (148-171)	9/16/1990	*	*	8.0	8.3	173	90	+171	-84.5
S-40	Water table	5/22/1990	834.6	3.00	8.0	6.0	35	8	+296	+40
TR1-63	Water table	5/15/1990	776.9	41.12	11.5	6.6	150	15	+164	-91
TR1-63	Water table	11/29/1990	775.9	42.05	7.7	6.3	47	79	+462	+207
TR1	A (177-199)	5/15/1990	756.1	61.80	9.5	8.7	147	80	-48	-302
TR1	B (200-299)	5/17/1990	753.5	64.43	10.5	8.4	168	86	*	*
TR1	A (171-190)	9/22/1990	*	*	11.3	8.5	125	59	+59	-196
TR1	B (271-300)	9/23/1990	*	*	10.2	8.2	166	76	+92	-162
TR1	C (299-327)	9/23/1990	*	*	15.3	8.2	182	84	+94	-155

[1] The system Eh is the true Eh of the environment relative to the standard hydrogen electrode. The system value is calculated from the observed Eh relative to the reference electrode and comparisons to Zobell solution (Wood, 1976).

[2] *denotes no information.

[3] @ denotes alkalinities done in the laboratory, not in the field and relative to hydrogen-ion potential.

[4] ** denotes pH and specific conductance affected by anthropogenic sources.

[5] # denotes a new measuring point (2.65 feet below old measuring point).

Table 27. Physical and chemical characteristics of water collected from selected wells, a seep and a spring in the vicinity of Mirror Lake, New Hampshire, 1993, 1995, 1996, and 1997.

[Water was measured at the end of the copper tubing discharging water from the well at the time of sample collection; date of measurement is by month/day/year; ºC, degrees Celsius; µS/cm @ 25 ºC, microsiemens per centimeter at 25 degrees Celsius; HCO3-, bicarbonate; >, greater than]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of measurement	Temperature,[1] in °C	pH	Specific conductance, in µS/cm @ 25 °C	Dissolved oxygen, in milligrams per liter	Alkalinity, in milligrams per liter as HCO_3^-
W2	Water table	6/20/1995	17	6.4	74	0.0	25.9
W2	Water table	8/26/1996	21	6.3	68	0.2-2.0	*[2]
W2	Water table	6/7/1997	9-12	7.0	75	0.5-1.0	*
W3	Water table	6/23/1995	16	6.3	47	3.0	14.2
W3	Water table	7/14/1997	11-20	6.0	52	2.5	*
W3A	Water table	6/23/1995	19	5.4	23	6.8	6.83
W3A	Water table	7/14/1997	12-22	5.0	20-29	5.6	*
W6	Water table	7/26/1997	10-16	6.0-6.4	140	0.3-0.8	*
W11	Water table	7/25/1997	10-13	5.5	38	6.9	*
W15	Water table	7/28/1997	17-20	6.2	50-70	1.9	*
W16	Water table	8/28/1996	13	7.0	120-180	0.1	*
W16	Water table	7/13/1997	10-20	6.0-6.8	140-170	0.5	*
W16A	Water table	8/27/1996	15	7.0	80	3.0	*
W16A	Water table	7/8/1997	12	6.0	62-86	*	*
W16A	Water table	7/12/1997	13	6.3	50-72	*	*
W18	Water table	7/12/1995	20	6.4	35	5.3	22.7
W18	Water table	6/26/1997	13-15	6.0	28	2.0	*
W25	Water table	6/21/1995	11	6.8	85	0.5	33.7
W25	Water table	7/13/1997	14-17	6.7	93	0.1	*
W26	Water table	6/21/1995	15	6.9	83	0.0	29.3
W26	Water table	8/26/1996	nr	6.4	80	0.05	*
W26	Water table	6/8/1997	10-12	6.7	85	0.5-0.7	*
W27	Water table	7/16/1995	20	6.3	54	5.1	22.0
W27	Water table	6/19/1997	10	5.8	50	4	*
W33	Water table	8/22/1996	24	6.8	74	0.04	*
W33	Water table	7/7/1997	10	64	78	0	*
W34	Water table	8/22/1996	nr	7.0	55	2.7	*
W34	Water table	6/10/1997	9-14	6.3	37	6-7	*
W35	Water table	8/27/1996	15	*	60	0.2	*
W35	Water table	7/11/1997	9.3	5.0–5.8	35	4.6	*

Table 27. Physical and chemical characteristics of water collected from selected wells, a seep and a spring in the vicinity of Mirror Lake, New Hampshire, 1993, 1995, 1996, and 1997.—Continued

[Water was measured at the end of the copper tubing discharging water from the well at the time of sample collection; date of measurement is by month/day/year; ºC, degrees Celsius; µS/cm @ 25 ºC, microsiemens per centimeter at 25 degrees Celsius; HCO3-, bicarbonate; >, greater than]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of measurement	Temperature,[1] in °C	pH	Specific conductance, in µS/cm @ 25 °C	Dissolved oxygen, in milligrams per liter	Alkalinity, in milligrams per liter as HCO_3^-
W36	Water table	8/26/1996	15	6.0	39	3.0	*
W36	Water table	8/27/1996	15	*	40	3.0	*
W36	Water table	6/17/1997	8.0	5.4	23	7.8	*
CO10	(130.0-143.5)	8/15/1995	14.3	7.30	965	0.005	136.7
CO10	(228.0-241.5)	8/15/1995	10	8.01	400	0.5	119.1
CO11	(95.0-108.5)	8/16/1995	10.5	7.32	681	0.04	120.8
CO11	(242.0-255.5)	8/17/1995	10.7	7.58	597	0.25	127.9
CO11	(342.6-356.1)	8/17/1995	11.8	7.91	337	0.05	278.2
FS1-17	Water table	7/18/1995	15	6.6	77	0.01	40.8
FS1-17	Water table	7/19/1996	nr	6.8	74	0.1–0.7	*
FS1-25	*23-25*	7/20/1996	nr	11.0	370	3.0	*
FS1-35	*33-35*	7/20/1996	nr	5.3	24	4.0	*
FS3	*60.0-72.4*	7/19/1993	9.8	7.5	122	0.5	63.2
FS3	*294.0-306.2*	7/20/1993	10.5	7.95	172	1.75	112.3
FS3	*365.0-377.2*	7/20/1993	10.2	7.87	184	0.75	122.0
FS3C-19	*18-19*	7/14/1995	24	5.6	25	9.5	4.39
FS3C-19	*18-19*	7/18/1996	nr	5.4	24	8.0	*
FS3C-24	*23-24*	7/15/1995	18	5.8	30	8.8	9.29
FS3C-24	*23-24*	7/18/1996	nr	5.8	28	6.8	*
FS3C-24	*23-24*	6/12/1997	8 - 9	5.5	26	7.0	*
FS3C-29	*28-29*	7/17/1996	nr	6.5	29	6.2	6
FS3C-29	*28-29*	6/11/1997	7 - 12	5.0	22	5.8	*
FS4 WT	Water table	7/8/1997	10.6	4.0 - 5.0	54 - 76	4.7	*
FS5	(70.0-83.5)	6/9/1995	13.3	8.30	152	>0.1	*
FS5	(142.0-155.5)	6/9/1995	10.5	8.16	135	0.12	85.7
FS5	(200.4-218.0)	6/8/1995	9	8.06	138	0.18	86.9
FS6	*44.0-53.5*	8/12/1995	9.8	6.48	320	0.0	166.0
R1-36	Water table	7/10/1995	8	6.4	23	10.6	2.93
R1-55	*53-55*	7/11/1995	18	10.2	190	0.0	*
RR1 PZ	Water table	8/21/1995	13.5	6.6	575	0.8	53.7

Table 27. Physical and chemical characteristics of water collected from selected wells, a seep and a spring in the vicinity of Mirror Lake, New Hampshire, 1993, 1995, 1996, and 1997.—Continued

[Water was measured at the end of the copper tubing discharging water from the well at the time of sample collection; date of measurement is by month/day/year; ºC, degrees Celsius; µS/cm @ 25 ºC, microsiemens per centimeter at 25 degrees Celsius; HCO3-, bicarbonate; >, greater than]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of measurement	Temperature,[1] in °C	pH	Specific conductance, in µS/cm @ 25 °C	Dissolved oxygen, in milligrams per liter	Alkalinity, in milligrams per liter as HCO_3^-
RR1	(582.5-596.0)	8/18/1995	12.3	6.36	2,660	0.0	*
TR1-63	Water table	7/8/1995	19	7.8	47	9.0	19.0
TR1-63	Water table	6/25/1997	9.0-16.0	6.1	46	9.2	*
TR2	(151.0-170.3)	7/21/1993	11.2	8.15	243	0.5	142.8
TR2	(270.0-289.3)	7/21/1993	10.9	7.88	323	0.45	38.5
TR2	(426.0-445.3)	7/22/1993	10.6	7.97	401	1.2	252.6
Seep S3	Water surface	8/7/1997	14	5.0	23-40	0.8–1.6	*
Leeman's Spring	Water surface	8/6/1997	7.7	4.8	10.5	6.0	*

[1] Over long pumping periods and at low flow rates, the temperature of water at the end of the copper tubing varies with air temperature; nr indicates temperature not recorded.

[2] * No information.

Table 28. Radon survey of water collected from selected wells in the vicinity of Mirror Lake, New Hampshire, 1992 and 1993.

[Date of collection is by month/day/year]

Name of well	Sampled zones, in feet below reference	Reference	Date of collection	Time of day	Radon 222[1] Disintigrations per minute +/—
CO1	104-114	Land surface	6/16/1992	12:15	3,343 +/- 30
CO1	104-114	Land surface	6/16/1992	13:05	4,200 +/- 107
CO1	420-430	Land surface	6/16/1992	16:01	1,136 +/- 53
CO1	420-430	Land surface	6/16/1992	16:45	872 +/- 52
CO4	92-98.8	Top of casing	6/11/1992	12:53	2,251 +/- 87
CO4	92-98.8	Top of casing	6/11/1992	13:31	2,172 +/- 16
IS1	56-58.8	Top of casing	6/3/1992	11:02	9,017 +/- 93
IS1	56-58.8	Top of casing	6/3/1992	12:30	11,601 +/- 111
IS1	364-370.8	Top of casing	6/4/1992	09:43	6,529 +/- 36
IS1	364-370.8	Top of casing	6/4/1992	11:30	2,362 +/- 86
IS1	400-405.8	Top of casing	6/4/1992	14:04	8,183 +/- 69
IS1	400-405.8	Top of casing	6/4/1992	14:55	9,425 +/- 112
IS1	466.5-473.3	Top of casing	6/4/1992	17:04	706 +/- 16
FS2	134-149.3	Land surface	7/7/1992	19:25	1,203 +/- 8
FS2	134-149.3	Land surface	7/7/1992	19:53	1,103 +/- 6
FS2	134-149.3	Land surface	7/7/1992	20:39	1,232 +/- 4
FS2	236-251.3	Land surface	7/8/1992	12:36	1,298 +/- 55
FS2	236-251.3	Land surface	7/8/1992	13:43	1,519 +/- 46
FS2	236-251.3	Land surface	7/8/1992	14:10	1,313 +/- 46
FS2	384-399.3	Land surface	7/8/1992	17:29	1,904 +/- 8
FS2	384-399.3	Land surface	7/8/1992	18:39	1,034 +/- 34
FS2	384-399.3	Land surface	7/8/1992	18:47	776 +/- 30
FS3	60-75.1	Land surface	7/11/1992	09:40	3,131 +/- 77
FS3	60-75.1	Land surface	7/11/1992	10:12	3,284 +/- 137
FS3	60-75.1	Land surface	7/11/1992	10:44	3,921 +/- 93
FS3	60-75.1	Land surface	7/12/1992	13:53	2,900 +/- 19
FS3	60-75.1	Land surface	7/12/1992	14:30	3,173 +/- 51
FS3	60-75.1	Land surface	7/12/1992	14:48	3,436 +/- 61
FS3	60-72.4	Land surface	7/19/1993	15:03	3,415
FS3	60-72.4	Land surface	7/19/1993	15:18	1,470
FS3	60-72.4	Land surface	7/19/1993	15:25	3,963
FS3	294-309.1	Land surface	7/11/1992	13:36	2,007 +/- 16
FS3	294-309.1	Land surface	7/11/1992	14:39	2,552 +/- 32
FS3	294-309.1	Land surface	7/11/1992	15:12	3,252 +/- 16
FS3	294-309.1	Land surface	7/12/1992	17:32	2,542 +/- 114
FS3	294-309.1	Land surface	7/12/1992	18:16	3,347 +/- 50
FS3	294-309.1	Land surface	7/12/1992	19:06	3,572 +/- 31
FS3	294-302.6	Land surface	7/20/1993	11:06	132
FS3	294-302.6	Land surface	7/20/1993	11:58	2,272

Table 28. Radon survey of water collected from selected wells in the vicinity of Mirror Lake, New Hampshire, 1992 and 1993.—Continued

[Date of collection is by month/day/year]

Name of well	Sampled zones, in feet below reference	Reference	Date of collection	Time of day	Radon 222[1] Disintigrations per minute +/—
FS3	294-302.6	Land surface	7/20/1993	12:27	2,642
FS3	365-380.1	Land surface	7/13/1992	10:20	440 +/- 8
FS3	365-380.1	Land surface	7/13/1992	10:42	321 +/- 17
FS3	365-380.1	Land surface	7/13/1992	11:12	260 +/- 6
FS3	365-372.2	Land surface	7/20/1993	15:18	262
FS3	365-372.2	Land surface	7/20/1993	15:33	292
FS3	365-372.2	Land surface	7/20/1993	16:22	277
FS3	530-545.1	Land surface	7/13/1992	13:35	2,205 +/- 35
FS3	530-545.1	Land surface	7/13/1992	14:07	4,186 +/- 74
FS3	530-545.1	Land surface	7/13/1992	14:23	2,727 +/- 86
FSE4	438-445	Top of casing	5/18/1992	17:31	894 +/- 19
FSE4	438-445	Top of casing	5/18/1992	18:10	690 +/- 45
FSE4	438-445	Top of casing	5/18/1992	18:37	1,102 +/- 31
FSE6 WT	10.5-15.5	Land surface	5/20/1992	09:39	1,179 +/- 53
FSE6-32	30-32	Land surface	5/21/1992	10:58	2,895 +/- 43
FSE6-32	30-32	Land surface	5/21/1992	12:24	2,860 +/- 54
FSE6-51	49-51	Land surface	5/20/1992	15:10	910 +/- 10
FSE6-59	57-59	Land surface	5/20/1992	20:11	440 +/- 22
FSE-23	21-23	Land surface	5/19/1992	16:18	1,068 +/- 46
FSE-32	30-32	Land surface	5/19/1992	13:52	730 +/- 4
FSE-43	41-43	Land surface	5/19/1992	13:07	1,322 +/- 21
FS3C-29	28-29	Land surface	7/18/1992	17:43	2,485 +/- 17
FS3C-29	28-29	Land surface	7/18/1992	19:14	2,642 +/- 21
FS3C-24	23-24	Land surface	7/19/1992	13:44	2,547 +/- 8
FS3C-24	23-24	Land surface	7/19/1992	17:08	2,807 +/- 21
R1	65-80.1	Land surface	7/14/1992	13:14	1,279 +/- 54
R1	65-80.1	Land surface	7/14/1992	14:03	2,246 +/- 16
R1	65-80.1	Land surface	7/14/1992	14:10	1943 +/- 8
R1	110-125.1	Land surface	7/14/1992	15:58	556 +/- 13
R1	110-125.1	Land surface	7/14/1992	16:26	792 +/- 21
R1	110-125.1	Land surface	7/14/1992	16:43	734 +/- 45
R1	147-162.1	Land surface	7/15/1992	11:49	619 +/- 27
R1	147-162.1	Land surface	7/15/1992	12:27	1,189 +/- 48
R1	147-162.1	Land surface	7/15/1992	12:48	142 +/- 18
R1	480-495.1	Land surface	7/15/1992	15:54	332 +/- 11
R1	480-495.1	Land surface	7/15/1992	17:26	352 +/- 24
TR1	170-190	Land surface	6/29/1992	13:24	5,899 +/- 195
TR1	170-190	Land surface	6/29/1992	14:00	8,493 +/- 147
TR1	170-190	Land surface	6/29/1992	15:01	6,969 +/- 147

Table 28. Radon survey of water collected from selected wells in the vicinity of Mirror Lake, New Hampshire, 1992 and 1993.—Continued

[Date of collection is by month/day/year]

Name of well	Sampled zones, in feet below reference	Reference	Date of collection	Time of day	Radon 222[1] Disintigrations per minute +/—
TR1	271-299.8	Land surface	6/30/1992	17:11	1,937 +/- 54
TR1	271-299.8	Land surface	6/30/1992	17:53	1,683 +/- 12
TR1	298.6-327.4	Land surface	7/1/1992	11:15	1,141 +/- 24
TR1	298.6-327.4	Land surface	7/1/1992	11:34	1,081 +/- 10
TR1	298.6-327.4	Land surface	7/1/1992	12:59	1,863 +/- 25
TR1	390-397.8	Land surface	7/1/1992	18:07	693 +/- 25
TR1	390-397.8	Land surface	7/1/1992	18:46	754 +/- 17
TR1	482-489.8	Land surface	7/6/1992	12:25	371 +/- 8
TR1	482-489.8	Land surface	7/6/1992	13:06	394 +/- 8
TR1	482-489.8	Land surface	7/6/1992	14:11	514 +/- 12
TR2	151-170.1	Top of casing	6/22/1992	13:43	2,204 +/- 10
TR2	151-170.1	Top of casing	6/22/1992	17:30	551 +/- 138
TR2	151-170.3	Top of casing	7/21/1993	13:20	1,627
TR2	151-170.3	Top of casing	7/21/1993	14:06	1,570
TR2	151-170.3	Top of casing	7/21/1993	14:21	1,789
TR2	270-289.1	Top of casing	6/22/1992	16:45	848 +/- 38
TR2	270-289.3	Top of casing	7/21/1993	16:49	749
TR2	270-289.3	Top of casing	7/21/1993	17:10	591
TR2	270-289.3	Top of casing	7/21/1993	17:43	724
TR2	426-445.1	Top of casing	6/23/1992	14:34	875 +/- 16
TR2	426-445.1	Top of casing	6/23/1992	14:45	413 +/- 108
TR2	426-445.1	Top of casing	6/23/1992	15:55	516 +/- 100
TR2	426-445.3	Top of casing	7/22/1993	09:32	60
TR2	426-445.3	Top of casing	7/22/1993	10:12	330

[1] Radon activities were determined in the field using Lucas cells and a portable scintillation counter. The reported radon value resulted from multiple determinations per cell beginning at the time noted.

Table 29. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for pH, specific conductance, calcium, magnesium, sodium, potassium, chloride, sulfate, and alkalinity.

[Plain text indicates alkalinity value determined in the laboratory. Bold text indicates alkalinity value determined in the field. For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water. Date of sample collection is by month/day/year. µS/cm @ 25 °C, microsiemens at 25 degrees Celsius; $CaCO_3$, calcium carbonate; HCO3-, bicarbonate; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Laboratory pH	Laboratory specific conductance, in µS/cm @ 25 °C	Concentration in milligrams per liter						Alkalinity, in milligrams per liter as $CaCO_3$, or [as HCO_3^-], or (calculated in milliequivalents per liter)	Laboratory[1]
					Calcium	Magnesium	Sodium	Potassium	Chloride	Sulfate		
W2	Water table	8/31/1983	7.68	56.6	*5.10*	*1.27*	*3.55*	*1.42*	*0.54*	*10.3*	*(0.320)*	IES
W2	Water table	6/28/1984	*[2]	*	5.07	1.40	3.44	1.30	0.00	10.5	(0.332)	IES
W2	Water table	6/20/1995	*	*	5.16	1.18	3.28	1.06	0.67	11.1	*[20.1, **25.9**]*	USGS R
W2	Water table	6/7/1997	*	*	5.22	1.34	3.33	1.20	1.25	13.9	*[19.8]*	USGS R
W3	Water table	8/2/1983	8.37	46.1	*3.90*	*1.01*	*2.79*	*1.24*	*0.57*	*8.2*	*(0.243)*	IES
W3	Water table	6/29/1984	*	*	3.93	1.03	2.84	1.28	0.58	8.0	(0.254)	IES
W3	Water table	5/30/1990	*6.6*	50	4.1	1.1	2.9	1.2	0.49	8.9	*14, **15***	USGS D
W3	Water table	6/23/1995	*	*	3.85	0.89	2.69	1.09	0.67	8.52	*[16.0, **14.2**]*	USGS R
W3	Water table	7/14/1997	*	*	4.30	1.10	2.80	1.3	1.12	8.35	[16.5]	USGS R
W3A	Water table	8/1/1983	9.09	46.4	*3.87*	*0.97*	*2.67*	*1.15*	*0.50*	*8.0*	*(0.237)*	IES
W3A	Water table	6/28/1984	*	*	1.28	0.25	1.08	0.11	0.48	4.2	(0.033)	IES
W3 A	Water table	6/23/1995	*	*	1.33	0.25	1.36	0.14	0.63	4.36	*[4.50, **6.83**]*	USGS R
W3 A	Water table	6/10/1997	*	*	1.45	0.28	1.14	0.2	1.18	4.31	*[2.50]*	USGS R
W4-11	Water table	8/1/1983	7.77	21.5	*1.72*	*0.36*	*1.65*	*0.22*	*0.58*	*4.5*	*(0.082)*	IES
W4-11	Water table	6/29/1984	*	*	1.20	0.29	1.07	0.07	0.52	5.3	(0.007)	IES
W4-23	Water table	8/3/1983	*6.55* 7.00	*72.3* 63.0	4.45	1.27	3.80	2.77	1.20	11.7	(0.285)	IES
W4-23	Water table	6/29/1984	*	*	3.93	1.03	2.84	1.28	0.58	8.0	(0.254)	IES
W6	Water table	6/28/1984	*	*	6.53	1.68	5.92	4.46	8.30	4.7	(0.503)	IES
W6	Water table	7/7/1987	*6.9*	*81*	5.7	1.3	4.0	4.1	9.0	4.6	*[23]*	USGS D
W6	Water table	7/26/1997	*	*	1.85	0.40	3.60	2.5	12.3	6.14	*[37.9]*	USGS R

Table 29. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for pH, specific conductance, calcium, magnesium, sodium, potassium, chloride, sulfate, and alkalinity.—Continued

[Plain text indicates alkalinity value determined in the laboratory. Bold text indicates alkalinity value determined in the field. For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water. Date of sample collection is by month/day/year. µS/cm @ 25 °C, microsiemens at 25 degrees Celsius; $CaCO_3$, calcium carbonate; HCO3-, bicarbonate; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Laboratory pH	Laboratory specific conductance, in µS/cm @ 25 °C	Concentration in milligrams per liter						Alkalinity, in milligrams per liter as $CaCO_3$, or [as HCO_3^-], or (calculated in milliequivalents per liter)	Laboratory[1]
					Calcium	Magnesium	Sodium	Potassium	Chloride	Sulfate		
W7	Water table	7/28/1983	*6.32* 7.39	*33.3* 29.1	*2.24*	*0.48*	*1.81*	*0.42*	*2.24*	*4.7*	*(0.079)*	IES
W7	Water table	6/26/1984	*	*	2.08	0.42	1.64	0.54	2.24	4.5	(0.066)	IES
W7	Water table	7/8/1987	*6.7*	*37*	2.6	0.4	1.8	0.7	2.2	4.3	*6*	USGS D
W8	Water table	6/26/1984	*	*	1.56	0.31	1.63	0.44	2.21	3.8	(0.044)	IES
W9	Water table	7/28/1983	*6.18* 7.43	*33.9* 32.8	*2.62*	*0.53*	*2.08*	*1.02*	*2.62*	*4.7*	*(0.119)*	IES
W9	Water table	6/27/1984	*	*	2.05	0.41	1.91	0.52	2.23	4.1	(0.084)	IES
W9	Water table	7/8/1987	*6.3*	*34*	2.6	0.43	1.9	0.6	2.3	4.1	*5*	USGS D
W10	Water table	7/28/1983	*6.59* 8.22	*55.9* 43.7	*3.75*	*0.76*	*2.80*	*1.36*	*2.72*	*3.4*	*(0.258)*	IES
W10	Water table	6/27/1984	*	*	3.98	0.85	2.51	0.97	2.31	3.7	(0.260)	IES
W10	Water table	7/8/1987	*6.4*	*53*	4.7	0.88	2.5	1.0	2.6	4.6	*14*	USGS D
W11	Water table	8/1/1983	7.73	35.0	*3.25*	*0.57*	*1.78*	*0.60*	*1.30*	*6.4*	*(0.131)*	IES
W11	Water table	6/28/1984	*	*	3.35	0.56	1.72	0.51	1.41	5.9	(0.138)	IES
W11	Water table	7/7/1987	*6.3*	*41*	4.5	0.57	1.5	0.6	1.0	5.5	*8*	USGS D
W11	Water table	7/25/1997	*	*	3.73	0.44	2.18	0.6	2.65	4.05	*[9.4]*	USGS R
W14	Water table	7/28/1983	*6.41* 7.20	*48.0* 46.1	*2.63*	*0.55*	*2.37*	*1.03*	*2.68*	*6.2*	*(0.101)*	IES
W14	Water table	7/2/1984	*	*	2.33	0.47	2.02	0.55	2.01	5.0	(0.096)	IES
W15	Water table	8/3/1983	*6.70* 6.90	*66.0* 52.2	1.97	0.57	1.49	0.82	1.00	6.0	(0.077)	IES
W15	Water table	7/2/1984	*	*	1.84	0.45	1.05	0.28	0.50	5.0	(0.063)	IES

Table 29. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for pH, specific conductance, calcium, magnesium, sodium, potassium, chloride, sulfate, and alkalinity.—Continued

[Plain text indicates alkalinity value determined in the laboratory. Bold text indicates alkalinity value determined in the field. For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water. Date of sample collection is by month/day/year. µS/cm @ 25 °C, microsiemens at 25 degrees Celsius; $CaCO_3$, calcium carbonate; HCO3-, bicarbonate; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Laboratory pH	Laboratory specific conductance, in µS/cm @ 25 °C	Concentration in milligrams per liter						Alkalinity, in milligrams per liter as $CaCO_3$, or [as HCO_3^-], or (calculated in milliequivalents per liter)	Laboratory[1]
					Calcium	Magnesium	Sodium	Potassium	Chloride	Sulfate		
W15	Water table	7/28/1997	*	*	1.56	0.41	1.11	0.6	1.18	4.67	*[28.9]*	USGS R
W16	Water table	8/3/1983	*7.11* 7.47	*157.0* 131.0	6.77	2.90	11.30	5.80	1.56	2.7	(1.116)	IES
W16	Water table	7/2/1984	*	*	9.35	5.27	9.67	6.72	0.73	2.2	(1.426)	IES
W16	Water table	8/29/1996	*	*	14.7	6.5	4.7	3.9	0.61	1.62	*[96.9]*	USGS R
W16	Water table	7/13/1997	*	*	14.3	6.21	4.39	3.5	1.11	2.81	*[94.0]*	USGS R
W16A	Water table	8/27/1996	*	*	4.3	1.8	2.3	2.1	0.64	5.80	*[27.0]*	USGS R
W16A	Water table	7/12/1997	*	*	3.69	1.41	1.99	1.1	1.18	5.60	*[18.9]*	USGS R
W18	Water table	8/1/1983	7.47	44.6	*1.90*	*0.57*	*1.12*	*1.64*	*0.71*	*2.6*	*(0.158)*	IES
W18	Water table	6/29/1984	*	*	1.30	0.35	0.85	0.78	0.59	2.9	(0.073)	IES
W18	Water table	7/12/1995	*	*	1.42	0.28	1.10	0.43	1.14	1.72	*[16.0, **22.7**]*	USGS R
W18	Water table	6/26/1997	*	*	1.27	0.27	1.01	0.5	1.29	1.65	10.1+	USGS R
W25	Water table	6/21/1995	*	*	7.17	1.84	3.79	1.82	0.71	11.2	*[33.4, **33.7**]*	USGS R
W25	Water table	7/13/1997	*	*	7.53	2.02	3.87	2.0	1.16	14.2	*[31.3]*	USGS R
W26	Water table	5/23/1990	*6.8*	71	6.2	1.7	3.8	1.6	0.56	13	*23, **26***	USGS D
W26	Water table	6/21/1995	*	*	5.80	1.44	3.43	1.33	0.71	12.4	*[22.5, **29.3**]*	USGS R
W26	Water table	8/16/1995	*	*	6.10	1.48	3.48	1.34	1.26	12.1	*[23.4]*	USGS R
W26	Water table	6/8/1997	*	*	5.99	1.62	3.63	1.5	1.14	15.3	*[22.7]*	USGS R
W27	Water table	7/16/1995	*	*	5.55	1.19	1.75	1.23	0.77	6.87	*[22.0, **22.0**]*	USGS R
W27	Water table	6/19/1997	*	*	5.16	1.16	1.73	1.3	1.19	6.11	[18.8]	USGS R
W33	Water table	8/22/1996	*	*	5.0	1.3	3.4	1.4	0.67	13.7	[16.1]	USGS R

Table 29. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for pH, specific conductance, calcium, magnesium, sodium, potassium, chloride, sulfate, and alkalinity.—Continued

[Plain text indicates alkalinity value determined in the laboratory. Bold text indicates alkalinity value determined in the field. For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water. Date of sample collection is by month/day/year. µS/cm @ 25 °C, microsiemens at 25 degrees Celsius; $CaCO_3$, calcium carbonate; HCO3-, bicarbonate; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Laboratory pH	Laboratory specific conductance, in µS/cm @ 25 °C	Concentration in milligrams per liter						Alkalinity, in milligrams per liter as $CaCO_3$, or [as HCO_3^-], or (calculated in milliequivalents per liter)	Laboratory[1]
					Calcium	Magnesium	Sodium	Potassium	Chloride	Sulfate		
W34	Water table	8/22/1996	*	*	3.5	0.79	3.4	2.1	0.66	7.87	*[15.4]*	USGS R
W34	Water table	6/10/1997	*	*	3.04	0.61	2.09	1.4	1.22	5.66	*[11.4]*	USGS R
W35	Water table	8/28/1996	*	*	1.9	0.72	3.6	3.6	0.73	4.31	*[22.2]*	USGS R
W36	Water table	8/26/1996	*	*	2.2	0.71	1.8	1.6	0.78	6.05	*[11.3]*	USGS R
W36	Water table	6/17/1997	*	*	1.55	0.33	1.32	0.6	1.19	4.74	*[3.3]*	USGS R
CO WT	Water table	7/21/1988	*5.7*	*50*	3.8	0.74	3.5	1.0	3.8	8.8	*6*	USGS D
CO WT	Water table	5/9/1990	*5.9*	34	2.0	0.37	3.0	0.56	1.8	5.0	*14,* ***22***	USGS D
CO1-18	*16-18*	12/3/1990	*5.4*	38	2.6	0.5	2.4	0.70	2.3	6.0	*7*	USGS D
CO1	B (101-209)	5/10/1990	*7.9*	346	44	8.9	7.2	2.9	41	14	*78,* ***87***	USGS D
CO1	B (104-116)	6/21/1990	*7.9*	352	44	8.7	7.0	3.1	43	18	*79,* ***88***	USGS D
CO1	*104-114*	6/16/1992	8.19	332	45	9.7	9.9	2.9	46	14	***98***	USGS R
CO1	(90-119)	6/20/1996	*	*	39.3	8.41	12.1	2.92	45.4	15.2	*111.0*	USGS R
CO1	(90-119)	6/23/1996	*	*	40.8	8.67	14.1	3.38	47.0	15.9	*110.0*	USGS R
CO1	C (409-421)	6/22/1990	*7.9*	262	31	7.1	9.3	1.9	11	10	*93,* ***103***	USGS D
CO1	*420-430*	6/16/1992	7.99	246	31	7.5	9.1	1.4	10	12	***107***	USGS R
CO2	A (25-104)	5/9/1990	*7.5*	202	14	4.5	7.9	12	7.1	14	*78,* ***93***	USGS D
CO2	B (163-171)	6/29/1990	*7.9*	294	36	8.7	10	2.0	17	20	*96,* ***107***	USGS D
CO3	(26-40)	8/17/1991	7.37	360	49	11	10	2.7	35	21	***92***	USGS R
CO3	(87-102)	8/17/1991	7.55	410	55	11	12	2.7	23	22	***93***	USGS R
CO3	(140-155)	8/17/1991	7.87	337	47	10	8	2.0	30	20	***108***	USGS R

Table 29. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for pH, specific conductance, calcium, magnesium, sodium, potassium, chloride, sulfate, and alkalinity.—Continued

[Plain text indicates alkalinity value determined in the laboratory. Bold text indicates alkalinity value determined in the field. For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water. Date of sample collection is by month/day/year. µS/cm @ 25 °C, microsiemens at 25 degrees Celsius; $CaCO_3$, calcium carbonate; HCO3-, bicarbonate; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Laboratory pH	Laboratory specific conductance, in µS/cm @ 25 °C	Concentration in milligrams per liter						Alkalinity, in milligrams per liter as $CaCO_3$, or [as HCO_3^-], or (calculated in milliequivalents per liter)	Laboratory[1]
					Calcium	Magnesium	Sodium	Potassium	Chloride	Sulfate		
CO4	(92-98.8)	6/11/1992	6.64	419	45	11	16	2.2	84	25	***59***	USGS R
CO10	(130.0-143.5)	8/15/1995	*	*	85.3	16.5	69.9	3.28	203.9	39.7	*[139.7, **136.7**]*	USGS R
CO10	(228.0-241.5)	8/15/1995	*	*	43.6	9.40	12.9	1.38	40.02	23.8	*[123.7, **119.1**]*	USGS R
CO11	(95.0-108.5)	8/16/1995	*	*	69.9	12.4	42.5	3.48	129.4	25.2	*[135.0, **120.8**]*	USGS R
CO11	(242.0-255.5)	8/17/1995	*	*	67.0	12.5	35.7	4.21	114.3	24.0	*[140.0, **127.9**]*	USGS R
CO11	(342.6-356.1)	8/17/1995	*	*	45.6	10.9	15.4	2.02	53.99	16.8	*[129.3, **278.2**]*	USGS R
FS1-17	Water table	8/1/1983	*7.38* 8.05	*79.3* 75.4	6.12	1.70	3.04	2.70	0.71	4.7	(0.528)	IES
FS1-17	Water table	6/29/1984	*	*	6.08	1.69	2.93	3.38	0.57	3.3	(0.571)	IES
FS1-17	Water table	5/30/1990	*7.2*	59	5.6	1.4	2.6	2.3	0.50	0.27	*25, **28***	USGS D
FS1-17	Water table	7/18/1995	*	*	5.50	1.24	2.58	1.54	0.69	2.52	*[31.9]*	USGS R
FS1-17	Water table	7/19/1996	*	*	5.3	1.2	2.8	1.8	0.71	2.87	*[29.0]*	USGS R
FS1-25	*23-25*	8/2/1983	*11.47* 11.37	*548.0* 426	29.50	0.06	4.50	2.81	0.69	6.2	(1.596)	IES
FS1-25	*23-25*	6/29/1984	*	*	27.43	0.08	4.83	2.77	0.68	6.7	(1.498)	IES
FS1-25	*23-25*	9/25/1991	10.8	*	*	*	*	*	*	*	*	USGS R
FS1-25	*23-25*	7/20/1996	*	*	32.3	0.51	3.4	2.2	0.52	6.33	*[47.4]*	USGS R
FS1-35	*33-35*	8/2/1983	*9.95* 9.10	*121.0* 112.7	17.20	1.05	3.90	2.34	0.65	6.3	(1.025)	IES
FS1-35	*33-35*	6/29/1984	*	*	17.24	1.06	4.09	2.31	0.76	7.1	(1.015)	IES
FS1-35	*33-35*	5/30/1990	*7.5*	80	9.1	1.6	3.6	1.7	0.55	6.6	***30, 33***	USGS D
FS1-35	*33-35*	12/5/1990	*7.4*	43	9.5	1.6	3.5	1.6	0.5	6.6	*32*	USGS D

Table 29. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for pH, specific conductance, calcium, magnesium, sodium, potassium, chloride, sulfate, and alkalinity.—Continued

[Plain text indicates alkalinity value determined in the laboratory. Bold text indicates alkalinity value determined in the field. For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water. Date of sample collection is by month/day/year. µS/cm @ 25 °C, microsiemens at 25 degrees Celsius; $CaCO_3$, calcium carbonate; HCO3-, bicarbonate; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Laboratory pH	Laboratory specific conductance, in µS/cm @ 25 °C	Concentration in milligrams per liter						Alkalinity, in milligrams per liter as $CaCO_3$, or [as HCO_3^-], or (calculated in milliequivalents per liter)	Laboratory[1]
					Calcium	Magnesium	Sodium	Potassium	Chloride	Sulfate		
FS1-35	*33-35*	7/20/1996	*	*	1.6	0.24	0.8	<0.3	0.56	3.97	*[2.5]*	USGS R
FS1	A (55-105)	5/31/1990	*7.0*	81	5.9	1.8	4.4	1.6	0.48	12	***32***	USGS D
FS1	C (217-450)	5/25/1990	*7.2*	198	16	7.4	7.4	1.7	0.30	5.4	*89*, ***99***	USGS D
FS1	*121-136*	8/5/1991	7.38	93	6.0	2.1	3.0	1.7	0.1	10	***92***	USGS R
FS1	*309-324*	8/5/1991	7.20	230	26.0	8.5	7.0	1.5	0.3	6.0	***93***	USGS R
FS1	*348-363*	8/6/1991	6.81	301	39	13	11	1.9	0.4	5.0	***108***	USGS R
FS2	A (32-105)	5/22/1990	*7.8*	92	5.6	1.6	7.5	5.1	0.81	8.3	*36*, ***40***	USGS D
FS2	B (133-169)	8/7/1990	*	*	*	*	*	*	*	*	*95*, ***105***	USGS D
FS2	*134-149*	7/7/1992	7.11	175	19	5.2	8.2	2.9	0.6	4.5	***94***	USGS R
FS2	C (236-251)	8/6/1990	*7.0*	454	61	15	16	3.0	3.0	11	*238*, ***264***	USGS D
FS2	*236-251*	7/8/1992	6.70	435	58	15	16	2.9	0.8	2	***277***	USGS R
FS2	*384-399*	7/8/1992	6.71	636	82	22	19	3.7	1.1	1.0	***329***	USGS R
FS3-11	Water table	12/6/90	*	*	*	*	*	*	*	*	*4*	USGS D
FS3-22	*20-22*	5/24/1990	*6.4*	61	4.7	1.2	3.6	1.6	0.52	14	*22*, ***24***	USGS D
FS3-22	*20-22*	12/5/1990	*7.0*	55	7.5	1.1	4.4	4.8	0.5	14	*14*	USGS D
FS3	A (38-84)	5/23/1990	*8.0*	125	11	3.9	4.6	3.7	1.2	8.6	*50*, ***55***	USGS D
FS3	A (60-75)	8/10/1990	*7.4*	119	11	3.8	4.7	3.4	0.20	9.8	*46*, ***51***	USGS D
FS3	*60-75.1*	7/11/1992	7.45	122	12	3.8	4.5	3.1	0.5	9	***51***	USGS R
FS3	*60.0-72.4*	7/19/1993	7.5	*	11.9	3.5	4.9	3.1	0.51	8.8	***[63.2]***	USGS R
FS3	C (197-645)	5/25/1990	*7.9*	208	24	7.7	7.7	1.9	1.2	5.3	*95*, ***106***	USGS D

Table 29. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for pH, specific conductance, calcium, magnesium, sodium, potassium, chloride, sulfate, and alkalinity.—Continued

[Plain text indicates alkalinity value determined in the laboratory. Bold text indicates alkalinity value determined in the field. For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water. Date of sample collection is by month/day/year. µS/cm @ 25 °C, microsiemens at 25 degrees Celsius; $CaCO_3$, calcium carbonate; HCO3-, bicarbonate; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Laboratory pH	Laboratory specific conductance, in µS/cm @ 25 °C	Concentration in milligrams per liter						Alkalinity, in milligrams per liter as $CaCO_3$, or [as HCO_3^-], or (calculated in milliequivalents per liter)	Laboratory[1]
					Calcium	Magnesium	Sodium	Potassium	Chloride	Sulfate		
FS3	*294-309.1*	7/11/1992	*7.89*	176	20	6.4	6.0	2.0	0.5	7	***93***	USGS R
FS3	*294.0-306.2*	7/20/1993	*7.95*	*	21.5	6.8	6.6	1.8	0.47	6.4	***[112.3]***	USGS R
FS3	C (365-380)	8/9/1990	*7.1*	198	21	6.0	8.4	3.1	1.6	4.8	*87,* ***97***	USGS D
FS3	*365-380.1*	7/13/1992	*7.77*	197	23	7.4	6.9	1.9	0.7	5	***99***	USGS R
FS3	*365.0-377.2*	7/20/1993	*7.87*	*	23.5	7.6	7.4	2.0	0.52	4.6	***[122]***	USGS R
FS3	C (530-545)	8/9/1990	*7.3*	133	13	4.7	5.3	2.8	0.40	9.3	*54,* ***60***	USGS D
FS3	*530-545.1*	7/13/1992	*7.78*	173	21	7.1	6.6	1.9	0.5	5	***99***	USGS R
FS3C-19	*18-19*	7/14/1995	*	*	1.56	0.26	1.17	0.28	0.90	4.85	*[5.25,* ***4.39****]*	USGS R
FS3C-19	*18-19*	7/18/1996	*	*	1.6	0.32	1.3	<0.3	0.68	5.02	*[3.1]*	USGS R
FS3C-24	*23-24*	7/19/1992	*	40	3.0	0.9	1.6	0.8	0.6	7	*8,* ***6.11***	USGS R
FS3C-24	*23-24*	7/15/1995	*	*	2.19	0.55	1.46	0.45	0.99	5.75	*[7.53,* ***9.29****]*	USGS R
FS3C-24	*23-24*	7/18/1996	*	*	2.1	0.50	1.4	0.3	0.70	4.61	*[7.1]*	USGS R
FS3C-24	*23-24*	6/12/1997	*	*	1.77	0.44	1.33	0.5	1.16	5.06	*[4.5]*	USGS R
FS3C-29	*28-29*	7/18/1992	*6.39*	59	2.4	0.6	1.2	0.8	0.6	8	*18,* ***18***	USGS R
FS3C-29	*28-29*	7/17/1996	*	*	1.5	0.37	1.2	0.3	1.04	5.10	*[4.5]*	USGS R
FS3C-29	*28-29*	6/11/1997	*	*	1.38	0.37	1.09	0.4	1.16	5.06	*[2.0]*	USGS R
FS4WT	Water table	7/18/1997	*	*	4.02	0.36	1.12	1.0	1.21	18.3	*[< 2]*	USGS R
FS5	(70.0-83.5)	6/9/1995	*	*	19.0	5.58	3.00	2.10	0.71	2.80	*[95.8]*	USGS R
FS5	(142.0-155.5)	6/9/1995	*	*	16.1	4.91	3.83	1.68	0.65	1.45	*[85.7,* ***85.7****]*	USGS R
FS5	(200.4-218.0)	6/8/1995	*	*	16.8	5.19	3.88	1.74	0.65	1.64	*[87.0,* ***86.9****]*	USGS R

Table 29. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for pH, specific conductance, calcium, magnesium, sodium, potassium, chloride, sulfate, and alkalinity.—Continued

[Plain text indicates alkalinity value determined in the laboratory. Bold text indicates alkalinity value determined in the field. For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water. Date of sample collection is by month/day/year. µS/cm @ 25 °C, microsiemens at 25 degrees Celsius; $CaCO_3$, calcium carbonate; HCO3-, bicarbonate; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Laboratory pH	Laboratory specific conductance, in µS/cm @ 25 °C	Concentration in milligrams per liter						Alkalinity, in milligrams per liter as $CaCO_3$, or [as HCO_3^-], or (calculated in milliequivalents per liter)	Laboratory[1]
					Calcium	Magnesium	Sodium	Potassium	Chloride	Sulfate		
FS6	*44.0-53.5*	8/12/1995	*	*	31.5	6.26	20.7	5.34	4.22	6.43	*[186.0,* ***166.0]***	USGS R
FS7	(53)	6/22/1996	*	*	2.33	0.95	1.00	0.32	0.65	6.50	*[7.0]*	USGS R
FSEWT	Water table	7/3/1984	*	*	6.67	0.36	1.50	1.16	0.64	4.4	(0.347)	IES
FSE-23	*21-23*	7/3/1984	*	*	299	<0.01	30.50	72.90	2.65	2.3	(17.988)	IES
FSE-23	*21-23*	10/23/1986	*11.3*	*862*	110	0.10	5.4	9.6	1.1	6.7	*312*	USGS D
FSE-23	*21-23*	6/1/1990	*10.9*	1050	61	0.38	2.7	3.0	1.8	7.0	*	USGS D
FSE-32	*30-32*	7/3/1984	*	*	55.90	0.03	153	509	3.98	10.2	(22.138)	IES
FSE-32	*30-32*	10/23/1986	*11.5*	*1420*	130	0.40	6.6	14	1.0	5.8	*338*	USGS D
FSE-43	*41-43*	7/3/1984	*	*	1.73	0.53	54.5	200	2.33	13.8	*	IES
FSE-43	*41-43*	6/1/1990	*11.4*	608	100	0.57	8.7	6.9	0.60	8.2	*	USGS D
FSE2	A (55-105)	6/1/1990	*6.5*	261	28	7.0	9.7	3.4	0.40	<5.1	*157,* ***174***	USGS D
FSE2	B (107-215)	6/1/1990	*	*	*	*	*	*	*	*	*201,* ***223***	USGS D
FSE4	*65-85*	10/23/1986	*6.4*	*340*	42	7.7	11	4.2	1.4	7.2	*176*	USGS D
FSE4	*80-100*	10/26/1986	*6.5*	*309*	33.6	7.8	10	3.8	1.3	6.4	*146*	USGS D
FSE4	*135-155*	10/23/1986	*6.3*	*379*	39	9.1	12	4.0	1.4	7.1	*184*	USGS D
FSE4	*430-450*	10/29/1986	*6.3*	*1110*	130	37	48	7.9	4.0	10	*696*	USGS D
FSE4	*700*	10/22/1986	*6.3*	*1270*	180	47	65	13	6.9	2.7	*797*	USGS D
FSE4	(436-443)	6/12/1991	*6.45*	1220	155	45	52	9.1	7.1	0.1	*660,* ***660***	USGS R
FSE4	(438.2-445)	5/18/1992	*6.26*	1142	150	41	42	6.8	3.8	0.4	***390***	USGS R
FSE6WT	Water table	5/20/1992	*6.09*	96	7	1	2	1.5	3.8	7	***16***	USGS R

Table 29. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for pH, specific conductance, calcium, magnesium, sodium, potassium, chloride, sulfate, and alkalinity.—Continued

[Plain text indicates alkalinity value determined in the laboratory. Bold text indicates alkalinity value determined in the field. For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water. Date of sample collection is by month/day/year. µS/cm @ 25 °C, microsiemens at 25 degrees Celsius; $CaCO_3$, calcium carbonate; HCO3-, bicarbonate; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Laboratory pH	Laboratory specific conductance, in µS/cm @ 25 °C	Concentration in milligrams per liter						Alkalinity, in milligrams per liter as $CaCO_3$, or [as HCO_3^-], or (calculated in milliequivalents per liter)	Laboratory[1]
					Calcium	Magnesium	Sodium	Potassium	Chloride	Sulfate		
H1	(107-122)	8/13/1991	*7.90*	179	28	4.8	3.8	1.7	2.0	16.3	***85***	USGS R
H1	(178-193)	8/13/1991	*7.96*	218	33	5.7	4.5	2.8	2.2	15.0	***101***	USGS R
IS1	(56-58.8)	6/3/1992	*6.86*	381	41	8.1	9.4	3.9	73.0	20.0	***62***	USGS R
IS1	(364-370.8)	6/4/1992	*7.07*	363	44	9.0	9.5	2.4	57.0	18.0	***76***	USGS R
IS1	(400-406.8)	6/4/1992	*6.82*	360	42	8.7	9.6	3.0	54.0	14.0	***70***	USGS R
IS1	(466.5-473.3)	6/4/1992	*7.84*	212	24	5.8	13.0	0.7	2.9	8.8	***106***	USGS R
K2-21	Water table	7/28/1983	*6.61* 6.98	*194.8* 191	*21.90*	*1.90*	*7.05*	*6.95*	*13.60*	*20.7*	*(0.919)*	IES
K2-21	Water table	8/5/1983	7.00	180	20.40	1.80	7.10	7.60	8.40	20.9	(0.997)	IES
K2-21	Water table	6/28/1984	*	*	18.89	1.92	9.48	8.07	19.40	17.5	(0.808)	IES
K2-31	*29-31*	7/28/1983	*5.80* 6.90	*175.0* 172	*9.90*	*1.43*	*14.70*	*9.50*	*13.30*	*16.2*	*(0.781)*	IES
K2-31	*29-31*	8/5/1983	6.08	169	10.93	1.36	14.10	8.70	13.00	17.8	(0.756)	IES
K2-31	*29-31*	6/28/1984	*	*	15.21	1.97	16.70	11.25	24.80	13.5	(0.954)	IES
K2-41	*39-41*	7/28/1983	*6.75* 7.21	*177.1* 172	*23.30*	*2.60*	*7.30*	*2.37*	*9.70*	*9.6*	*(1.281)*	IES
K2-41	*39-41*	8/5/1983	7.10	172	21.50	2.80	7.30	2.29	9.60	9.9	(1.202)	IES
K2-41	*39-41*	6/28/1984	*	*	17.51	2.90	7.25	2.54	12.20	8.3	(0.976)	IES
K1-8	Water table	8/5/1983	*5.80* 5.93	*33.3* 32.4	2.45	0.58	1.93	0.39	2.31	5.7	(0.080)	IES
K1-8	Water table	6/26/1984	*	*	1.50	0.33	1.76	0.28	2.22	4.6	(0.027)	IES
K1-8	Water table	5/21/1990	*6.0*	35	2.4	0.63	3.0	0.35	2.9	6.0	*5*	USGS D
K1-8	Water table	11/30/90	*5.7*	35	2.7	0.5	2.3	0.30	2.0	5.0	*5*	USGS D

Table 29. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for pH, specific conductance, calcium, magnesium, sodium, potassium, chloride, sulfate, and alkalinity.—Continued

[Plain text indicates alkalinity value determined in the laboratory. Bold text indicates alkalinity value determined in the field. For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water. Date of sample collection is by month/day/year. µS/cm @ 25 °C, microsiemens at 25 degrees Celsius; $CaCO_3$, calcium carbonate; HCO3-, bicarbonate; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Laboratory pH	Laboratory specific conductance, in µS/cm @ 25 °C	Concentration in milligrams per liter						Alkalinity, in milligrams per liter as $CaCO_3$, or [as HCO_3^-], or (calculated in milliequivalents per liter)	Laboratory[1]
					Calcium	Magnesium	Sodium	Potassium	Chloride	Sulfate		
K1-15	*13-15*	8/5/1983	*6.31* 6.30	*35.6* 33.8	13.80	1.19	3.60	1.55	2.31	5.3	(0.807)	IES
K1-15	*13-15*	6/26/1984	*	*	10.94	0.51	2.29	1.38	2.27	4.6	(0.563)	IES
K1-20	*18-20*	8/5/1983	9.59	76.9	10.95	0.40	2.32	1.82	2.30	4.9	(0.560)	IES
K1-20	*18-20*	6/26/1984	*	*	3.38	0.41	1.71	0.69	2.27	4.2	(0.143)	IES
K1-25	*23-25*	8/5/1983	*6.17* 7.37	*33.0* 31.6	2.78	0.58	1.78	0.54	2.13	5.2	(0.109)	IES
K1-25	*23-25*	6/26/1984	*	*	2.75	0.57	1.56	0.48	1.96	6.0	(0.084)	IES
K1-30	*28-30*	8/5/1983	*6.38* 7.49	*42.3* 38.1	3.97	0.60	1.82	0.63	2.15	9.1	(0.093)	IES
K1-30	*28-30*	6/26/1984	*	*	4.93	0.65	2.02	0.66	2.10	12.9	(0.076)	IES
K1-35	*33-35*	8/5/1993	*7.1* 7.4	*105.2* 99.4	13.80	1.19	3.60	1.55	0.93	0.1	(0.954)	IES
K1-35	*33-35*	6/26/1984	*	*	15.36	0.95	3.24	1.30	1.21	0.6	(0.972)	IES
K1-39	*37-39*	8/5/1983	*12.10* 12.09	*2333* 2100	174.80	0.03	7.30	4.30	1.43	1.7	(9.077)	IES
K1-39	*37-39*	6/26/1984	*	*	57.10	0.01	5.85	3.94	0.73	0.3	(3.178)	IES
K1-39	*37-39*	5/22/1990	*8.3*	416	64	1.9	4.8	2.0	0.50	<1.0	***184***	USGS D
K1	borehole	9/7/1983	*8.21* 8.29	*153.3* 152.8	16.2	3	7.92	3.08	0.52	12	(1.213)	IES
K1	borehole	9/7/1983	*8.2*	*157*	17	3.1	8.4	3.0	0.8	12	*64*	USGS D
K1	borehole	5/17/1990	*8.2*	161	0.04	<0.02	0.20	2.8	0.20	12	*67*	USGS D
K2-21	Water table	5/17/1990	*7.0*	236	18	2.2	16	10	27	16	*30*, ***33***	USGS D
K2-41	*39-41*	5/17/1990	*7.0*	147	14	2.6	8.1	2.0	14	9.1	*45*, ***50***	USGS D

Table 29. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for pH, specific conductance, calcium, magnesium, sodium, potassium, chloride, sulfate, and alkalinity.—Continued

[Plain text indicates alkalinity value determined in the laboratory. Bold text indicates alkalinity value determined in the field. For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water. Date of sample collection is by month/day/year. µS/cm @ 25 °C, microsiemens at 25 degrees Celsius; $CaCO_3$, calcium carbonate; HCO3-, bicarbonate; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Laboratory pH	Laboratory specific conductance, in µS/cm @ 25 °C	Concentration in milligrams per liter						Alkalinity, in milligrams per liter as $CaCO_3$, or [as HCO_3^-], or (calculated in milliequivalents per liter)	Laboratory[1]
					Calcium	Magnesium	Sodium	Potassium	Chloride	Sulfate		
K2-41	*39-41*	11/29/1990	*6.8*	149	14	2.2	8.4	1.8	19	9.1	*36*	USGS D
K2	(55-160)	5/17/1990	*8.4*	237	20	4.8	22	4.2	0.90	<1.0	*113*, ***125***	USGS D
		08:25			22	4.9	20	4.3	1.0	5.2	*127*	USGS D
		09:00			23	5.3	21	4.7	0.9	6.1	*125*	USGS D
		14:50			22	4.9	24	3.6	1.1	2.7	*121*	USGS D
K3-22	Water table	7/27/1983	*6.30* 7.44	*36.5* 32.6	*2.53*	*0.54*	*2.13*	*0.57*	*3.47*	*5.9*	*(0.057)*	IES
K3-22	Water table	8/5/1983	*5.90* 5.97	*35.2* 33.3	2.79	0.56	2.18	0.50	3.28	5.3	(0.090)	IES
K3-22	Water table	7/2/1984	*	*	3.69	0.73	3.06	0.62	8.80	4.1	(0.059)	IES
K3-22	Water table	5/16/1990	*6.2*	53	3.2	1.0	4.3	0.65	10	2.8	*5*, ***5***	USGS D
K3-41	*39-41*	7/27/1983	*7.00* 7.54	*59.3* 58.3	*8.88*	*0.52*	*1.58*	*0.50*	*1.99*	*5.9*	*(0.388)*	IES
K3-41	*39-41*	8/5/1983	*6.41* 7.43	*43.6* 41.6	5.42	0.69	1.62	0.48	2.05	5.4	(0.231)	IES
K3-41	*39-41*	7/2/1984	*	*	3.25	0.49	1.50	0.45	1.77	5.5	(0.115)	IES
K3-61	*59-61*	7/27/1983	*6.83* 7.35	*88.4* 76.1	*9.95*	*1.01*	*3.15*	*1.43*	*2.38*	*5.7*	*(0.567)*	IES
K3-61	*59-61*	8/5/1983	*6.72* 6.98	*82.2* 76.7	10.20	1.05	3.16	1.35	2.48	5.5	(0.583)	IES
K3-61	*59-61*	7/2/1984	*	*	12.88	1.06	3.10	1.36	2.58	5.6	(0.710)	IES
K3-61	*59-61*	5/16/1990	*7.2*	71	7.0	1.6	3.3	1.3	3.7	5.1	*4*, ***47***	USGS D
K3-61	*59-61*	11/30/1990	*7.4*	78	7.5	1.0	3.2	1.2	3.6	1.0	*34*	USGS D
K3	(75-175)	5/16/1990	*8.2*	329	22	6.8	43	2.6	3.8	<1.0	*169*, ***188***	USGS D

Table 29. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for pH, specific conductance, calcium, magnesium, sodium, potassium, chloride, sulfate, and alkalinity.—Continued

[Plain text indicates alkalinity value determined in the laboratory. Bold text indicates alkalinity value determined in the field. For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water. Date of sample collection is by month/day/year. µS/cm @ 25 °C, microsiemens at 25 degrees Celsius; $CaCO_3$, calcium carbonate; HCO3-, bicarbonate; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Laboratory pH	Laboratory specific conductance, in µS/cm @ 25 °C	Concentration in milligrams per liter						Alkalinity, in milligrams per liter as $CaCO_3$, or [as HCO_3^-], or (calculated in milliequivalents per liter)	Laboratory[1]
					Calcium	Magnesium	Sodium	Potassium	Chloride	Sulfate		
R1-36	Water table	11/30/1990	*5.7*	25	2.1	0.3	1.0	0.30	0.5	6.1	*3*	USGS D
R1-36	Water table	7/10/1995	*	*	1.88	0.31	0.81	0.15	0.98	6.19	[*1.80*, ***2.93***]	USGS R
R1-55	*53-55*	9/26/1991	*9.87*	*	*	*	*	*	*	*	*	USGS R
R1	(57.4-80)	9/16/1990	*7.9*	153	22	3.8	5.7	2.3	0.5	9.6	*68*, ***68***	USGS D
R1	*65-80.1*	7/14/1992	*8.00*	154	18	3.8	5	2.2	0.6	9.1	***73***	USGS R
R1	(102-125)	9/15/1990	*7.90*	168	24	4.3	7.5	2.3	0.4	6.9	*78*	USGS D
R1	*110-125.1*	7/14/1992	*7.85*	171	21	4.4	7	1.9	0.5	6.7	***83***	USGS R
R1	(148-171)	9/16/1990	*8.3*	173	26	4.2	8.9	1.4	0.5	6.2	*81*	USGS D
R1	*147-162.1*	7/15/1992	*8.15*	183	24	4.5	9	1.3	0.5	5.9	***93***	USGS R
R1	*480-495.1*	7/15/1992	*8.18*	265	25	5.7	28	1.0	0.6	11.0	***139***	USGS R
RR1 PZ	Water table	8/21/1995	*	*	30.0	5.16	57.4	11.9	115.3	23.6	*71.1*	USGS R
RR1	(582.5-596.0)	8/18/1995	*	*	200	43.6	388	10.9	141.7	1.33	*1720*	USGS R
S-40	Water table	5/22/1990	*6.0*	35	3.2	0.70	1.8	0.56	0.54	7.5	***7, 8***	USGS D
S-40	Water table	7/25/1997	*	*	0.92	0.21	0.93	0.3	1.12	3.89	*3.6+*	USGS R
T1	(57-72)	8/15/1991	*7.24*	136	14	3.4	3.6	2.5	0.8	10.2	***65***	USGS R
T1	(155-172)	8/15/1991	*7.21*	246	42	8.3	8.2	5.8	0.8	6.4	***147***	USGS R
T1	(220-237)	8/15/1991	*7.02*	529	93	18	17	8.0	1.1	1.6	***195***	USGS R
TR1-63	Water table	7/2/1984	*	*	4.54	0.78	3.34	2.04	1.39	5.9	0.326	IES
TR1-63	Water table	5/15/1990	*6.9*	57	5.6	1.0	3.2	1.4	2.7	4.6	*14*, ***15***	USGS D
TR1-63	Water table	11/30/1990	*6.3*	47	5.1	0.90	3.1	1.3	1.1	4.8	*17*	USGS D

Table 29. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for pH, specific conductance, calcium, magnesium, sodium, potassium, chloride, sulfate, and alkalinity.—Continued

[Plain text indicates alkalinity value determined in the laboratory. Bold text indicates alkalinity value determined in the field. For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water. Date of sample collection is by month/day/year. µS/cm @ 25 °C, microsiemens at 25 degrees Celsius; $CaCO_3$, calcium carbonate; HCO3-, bicarbonate; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Laboratory pH	Laboratory specific conductance, in µS/cm @ 25 °C	Concentration in milligrams per liter						Alkalinity, in milligrams per liter as $CaCO_3$, or [as HCO_3^-], or (calculated in milliequivalents per liter)	Laboratory[1]
					Calcium	Magnesium	Sodium	Potassium	Chloride	Sulfate		
TR1-63	Water table	9/26/1991	*6.49*	50	2.1	0.41	2.0	1.0	0.3	5.4	*15*	USGS R
TR1-63	Water table	7/8/1995	*	*	4.64	0.75	2.89	1.10	0.98	5.82	*[19.5,* ***19.0****]*	USGS R
TR1-63	Water table	6/25/1997	*	*	4.08	0.79	2.88	1.2	1.23	5.22	*[16.9]*	USGS R
TR1-132	*130-132*	7/3/1984	*	*	31.06	0.03	13.30	20.70	1.18	28.5	(2.034)	IES
TR1	A (177-199)	5/15/1990	*8.5*	143	14	3.7	5.3	2.4	0.50	7.4	*72,* ***80***	USGS D
TR1	(171-190)	9/22/1990	*8.5*	125	18	3.2	4.8	2.1	0.5	12	*53*	USGS D
TR1	*170-190*	6/29/1992	*8.22*	139	17	3.4	4.8	2.1	1.0	12.0	***61***	USGS R
TR1	B (200-299)	5/17/1990	*8.1*	177	21	5.6	6.0	1.7	0.20	6.2	*77,* ***86***	USGS D
TR1	(271-300)	9/23/1990	*8.2*	166	23	4.9	6.4	1.4	0.5	5.9	*68*	USGS D
TR1	*271-299.8*	6/30/1992	*8.04*	151	19	4.5	5.8	1.5	0.8	7.0	*77*	USGS R
TR1	(299-328)	9/23/1990	*8.2*	183	23	4.8	11	1.0	0.5	5.1	*76*	USGS D
TR1	*298.6-327.4*	7/1/1992	*8.35*	166	22	5.1	8.9	1.1	0.7	5.8	***91***	USGS R
TR1	*390-397.8*	7/1/1992	*8.36*	188	20	5.0	12	0.7	0.7	4.9	***124***	USGS R
TR1	*482-489.8*	7/7/1992	*8.35*	194	19	5.0	18	1.1	0.6	4.7	***104***	USGS R
TR2	(151-170.1)	6/22/1992	*8.13*	249	26	4.7	14	1.4	0.5	4.5	***109***	USGS R
TR2	(270-289.1)	6/22/1992	*7.88*	318	34	6.2	24	1.0	0.6	3.3	***170***	USGS R
TR2	(426-445.1)	6/23/1992	*7.94*	345	30	7.2	50	1.3	0.9	3.1	***230***	USGS R
TR2	(151.0-170.3)	7/21/1993	*	*	26.6	4.8	16.3	1.2	0.55	3.6	***[142.8]***	USGS R
TR2	(270.0-289.3)	7/21/1993	*	*	38.5	6.8	25.8	1.0	0.67	2.8	***[217.2]***	USGS R
TR2	(426.0-445.3)	7/22/1993	*	*	31.6	7.3	50.6	1.2	1.04	4.5	***[252.6]***	USGS R

Table 29. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for pH, specific conductance, calcium, magnesium, sodium, potassium, chloride, sulfate, and alkalinity.—Continued

[Plain text indicates alkalinity value determined in the laboratory. Bold text indicates alkalinity value determined in the field. For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water. Date of sample collection is by month/day/year. µS/cm @ 25 °C, microsiemens at 25 degrees Celsius; $CaCO_3$, calcium carbonate; HCO3-, bicarbonate; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Laboratory pH	Laboratory specific conductance, in µS/cm @ 25 °C	Concentration in milligrams per liter						Alkalinity, in milligrams per liter as $CaCO_3$, or [as HCO_3^-], or (calculated in milliequivalents per liter)	Laboratory[1]
					Calcium	Magnesium	Sodium	Potassium	Chloride	Sulfate		
Seep S3	Water surface	8/7/1997	*	*	0.68	0.16	0.98	0.2	1.29	2.95	***5.6***	USGS R
Leeman's Spring	Water suface	8/6/1997	*	*	2.78	0.48	1.42	0.4	1.15	5.80	*5.0*	USGS R
Pleasant view well	unknown	5/22/1991	*6.84*	865	72	15	91	4.0	9.9	4.4	*365,* ***365***	USGS R

[1] Laboratories - Institute for Ecosystems Studies (IES); U.S. Geological Survey National Water Quality Laboratory, Denver, Colorado (USGS D); U.S. Geological Survey Research Laboratory, Reston, Virginia (USGS R).

[2] *, Indicates analysis for this characteristic was not done for water collected from this well on the given date.

Table 30. Chemical characteristics of groundwater from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for nitrite, nitrite plus nitrate, nitrate, ammonium, total Kjeldahl, ortho-phosphorus, and total phosphorus.

[For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water. Date of sample collection is by month/day/year; N, nitrogen; P, phosphorus; <, less than; A, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration, in milligrams per liter							Laboratory[1]
			Nitrite as N	Nitrite+ Nitrate as N	Nitrate	Ammonium	Total Kjeldahl nitrogen as N	Ortho-phosphorus	Total phosphorus as P	
W2	Water table	8/31/1983	*[2]	*	*0.00*	*0.01*	*	*0.007*	*	IES
W2	Water table	6/28/1984	*	*	0.00	0.02	*	0.13	*	IES
W2	Water table	6/20/1995	*	*	0.08	*	*	*	*	USGS R

Table 30. Chemical characteristics of groundwater from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for nitrite, nitrite plus nitrate, nitrate, ammonium, total Kjeldahl, ortho-phosphorus, and total phosphorus.—Continued

[For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water. Date of sample collection is by month/day/year; N, nitrogen; P, phosphorus; <, less than; A, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration, in milligrams per liter							Laboratory[1]
			Nitrite as N	Nitrite+ Nitrate as N	Nitrate	Ammonium	Total Kjeldahl nitrogen as N	Ortho-phosphorus	Total phosphorus as P	
W2	Water table	6/7/1997	*	*	<0.10	*	*	*	*	USGS R
W3	Water table	8/2/1983	*	*	0.00	*0.02*	*	*0.027*	*	IES
W3	Water table	6/29/1984	*	*	0.00	0.07	*	0.020	*	IES
W3	Water table	5/30/1990	*	*	<0.010	*	*	*	*	USGS D
W3	Water table	6/23/1995	*	*	0.09	*	*	*	*	USGS R
W3	Water table	7/14/1997	*	*	<0.10	*	*	*	*	USGS R
W3A	Water table	8/1/1983	*	*	*0.03*	*0.01*	*	*0.019*	*	IES
W3A	Water table	6/28/1984	*	*	0.00	0.01	*	0.010	*	IES
W3 A	Water table	6/23/1995	*	*	0.05	*	*	*	*	USGS R
W3 A	Water table	6/10/1997	*	*	<0.10	*	*	*	*	USGS R
W4-11	Water table	8/1/1983	*	*	*0.03*	*0.01*	*	*0.010*	*	IES
W4-11	Water table	6/29/1984	*	*	0.00	0.01	*	0.009	*	IES
W4-23	Water table	8/3/1983	*	*	0.03	0.31	*	0.028	*	IES
W4-23	Water table	6/29/1984	*	*	0.00	0.07	*	0.020	*	IES
W6	Water table	6/28/1984	*	*	0.00	0.06	*	0.015	*	IES
W6	Water table	7/7/1987	*	0.064, *<0.1*	*	0.041, *0.07*	*0.7*	<0.001	*0.069*	USGS D
W6	Water table	7/26/1997	*	*	1.79	*	*	*	*	USGS R
W7	Water table	7/28/1983	*	*	*0.18*	*0.01*	*	*0.010*	*	IES
W7	Water table	6/26/1984	*	*	0.00	0.03	*	0.005	*	IES
W7	Water table	7/8/1987	*	0.018, *<0.1*	*	0.021, *0.07*	*0.7*	<0.001	*0.139*	USGS D
W8	Water table	6/26/1984	*	*	0.00	0.04	*	0.010	*	IES

Table 30. Chemical characteristics of groundwater from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for nitrite, nitrite plus nitrate, nitrate, ammonium, total Kjeldahl, ortho-phosphorus, and total phosphorus.—Continued

[For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water. Date of sample collection is by month/day/year; N, nitrogen; P, phosphorus; <, less than; A, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration, in milligrams per liter							Laboratory[1]
			Nitrite as N	Nitrite+ Nitrate as N	Nitrate	Ammonium	Total Kjeldahl nitrogen as N	Ortho-phosphorus	Total phosphorus as P	
W9	Water table	7/28/1983	*	*	*0.00*	*0.05*	*	*0.080*	*	IES
W9	Water table	6/27/1984	*	*	0.00	0.01	*	0.015	*	IES
W9	Water table	7/8/1987	*	<0.010, *<0.1*	*	0.010, *0.08*	*0.4*	<0.001	*0.900*	USGS D
W10	Water table	7/28/1983	*	*	*0.00*	*0.16*	*	*0.099*	*	IES
W10	Water table	6/27/1984	*	*	0.00	0.12	*	0.022	*	IES
W10	Water table	7/8/1987	*	<0.010, *<0.1*	*	0.120, *0.120*	*0.6*	<0.001	*0.130*	USGS D
W11	Water table	8/1/1983	*	*	*0.98*	*0.01*	*	*0.012*	*	IES
W11	Water table	6/28/1984	*	*	1.30	0.02	*	0.013	*	IES
W11	Water table	7/7/1987	*	0.210, *0.200*	*	0.021, *0.03*	*0.4*	<0.001	*0.019*	USGS D
W11	Water table	7/25/1997	*	*	0.89	*	*	*	*	USGS R
W14	Water table	7/28/1983	*	*	*0.07*	*0.03*	*	*0.031*	*	IES
W14	Water table	7/2/1984	*	*	0.09	0.03	*	0.010	*	IES
W15	Water table	8/3/1983	*	*	0.00	0.02	*	0.010	*	IES
W15	Water table	7/2/1984	*	*	0.02	0.02	*	0.023	*	IES
W15	Water table	7/28/1997	*	*	<0.10	*	*	*	*	USGS R
W16	Water table	8/3/1983	*	*	0.13	0.84	*	0.073	*	IES
W16	Water table	7/2/1984	*	*	0.00	0.07	*	0.021	*	IES
W16	Water table	8/29/1996	*	*	<0.01	*	*	*	*	USGS R
W16	Water table	7/13/1997	*	*	0.73	*	*	*	*	USGS R
W16A	Water table	8/27/1996	*	*	0.09	*	*	*	*	USGS R
W16A	Water table	7/12/1997	*	*	0.25	*	*	*	*	USGS R

Table 30. Chemical characteristics of groundwater from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for nitrite, nitrite plus nitrate, nitrate, ammonium, total Kjeldahl, ortho-phosphorus, and total phosphorus.—Continued

[For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water. Date of sample collection is by month/day/year; N, nitrogen; P, phosphorus; <, less than; A, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration, in milligrams per liter							Laboratory[1]
			Nitrite as N	Nitrite+ Nitrate as N	Nitrate	Ammonium	Total Kjeldahl nitrogen as N	Ortho-phosphorus	Total phosphorus as P	
W18	Water table	8/1/1983	*	*	*0.00*	*0.02*	*	*0.010*	*	IES
W18	Water table	6/29/1984	*	*	0.02	0.03	*	0.005	*	IES
W18	Water table	7/12/1995	*	*	0.18	*	*	*	*	USGS R
W18	Water table	6/26/1997	*	*	<0.10	*	*	*	*	USGS R
W25	Water table	6/21/1995	*	*	0.08	*	*	*	*	USGS R
W25	Water table	7/13/1997	*	*	<0.10	*	*	*	*	USGS R
W26	Water table	5/23/1990	*	*	<0.010	*	*	*	*	USGS D
W26	Water table	6/21/1995	*	*	0.08	*	*	*	*	USGS R
W26	Water table	8/16/1995	*	*	0.02	*	*	*	*	USGS R
W26	Water table	6/8/1997	*	*	<0.10	*	*	*	*	USGS R
W27	Water table	7/16/1995	*	*	0.17	*	*	*	*	USGS R
W27	Water table	6/19/1997	*	*	<0.10	*	*	*	*	USGS R
W33	Water table	8/22/1996	*	*	<0.010	*	*	*	*	USGS R
W34	Water table	8/22/1996	*	*	0.02	*	*	*	*	USGS R
W34	Water table	6/10/1997	*	*	0.25	*	*	*	*	USGS R
W35	Water table	8/28/1996	*	*	<0.010	*	*	*	*	USGS R
W36	Water table	8/26/1996	*	*	0.02	*	*	*	*	USGS R
W36	Water table	6/17/1997	*	*	0.16	*	*	*	*	USGS R
CO WT	Water table	7/21/1988	*	0.383, *0.4*	*	0.014, *<0.01*	*<0.20*	<0.001	*0.025*	USGS D
CO WT	Water table	5/9/1990	*	*	<0.010	*	*	*	*	USGS D
CO1-18	*16-18*	12/3/1990	*	*	1.0	*	*	*	*	USGS D

Table 30. Chemical characteristics of groundwater from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for nitrite, nitrite plus nitrate, nitrate, ammonium, total Kjeldahl, ortho-phosphorus, and total phosphorus.—Continued

[For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water. Date of sample collection is by month/day/year; N, nitrogen; P, phosphorus; <, less than; A, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration, in milligrams per liter							Laboratory[1]
			Nitrite as N	Nitrite+ Nitrate as N	Nitrate	Ammonium	Total Kjeldahl nitrogen as N	Ortho-phosphorus	Total phosphorus as P	
CO1	B (101-209)	5/10/1990	*	<0.10	*	*	*	*	*	USGS D
CO1	B (104-116)	6/21/1990	<0.10	<0.10	*	*	*	<0.010	*	USGS D
CO1	(90-119)	6/20/1996	*	*	0.221	*	*	*	*	USGS R
CO1	(90-119)	6/23/1996	*	*	0.054	*	*	*	*	USGS R
CO1	C (409-421)	6/22/1990	<0.010	<0.10	*	*	*	<0.010	*	USGS D
CO2	A (25-104)	5/9/1990	*	0.200	<0.010	*	*	<0.10	*	USGS D
CO2	B (163-171)	6/29/1990	*	<0.100	*	*	*	*	*	USGS D
CO10	(130.0-143.5)	8/15/1995	*	*	0.09	*	*	*	*	USGS R
CO10	(228.0-241.5)	8/15/1995	*	*	0.09	*	*	*	*	USGS R
CO11	(95.0-108.5)	8/16/1995	*	*	0.15	*	*	*	*	USGS R
CO11	(242.0-255.5)	8/17/1995	*	*	0.16	*	*	*	*	USGS R
CO11	(342.6-356.1)	8/17/1995	*	*	0.08	*	*	*	*	USGS R
FS1-17	Water table	8/1/1983	*	*	0.09	0.08	*	0.002	*	IES
FS1-17	Water table	6/29/1984	*	*	0.00	0.02	*	0.009	*	IES
FS1-17	Water table	5/30/1990	*	*	<0.010	*	*	<0.010	*	USGS D
FS1-17	Water table	7/18/1995	*	*	0.14	*	*	*	*	USGS R
FS1-17	Water table	7/19/1996	*	*	0.06	*	*	*	*	USGS R
FS1-25	*23-25*	8/2/1983	*	*	0.14	0.04	*	0.010	*	IES
FS1-25	*23-25*	6/29/1984	*	*	0.09	0.07	*	0.021	*	IES
FS1-25	*23-25*	7/20/1996	*	*	0.13	*	*	*	*	USGS R
FS1-35	*33-35*	8/2/1983	*	*	0.23	0.01	*	0.047	*	IES

Table 30. Chemical characteristics of groundwater from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for nitrite, nitrite plus nitrate, nitrate, ammonium, total Kjeldahl, ortho-phosphorus, and total phosphorus.—Continued

[For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water. Date of sample collection is by month/day/year; N, nitrogen; P, phosphorus; <, less than; A, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration, in milligrams per liter							Laboratory[1]
			Nitrite as N	Nitrite+ Nitrate as N	Nitrate	Ammonium	Total Kjeldahl nitrogen as N	Ortho-phosphorus	Total phosphorus as P	
FS1-35	*33-35*	6/29/1984	*	*	0.31	0.02	*	0.033	*	IES
FS1-35	*33-35*	5/30/1990	*	*	0.070	*	*	<0.010	*	USGS D
FS1-35	*33-35*	12/5/1990	*	*	0.27	*	*	*	*	USGS D
FS1-35	*33-35*	7/20/1996	*	*	0.01	*	*	*	*	USGS R
FS1	A (55-105)	5/31/1990	*	*	<0.010	*	*	<0.010	*	USGS D
FS1	C (217-450)	5/25/1990	<0.010	<0.100	*	*	*	<0.010	*	USGS D
FS2	A (32-105)	5/22/1990	*	*	<0.010	*	*	<0.010	*	USGS D
FS2	C (236-251)	8/6/1990	*	<0.100	*	*	*	*	*	USGS D
FS3-22	*20-22*	5/24/1990	*	*	<0.010	*	*	<0.010	*	USGS D
FS3	A(38-84)	5/23/1990	*	<0.100	*	*	*	*	*	USGS D
FS3	A (60-75)	8/10/1990	*	<0.100	*	*	*	*	*	USGS D
FS3	C (197-645)	5/25/1990	*	<0.100	*	*	*	*	*	USGS D
FS3	C (365-380)	8/9/1990	*	<0.100	*	*	*	*	*	USGS D
FS3	C (530-545)	8/9/1990	*	<0.100	*	*	*	*	*	USGS D
FS3C-19	*18-19*	7/14/1995	*	*	0.15	*	*	*	*	USGS R
FS3C-19	*18-19*	7/18/1996	*	*	0.02	*	*	*	*	USGS R
FS3C-24	*23-24*	7/15/1995	*	*	0.08	*	*	*	*	USGS R
FS3C-24	*23-24*	7/18/1996	*	*	0.03	*	*	*	*	USGS R
FS3C-24	*23-24*	6/12/1997	*	*	0.13	*	*	*	*	USGS R
FS3C-29	*28-29*	7/17/1996	*	*	0.10	*	*	*	*	USGS R
FS3C-29	*28-29*	6/11/1997	*	*	0.16	*	*	*	*	USGS R

Table 30. Chemical characteristics of groundwater from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for nitrite, nitrite plus nitrate, nitrate, ammonium, total Kjeldahl, ortho-phosphorus, and total phosphorus.—Continued

[For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water. Date of sample collection is by month/day/year; N, nitrogen; P, phosphorus; <, less than; A, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration, in milligrams per liter							Laboratory[1]
			Nitrite as N	Nitrite+ Nitrate as N	Nitrate	Ammonium	Total Kjeldahl nitrogen as N	Ortho-phosphorus	Total phosphorus as P	
FS4WT	Water table	7/18/1997	*	*	<0.10	*	*	*	*	USGS R
FS5	(70.0-83.5)	6/9/1995	*	*	0.09	*	*	*	*	USGS R
FS5	(142.0-155.5)	6/9/1995	*	*	0.09	*	*	*	*	USGS R
FS5	(200.4-218.0)	6/8/1995	*	*	0.08	*	*	*	*	USGS R
FS6	*44.0-53.5*	8/12/1995	*	*	0.08	*	*	*	*	USGS R
FS7	(53)	6/22/1996	*	*	0.867	*	*	*	*	USGS R
FSE WT	Water table	7/3/1984	*	*	0.01	0.03	*	0.019	*	IES
FSE -23	*21-23*	7/3/1984	*	*	0.43	0.20	*	0.005	*	IES
FSE- 23	*21-23*	10/23/1986	*	0.072, *<0.1*	*	0.012, *0.01*	*1.6*	0.010	*0.060*	USGS D
FSE -23	*21-23*	6/1/1990	<0.010	<0.100	*	*	*	<0.010	*	USGS D
FSE -32	*30-32*	7/3/1984	*	*	0.15	2.30	*	0.160	*	IES
FSE -32	*30-32*	10/23/1986	*	0.062, *<0.1*	*	0.069, *0.07*	*0.7*	0.001	*0.023*	USGS D
FSE-43	*41-43*	7/3/1984	*	*	0	0.51	*	0.49	*	IES
FSE-43	*41-43*	6/1/1990	<0.010	<0.100	*	*	*	<0.010	*	USGS D
FSE2	A (55-105)	6/1/1990	<0.020	<0.100	*	*	*	<0.010	*	USGS D
FSE4	*65-85*	10/23/1986	*	<0.010, *<0.1*	*	0.037, *0.05*	*0.5*	0.006	*0.380*	USGS D
FSE4	*80-100*	10/26/1986	*	<0.010, *<0.1*	*	0.045, *0.04*	*0.4*	0.002	*0.365*	USGS D
FSE4	*135-155*	10/23/1986	*	<0.010, *<0.1*	*	0.064, *0.05*	*1.3*	0.002	*0.083*	USGS D
FSE4	*430-450*	10/29/1986	*	<0.010, *<0.1*	*	0.259, *0.25*	*0.5*	0.003	*0.087*	USGS D
FSE4	*700*	10/22/1986	*	<0.010, *<0.1*	*	0.722, *0.36*	*0.5*	0.012	*0.110*	USGS D
K2-21	Water table	7/28/1983	*	*	*9.87*	*0.01*	*	*0.010*	*	IES
K2-21	Water table	8/5/1983	*	*	7.59	0.01	*	0.007	*	IES

Table 30. Chemical characteristics of groundwater from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for nitrite, nitrite plus nitrate, nitrate, ammonium, total Kjeldahl, ortho-phosphorus, and total phosphorus.—Continued

[For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water. Date of sample collection is by month/day/year; N, nitrogen; P, phosphorus; <, less than; A, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration, in milligrams per liter							Laboratory[1]
			Nitrite as N	Nitrite+ Nitrate as N	Nitrate	Ammonium	Total Kjeldahl nitrogen as N	Ortho-phosphorus	Total phosphorus as P	
K2-21	Water table	6/28/1984	*	*	6.86	0.04	*	0.024	*	IES
K2-31	*29-31*	7/28/1983	*	*	*23.40*	*0.01*	*	*0.007*	*	IES
K2-31	*29-31*	8/5/1983	*	*	20.10	0.04	*	0.004	*	IES
K2-31	*29-31*	6/28/1984	*	*	42.20	0.04	*	0.006	*	IES
K2-41	*39-41*	7/28/1983	*	*	*1.54*	*0.02*	*	*0.013*	*	IES
K2-41	*39-41*	8/5/1983	*	*	0.13	0.02	*	0.016	*	IES
K2-41	*39-41*	6/28/1984	*	*	0.56	0.29	*	0.017	*	IES
K1-8	Water table	8/5/1983	*	*	0.06	0.02	*	0.009	*	IES
K1-8	Water table	6/26/1984	*	*	0.00	0.02	*	0.007	*	IES
K1-8	Water table	5/21/1990	*	*	<0.010	*	*	<0.010	*	USGS D
K1-8	Water table	11/30/1990	*	*	0.41	*	*	*	*	USGS D
K1-15	*13-15*	8/5/1983	*	*	0.00	0.02	*	0.012	*	IES
K1-15	*13-15*	6/26/1984	*	*	0.00	0.01	*	0.021	*	IES
K1-20	*18-20*	8/5/1983	*	*	0.03	0.04	*	0.013	*	IES
K1-20	*18-20*	6/26/1984	*	*	0.00	0.02	*	0.010	*	IES
K1-25	*23-25*	8/5/1983	*	*	0.00	0.02	*	0.013	*	IES
K1-25	*23-25*	6/26/1984	*	*	0.42	0.01	*	0.011	*	IES
K1-30	*28-30*	8/5/1983	*	*	0.00	0.01	*	0.016	*	IES
K1-30	*28-30*	6/26/1984	*	*	0.00	0.01	*	0.009	*	IES
K1-35	*33-35*	8/5/1983	*	*	0.03	0.48	*	0.021	*	IES
K1-35	*33-35*	6/26/1984	*	*	0.02	0.66	*	0.100	*	IES

Table 30. Chemical characteristics of groundwater from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for nitrite, nitrite plus nitrate, nitrate, ammonium, total Kjeldahl, ortho-phosphorus, and total phosphorus.—Continued

[For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water. Date of sample collection is by month/day/year; N, nitrogen; P, phosphorus; <, less than; A, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration, in milligrams per liter							Laboratory[1]
			Nitrite as N	Nitrite+ Nitrate as N	Nitrate	Ammonium	Total Kjeldahl nitrogen as N	Ortho-phosphorus	Total phosphorus as P	
K1-39	*37-39*	8/5/1983	*	*	0.06	0.64	*	0.011	*	IES
K1-39	*37-39*	6/26/1984	*	*	0.00	0.46	*	0.009	*	IES
K1-39	*37-39*	5/22/1990	*	<0.100	*	*	*	*	*	USGS R
K1	borehole	9/7/1983	*	*	0.06	0.64	*	0.011	*	IES
K1	borehole	9/7/1983	*	<0.01	*	*	*	*	*	USGS D
K1	borehole	5/17/1990	*	<0.100	*	*	*	*	*	USGS D
K2-21	Water table	5/17/1990	*	3.30	*	*	*	*	*	USGS D
K2-41	*39-41*	5/17/1990	*	0.200	*	*	*	*	*	USGS D
K2-41	*39-41*	11/29/1990	*	*	1.0	*	*	*	*	USGS D
K2	(55-160)	5/17/1990	*	<0.100	*	*	*	*	*	USGS D
		08:25	*	<0.005	*	*	*	*	*	
		09:00	*	<0.005	*	*	*	*	*	
		14:50	*	<0.005	*	*	*	*	*	
K3-22	Water table	7/27/1983	*	*	*0.24*	*0.01*	*	*0.021*	*	IES
K3-22	Water table	8/5/1983	*	*	0.38	0.02	*	0.006	*	IES
K3-22	Water table	7/2/1984	*	*	0.48	0.01	*	0.013	*	IES
K3-22	Water table	5/16/1990	*	*	0.140	*	*	<0.010	*	USGS D
K3-41	*39-41*	7/27/1983	*	*	*0.00*	*0.02*	*	*0.017*	*	IES
K3-41	*39-41*	8/5/1983	*	*	0.09	0.02	*	0.019	*	IES
K3-41	*39-41*	7/2/1984	*	*	0.18	0.01	*	0.016	*	IES
K3-61	*59-61*	7/27/1983	*	*	*0.00*	*0.01*	*	*0.007*	*	IES
K3-61	*59-61*	8/5/1983	*	*	0.03	0.07	*	0.010	*	IES

Table 30. Chemical characteristics of groundwater from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for nitrite, nitrite plus nitrate, nitrate, ammonium, total Kjeldahl, ortho-phosphorus, and total phosphorus.—Continued

[For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water. Date of sample collection is by month/day/year; N, nitrogen; P, phosphorus; <, less than; A, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration, in milligrams per liter							Laboratory[1]
			Nitrite as N	Nitrite+ Nitrate as N	Nitrate	Ammonium	Total Kjeldahl nitrogen as N	Ortho-phosphorus	Total phosphorus as P	
K3-61	*59-61*	7/2/1984	*	*	0.09	0.02	*	0.013	*	IES
K3-61	*59-61*	5/16/1990	*	*	<0.10	*	*	<0.010	*	USGS D
K3	(75-175)	5/16/1990	*	<0.100	*	*	*	*	*	USGS D
R1-36	Water table	11/30/1990	*	0.06	*	*	*	*	*	USGS D
R1-36	Water table	7/10/1995	*	*	0.13	*	*	*	*	USGS R
RR1 PZ	Water table	8/21/1995	*	*	10.5	*	*	*	*	USGS R
RR1	(582.5-596.0)	8/18/1995	*	*	0.14	*	*	*	*	USGS R
S-40	Water table	7/25/1997	*	*	<0.10	*	*	*	*	USGS R
TR1-63	Water table	7/2/1984	*	*	0.32	0.32	*	0.036	*	IES
TR1-63	Water table	5/15/1990	*	*	0.130	*	*	<0.010	*	USGS D
TR1-63	Water table	11/30/90	*	*	0.32	*	*	*	*	USGS R?
TR1-63	Water table	9/26/1991	*	*	0.23	*	*	*	*	USGS R
TR1-63	Water table	7/8/1995	*	*	0.37	*	*	*	*	USGS R
TR1-63	Water table	6/25/1997	*	*	0.30	*	*	*	*	USGS R
TR1-132	*130-132*	7/3/1984	*	*	0.00	0.21	*	0.016	*	IES
TR1	A (177-199)	5/15/1990	*	<0.100	*	*	*	*	*	USGS D
TR1	B (200-299)	5/17/1990	*	<0.100	*	*	*	*	*	USGS D
TR1	*170-190*	6/29/1992	*	*	<0.05	*	*	*	*	USGS R
TR1	*271-299.8*	6/30/1992	*	*	<0.05	*	*	*	*	USGS R
TR1	*298.6-327.4*	7/1/1992	*	*	<0.05	*	*	*	*	USGS R
TR1	*390-397.8*	7/1/1992	*	*	<0.05	*	*	*	*	USGS R

Table 30. Chemical characteristics of groundwater from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for nitrite, nitrite plus nitrate, nitrate, ammonium, total Kjeldahl, ortho-phosphorus, and total phosphorus.—Continued

[For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water. Date of sample collection is by month/day/year; N, nitrogen; P, phosphorus; <, less than; A, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration, in milligrams per liter							Laboratory[1]
			Nitrite as N	Nitrite+ Nitrate as N	Nitrate	Ammonium	Total Kjeldahl nitrogen as N	Ortho-phosphorus	Total phosphorus as P	
TR1	*482-489.8*	7/7/1992	*	*	<0.05	*	*	*	*	USGS R
TR2	(151-170.1)	6/22/1992	*	*	<0.05	*	*	*	*	USGS R
TR2	(270-289.1)	6/22/1992	*	*	<0.05	*	*	*	*	USGS R
TR2	(426-445.1)	6/23/1992	*	*	<0.05	*	*	*	*	USGS R
Seep S3	water surface	8/7/1997	*	*	<0.100	*	*	*	*	USGS R
Leeman's Spring	water surface	8/6/1997	*	*	0.62	*	*	*	*	USGS R
Pleasant view well	unknown	5/22/1991	*	*	*	*	*	*	*	*

[1] Laboratories - Institute for Ecosystems Studies (IES); U.S. Geological Survey National Water Quality Laboratory, Denver, Colorado (USGS D); U.S. Geological Survey Research Laboratory, Reston, Virginia (USGS R).

[2] *, indicates analysis for this characteristic was not done for water collected from this well on the given date.

Table 31. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake Watershed, New Hampshire, for aluminium, silica (as SiO_2), bromide, fluoride, iodide, iron, and manganese.

[For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water.Date of sample collection is by month/day/year. A,B,C, sample zones; <, less than]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration in milligrams per liter							Laboratory[1]
			Aluminum	Silica, as SiO_2	Bromide	Fluoride	Iodide	Iron	Manganese	
W2	Water table	8/31/1983	*0.01*	*20.3*	*[2]	*	*	*	*	IES
W2	Water table	6/28/1984	<0.01	21.0	*	*	*	*	*	IES

Table 31. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake Watershed, New Hampshire, for aluminium, silica (as SiO_2), bromide, fluoride, iodide, iron, and manganese.—Continued

[For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water.Date of sample collection is by month/day/year. A,B,C, sample zones; <, less than]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration in milligrams per liter							Laboratory[1]
			Aluminum	Silica, as SiO_2	Bromide	Fluoride	Iodide	Iron	Manganese	
W2	Water table	6/20/1995	<0.005	18.7	<0.02	*	*	4.77	0.085	USGS R
W2	Water table	6/7/1997	0.007	19.7	<0.02	0.11	*	3.42	0.092	USGS R
W3	Water table	8/2/1983	*0.00*	*18.5*	*	*	*	*	*	IES
W3	Water table	6/29/1984	<0.01	18.3	*	*	*	*	*	IES
W3	Water table	5/30/1990	*	18	<0.010	0.13	*	0.013	<0.001	USGS D
W3	Water table	6/23/1995	<0.005	16.5	<0.02	*	*	0.014	<0.005	USGS R
W3	Water table	7/14/1997	0.004	18.6	<0.02	0.09	*	0.021	<0.003	USGS R
W3A	Water table	8/1/1983	*0.01*	*19.5*	*	*	*	*	*	IES
W3A	Water table	6/28/1984	<0.01	7.7	*	*	*	*	*	IES
W3 A	Water table	6/23/1995	0.092	7.57	<0.02	*	*	0.024	0.012	USGS R
W3 A	Water table	6/10/1997	0.131	7.30	<0.02	0.08	*	0.009	0.009	USGS R
W4-11	Water table	8/1/1983	*0.01*	*6.5*	*	*	*	*	*	IES
W4-11	Water table	6/29/1984	<0.01	5.8	*	*	*	*	*	IES
W4-23	Water table	8/3/1983	0.00	20.4	*	*	*	*	*	IES
W4-23	Water table	6/29/1984	<0.01	18.3	*	*	*	*	*	IES
W6	Water table	6/28/1984	<0.01	2.5	*	*	*	*	*	IES
W6	Water table	7/7/1987	<0.010	12	<0.010	<0.010	0.004	12.0	0.490	USGS D
W6	Water table	7/26/1997	0.002	18.9	0.02	0.05	*	21.5	0.355	USGS R
W7	Water table	7/28/1983	*0.03*	*2.2*	*	*	*	*	*	IES
W7	Water table	6/26/1984	<0.01	2.5	*	*	*	*	*	IES
W7	Water table	7/8/1987	<0.010	2.9	<0.010	<0.010	0.002	2.8	0.120	USGS D
W8	Water table	6/26/1984	<0.01	2.7	*	*	*	*	*	IES

Table 31. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake Watershed, New Hampshire, for aluminium, silica (as SiO_2), bromide, fluoride, iodide, iron, and manganese.—Continued

[For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water.Date of sample collection is by month/day/year. A,B,C, sample zones; <, less than]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration in milligrams per liter							Laboratory[1]
			Aluminum	Silica, as SiO_2	Bromide	Fluoride	Iodide	Iron	Manganese	
W9	Water table	7/28/1983	*0.28*	*3.0*	*	*	*	*	*	IES
W9	Water table	6/27/1984	<0.01	3.6	*	*	*	*	*	IES
W9	Water table	7/8/1987	<0.010	3.3	<0.010	<0.010	0.005	0.019	0.037	USGS D
W10	Water table	7/28/1983	*0.77*	*14.9*	*	*	*	*	*	IES
W10	Water table	6/27/1984	<0.01	12.3	*	*	*	*	*	IES
W10	Water table	7/8/1987	<0.010	14	0.011	0.010	0.004	11.0	0.360	USGS D
W11	Water table	8/1/1983	*0.01*	*11.2*	*	*	*	*	*	IES
W11	Water table	6/28/1984	<0.01	10.8	*	*	*	*	*	IES
W11	Water table	7/7/1987	0.020	9.6	<0.010	<0.010	0.002	0.017	0.011	USGS D
W11	Water table	7/25/1997	0.022	9.05	<0.02	0.04	*	0.008	0.009	USGS R
W14	Water table	7/28/1983	*0.10*	*4.6*	*	*	*	*	*	IES
W14	Water table	7/2/1984	<0.01	4.1	*	*	*	*	*	IES
W15	Water table	8/3/1983	0.26	7.1	*	*	*	*	*	IES
W15	Water table	7/2/1984	<0.01	6.7	*	*	*	*	*	IES
W15	Water table	7/28/1997	0.003	5.33	<0.02	<0.05	*	10.4	0.215	USGS R
W16	Water table	8/3/1983	0.15	16.5	*	*	*	*	*	IES
W16	Water table	7/2/1984	<0.01	20.1	*	*	*	*	*	IES
W16	Water table	8/29/1996	0.003	24.4	<0.01	0.49	*	5.65	1.03	USGS R
W16	Water table	7/13/1997	0.003	25.5	<0.02	0.49	*	5.05	1.07	USGS R
W16A	Water table	8/27/1996	0.010	16.5	<0.01	0.10	*	<0.010	0.463	USGS R
W16A	Water table	7/12/1997	0.007	12.8	<0.02	0.12	*	<0.006	0.119	USGS R
W18	Water table	8/1/1983	*0.15*	*6.1*	*	*	*	*	*	IES

Table 31. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake Watershed, New Hampshire, for aluminium, silica (as SiO_2), bromide, fluoride, iodide, iron, and manganese.—Continued

[For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water.Date of sample collection is by month/day/year. A,B,C, sample zones; <, less than]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration in milligrams per liter							Laboratory[1]
			Aluminum	Silica, as SiO_2	Bromide	Fluoride	Iodide	Iron	Manganese	
W18	Water table	6/29/1984	<0.01	6.1	*	*	*	*	*	IES
W18	Water table	7/12/1995	<0.005	6.25	<0.02	*	*	1.39	0.074	USGS R
W18	Water table	6/26/1997	0.010	5.73	<0.02	<0.05	*	2.41	0.072	USGS R
W25	Water table	6/21/1995	<0.005	16.7	<0.02	*	*	2.45	0.108	USGS R
W25	Water table	7/13/1997	0.003	18.5	<0.02	0.22	*	2.20	0.086	USGS R
W26	Water table	5/23/1990	*	22	<0.010	0.21	*	5.40	0.360	USGS D
W26	Water table	6/21/1995	<0.005	19.0	<0.02	*	*	4.83	0.114	USGS R
W26	Water table	8/16/1995	0.006	19.1	<0.02	*	*	5.07	0.097	USGS R
W26	Water table	6/8/1997	0.002	20.3	<0.02	0.15	*	3.09	0.089	USGS R
W27	Water table	7/16/1995	0.007	12.0	<0.02	*	*	0.200	0.164	USGS R
W27	Water table	6/19/1997	0.007	12.6	<0.02	0.05	*	0.154	0.096	USGS R
W33	Water table	8/22/1996	0.009	21.0	<0.01	0.13	*	3.00	0.217	USGS R
W34	Water table	8/22/1996	0.015	15.7	0.01	0.08	*	<0.010	0.209	USGS R
W34	Water table	6/10/1997	0.028	13.9	<0.02	0.05	*	0.023	0.021	USGS R
W35	Water table	8/28/1996	0.006	15.4	<0.01	0.07	*	0.054	1.55	USGS R
W36	Water table	8/26/1996	0.013	10.8	<0.01	0.05	*	<0.010	1.06	USGS R
W36	Water table	6/17/1997	0.046	8.54	<0.02	0.05	*	<0.007	0.042	USGS R
CO WT	Water table	7/21/1988	0.130	10	<0.010	0.1	0.001	0.930	0.160	USGS D
CO WT	Water table	5/9/1990	*	10	<0.010	0.08	*	0.110	0.030	USGS D
CO1-18	*16-18*	12/3/1990	*	22	<0.010	*	*	*	*	USGS D
CO1	B (101-209)	5/10/1990	*	17	0.010	0.40	*	0.390	0.190	USGS D
CO1	B (104-116)	6/21/1990	*	16	0.021	0.30	*	0.370	0.190	USGS D

Table 31. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake Watershed, New Hampshire, for aluminium, silica (as SiO_2), bromide, fluoride, iodide, iron, and manganese.—Continued

[For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water.Date of sample collection is by month/day/year. A,B,C, sample zones; <, less than]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration in milligrams per liter							Laboratory[1]
			Aluminum	Silica, as SiO_2	Bromide	Fluoride	Iodide	Iron	Manganese	
CO1	*104-114*	6/16/1992	*	16	<0.01	0.50	*	0.230	*	USGS R
CO1	(90-119)	6/20/1996	0.038	16.3	0.018	*	*	0.363	0.203	USGS R
CO1	(90-119)	6/23/1996	0.039	16.6	0.019	*	*	0.370	0.192	USGS R
CO1	C (409-421)	6/22/1990	*	16	0.010	1.3	*	0.130	0.052	USGS D
CO1	*420-430*	6/16/1992	*	15	<0.01	1.60	*	0.160	*	USGS R
CO2	A (25-104)	5/9/1990	*	12	<0.010	0.10	*	0.940	0.430	USGS D
CO2	B (163-171)	6/29/1990	*	18	<0.010	1.5	*	0.180	0.052	USGS D
CO3	(26-40)	8/17/1991	*	*	0.0586	0.09	*	0.280	*	USGS R
CO3	(87-102)	8/17/1991	*	*	0	0.19	*	0.330	*	USGS R
CO3	(140-155)	8/17/1991	*	*	0	0	*	0.250	*	USGS R
CO4	(92-98.8)	6/11/1992	*	16	<0.01	0.20	*	0.090	*	USGS R
CO10	(130.0-143.5)	8/15/1995	0.015	16.7	0.25	*	*	0.820	0.168	USGS R
CO10	(228.0-241.5)	8/15/1995	0.009	15.6	0.15	*	*	0.090	0.042	USGS R
CO11	(95.0-108.5)	8/16/1995	0.020	16.1	0.15	*	*	0.900	0.758	USGS R
CO11	(242.0-255.5)	8/17/1995	0.007	15.5	0.09	*	*	0.067	0.496	USGS R
CO11	(342.6-356.1)	8/17/1995	0.009	14.5	0.04	*	*	0.045	0.071	USGS R
FS1-17	Water table	8/1/1983	0.07	12.5	*	*	*	*	*	IES
FS1-17	Water table	6/29/1984	<0.01	7.1	*	*	*	*	*	IES
FS1-17	Water table	5/30/1990	*	8.5	<0.010	0.12	*	5.30	0.270	USGS D
FS1-17	Water table	7/18/1995	<0.005	9.24	<0.02	*	*	3.84	0.118	USGS R
FS1-17	Water table	7/19/1996	0.008	10.7	<0.01	0.04	*	4.51	0.117	USGS R
FS1-25	*23-25*	8/2/1983	0.39	13.3	*	*	*	*	*	IES

Table 31. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake Watershed, New Hampshire, for aluminium, silica (as SiO_2), bromide, fluoride, iodide, iron, and manganese.—Continued

[For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water.Date of sample collection is by month/day/year. A,B,C, sample zones; <, less than]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration in milligrams per liter							Laboratory[1]
			Aluminum	Silica, as SiO_2	Bromide	Fluoride	Iodide	Iron	Manganese	
FS1-25	*23-25*	6/29/1984	0.53	13.0	*	*	*	*	*	IES
FS1-25	*23-25*	7/20/1996	0.241	14.2	0.02	0.06	*	0.023	<0.004	USGS R
FS1-35	*33-35*	8/2/1983	0.09	17.9	*	*	*	*	*	IES
FS1-35	*33-35*	6/29/1984	0.05	18.3	*	*	*	*	*	IES
FS1-35	*33-35*	5/30/1990	*	21	<0.010	0.28	*	0.013	<0.001	USGS D
FS1-35	*33-35*	12/5/1990	*	19	*	*	*	*	*	USGS D
FS1-35	*33-35*	7/20/1996	0.225	6.5	<0.01	0.06	*	0.039	0.019	USGS R
FS1	A (55-105)	5/31/1990	*	25	<0.010	0.33	*	3.90	0.130	USGS D
FS1	C (217-450)	5/25/1990	*	54	0.080	0.30	*	1.50	0.071	USGS D
FS1	*121-136*	8/5/1991	*	*	0	0.82	*	2.50	*	USGS R
FS1	*309-324*	8/5/1991	*	*	0.3	0.34	*	2.30	*	USGS R
FS1	*348-363*	8/6/1991	*	*	0.021	0.55	*	3.30	*	USGS R
FS2	A (32-105)	5/22/1990	*	2.8	<0.010	0.89	*	0.010	0.140	USGS D
FS2	B (133-169)	8/7/1990	*	*	*	*	*	*	*	*
FS2	*134-149*	7/7/1992	*	28	<0.01	0.27	*	1.46	*	USGS R
FS2	C (236-251)	8/6/1990	*	64	0.010	0.40	*	4.80	0.110	USGS D
FS2	*236-251*	7/8/1992	*	58	<0.01	0.33	*	3.13	*	USGS R
FS2	*384-399*	7/8/1992	*	58	<0.01	0.31	*	4.40	*	USGS R
FS3-22	*20-22*	12/5/1990	*	10	<0.01	*	*	5.90	*	USGS D
FS3-22	*20-22*	5/24/1990	*	22	<0.010	0.12	*	5.30	0.320	USGS D
FS3	A (38-84)	5/23/1990	*	29	0.060	0.20	*	1.0	0.140	USGS D
FS3	A (60-75)	8/10/1990	*	33	0.080	0.03	*	1.20	0.140	USGS D

Table 31. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake Watershed, New Hampshire, for aluminium, silica (as SiO_2), bromide, fluoride, iodide, iron, and manganese.—Continued

[For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water.Date of sample collection is by month/day/year. A,B,C, sample zones; <, less than]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration in milligrams per liter							Laboratory[1]
			Aluminum	Silica, as SiO_2	Bromide	Fluoride	Iodide	Iron	Manganese	
FS3	*60-75.1*	7/11/1992	*	32	<0.01	0.32	*	1.20	*	USGS R
FS3	*60.0-72.4*	7/19/1993	*	29.9	<0.010	0.33	*	1.320	0.151	USGS R
FS3	C (197-645)	5/25/1990	*	48	0.010	0.30	*	0.260	0.020	USGS D
FS3	*294-309.1*	7/11/1992	*	32	<0.01	0.27	*	0.320	*	USGS R
FS3	*294.0-306.2*	7/20/1993	*	46.6	<0.010	0.33	*	0.301	0.025	USGS R
FS3	C (365-380)	8/9/1990	*	33	<0.010	0.30	*	3.60	0.170	USGS D
FS3	*365-380.1*	7/13/1992	*	45	<0.01	0.40	*	0.320	*	USGS R
FS3	*365.0-377.2*	7/20/1993	*	47.9	<0.010	0.45	*	0.333	0.030	USGS R
FS3	C (530-545)	8/9/1990	*	36	0.021	0.30	*	0.390	0.085	USGS D
FS3	*530-545.1*	7/13/1992	*	43	<0.01	0.40	*	0.290	*	USGS R
FS3C-19	*18-19*	7/14/1995	0.020	5.65	<0.02	*	*	0.085	0.023	USGS R
FS3C-19	*18-19*	7/18/1996	0.140	6.9	<0.01	0.06	*	0.012	0.014	USGS R
FS3C-24	*23-24*	7/19/1992	*	*	<0.01	*	*	*	*	USGS R
FS3C-24	*23-24*	7/15/1995	0.007	8.17	<0.02	*	*	0.027	0.019	USGS R
FS3C-24	*23-24*	7/18/1996	0.015	8.8	<0.01	0.04	*	<0.010	0.016	USGS R
FS3C-24	*23-24*	6/12/1997	0.016	7.47	<0.02	<0.05	*	0.010	0.012	USGS R
FS3C-29	*28-29*	7/18/1992	*	*	<0.01	*	*	*	*	USGS R
FS3C-29	*28-29*	7/17/1996	0.093	7.2	<0.01	0.08	*	0.046	0.037	USGS R
FS3C-29	*28-29*	6/11/1997	0.061	5.93	<0.02	0.01	*	0.010	0.028	USGS R
FS4WT	Water table	7/18/1997	0.564	9.26	<0.02	0.06	*	0.790	0.114	USGS R
FS5	(70.0-83.5)	6/9/1995	0.010	7.57	0.01	*	*	0.136	0.059	USGS R
FS5	(142.0-155.5)	6/9/1995	0.008	10.2	0.01	*	*	0.072	0.049	USGS R

Table 31. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake Watershed, New Hampshire, for aluminium, silica (as SiO_2), bromide, fluoride, iodide, iron, and manganese.—Continued

[For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water.Date of sample collection is by month/day/year. A,B,C, sample zones; <, less than]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration in milligrams per liter							Laboratory[1]
			Aluminum	Silica, as SiO_2	Bromide	Fluoride	Iodide	Iron	Manganese	
FS5	(200.4-218.0)	6/8/1995	0.010	9.95	0.01	*	*	0.113	0.053	USGS R
FS6	*44.0-53.5*	8/12/1995	0.020	19.5	0.02	*	*	3.04	0.211	USGS R
FS7	(53)	6/22/1996	0.316	7.19	<0.01	*	*	0.143	0.036	USGS R
FSE WT	Water table	7/3/1984	<0.01	6.4	*	*	*	*	*	IES
FSE 23	*21-23*	7/3/1984	<0.01	2.1	*	*	*	*	*	IES
FSE 23	*21-23*	10/23/1986	0.960	9.7	<0.010	0.1	0.002	0.010	0.003	USGS D
FSE 23	*21-23*	6/1/1990	*	11	<0.010	<0.10	*	0.026	<0.001	USGS D
FSE 32	*30-32*	7/3/1984	<0.01	10.3	*	*	*	*	*	IES
FSE 32	*30-32*	10/23/1986	0.650	11	<0.010	0.1	<0.001	0.012	0.004	USGS D
FSE-43	*41-43*	7/3/1984	1.12	21	*	*	*	*	*	IES
FSE 43	*41-43*	6/1/1990	*	14	*	0.40	*	0.012	0.001	USGS D
FSE2	A (55-105)	6/1/1990	*	36	0.25	0.30	*	28.0	0.650	USGS R
FSE4	*65-85*	10/23/1986	0.010	40	0.030	0.5	<0.001	15.0	0.420	USGS D
FSE4	*80-100*	10/26/1986	<0.010	36	0.036	0.5	0.003	11.0	0.410	USGS D
FSE4	*135-155*	10/23/1986	<0.010	46	0.046	0.5	0.004	29.0	0.550	USGS D
FSE4	*430-450*	10/29/1986	<0.010	47	0.058	0.5	0.002	8.1	0.160	USGS D
FSE4	*700*	10/22/1986	<0.010	58	0.14	0.5	<0.001	27.0	0.450	USGS D
FSE4	(436-443)	6/12/1991	*	24	*	0.87	*	*	*	USGS R
FSE4	(438.2-445)	5/18/1992	*	60	<0.01	0.13	*	5.300	*	USGS R
FSE6 WT	Water table	5/20/1992	*	7.5	<0.01	0.10	*	*	*	USGS R
H1	(107-122)	8/13/1991	*	*	0.007	0.07	*	0.200	*	USGS R
H1	(178-193)	8/13/1991	*	*	0.084	0.15	*	0.010	*	USGS R

Table 31. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake Watershed, New Hampshire, for aluminium, silica (as SiO_2), bromide, fluoride, iodide, iron, and manganese.—Continued

[For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water.Date of sample collection is by month/day/year. A,B,C, sample zones; <, less than]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration in milligrams per liter							Laboratory[1]
			Aluminum	Silica, as SiO_2	Bromide	Fluoride	Iodide	Iron	Manganese	
IS1	(56-58.8)	6/3/1992	*	21	<0.01	0.37	*	7.10	*	USGS R
IS1	(364-370.8)	6/4/1992	*	21	<0.01	0.54	*	3.00	*	USGS R
IS1	(400-406.8)	6/4/1992	*	21	<0.01	0.52	*	2.20	*	USGS R
IS1	(466.5-473.3)	6/4/1992	*	24	<0.01	1.96	*	0.180	*	USGS R
K21	Water table	7/28/1983	*0.04*	*6.7*	*	*	*	*	*	IES
K21	Water table	8/5/1983	0.00	6.5	*	*	*	*	*	IES
K21	Water table	6/28/1984	0.05	6.2	*	*	*	*	*	IES
K31	*29-31*	7/28/1983	*0.04*	*8.8*	*	*	*	*	*	IES
K31	*29-31*	8/5/1983	0.04	8.6	*	*	*	*	*	IES
K31	*29-31*	6/28/1984	<0.01	9.3	*	*	*	*	*	IES
K41	*39-41*	7/28/1983	*0.03*	*19.0*	*	*	*	*	*	IES
K41	*39-41*	8/5/1983	0.03	19.5	*	*	*	*	*	IES
K41	*39-41*	6/28/1984	<0.01	19.7	*	*	*	*	*	IES
K1-8	Water table	8/5/1983	0.01	2.5	*	*	*	*	*	IES
K1-8	Water table	6/26/1984	<0.01	3.5	*	*	*	*	*	IES
K1-8	Water table	5/21/1990	*	4.3	0.13	0.10	*	0.005	0.007	USGS D
K1-8	Water table	11/30/1990	*	2.0	0.11	*	*	0.005	*	USGS D
K1-15	*13-15*	8/5/1983	0.02	2.9	*	*	*	*	*	IES
K1-15	*13-15*	6/26/1984	0.07	4.0	*	*	*	*	*	IES
K1-20	*18-20*	8/5/1983	0.10	4.0	*	*	*	*	*	IES
K1-20	*18-20*	6/26/1984	<0.01	3.2	*	*	*	*	*	IES
K1-25	*23-25*	8/5/1983	0.01	3.0	*	*	*	*	*	IES

Table 31. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake Watershed, New Hampshire, for aluminium, silica (as SiO_2), bromide, fluoride, iodide, iron, and manganese.—Continued

[For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water.Date of sample collection is by month/day/year. A,B,C, sample zones; <, less than]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration in milligrams per liter							Laboratory[1]
			Aluminum	Silica, as SiO_2	Bromide	Fluoride	Iodide	Iron	Manganese	
K1-25	*23-25*	6/26/1984	<0.01	2.6	*	*	*	*	*	IES
K1-30	*28-30*	8/5/1983	0.02	3.4	*	*	*	*	*	IES
K1-30	*28-30*	6/26/1984	<0.01	3.4	*	*	*	*	*	IES
K1-35	*33-35*	8/5/1983	0.05	13.4	*	*	*	*	*	IES
K1-35	*33-35*	6/26/1984	*	13.1	*	*	*	*	*	IES
K1-39	*37-39*	8/5/1983	0.31	6.7	*	*	*	*	*	IES
K1-39	*37-39*	6/26/1984	<0.01	11.3	*	*	*	*	*	IES
K1-39	*37-39*	5/22/1990	*	13	*	0.30	*	0.005	0.009	USGS D
K1	borehole	9/7/1983	0.02	12.5	*	*	*	*	*	IES
K1	borehole	9/7/1983	*	12.0	*	1.0	*	0.017	0.031	USGS D
K1	borehole	5/17/1990	*	<0.02	<0.010	1.1	*	<0.003	<0.001	USGS D
K2-21	Water table	5/17/1990	*	6.5	<0.010	<0.10	*	0.012	0.008	USGS D
K2-41	*39-41*	5/17/1990	*	19	0.060	<0.10	*	4.0	0.310	USGS D
K2-41	*39-41*	11/29/1990	*	19	*	*	*	3.3	*	USGS D
K2	(55-160)	5/17/1990	*	7.8	<0.010	1.3	*	0.420	0.027	USGS D
		08:25	*	12	<0.010	1.21	*	0	*	USGS D
		09:00	*	16	<0.010	1.31	*	0	*	USGS D
		14:50	*	4.9	<0.010	1.31	*	0.01	*	USGS D
K3-22	Water table	7/27/1983	*0.02*	*4.4*	*	*	*	*	*	IES
K3-22	Water table	8/5/1983	0.01	4.3	*	*	*	*	*	IES
K3-22	Water table	7/2/1984	<0.01	4.3	*	*	*	*	*	IES
K3-22	Water table	5/16/1990	*	4.5	0.23	0.06	*	0.075	0.010	USGS D

Table 31. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake Watershed, New Hampshire, for aluminium, silica (as SiO_2), bromide, fluoride, iodide, iron, and manganese.—Continued

[For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water.Date of sample collection is by month/day/year. A,B,C, sample zones; <, less than]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration in milligrams per liter							Laboratory[1]
			Aluminum	Silica, as SiO_2	Bromide	Fluoride	Iodide	Iron	Manganese	
K3-41	*39-41*	7/27/1983	*0.03*	*3.7*	*	*	*	*	*	IES
K3-41	*39-41*	8/5/1983	0.01	3.6	*	*	*	*	*	IES
K3-41	*39-41*	7/2/1984	<0.01	3.5	*	*	*	*	*	IES
K3-61	*59-61*	7/27/1983	*0.02*	*16.5*	*	*	*	*	*	IES
K3-61	*59-61*	8/5/1983	0.02	16.0	*	*	*	*	*	IES
K3-61	*59-61*	7/2/1984	<0.01	16.1	*	*	*	*	*	IES
K3-61	*59-61*	5/16/1990	*	19	<0.010	0.14	*	11.0	0.150	USGS D
K3	(75-175)	5/16/1990	*	19	0.020	2.2	*	0.390	0.018	USGS D
R1-36	Water table	11/30/1990	*	17	<0.01	*	*	0.005	*	USGS D
R1-36	Water table	7/10/1995	0.020	4.09	<0.02	*	*	0.01	<0.005	USGS R
R1	(57.4-80)	9/16/1990	*	14	*	*	*	0.330	*	USGS D
R1	*65-80.1*	7/14/1992	*	18	<0.01	0.50	*	0.460	*	USGS R
R1	(102-125)	9/15/1990	*	15	*	*	*	0.030	*	USGS D
R1	*110-125.1*	7/14/1992	*	18	<0.01	0.56	*	0.240	*	USGS R
R1	(148-171)	9/16/1990	*	16	*	*	*	0.060	*	USGS D
R1	*147-162.1*	7/15/1992	*	20	<0.01	0.84	*	0.100	*	USGS R
R1	*480-495.1*	7/15/1992	*	19	<0.01	1.96	*	0.150	*	USGS R
RR1 PZ	Water table	8/21/1995	0.071	13.0	<0.02	*	*	1.46	1.47	USGS R
RR1	(582.5-596.0)	8/18/1995	0.085	47.7	0.05	*	*	2.60	0.109	USGS R
S-40	Water table	5/22/1990	*	11	<0.010	0.08	*	0.460	0.110	USGS D
S-40	Water table	7/25/1997	0.262	8.43	<0.02	0.05	*	0.352	0.062	USGS R
T1	(57-72)	8/15/1991	*	*	0	*	*	2.30	*	USGS R

Table 31. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake Watershed, New Hampshire, for aluminium, silica (as SiO_2), bromide, fluoride, iodide, iron, and manganese.—Continued

[For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water.Date of sample collection is by month/day/year. A,B,C, sample zones; <, less than]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration in milligrams per liter							Laboratory[1]
			Aluminum	Silica, as SiO_2	Bromide	Fluoride	Iodide	Iron	Manganese	
T1	(155-172)	8/15/1991	*	*	0	0.15	*	1.80	*	USGS R
T1	(220-237)	8/15/1991	*	*	0.026	0.56	*	1.70	*	USGS R
TR1-63	Water table	7/2/1984	<0.01	19.0	*	*	*	*	*	IES
TR1-63	Water table	5/15/1990	*	20	<0.010	0.07	*	0.025	0.005	USGS D
TR1-63	Water table	11/30/1990	*	20	<0.010	*	*	0.005	*	USGS D
TR1-63	Water table	9/26/1991	*	*	0.0217	0	*	0	*	USGS R
TR1-63	Water table	7/8/1995	0.010	17.4	<0.02	*	*	0.017	0.012	USGS R
TR1-63	Water table	6/25/1997	0.008	18.0	<0.02	0.06	*	0.009	0.005	USGS R
TR1-132	*130-132*	7/3/1984	0.52	28.0	*	*	*	*	*	IES
TR1	A (177-199)	5/15/1990	*	9.5	<0.010	0.60	*	0.130	0.087	USGS D
TR1	(171-190)	9/22/1990	*	21	*	*	*	0.180	*	USGS D
TR1	*170-190*	6/29/1992	*	16	<0.01	0.75	*	0.210	*	USGS R
TR1	B (200-299)	5/17/1990	*	15	<0.010	0.80	*	0.120	0.056	USGS D
TR1	(271-300)	9/23/1990	*	13	*	*	*	0.130	*	USGS D
TR1	*271-299.8*	6/30/1992	*	14	<0.01	1.08	*	0.250	*	USGS R
TR1	(299-328)	9/23/1990	*	23	*	*	*	0.100	*	USGS D
TR1	*298.6-327.4*	7/1/1992	*	14	<0.01	1.08	*	0.160	*	USGS R
TR1	*390-397.8*	7/1/1992	*	16	<0.01	1.57	*	0	*	USGS R
TR1	*482-489.8*	7/7/1992	*	15	<0.01	1.17	*	0.180	*	USGS R
TR2	(151-170.1)	6/22/1992	*	21	<0.01	1.17	*	0.190	*	USGS R
TR2	(270-289.1)	6/22/1992	*	26	<0.01	1.08	*	0.350	*	USGS R
TR2	(426-445.1)	6/23/1992	*	23	<0.01	2.19	*	0	*	USGS R

Table 31. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake Watershed, New Hampshire, for aluminium, silica (as SiO_2), bromide, fluoride, iodide, iron, and manganese.—Continued

[For all characteristics, *italics indicates analyses of unfiltered water*. Plain text indicates analyses of filtered water.Date of sample collection is by month/day/year. A,B,C, sample zones; <, less than]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration in milligrams per liter							Laboratory[1]
			Aluminum	Silica, as SiO_2	Bromide	Fluoride	Iodide	Iron	Manganese	
TR2	(151.0-170.3)	7/21/1993	*	19.9	<0.010	1.54	*	0.113	0.022	USGS R
TR2	(270.0-289.3)	7/21/1993	*	25.5	<0.010	1.32	*	0.256	0.012	USGS R
TR2	(426.0-445.3)	7/22/1993	*	22.0	<0.010	2.63	*	0.144	0.013	USGS R
Seep S3	Water surface	8/7/1997	0.192	4.32	<0.02	0.05	*	2.02	0.054	USGS R
Leeman's Spring	Water surface	8/6/1997	0.050	8.58	<0.02	0.05	*	<0.007	0.004	USGS R
Pleasant view well	Unknown	5/22/1991	*	*	0.17	1.98	*	0.810	*	USGS R

[1] Laboratories - Institute for Ecosystems Studies (IES); U.S. Geological Survey National Water Quality Laboratory, Denver, Colorado (USGS D); U.S. Geological Survey Research Laboratory, Reston, Virginia (USGS R).

[2] *, Indicates analysis for this characteristic was not done for water collected from this well on the given date.

Table 32. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for barium, beryllium, boron, cadmium, chromium, cobalt, copper, and lead.

[Date of sample collection is by month/day/year. <, less than; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration in micrograms per liter							
			Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Lead
W2	Water table	6/7/1997	4	*[1]	<5	*	<1	0.6	4	0.2
W3	Water table	5/30/1990	<2	<0.5	<10	<1.0	<5	<3	<10	<10
W3	Water table	7/14/1997	1	*	<5	*	<1	0.1	124	0.4
W3 A	Water table	6/10/1997	3	*	<5	*	<1	0.2	7	0.8
W6	Water table	7/26/1997	4	*	<5	*	*	*	3	*
W11	Water table	7/25/1997	4	*	<5	*	<1	0.1	24	0.4
W15	Water table	7/28/1997	6	*	<5	*	<1	3.4	3	0.1
W16	Water table	8/28/1996	6	*	<5	*	*	*	2	*
W16	Water table	7/13/1997	7	*	<5	*	<1	0.2	2	0.4
W16A	Water table	8/27/1996	3	*	<5	*	*	*	6	*
W16A	Water table	7/12/1997	2	*	<5	*	<1	0.3	3	0.2
W18	Water table	6/26/1997	2	*	<5	*	<1	3.8	7	0.2
W25	Water table	7/13/1997	4	*	<5	*	<1	0.1	19	0.2
W26	Water table	5/23/1990	4	<0.5	<10	3.0	<5	<3	<10	<10
W26	Water table	6/8/1997	4	*	<5	*	<1	0.4	4	0.2
W27	Water table	6/19/1997	4	*	<5	*	<1	1.7	2	0.1
W33	Water table	8/22/1996	3	*	<5	*	*	*	7	*
W34	Water table	8/22/1996	2	*	<5	*	*	*	16	*
W34	Water table	6/10/1997	1	*	<5	*	<1	1.1	4	0.8
W35	Water table	8/28/1996	4	*	<5	*	*	*	5	*
W36	Water table	8/26/1996	4	*	<5	*	*	*	5	*
W36	Water table	6/17/1997	3	*	<5	*	<1	2.7	4	0.2

Table 32. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for barium, beryllium, boron, cadmium, chromium, cobalt, copper, and lead.—Continued

[Date of sample collection is by month/day/year. <, less than; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration in micrograms per liter							
			Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Lead
CO WT	Water table	5/9/1990	6	<0.5	10	<1.0	<5	<3	<10	<10
CO1	B (101-209)	5/10/1990	10	<0.5	<10	<1.0	<5	<3	<10	<10
CO1	B (104-116)	6/21/1990	10	<0.5	<10	<1.0	<5	<3	<10	<10
CO2	A (25-104)	5/9/1990	9	<0.5	<10	2.0	<5	6	<10	<10
CO2	B (163-171)	6/29/1990	9	<0.5	<10	<1.0	<5	<3	<10	<10
FS1-17	Water table	5/30/1990	3	<0.5	<10	2.0	<5	<3	<10	<10
FS1-17	Water table	7/19/1996	5	*	<5	*	*	*	16	*
FS1-25	*23-25*	7/20/1996	9	*	<5	*	*	*	11	*
FS1-35	*33-35*	5/30/1990	2	<0.5	<10	<1.0	<5	<3	<10	<10
FS1-35	*33-35*	7/20/1996	11	*	<5	*	*	*	121	*
FS1	A (55-105)	5/31/1990	4	<0.5	<10	<1.0	<5	<3	<10	<10
FS1	C (217-450)	5/25/1990	7	<0.6	<10	<2.0	<5	<3	<10	<10
FS2	A (32-105)	5/22/1990	3	<0.5	<10	2.0	<5	<3	<10	<10
FS2	B (133-169)	8/7/1990	*	*	*	*	*	*	*	*
FS2	C (236-251)	8/6/1990	35	<0.5	<10	<1.0	<5	<3	<10	<10
FS3-22	*20-22*	5/24/1990	2	<0.5	<10	5.0	<5	30	<10	<10
FS3	A (38-84)	5/23/1990	24	<0.5	<10	<1.0	<5	<3	<10	10
FS3	A (60-75)	8/10/1990	25	<0.5	<10	<1.0	<5	<3	<10	<10
FS3	C (197-645)	5/25/1990	7	<0.5	<10	1.0	<5	<3	<10	<10
FS3	C (365-380)	8/9/1990	<100	<10	<10	<1.0	<1	<1	<1	<1
FS3	C (530 -545)	8/9/1990	10	<0.5	<10	<1.0	<5	<3	<10	<10
FS3C-19	*18-19*	7/18/1996	6	*	<5	*	*	*	277	*

Table 32. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for barium, beryllium, boron, cadmium, chromium, cobalt, copper, and lead.—Continued

[Date of sample collection is by month/day/year. <, less than; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration in micrograms per liter							
			Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Lead
FS3C-24	*23-24*	7/18/1996	3	*	<5	*	*	*	303	*
FS3C-24	*23-24*	6/12/1997	2	*	<5	*	<1	0.8	39	3.9
FS3C-29	*28-29*	7/17/1996	4	*	<5	*	*	*	841	*
FS3C-29	*28-29*	6/11/1997	3	*	<5	*	<1	1.8	17	1.7
FS4 WT	Water table	7/8/1997	16	*	<5	*	<1	14.9	18	1.1
FSE-23	*21-23*	6/1/1990	54	<0.5	<10	<1.0	<5	<3	<10	<10
FSE-43	*41-43*	6/1/1990	200	0.5	<10	<1.0	<5	<3	<10	<10
FSE2	A (55-105)	6/1/1990	18	1	20	9.0	<5	<3	<10	<10
K1-8	Water table	5/21/1990	14	<0.5	<10	<1.0	<5	<3	<10	<10
K1-39	*37-39*	5/22/1990	52	<0.5	<10	<1.0	<5	<3	<10	<10
K1	borehole	5/17/1990	<2	<0.5	<10	1.0	<5	<3	<10	<10
K2-21	Water table	5/17/1990	87	<0.5	<30	<1.0	<5	<3	<10	<10
K2-41	*39-41*	5/17/1990	10	<0.5	10	<1.0	<5	<3	<10	<10
K2	(55-160)	5/17/1990	7	<0.5	<10	<1.0	<5	<3	<10	<10
K3-22	Water table	5/16/1990	11	<0.5	<10	<1.0	<5	<3	<10	<10
K3-61	*59-61*	5/16/1990	8	<0.5	<10	<1.0	<5	5	<10	<10
K3	(75-175)	5/16/1990	8	<0.5	30	<1.0	<5	<3	<10	<10
S-40	Water table	5/22/1990	4	<0.5	<10	2.0	<5	<3	<10	<10
S-40	Water table	7/25/1997	6	*	<5	*	<1	2.2	10	0.7
TR1-63	Water table	5/15/1990	<2	0.9	<10	1.0	<5	<3	<10	<10
TR1-63	Water table	6/25/1997	2	*	<5	*	<1	0.1	173	0.1
TR1	A (177-199)	5/15/1990	10	<0.5	<10	<1.0	<5	<3	<10	<10

Table 32. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for barium, beryllium, boron, cadmium, chromium, cobalt, copper, and lead.—Continued

[Date of sample collection is by month/day/year. <, less than; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration in micrograms per liter							
			Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Lead
TR1	B (200-299)	5/17/1990	15	<0.5	<10	<1.0	<5	<3	<10	<10
Seep S3	Water surface	8/7/1997	7	*	<5	*	<1	4.8	4	1.5
Leeman's Spring	Water surface	8/6/1997	4	*	<5	*	<1	0.1	4	0.2

[1] *, Indicates analysis for this characteristic was not done for water collected from this well on the given date.

Table 33. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for lithium, molybdenum, nickel, silver, strontium, vanadium, zinc, and silicon.

[Date of sample collection is by month/day/year. <, less than; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration in micrograms per liter							
			Lithium	Molybdenum	Nickel	Silver	Strontium	Vanadium	Zinc	Slilcon
W2	Water table	6/20/1995	*[1]	*	*	*	31	*	*	*
W2	Water table	6/7/1997	8	*	<1	*	27	<0.1	46	9,200
W3	Water table	5/30/1990	8	<10	<10	1.0	27	<6	8	*
W3	Water table	6/23/1995	*	*	*	*	25	*	*	*
W3	Water table	7/14/1997	8	*	2	*	27	<0.1	9	8,700
W3 A	Water table	6/23/1995	*	*	*	*	14	*	*	*
W3 A	Water table	6/10/1997	1	*	<1	*	13	<0.1	28	3,410
W6	Water table	7/7/1987	16	<1	*	*	*	*	*	*
W6	Water table	7/26/1997	24	*	2	*	17	<0.1	366	8,850
W7	Water table	7/8/1987	<4	<1	*	*	*	*	*	*
W9	Water table	7/8/1987	<4	<1	*	*	*	*	*	*
W10	Water table	7/8/1987	<4	<1	*	*	*	*	*	*
W11	Water table	7/7/1987	<4	<1	*	*	*	*	*	*
W11	Water table	7/25/1997	<1	*	<1	*	19	<0.1	57	4,230
W15	Water table	7/28/1997	2	*	19	*	14	<0.1	1,700	2,490
W16	Water table	8/29/1996	29	*	*	*	131	*	159	11,400
W16	Water table	7/13/1997	27	*	<1	*	134	<0.1	189	11,900
W16A	Water table	8/27/1996	13	*	*	*	39	*	28	7,700
W16A	Water table	7/12/1997	9	*	2	*	31	<0.1	10	6,000
W18	Water table	7/12/1995	*	*	*	*	15	*	*	*
W18	Water table	6/26/1997	<1	*	2	*	17	<0.1	176	2,680

Table 33. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for lithium, molybdenum, nickel, silver, strontium, vanadium, zinc, and silicon.—Continued

[Date of sample collection is by month/day/year. <, less than; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration in micrograms per liter							
			Lithium	Molybdenum	Nickel	Silver	Strontium	Vanadium	Zinc	Silicon
W25	Water table	6/21/1995	*	*	*	*	36	*	*	*
W25	Water table	7/13/1997	24	*	<1	*	34	<0.1	10	8,660
W26	Water table	5/23/1990	13	<10	<10	<1.0	34	<6	22	*
W26	Water table	6/21/1995	*	*	*	*	32	*	*	*
W26	Water table	8/16/1995	*	*	*	*	32	*	*	*
W26	Water table	6/8/1997	12	*	<1	*	30	<0.1	41	9,500
W27	Water table	7/16/1995	*	*	*	*	33	*	*	*
W27	Water table	6/19/1997	4	*	24	*	27	<0.1	8	5,900
W33	Water table	8/22/1996	10	*	*	*	25	*	23	9,800
W34	Water table	8/22/1996	9	*	*	*	21	*	32	7,340
W34	Water table	6/10/1997	6	*	2	*	16	<0.1	46	6,520
W35	Water table	8/28/1996	3	*	*	*	28	*	27	7,200
W36	Water table	8/26/1996	2	*	*	*	27	*	16	5,030
W36	Water table	6/17/1997	2	*	3	*	17	<0.1	11	3,990
CO WT	Water table	7/21/1988	<4	1	*	*	*	*	*	*
CO WT	Water table	5/9/1990	<4	<10	<10	<1.0	16	<6	<3	*
CO1-18	*16-18*	12/3/1990	*	*	*	*	200	*	*	*
CO1	B (101-209)	5/10/1990	31	<10	<10	<1.0	310	<6	170	*
CO1	B (104-116)	6/21/1990	34	<10	<10	<1.0	310	<6	330	*
CO1	*104-114*	6/16/1992	*	*	*	*	400	*	*	*
CO1	(90-119)	6/20/1996	*	*	*	*	307	*	*	7,620

Table 33. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for lithium, molybdenum, nickel, silver, strontium, vanadium, zinc, and silicon.—Continued

[Date of sample collection is by month/day/year. <, less than; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration in micrograms per liter							
			Lithium	Molybdenum	Nickel	Silver	Strontium	Vanadium	Zinc	Slilcon
CO1	(90-119)	6/23/1996	*	*	*	*	315	*	*	7,770
CO1	C (409-421)	6/22/1990	30	<10	<10	<1.0	340	<6	130	*
CO1	*420-430*	6/16/1992	*	*	*	*	360	*	*	*
CO2	A (25-104)	5/9/1990	20	<10	<10	<1.0	220	<6	3,100	*
CO2	B (163-171)	6/29/1990	30	<10	<10	<1.0	430	<6	110	*
CO3	(26-40)	8/17/1991	*	*	*	*	350	*	*	*
CO3	(87-102)	8/17/1991	*	*	*	*	370	*	*	*
CO3	(140-155)	8/17/1991	*	*	*	*	420	*	*	*
CO4	(92-98.8)	6/11/1992	*	*	*	*	180	*	*	*
CO10	(130.0-143.5)	8/15/1995	*	*	*	*	658	*	*	*
CO10	(228.0-241.5)	8/15/1995	*	*	*	*	392	*	*	*
CO11	(95.0-108.5)	8/16/1995	*	*	*	*	494	*	*	*
CO11	(242.0-255.5)	8/17/1995	*	*	*	*	516	*	*	*
CO11	(342.6-356.1)	8/17/1995	*	*	*	*	474	*	*	*
FS1-17	Water table	5/30/1990	16	<10	<10	2.0	41	<6	250	*
FS1-17	Water table	7/18/1995	*	*	*	*	34	*	*	*
FS1-17	Water table	7/19/1996	14	*	*	*	34	*	275	5,010
FS1-25	*23-25*	7/20/1996	16	*	*	*	69	*	5	6,640
FS1-35	*33-35*	5/30/1990	19	<10	<10	1.0	37	<6	<3	*
FS1-35	*33-35*	12/5/1990	*	*	*	*	30	*	*	*
FS1-35	*33-35*	7/20/1996	2	*	*	*	11	*	18	3,020

Table 33. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for lithium, molybdenum, nickel, silver, strontium, vanadium, zinc, and silicon.—Continued

[Date of sample collection is by month/day/year. <, less than; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration in micrograms per liter							
			Lithium	Molybdenum	Nickel	Silver	Strontium	Vanadium	Zinc	Silicon
FS1	A (55-105)	5/31/1990	14	<10	<10	1.0	48	<6	4,000	*
FS1	C (217-450)	5/25/1990	25	<10	<10	<1.0	230	<6	650	*
FS1	*121-136*	8/5/1991	*	*	*	*	70	*	*	*
FS1	*309-324*	8/5/1991	*	*	*	*	300	*	*	*
FS1	*348-363*	8/6/1991	*	*	*	*	400	*	*	*
FS2	A (32-105)	5/22/1990	25	<10	<10	<1.0	46	<6	740	*
FS2	*134-149*	7/7/1992	*	*	*	*	200	*	*	*
FS2	C (236-251)	8/6/1990	53	<10	<10	<1.0	760	<6	3,800	*
FS2	*236-251*	7/8/1992	*	*	*	*	690	*	*	*
FS2	*384-399*	7/8/1992	*	*	*	*	910	*	*	*
FS3-22	*20-22*	12/5/1990	*	*	*	*	100	*	*	*
FS3-22	*20-22*	5/24/1990	8	<10	<10	1.0	30	<6	34	*
FS3	A (38-84)	5/23/1990	24	<10	10	1.0	93	<6	2,100	*
FS3	A (60-75)	8/10/1990	19	<10	<10	<1.0	97	<6	110	*
FS3	*60-75.1*	7/11/1992	*	*	*	*	90	*	*	*
FS3	*60.0-72.4*	7/19/1993	*	*	*	*	88	*	*	*
FS3	C (197-645)	5/25/1990	20	<10	<10	<1.0	280	<6	100	*
FS3	*294-309.1*	7/11/1992	*	*	*	*	230	*	*	*
FS3	*294.0-306.2*	7/20/1993	*	*	*	*	263	*	*	*
FS3	C (365-380)	8/9/1990	30	<1	<1	<1.0	230	<1	3,000	*
FS3	*365-380.1*	7/13/1992	*	*	*	*	240	*	*	*

Table 33. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for lithium, molybdenum, nickel, silver, strontium, vanadium, zinc, and silicon.—Continued

[Date of sample collection is by month/day/year. <, less than; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration in micrograms per liter							
			Lithium	Molybdenum	Nickel	Silver	Strontium	Vanadium	Zinc	Slilcon
FS3	*365.0-377.2*	7/20/1993	*	*	*	*	0.256	*	*	*
FS3	C (530-545)	8/9/1990	20	<10	<10	<1.0	150	<6	160	*
FS3	*530-545.1*	7/13/1992	*	*	*	*	230	*	*	*
FS3C-19	*18-19*	7/14/1995	*	*	*	*	15	*	*	*
FS3C-19	*18-19*	7/18/1996	2	*	*	*	14	*	95	3,240
FS3C-24	*23-24*	7/19/1992	*	*	*	*	20	*	*	*
FS3C-24	*23-24*	7/15/1995	*	*	*	*	15	*	*	*
FS3C-24	*23-24*	7/18/1996	2	*	*	*	15	*	178	4,120
FS3C-24	*23-24*	6/12/1997	2	*	2	*	13	<0.1	67	3,490
FS3C-29	*28-29*	7/18/1992	*	*	*	*	20	*	*	*
FS3C-29	*28-29*	7/17/1996	4	*	*	*	13	*	140	3,380
FS3C-29	*28-29*	6/11/1997	3	*	4	*	12	<0.1	44	2,770
FS4WT	Water table	7/18/1997	4	*	16	*	25	<0.1	40	4,330
FS5	(70.0-83.5)	6/9/1995	*	*	*	*	155	*	*	*
FS5	(142.0-155.5)	6/9/1995	*	*	*	*	147	*	*	*
FS5	(200.4-218.0)	6/8/1995	*	*	*	*	154	*	*	*
FS6	*44.0-53.5*	8/12/1995	*	*	*	*	338	*	*	*
FS7	(53)	6/22/1996	*	*	*	*	15	*	*	3,360
FSE-23	*21-23*	10/23/1986	26	<1	*	*	*	*	*	*
FSE-23	*21-23*	6/1/1990	14	<10	<10	1.0	390	<6	<3	*
FSE-32	*30-32*	10/23/1986	43	2	*	*	*	*	*	*

Table 33. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for lithium, molybdenum, nickel, silver, strontium, vanadium, zinc, and silicon.—Continued

[Date of sample collection is by month/day/year. <, less than; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration in micrograms per liter							
			Lithium	Molybdenum	Nickel	Silver	Strontium	Vanadium	Zinc	Slilcon
FSE-43	*41-43*	6/1/1990	70	<10	10	1.0	860	<6	<3	*
FSE2	A (55-105)	6/1/1990	54	<10	<10	2.0	180	<9	13,000	*
FSE4	*65-85*	10/23/1986	68	<1	*	*	*	*	*	*
FSE4	*80-100*	10/26/1986	60	<1	*	*	*	*	*	*
FSE4	*135-155*	10/23/1986	66	1	*	*	*	*	*	*
FSE4	*430-450*	10/29/1986	200	1	*	*	*	*	*	*
FSE4	*700*	10.22/1986	250	3	*	*	*	*	*	*
FSE4	(436-443)	6/12/1991	*	*	*	*	1,780	*	*	*
FSE4	(438.2-445)	5/18/1992	*	*	*	*	1,500	*	*	*
FSE6 WT	Water table	5/20/1992	*	*	*	*	580	*	*	*
H1	(107-122)	8/13/1991	*	*	*	*	250	*	*	*
H1	(178-193)	8/13/1991	*	*	*	*	300	*	*	*
IS1	(56-58.8)	6/3/1992	*	*	*	*	230	*	*	*
IS1	(364-370.8)	6/4/1992	*	*	*	*	740	*	*	*
IS1	(400-406.8)	6/4/1992	*	*	*	*	610	*	*	*
IS1	(466.5-473.3)	6/4/1992	*	*	*	*	650	*	*	*
K1-8	Water table	5/21/1990	5	<10	<10	<1.0	23	<6	9	*
K1-8	Water table	11/30/1990	*	*	*	*	20	*	*	*
K1-39	*37-39*	5/22/1990	33	<10	<10	<1.0	340	<6	<3	*
K1	Borehole	5/17/1990	13	<10	<10	<1.0	<1	<6	<3	*
K2-21	Water table	5/17/1990	<4	<10	<10	<1.0	95	<6	<12	*

Table 33. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for lithium, molybdenum, nickel, silver, strontium, vanadium, zinc, and silicon.—Continued

[Date of sample collection is by month/day/year. <, less than; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration in micrograms per liter							
			Lithium	Molybdenum	Nickel	Silver	Strontium	Vanadium	Zinc	Slilcon
K2-41	*39-41*	5/17/1990	9	<10	<10	<1.0	120	<6	61	*
K2-41	*39-41*	11/29/1990	*	*	*	*	90	*	*	*
K2	(55-160)	5/17/1990	37	<10	<10	<1.0	380	<6	<3	*
		08:25	*	*	*	*	260	*	*	*
		09:00	*	*	*	*	270	*	*	*
		14:25	*	*	*	*	360	*	*	*
K3-22	Water table	5/16/1990	4	<10	<10	1.0	30	<6	69	*
K3-61	*59-61*	5/16/1990	12	<10	<10	<1.0	63	<6	21	*
K3-61	*59-61*	11/30/1990	*	*	*	*	60	*	*	*
K3	(75-175)	5/16/1990	47	<10	<10	2.0	480	<6	5	*
R1-36	Water table	11/30/1990	*	*	*	*	20	*	*	*
R1-36	Water table	7/10/1995	*	*	*	*	16	*	*	*
R1	(57.4-80)	9/16/1990	*	*	*	*	210	*	*	*
R1	*65-80.1*	7/14/1992	*	*	*	*	170	*	*	*
R1	(102-125)	9/15/1990	*	*	*	*	300	*	*	*
R1	*110-125.1*	7/14/1992	*	*	*	*	270	*	*	*
R1	(148-171)	9/16/1990	*	*	*	*	400	*	*	*
R1	*147-162.1*	7/15/1992	*	*	*	*	370	*	*	*
R1	*480-495.1*	7/15/1992	*	*	*	*	400	*	*	*
RR1 PZ	Water table	8/21/1995	*	*	*	*	420	*	*	*
RR1	(582.5-596.0)	8/18/1995	*	*	*	*	2,410	*	*	*
S-40	Water table	5/22/1990	4	<10	<10	<1.0	21	<6	10	*

Table 33. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for lithium, molybdenum, nickel, silver, strontium, vanadium, zinc, and silicon.—Continued

[Date of sample collection is by month/day/year. <, less than; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration in micrograms per liter							
			Lithium	Molybdenum	Nickel	Silver	Strontium	Vanadium	Zinc	Silicon
S-40	Water table	7/25/1997	2	*	1	*	7	<0.1	21	3,940
T1	(57-72)	8/15/1991	*	*	*	*	80	*	*	*
T1	(155-172)	8/15/1991	*	*	*	*	320	*	*	*
T1	(220-237)	8/15/1991	*	*	*	*	980	*	*	*
TR1-63	Water table	5/15/1990	10	<10	<10	<1.0	32	<6	8	*
TR1-63	Water table	11/30/1990	*	*	*	*	30	*	*	*
TR1-63	Water table	9/26/1991	*	*	*	*	20	*	*	*
TR1-63	Water table	7/8/1995	*	*	*	*	26	*	*	*
TR1-63	Water table	6/25/1997	8	*	3	*	23	<0.1	21	8,430
TR1	A (177-199)	5/15/1990	25	<10	<10	<1.0	230	<6	210	*
TR1	(171-190)	9/22/1990	*	*	*	*	200	*	*	*
TR1	*170-190*	6/29/1992	*	*	*	*	180	*	*	*
TR1	B (200-299)	5/17/1990	21	<10	<10	3.0	430	<6	530	*
TR1	(271-300)	9/23/1990	*	*	*	*	430	*	*	*
TR1	*271-299.8*	6/30/1992	*	*	*	*	370	*	*	*
TR1	(299-328)	9/23/1990	*	*	*	*	500	*	*	*
TR1	*298.6-327.4*	7/1/1992	*	*	*	*	440	*	*	*
TR1	*390-397.8*	7/1/1992	*	*	*	*	450	*	*	*
TR1	*482-489.8*	7/7/1992	*	*	*	*	490	*	*	*
TR2	(151-170.1)	6/22/1992	*	*	*	*	430	*	*	*
TR2	(270-289.1)	6/22/1992	*	*	*	*	650	*	*	*
TR2	(426-445.1)	6/23/1992	*	*	*	*	520	*	*	*

Table 33. Chemical characteristics of water collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for lithium, molybdenum, nickel, silver, strontium, vanadium, zinc, and silicon.—Continued

[Date of sample collection is by month/day/year. <, less than; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration in micrograms per liter							
			Lithium	Molybdenum	Nickel	Silver	Strontium	Vanadium	Zinc	Slilcon
TR2	(151.0-170.3)	7/21/1993	*	*	*	*	453	*	*	*
TR2	(270.0-289.3)	7/21/1993	*	*	*	*	694	*	*	*
TR2	(426.0-445.3)	7/22/1993	*	*	*	*	519	*	*	*
Seep S3	Water surface	8/7/1997	1	*	79	*	7	<0.1	58	2,020
Leeman's Spring	Water surface	8/6/1997	2	*	<1	*	20	<0.1	23	4,010
Pleasant view well	Unknown	5/22/1991	*	*	*	*	820	*	*	*

[1] *, indicates analysis for this characteristic was not done for water collected from this well on the given date.

Table 34. Radiochemical isotopic characteristics of groundwater collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for radon, radium 226, radium 228, uranium U-234/U-235/U-238 (speciation method), uranium-234 (alpha method), uranium-235 (alpha method), uranium-238 (apha method), uranium in milligrams per lliter, and tritium.

[Date of sample collection is by month/day/year. <, less than; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Activity in picocuries per liter								
			Radon	Radium 226	Radium 228	Uranium U-234/U-235/ U-238 (speciation method)	Uranium-234 (alpha method)	Uranium- 235 (alpha method)	Uranium-238 (alpha method)	Uranium in milligrams per liter	Tritium, in tritium units
W2	Water table	6/20/1995	*[1]	*	*	*	*	*	*	*	16.6 +/- 0.5
W2	Water table	6/7/1997	*	*	*	*	*	*	*	*	14.8 +/- 0.6
W3	Water table	5/30/1990	*	0.03	0.41	<0.3	0.052	0.004	0.035	*	19.7 +/- 0.7
W3	Water table	6/23/1995	*	*	*	*	*	*	*	*	14.4 +/- 0.4
W3	Water table	7/14/1997	*	*	*	*	*	*	*	*	12.0 +/- 0.5
W3 A	Water table	6/23/1995	*	*	*	*	*	*	*	*	12.5 +/- 0.4
W3 A	Water table	6/10/1997	*	*	*	*	*	*	*	*	9.6 +/- 0.4
W6	Water table	7/26/1997	*	*	*	*	*	*	*	*	10.7 +/- 0.5
W11	Water table	7/25/1997	*	*	*	*	*	*	*	*	10.3 +/- 0.5
W15	Water table	7/28/1997	*	*	*	*	*	*	*	*	11.0 +/- 0.5
W16	Water table	8/29/1996	*	*	*	*	*	*	*	*	3.40 +/- 0.18
W16	Water table	7/13/1997	*	*	*	*	*	*	*	*	3.4 +/- 0.3
W16A	Water table	8/27/1996	*	*	*	*	*	*	*	*	11.8 +/- 0.4
W16A	Water table	7/12/1997	*	*	*	*	*	*	*	*	9.9 +/- 0.5
W18	Water table	7/12/1995	*	*	*	*	*	*	*	*	9.4 +/- 0.3
W18	Water table	6/26/1997	*	*	*	*	*	*	*	*	8.7 +/- 0.4
W25	Water table	7/13/1997	*	*	*	*	*	*	*	*	24.4 +/- 0.8
W26	Water table	5/23/1990	*	0.16	0.01	<0.3	0.036	0	0.014	<0.1000	35.6 +/- 1.1
W26	Water table	6/21/1995	*	*	*	*	*	*	*	*	22.4 +/- 0.7
W26	Water table	6/8/1997	*	*	*	*	*	*	*	*	17.8 +/- 0.6
W27	Water table	7/16/1995	*	*	*	*	*	*	*	*	12.1 +/- 0.4

Table 34. Radiochemical isotopic characteristics of groundwater collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for radon, radium 226, radium 228, uranium U-234/U-235/U-238 (speciation method), uranium-234 (alpha method), uranium-235 (alpha method), uranium-238 (apha method), uranium in milligrams per lliter, and tritium.—Continued

[Date of sample collection is by month/day/year. <, less than; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Activity in picocuries per liter								
			Radon	Radium 226	Radium 228	Uranium U-234/U-235/ U-238 (speciation method)	Uranium-234 (alpha method)	Uranium- 235 (alpha method)	Uranium-238 (alpha method)	Uranium in milligrams per liter	Tritium, in tritium units
W27	Water table	6/19/1997	*	*	*	*	*	*	*	*	9.2 +/- 0.4
W33	Water table	8/22/1996	*	*	*	*	*	*	*	*	12.8 +/- 0.4
W33	Water table	7/7/1997	*	*	*	*	*	*	*	*	14.2 +/- 0.6
W34	Water table	8/22/1996	*	*	*	*	*	*	*	*	12.0 +/- 0.4
W34	Water table	6/10/1997	*	*	*	*	*	*	*	*	10.9 +/- 0.5
W35	Water table	8/28/1996	*	*	*	*	*	*	*	*	10.6 +/- 0.4
W35	Water table	7/12/1997	*	*	*	*	*	*	*	*	10.1 +/- 0.5
W36	Water table	8/26/1996	*	*	*	*	*	*	*	*	10.1 +/- 0.3
W36	Water table	6/17/1997	*	*	*	*	*	*	*	*	9.5 +/- 0.4
CO WT	Water table	5/9/1990	*	0.16	0.76	<0.3	0.081	0.006	0.096	<0.1000	12.2 +/- 0.8
CO1-18	*16-18*	12/3/1990	2,428	*	*	*	*	*	*	*	13.3 +/- 0.5
CO1	B (101-209)	5/10/1990	*	1	0.79	0.8(0.5,0.1,0.2)	0.458	0.014	0.211	0.3	22.1 +/- 1.4
CO1	B (104-116)	6/21/1990	*	1.15	0.48	<0.3	0.378	0.014	0.286	*	21.4 +/- 0.8
CO1	*104-114*	6/16/1992	*	*	*	*	*	*	*	*	15.6 +/- 0.6
CO1	C (409-421)	6/22/1990	*	0.166	0.142	<0.3	1.02	0.049	1.06	*	4.8 +/- 0.2
CO1	*420-430*	6/16/1992	*	*	*	*	*	*	*	*	4.8 +/- 0.3
CO2	A (25-104)	5/9/1990	*	0.17	0.67	<0.3	0.061	0.004	0.053	<0.1000	14 +/- 0.9
CO2	B (163-171)	6/29/1990	*	0.57	0.41	<0.3	0.443	0.022	0.324	*	4.8 +/- 0.2
CO3	(26-40)	8/17/1991	*	*	*	*	*	*	*	*	13.8 +/- 0.5
CO3	(87-102)	8/17/1991	*	*	*	*	*	*	*	*	18.0 +/- 0.6
CO3	(140-155)	8/17/1991	*	*	*	*	*	*	*	*	10.3 +/- 0.3

Table 34. Radiochemical isotopic characteristics of groundwater collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for radon, radium 226, radium 228, uranium U-234/U-235/U-238 (speciation method), uranium-234 (alpha method), uranium-235 (alpha method), uranium-238 (apha method), uranium in milligrams per lliter, and tritium.—Continued

[Date of sample collection is by month/day/year. <, less than; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Activity in picocuries per liter								
			Radon	Radium 226	Radium 228	Uranium U-234/U-235/ U-238 (speciation method)	Uranium-234 (alpha method)	Uranium- 235 (alpha method)	Uranium-238 (alpha method)	Uranium in milligrams per liter	Tritium, in tritium units
CO4	(92-98.8)	6/11/1992	*	*	*	*	*	*	*	*	17.2 +/- 0.5
CO10	(130.0-143.5)	8/15/1995	*	*	*	*	*	*	*	*	12.4 +/- 0.4
CO10	(228.0-241.5)	8/15/1995	*	*	*	*	*	*	*	*	3.7 +/- 0.3
CO11	(95.0-108.5)	8/16/1995	*	*	*	*	*	*	*	*	13.5 +/- 0.4
CO11	(242.0-255.5)	8/17/1995	*	*	*	*	*	*	*	*	9.6 +/- 0.3
CO11	(342.6-356.1)	8/17/1995	*	*	*	*	*	*	*	*	5.65 +/- 0.22
FS1-17	Water table	5/30/1990	*	0.12	0.08	<0.3	0.008	0.006	0.002	<0.1000	11.8 +/- 0.4
FS1-17	Water table	7/18/1995	*	*	*	*	*	*	*	*	13.1 +/- 0.4
FS1-17	Water table	7/19/1996	*	*	*	*	*	*	*	*	12.0 +/- 0.4
FS1-25	*23-25*	9/25/1991	*	*	*	*	*	*	*	*	15.6 +/- 0.5
FS1-25	*23-25*	7/20/1996	*	*	*	*	*	*	*	*	13.2 +/- 0.4
FS1-35	*33-35*	5/30/1990	1655	0.04	0.32	0.7(0.3,0.1,0.3)	0.278	0.01	0.261	*	25.2 +/- 0.8
FS1-35	*33-35*	12/5/1990	*	*	*	*	*	*	*	*	31.2 +/- 1.1
FS1-35	*33-35*	7/20/1996	*	*	*	*	*	*	*	*	10.3 +/- 0.4
FS1	A (55-105)	5/31/1990	*	0.1	0.25	<0.3	0.084	0.002	0.025	<0.1000	29.8 +/- 1.0
FS1	C (217-450)	5/25/1990	*	1.21	0.47	<0.3	0.084	0.002	0.025	<0.1000	0.14 +/- 0.12
FS1	*121-136*	8/5/1991	*	*	*	*	*	*	*	*	20.2 +/- 0.6
FS1	*309-324*	8/5/1991	*	*	*	*	*	*	*	*	0.03 +/- 0.13
FS1	*348-363*	8/6/1991	*	*	*	*	*	*	*	*	0.05 +/- 0.12
FS2	A (32-105)	5/22/1990	*	0.44	0.29	<0.3	0.01	0.002	0.004	<0.1000	3.62 +/- 0.20
FS2	B (133-169)	8/7/1990	1250	0.78	0.5	<0.3	0.019	0.006	0.019	*	-0.1 +/- 0.14

Table 34. Radiochemical isotopic characteristics of groundwater collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for radon, radium 226, radium 228, uranium U-234/U-235/U-238 (speciation method), uranium-234 (alpha method), uranium-235 (alpha method), uranium-238 (apha method), uranium in milligrams per lliter, and tritium.—Continued

[Date of sample collection is by month/day/year. <, less than; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Activity in picocuries per liter								
			Radon	Radium 226	Radium 228	Uranium U-234/U-235/ U-238 (speciation method)	Uranium-234 (alpha method)	Uranium- 235 (alpha method)	Uranium-238 (alpha method)	Uranium in milligrams per liter	Tritium, in tritium units
FS2	C (236-251)	8/6/1990	*	1.07	1.82	*	9.23	0.258	5.59	*	-0.14 +/- 0.11
FS3-11	Water table	12/6/1990	*	*	*	*	*	*	*	*	19.6 +/- 0.6
FS3-22	*20-22*	5/24/1990	1450	0.07	0.44	<0.3	0.012	0.002	0.006	<0.1000	18.6 +/- 1.0
FS3-22	*20-22*	12/5/1990	1406	*	*	*	*	*	*	*	*
FS3	A (38-84)	5/23/1990	*	0.07	0.61	<0.3	0.038	0	0.019	<0.1000	10.9 +/- 0.4
FS3	A (60-75)	8/10/1990	*	0.129	0.097	<0.3	1.34	0.006	0.293	*	11.1 +/- 0.4
FS3	*60.0-72.4*	7/19/1993	*	*	*	*	*	*	*	*	13.5 +/- 0.4
FS3	C (197-645)	5/25/1990	*	0.11	0.05	<0.3	0.068	0	0.018	<0.1000	0.29 +/- 0.13
FS3	*294.0-306.2*	7/20/1993	*	*	*	*	*	*	*	*	0.92 +/- 0.12
FS3	C (365-380)	8/9/1990	310	0.09	0.24	<0.3	0.023	0.002	0.012	*	2.16 +/- 0.18
FS3	*365.0-377.2*	7/20/1993	*	*	*	*	*	*	*	*	0.96 +/- 0.13
FS3	C (530-545)	8/9/1990	1650	0.51	0.10	<0.3	1.37	0.029	0.442	*	8.4 +/- 0.3
FS3C-19	*18-19*	7/14/1995	*	*	*	*	*	*	*	*	12.5 +/- 0.4
FS3C-19	*18-19*	7/18/1996	*	*	*	*	*	*	*	*	9.9 +/- 0.3
FS3C-24	*23-24*	7/15/1995	*	*	*	*	*	*	*	*	12.3 +/- 0.4
FS3C-24	*23-24*	7/18/1996	*	*	*	*	*	*	*	*	11.8 +/- 0.4
FS3C-24	*23-24*	6/12/1997	*	*	*	*	*	*	*	*	8.8 +/- 0.4
FS3C-29	*28-29*	7/17/1996	*	*	*	*	*	*	*	*	10.3 +/- 0.4
FS3C-29	*28-29*	6/11/1997	*	*	*	*	*	*	*	*	9.7 +/- 0.4
FS4 WT	Water table	7/8/1997	*	*	*	*	*	*	*	*	11.8 +/- 0.5
FS5	(70.0-83.5)	6/9/1995	*	*	*	*	*	*	*	*	14.8 +/- 0.5

Table 34. Radiochemical isotopic characteristics of groundwater collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for radon, radium 226, radium 228, uranium U-234/U-235/U-238 (speciation method), uranium-234 (alpha method), uranium-235 (alpha method), uranium-238 (apha method), uranium in milligrams per lliter, and tritium.—Continued

[Date of sample collection is by month/day/year. <, less than; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Activity in picocuries per liter								
			Radon	Radium 226	Radium 228	Uranium U-234/U-235/ U-238 (speciation method)	Uranium-234 (alpha method)	Uranium- 235 (alpha method)	Uranium-238 (alpha method)	Uranium in milligrams per liter	Tritium, in tritium units
FS5	(142.0-155.5)	6/9/1995	*	*	*	*	*	*	*	*	14.5 +/- 0.4
FS5	(200.4-218.0)	6/8/1995	*	*	*	*	*	*	*	*	15.2 +/- 0.5
FS6	*44.0-53.5*	8/12/1995	*	*	*	*	*	*	*	*	3.52 +/- 0.18
FS7	(53)	6/22/1996	*	*	*	*	*	*	*	*	10.5 +/- 0.4
FSE-23	*21-23*	6/1/1990	*	0.06	0.44	<0.3	0.094	0.004	0.077	<0.1000	18.1 +/- 0.6
FSE-32	*30-32*	5/21/1992	*	*	*	*	*	*	*	*	14.3 +/- 0.5
FSE-43	*41-43*	6/1/1990	*	0.21	0.46	<0.3	0.1	0.012	0.08	<0.1000	13.6 +/- 0.5
FSE-43	*41-43*	5/19/1992	*	*	*	*	*	*	*	*	21.9 +/- 0.7
FSE2	A (55-105)	6/1/1990	*	3.2	1.8	<0.3	0.092	0.009	0.066	0.2	8.7 +/- 0.3
FSE2	B (107-215)	6/1/1990	*	7.5	0.44	<0.3	0.402	0.008	0.368	0.24	4.15 +/- 0.18
FSE4	(438.2-445)	5/18/1992	*	*	*	*	*	*	*	*	0.29 +/- 0.12
FSE6 WT	water table	5/20/1992	*	*	*	*	*	*	*	*	15.5 +/- 0.5
H1	(107-122)	8/13/1991	*	*	*	*	*	*	*	*	16.6 +/- 0.5
H1	(178-193)	8/13/1991	*	*	*	*	*	*	*	*	14.1 +/- 0.5
IS1	(56-58.8)	6/3/1992	*	*	*	*	*	*	*	*	27.7 +/- 0.8
IS1	(364-370.8)	6/4/1992	*	*	*	*	*	*	*	*	25.7 +/- 0.8
IS1	(400-406.8)	6/4/1992	*	*	*	*	*	*	*	*	26.8 +/- 0.8
IS1	(466.5-473.3)	6/4/1992	*	*	*	*	*	*	*	*	1.53 +/- 0.13
K1-8	Water table	5/21/1990	*	0.22	0.79	<0.3	0.018	0.002	0.011	*	16.8 +/- 0.7
K1-8	Water table	11/30/1990	*	*	*	*	*	*	*	*	16.4 +/- 0.6
K1-39	*37-39*	5/22/1990	*	0.19	0.29	<0.3	0.024	0.006	0.026	<0.1000	*

Table 34. Radiochemical isotopic characteristics of groundwater collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for radon, radium 226, radium 228, uranium U-234/U-235/U-238 (speciation method), uranium-234 (alpha method), uranium-235 (alpha method), uranium-238 (apha method), uranium in milligrams per lliter, and tritium.—Continued

[Date of sample collection is by month/day/year. <, less than; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Activity in picocuries per liter								
			Radon	Radium 226	Radium 228	Uranium U-234/U-235/ U-238 (speciation method)	Uranium-234 (alpha method)	Uranium- 235 (alpha method)	Uranium-238 (alpha method)	Uranium in milligrams per liter	Tritium, in tritium units
K1	borehole	5/17/1990	*	0.32	0.2	<0.3	0.088	0.004	0.042	<0.1000	0.15
K2-21	Water table	5/17/1990	*	0.22	0.55	<0.3	0.097	0	0.101	<0.1000	10.3 +/- 0.4
K2-41	*39-41*	5/17/1990	*	0.12	0.46	<0.3	0.019	0.004	0.025	<0.1000	30.6 +/- 1.3
K2-41	*39-41*	11/29/1990	*	*	*	*	*	*	*	*	19.2 +/- 0.7
K2	(55-160)	5/17/1990	*	0.23	0.44	<0.3	0.109	0.002	0.016	<0.1000	0.86 +/- 0.18
		14:25	*	*	*	*	*	*	*	*	0.32 +/- 0.11
K3-22	Water table	5/16/1990	*	0.12	1.1	<0.3	0.041	0.004	0.026	<0.1000	20.2 +/- 0.8
K3-61	*59-61*	5/16/1990	*	0.14	0.08	<0.3	0.015	0.004	0.004	<0.1000	21.5 +/- 0.9
K3-61	*59-61*	11/30/1990	*	*	*	*	*	*	*	*	22.3 +/- 0.8
K3	(75-175)	5/16/1990	*	0.59	0.57	<0.3	0.087	0.006	0.032	<0.1000	0.03 +/- 0.11
R1-36	Water table	11/30/1990	*	*	*	*	*	*	*	*	15.3 +/- 0.6
R1-36	Water table	9/26/1991	*	*	*	*	*	*	*	*	12.2 +/- 0.4
R1-36	Water table	7/10/1995	*	*	*	*	*	*	*	*	12.8 +/- 0.4
R1-55	*53-55*	9/25/1991	*	*	*	*	*	*	*	*	17.0 +/- 0.5
R1-55	*53-55*	7/11/1995	*	*	*	*	*	*	*	*	11.1 +/- 0.4
R1	(57.4-80)	9/16/1990	*	*	*	*	*	*	*	*	14.8 +/- 0.7
R1	(102-125)	9/15/1990	*	*	*	*	*	*	*	*	3.76 +/- 0.25
R1	(148-171)	9/16/1990	*	*	*	*	*	*	*	*	0.9 +/- 0.22
RR1 PZ	Water table	8/21/1995	*	*	*	*	*	*	*	*	13.7 +/- 0.4
RR1	(582.5-596.0)	8/18/1995	*	*	*	*	*	*	*	*	-0.04 +/- 0.13
S-40	Water table	5/22/1990	*	0.05	0.72	<0.3	0.041	0.004	0.037	<0.1000	33.1 +/- 1.2

Table 34. Radiochemical isotopic characteristics of groundwater collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for radon, radium 226, radium 228, uranium U-234/U-235/U-238 (speciation method), uranium-234 (alpha method), uranium-235 (alpha method), uranium-238 (apha method), uranium in milligrams per lliter, and tritium.—Continued

[Date of sample collection is by month/day/year. <, less than; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Activity in picocuries per liter								
			Radon	Radium 226	Radium 228	Uranium U-234/U-235/ U-238 (speciation method)	Uranium-234 (alpha method)	Uranium- 235 (alpha method)	Uranium-238 (alpha method)	Uranium in milligrams per liter	Tritium, in tritium units
S-40	Water table	8/23/1996	*	*	*	*	*	*	*	*	12.1 +/- 0.4
S-40	Water table	7/25/1997	*	*	*	*	*	*	*	*	12.6 +/- 0.5
T1	(57-72)	8/15/1991	*	*	*	*	*	*	*	*	21.8 +/- 0.7
T1	(155-172)	8/15/1991	*	*	*	*	*	*	*	*	12.9 +/- 0.4
T1	(220-237)	8/15/1991	*	*	*	*	*	*	*	*	1.58 +/- 0.15
TR1-63	Water table	5/15/1990	*	0.07	*	<0.3	0.051	0.004	-.055	<0.1000	15.9 +/- 1.0
TR1-63	Water table	11/30/1990	*	*	*	*	*	*	*	*	12.3 +/- 0.5
TR1-63	Water table	9/26/1991	*	*	*	*	*	*	*	*	15.0 +/- 0.5
TR1-63	Water table	7/8/1995	*	*	*	*	*	*	*	*	12.2 +/- 0.4
TR1-63	Water table	6/25/1997	*	*	*	*	*	*	*	*	11.2 +/- 0.5
TR1	A (177-199)	5/15/1990	*	0.19	0.61	<0.3	0.027	0.006	0.013	<0.1000	23.3 +/- 0.3 25.6 +/- 0.9
TR1	(171-190)	9/22/1990	*	*	*	*	*	*	*	*	24.2 +/- 1.1
TR1	B (200-299)	5/17/1990	*	0.27	0.25	<0.3	0.173	0.002	0.04	<0.1000	5.0 +/- 0.3
TR1	(271-300)	9/23/1990	*	*	*	*	*	*	*	*	4.17 +/- 0.26
TR1	*271-299.8*	6/30/1992	*	*	*	*	*	*	*	*	9.6 +/- 0.3
TR1	(299-328)	9/23/1990	*	*	*	*	*	*	*	*	0.99 +/- 0.26
TR1	*298.6-327.4*	7/1/1992	*	*	*	*	*	*	*	*	5.53 +/- 0.21
TR1	*390-397.8*	7/1/1992	*	*	*	*	*	*	*	*	1.17 +/- 0.13
TR1	*482-489.8*	7/7/1992	*	*	*	*	*	*	*	*	1.00 +/- 0.13
TR2	(151-170.1)	6/22/1992	*	*	*	*	*	*	*	*	0.76 +/- 0.12
TR2	(270-289.1)	6/22/1992	*	*	*	*	*	*	*	*	0.18 +/- 0.13

Table 34. Radiochemical isotopic characteristics of groundwater collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for radon, radium 226, radium 228, uranium U-234/U-235/U-238 (speciation method), uranium-234 (alpha method), uranium-235 (alpha method), uranium-238 (apha method), uranium in milligrams per lliter, and tritium.—Continued

[Date of sample collection is by month/day/year. <, less than; A, B, C, sample zones]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Activity in picocuries per liter								
			Radon	Radium 226	Radium 228	Uranium U-234/U-235/ U-238 (speciation method)	Uranium-234 (alpha method)	Uranium- 235 (alpha method)	Uranium-238 (alpha method)	Uranium in milligrams per liter	Tritium, in tritium units
TR2	(426-445.1)	6/23/1992	*	*	*	*	*	*	*	*	-0.13 +/- 0.13
TR2	(151.0-170.3)	7/21/1993	*	*	*	*	*	*	*	*	0.68 +/- 0.12
TR2	(270.0-289.3)	7/21/1993	*	*	*	*	*	*	*	*	0.24 +/- 0.13
TR2	(426.0-445.3)	7/22/1993	*	*	*	*	*	*	*	*	0.07 +/- 0.12
Seep S3	Water surface	8/7/1997	*	*	*	*	*	*	*	*	10.1 +/- 0.4
Leeman's Spring	Water surface	8/6/1997	*	*	*	*	*	*	*	*	8.5 +/- 0.4
Pleasant View well	Unknown	5/22/1991	*	*	*	*	*	*	*	*	6.18 +/- 0.24

[1] *, indicates analysis for this characteristic was not done for water collected from this well on the given date.

Table 35. Isotopic characteristics of groundwater collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for stable isotope ratios.

[Date of sample collection is by month/day/year. <, less than; A, B, C, sample zones; Values in the table are isotope ratios relative to reference materials of Standard Mean Ocean Water (SMOW), Vienna Pee Dee Belemnite (VPDB), and Canyon Diablo Troilite (CDT)]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	per mil ‰			
			$\delta^{2}H$ (SMOW)	$\delta^{18}O$ (SMOW)	$\delta^{13}C$ (VPDB)	$\delta^{34}S$ (CDT)
W2	Water table	6/20/1995	-49.51	-5.62	-21.48	*[1]
W2	Water table	6/7/1997	-63.38	-9.71	-20.96	*
W3	Water table	5/30/1990	-64.5	-9.80	*	*
W3	Water table	6/23/1995	-63.31	-9.79	*	*
W3	Water table	7/14/1997	-66.13	-9.85	-22.54	*
W3 A	Water table	6/23/1995	-65.83	-10.07	-12.67	*
W3 A	Water table	6/10/1997	-69.15	-10.60	-19.24	*
W6	Water table	7/26/1997	-69.20	-10.45	-21.20	*
W11	Water table	7/25/1997	-65.67	-9.73	-22.31	*
W15	Water table	7/28/1997	-64.25	-9.76	-21.51	*
W16	Water table	8/29/1996	-63.95	-9.91	-10.58	*
W16	Water table	7/13/1997	-65.64	-9.88	-10.21	*
W16A	Water table	8/27/1996	-65.58	-9.91	-18.14	*
W16A	Water table	7/12/1997	-63.55	-9.85	-16.94	*
W18	Water table	7/12/1995	-81.32	-12.02	-16.35	*
W18	Water table	6/26/1997	-61.82	-9.31	*	*
W25	Water table	6/21/1995	-69.07	-10.40	-20.54	*
W25	Water table	7/13/1997	-66.89	-10.25	-20.25	*
W26	Water table	5/23/1990	-67.5	-10.20	-22.35	-7.4
W26	Water table	6/21/1995	-65.01	-9.97	*	*
W26	Water table	6/8/1997	-64.56	-9.87	-20.66	*
W27	Water table	7/16/1995	-68.97	-10.66	-23.65	*
W27	Water table	6/19/1997	-66.75	-9.96	*	*
W33	Water table	8/22/1996	-63.19	-9.74	-20.59	*
W33	Water table	7/7/1997	-63.21	-9.76	-20.83	*
W34	Water table	8/22/1996	-66.43	-9.98	*	*
W34	Water table	6/10/1997	-66.41	-10.22	-24.78	*
W35	Water table	8/28/1996	-64.44	-9.79	-20.74	*
W35	Water table	7/11/1997	-64.99	-10.15	*	*
W36	Water table	8/26/1996	*	*	-23.26	*
W36	Water table	6/17/1997	-66.00	-9.98	-18.92	*

Table 35. Isotopic characteristics of groundwater collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for stable isotope ratios.—Continued

[Date of sample collection is by month/day/year. <, less than; A, B, C, sample zones; Values in the table are isotope ratios relative to reference materials of Standard Mean Ocean Water (SMOW), Vienna Pee Dee Belemnite (VPDB), and Canyon Diablo Troilite (CDT)]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	per mil ‰			
			$\delta^{2}H$ (SMOW)	$\delta^{18}O$ (SMOW)	$\delta^{13}C$ (VPDB)	$\delta^{34}S$ (CDT)
CO WT	Water table	5/9/1990	-72.5	-10.55	*	*
CO1-18	*16-18*	12/3/1990	-56.5	-8.75	-25.40	*
CO1	B (101-209)	5/10/1990	-65.50	-9.75	-12.95	-2.5
CO1	B (104-116)	6/21/1990	*	*	-12.90	*
CO1	*104-114*	6/16/1992	-62.5	-9.65	*	*
CO1	*420-430*	6/16/1992	-62.0	-9.70	*	*
CO1	C (409-421)	6/22/1990	*	*	-10.30	*
CO2	A (25-104)	5/9/1990	-61.50	-9.40	-17.00	4.9
CO2	B (163-171)	6/29/1990	*	*	-11.15	*
CO3	(26-40)	8/17/1991	-63.0	-9.65	*	*
CO3	(87-102)	8/17/1991	-63.5	-9.75	*	*
CO3	(140-155)	8/17/1991	-63.0	-9.70	*	*
CO4	(92-98.8)	6/11/1992	-62.0	-9.60	*	*
CO10	(130.0-143.5)	8/15/1995	-62.58	-9.27	*	*
CO10	(228.0-241.5)	8/15/1995	-62.09	-9.55	*	*
CO11	(95.0-108.5)	8/16/1995	-61.56	-9.37	-14.20	*
CO11	(242.0-255.5)	8/17/1995	-63.01	-9.54	*	*
CO11	(342.6-356.1)	8/17/1995	-61.93	-9.58	-12.57	*
FS1-17	Water table	5/30/1990	-66.00	-10.10	*	*
FS1-17	Water table	9/23/1991	-66.0	-10.05	-17.10	*
FS1-17	Water table	7/18/1995	-66.14	-10.14	-22.81	*
FS1-17	Water table	7/19/1996	-68.42	-10.37	-21.85	*
FS1-25	*23-25*	7/20/1996	-66.29	-10.11	-15.66	*
FS1-35	*33-35*	5/30/1990	-66.50	-10.10	*	*
FS1-35	*33-35*	12/5/1990	-66.5	-10.15	*	*
FS1-35	*33-35*	7/20/1996	-61.13	-9.42	-24.48	*
FS1	A (55-105)	5/31/1990	-67.00	-10.20	-17.10	*
FS1	C (217-450)	5/25/1990	-65.00	-9.85	-8.25	10
FS1	*121-136*	8/5/1991	-66.0	-10.30	*	*
FS1	*309-324*	8/5/1991	-63.5	-9.80	*	*
FS1	*348-363*	8/6/1991	-66.5	-10.20	*	*

Table 35. Isotopic characteristics of groundwater collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for stable isotope ratios.—Continued

[Date of sample collection is by month/day/year. <, less than; A, B, C, sample zones; Values in the table are isotope ratios relative to reference materials of Standard Mean Ocean Water (SMOW), Vienna Pee Dee Belemnite (VPDB), and Canyon Diablo Troilite (CDT)]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	per mil ‰			
			$\delta^{2}H$ (SMOW)	$\delta^{18}O$ (SMOW)	$\delta^{13}C$ (VPDB)	$\delta^{34}S$ (CDT)
FS2	A (32-105)	5/22/1990	-61.50	-9.45	-14.05	2.9
FS2	B (133-169)	8/7/1990	*	*	-8.80	*
FS2	*134-149*	7/7/1992	-64.0	-9.95	*	*
FS2	C (236-251)	8/6/1990	*	*	-6.50	*
FS2	*236-251*	7/8/1992	-65.0	-9.95	*	*
FS2	*384-399*	7/8/1992	-66.5	-10.20	*	*
FS3-11	Water table	12/6/1990	-62.5	-9.85	-20.95	*
FS3-22	*20-22*	5/24/1990	-62.50	-9.85	-20.95	*
FS3	A (38-84)	5/23/1990	-67.00	-10.10	-12.65	2.3
FS3	A (60-75)	8/10/1990	-66.50	-10.10	-10.80	*
FS3	*60-75.1*	7/12/1992	-65.5	-10.15	*	*
FS3	*60.0-72.4*	7/19/1993	-66.3	-10.06	*	*
FS3	C (197-645)	5/25/1990	-63.50	-9.80	-9.00	13.7
FS3	*294-309.1*	7/12/1992	-65.0	-9.95	*	*
FS3	*294.0-306.2*	7/20/1993	-64.2	-10.00	*	*
FS3	C (365-380)	8/9/1990	*	*	-8.80	*
FS3	*365-380.1*	7/13/1992	-63.5	-9.90	*	*
FS3	*365.0-377.2*	7/20/1993	-64.0	-9.84	*	*
FS3	C (530-545)	8/9/1990	*	*	-10.15	*
FS3	*530-545.1*	7/13/1992	-64.5	-9.90	*	*
FS3C-19	*18-19*	7/14/1995	-66.60	-10.08	-16.40	*
FS3C-19	*18-19*	7/18/1996	-62.36	-9.71	-24.65	*
FS3C-24	*23-24*	7/19/1992	-71.5	-10.75	*	*
FS3C-24	*23-24*	7/15/1995	-67.02	-10.12	-24.05	*
FS3C-24	*23-24*	7/18/1996	-63.89	-9.97	-20.12	*
FS3C-24	*23-24*	6/12/1997	-69.83	-10.58	-21.50	*
FS3C-29	*28-29*	7/18/1992	-69.0	-10.45	*	*
FS3C-29	*28-29*	7/17/1996	-66.48	-9.84	-20.46	*
FS3C-29	*28-29*	6/11/1997	-70.58	-10.87	-17.57	*
FS4 WT	Water table	7/8/1997	-71.03	-10.66	-17.16	*
FS5	(70.0-83.5)	6/9/1995	*	*	-16.55	*

Table 35. Isotopic characteristics of groundwater collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for stable isotope ratios.—Continued

[Date of sample collection is by month/day/year. <, less than; A, B, C, sample zones; Values in the table are isotope ratios relative to reference materials of Standard Mean Ocean Water (SMOW), Vienna Pee Dee Belemnite (VPDB), and Canyon Diablo Troilite (CDT)]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	per mil ‰			
			$\delta^{2}H$ (SMOW)	$\delta^{18}O$ (SMOW)	$\delta^{13}C$ (VPDB)	$\delta^{34}S$ (CDT)
FS5	(142.0-155.5)	6/9/1995	-66.45	-10.24	-14.83	*
FS5	(200.4-218.0)	6/8/1995	-65.86	-10.22	-15.03	*
FS6	*44.0-53.5*	8/12/1995	-64.12	-10.00	*	*
FS7	(53)	6/22/1996	-65.04	-10.0	-24.07	*
FSE-23	*21-23*	10/23/1986	*	-9.75	*	*
FSE-23	*21-23*	6/1/1990	-65.50	-10.05	*	*
FSE-32	*30-32*	10/23/1986	*	-9.60	*	*
FSE-43	*41-43*	6/1/1990	-68.00	-10.30	*	*
FSE2	A (55-105)	6/1/1990	-67.00	-10.25	-8.20	*
FSE2	B (107-215)	6/1/1990	-66.00	-10.20	-7.90	*
FSE4	*65-85*	10/23/1986	*	-10.15	*	*
FSE4	*80-100*	10/26/1986	*	-10.20	*	*
FSE4	*135-155*	10/23/1986	*	-10.15	*	*
FSE4	*430-450*	10/29/1986	*	-10.40	*	*
FSE4	*700*	10/22/1986	*	-10.35	*	*
FSE4	(436-443)	6/12/1991	-66.0	-10.55	*	*
FSE4	(438.2-445)	5/18/1992	-67.5	-10.45	*	*
FSE6 WT	Water table	5/20/1992	-58.0	-9.10	*	*
H1	(107-122)	8/13/1991	-64.0	-9.95	*	*
H1	(178-193)	8/13/1991	-65.0	-10.15	*	*
IS1	(56-58.8)	6/3/1992	-65.5	-9.90	*	*
IS1	(364-370.8)	6/4/1992	-64.0	-9.95	*	*
IS1	(400-406.8)	6/4/1992	-65.5	-9.95	*	*
IS1	(466.5-473.3)	6/4/1992	-61.5	-9.55	*	*
K1-8	Water table	5/21/1990	-59.00	-8.20	*	*
K1-8	Water table	11/30/1990	-50.0	-6.95	*	*
K1	borehole	5/17/1990	-68.00	-10.30	-10.85, -10.55	*
K2-21	Water table	5/17/1990	-68.00	-10.25	*	*
K2-41	*39-41*	5/17/1990	-63.50	-9.60	-19.80	2.6
K2-41	*39-41*	11/29/1990	-63.5	-9.65	*	*
K2	(55-160)	5/17/1990	-67.50	-9.95	-9.00, -8.30	-5

Table 35. Isotopic characteristics of groundwater collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for stable isotope ratios.—Continued

[Date of sample collection is by month/day/year. <, less than; A, B, C, sample zones; Values in the table are isotope ratios relative to reference materials of Standard Mean Ocean Water (SMOW), Vienna Pee Dee Belemnite (VPDB), and Canyon Diablo Troilite (CDT)]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	per mil ‰			
			$\delta^{2}H$ (SMOW)	$\delta^{18}O$ (SMOW)	$\delta^{13}C$ (VPDB)	$\delta^{34}S$ (CDT)
K3-22	Water table	5/16/1990	-54.00	-7.60	*	*
K3-61	*59-61*	5/16/1990	-56.50	-8.15	-19.45, -20.25	*
K3-61	*59-61*	11/30/1990	-57.50	-8.15	-21.55	*
K3	(75-175)	5/16/1990	-69.50	-10.40	-8.45	*
R1-36	Water table	11/30/1990	-48.5	-7.75	-22.85	*
R1-36	Water table	7/14/1991	-61.5	-9.60	*	*
R1-36	Water table	9/26/1991	-61.5	-9.60	-13.50	*
R1-36	Water table	7/10/1995	-67.21	-10.14	-22.57	*
R1-55	*53-55*	7/11/1995	-67.37	-9.95	-13.52	*
R1	57.4-80.1	9/16/1990	-64.5	-10.15	-11.60	*
R1	(102-125)	9/15/1990	-65.5	-10.10	-10.70	*
R1	(148-171)	9/16/1990	-66.0	-10.05	-10.40	*
R1	*65-80.1*	7/14/1992	-66.0	-10.10	*	*
R1	*110-125.1*	7/14/1992	-65.5	-10.05	*	*
R1	*147-162.1*	7/15/1992	-65.5	-10.00	*	*
R1	*480-495.1*	7/15/1992	-67.5	-10.40	*	*
RR1 PZ	Water table	8/21/1995	-59.88	-9.01	-20.76	*
RR1	(582.5-596.0)	8/18/1995	-70.42	-10.95	-5.30	*
S-40	Water table	5/22/1990	-68.5	-10.40	-27.30	*
S-40	Water table	7/25/1997	-61.48	-9.36	-27.10	*
T1	(57-72)	8/15/1991	-64.5	-10.05	*	*
T1	(155-172)	8/15/1991	-64.0	-10.05	*	*
T1	(220-237)	8/15/1991	-65.0	-10.10	*	*
TR1-63	Water table	5/15/1990	-67.50	-10.15	-21.80, -22.80	*
TR1-63	Water table	11/30/1990	-68.0	-10.25	-22.90	*
TR1-63	Water table	9/26/1991	-65.5	-10.10	-17.35	*
TR1-63	Water table	7/8/1995	-67.26	-10.06	-23.42	*
TR1-63	Water table	6/25/1997	-65.41	-9.92	*	*
TR1	A (177-199)	5/15/1990	-67.00	-10.05	-13.55	-1.9
TR1	(171-190)	9/22/1990	-65.0	-10.15	-15.20	*
TR1	*170-190*	6/29/1992	-66.0	-10.15	-14.95	*

Table 35. Isotopic characteristics of groundwater collected from selected wells, a seep, and a spring in the Mirror Lake watershed, New Hampshire, for stable isotope ratios.—Continued

[Date of sample collection is by month/day/year. <, less than; A, B, C, sample zones; Values in the table are isotope ratios relative to reference materials of Standard Mean Ocean Water (SMOW), Vienna Pee Dee Belemnite (VPDB), and Canyon Diablo Troilite (CDT)]

Name of well, seep, or spring	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	per mil ‰			
			$\delta^{2}H$ (SMOW)	$\delta^{18}O$ (SMOW)	$\delta^{13}C$ (VPDB)	$\delta^{34}S$ (CDT)
TR1	B (200-299)	5/17/1990	-65.00	-9.90	-12.30	1.2
TR1	(271-300)	9/23/1990	-64.5	-10.00	-12.60	*
TR1	*271-299.8*	6/30/1992	-63.0	-10.00	-12.50	*
TR1	(299-328)	9/23/1990	-64.0	-9.85	-11.40	*
TR1	*298.6-327.4*	7/1/1992	-64.5	-10.05	-12.10	*
TR1	*390-397.8*	7/1/1992	-65.0	-10.00	-10.85	*
TR1	*482-489.8*	7/7/1992	-64.0	-9.95	-10.95	*
TR2	(151-170.1)	6/22/1992	-66.0	-10.15	-8.85	*
TR2	(270-289.1)	6/22/1992	-68.5	-10.45	-7.60	*
TR2	(426-445.1)	6/23/1992	-69.5	-10.60	-6.15	*
TR2	(151.0-170.3)	7/21/1993	-65.5	-10.18	*	*
TR2	(270.0-289.3)	7/21/1993	-68.5	-10.52	*	*
TR2	(426.0-445.3)	7/22/1993	-69.0	-10.49	*	*
Seep S3	Water surface	8/7/1997	-68.16	-10.37	-28.14	*
Leeman's Spring	Water surface	8/6/1997	-64.67	-9.99	-19.19	*
Pleasant view well	Unknown	5/22/1991	-68.0	-10.40	*	*

[1] *, indicates analysis for this characteristic was not done for water collected from this well on the given date.

Table 36. Isotopic characteristics of water collected over time from a single well (CO1) in the vicinity of Mirror Lake, New Hampshire, 1996, for stable isotope ratios.

[Date of sample collection is by month/day/year; Values in the table are isotope ratios relative to reference materials of Standard Mean Ocean Water (SMOW) and Vienna Pee Dee Belemnite (VPDB)]

Name of well	Date	Time of collection in hour of the day and minute of the hour	per mil ‰		
			$\delta^{2}H$ (SMOW)	$\delta^{18}O$ (SMOW)	$\delta^{13}C$ (VPDB)
CO1	6/17/1996	15:20	-63.27	-9.65	-12.40
CO1	6/17/1996	15:48	-63.95	-9.70	-13.64
CO1	6/17/1996	16:19	-63.74	-9.62	-14.11
CO1	6/17/1996	16:37	-63.97	-9.76	-14.05
CO1	6/17/1996	17:23	-63.93	-9.68	-14.33
CO1	6/17/1996	18:01	-63.81	-9.68	-14.38
CO1	6/17/1996	18:49	-63.97	-9.75	-14.59
CO1	6/17/1996	19:50	-64.67	-9.72	-14.44
CO1	6/17/1996	22:44	-63.67	-9.70	-14.89
CO1	6/18/1996	02:11	-63.64	-9.76	-14.86
CO1	6/18/1996	04:31	-63.81	-9.73	-14.05
CO1	6/18/1996	09:40	-63.12	-9.70	-14.67
CO1	6/18/1996	13:55	-63.88	-9.71	-13.43
CO1	6/18/1996	18:40	-63.31	-9.69	-13.70
CO1	6/18/1996	22:13	-64.10	-9.59	-14.23
CO1	6/19/1996	09:22	-64.76	-9.70	-14.47
CO1	6/19/1996	18:05	-62.45	-9.68	-14.05
CO1	6/20/1996	09:20	-63.63	-9.62	-14.57
CO1	6/20/1996	17:40	-63.82	-9.68	-13.57
CO1	6/21/1996	10:51	-62.62	-9.71	-13.17
CO1	6/21/1996	18:27	-63.66	-9.71	-14.23
CO1	6/22/1996	08:43	-63.30	-9.70	-14.51
CO1	6/23/1996	10:24	-64.31	-9.68	-14.40
CO1	6/23/1996	14:00	-64.96	-9.69	-14.40

Table 37. Isotopic characteristics of water collected over time from a single well (CO1) in the vicinity of Mirror Lake, New Hampshire, 1996, for tritium.

[Date of sample collection is by month/day/year]

Name of well	Date	Time of collection in hour of the day and minute of the hour	Tritium, in tritium units
CO1	6/17/1996	15:56	8.9
CO1	6/17/1996	16:35	9.9
CO1	6/17/1996	17:24	10.2
CO1	6/17/1996	19:55	9.7
CO1	6/18/1996	02:16	10.1
CO1	6/18/1996	09:46	10.3
CO1	6/18/1996	18:37	9.7
CO1	6/19/1996	09:25	9.0
CO1	6/19/1996	18:08	9.9
CO1	6/20/1996	17:46	9.9
CO1	6/21/1996	10:48	9.4
CO1	6/22/1996	08:38	8.6
CO1	6/23/1996	14:03	9.6

Table 38. Concentrations of gases and excess air and nitrogen in groundwater collected from selected wells in the Mirror Lake watershed, New Hampshire (modified from Busenberg and Plummer, 1996).

[Date of sample collection is by month/day/year]

Name of well	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration in milligrams per liter					Concentration in cubic centimeters per liter	
			Nitrogen	Argon	Oxygen	Carbon Dioxide	Methane	Air	Nitrogen
W2	Water table	8/26/1996	19.507	0.7361	0.405	19.911	0.0011	*1	*
W2	Water table	6/7/1997	16.818	0.6620	0.048	9.298	0.00	*	*
W3	Water table	7/14/1997	21.104	0.7661	2.682	17.304	0.0006	*	*
W3	Water table	7/14/1997	20.751	0.7632	2.762	17.317	0.0007	*	*
W3A	Water table	7/14/1997	20.366	0.7507	3.660	36.813	0	*	*
W3A	Water table	7/14/1997	21.253	0.7738	3.961	37.705	0	*	*
W6	Water table	7/26/1997	19.952	0.6980	0	12.952	0.7135	*	*
W6	Water table	7/26/1997	10.973	0.7064	0.0015	10.973	0.9744	*	*
W11	Water table	7/25/1997	21.534	0.7629	8.186	36.689	0	*	*
W11	Water table	7/25/1997	19.509	0.7427	7.426	36.163	0	*	*
W15	Water table	7/28/1997	18.507	0.6767	0.678	25.765	0.0139	*	*
W15	Water table	7/28/1997	18.434	0.6618	0.700	25.443	0.0130	*	*
W16	Water table	8/28/1996	21.55	0.7721	0.248	3.648	0.5624	*	*
W16	Water table	8/28/1996	20.963	0.7543	0.115	2.775	0.5663	*	*
W16	Water table	7/13/1997	21.248	0.7715	0.020	12.883	0.1891	*	*
W16	Water table	7/13/1997	21.214	0.7708	0.080	12.274	0.2847	*	*
W16A	Water table	7/8/1997	19.708	0.7393	5.511	16.731	0.0005	*	*
W16A	Water table	7/8/1997	19.416	0.7356	5.432	16.974	0.0005	*	*
W16A	Water table	7/12/1997	18.768	0.7077	6.833	15.093	0.0000	*	*
W16A	Water table	7/12/1997	18.670	0.7089	6.839	15.050	0.0009	*	*
W18	Water table	7/12/1995	19.71	0.7279	4.7	14.6	0.013	*	*
W18	Water table	6/27/1997	18.701	0.7030	4.10	16.640	0.0574	*	*
W18	Water table	6/27/1997	18.709	0.7036	4.229	17.325	0.0488	*	*

Table 38. Concentrations of gases and excess air and nitrogen in groundwater collected from selected wells in the Mirror Lake watershed, New Hampshire (modified from Busenberg and Plummer, 1996).—Continued

[Date of sample collection is by month/day/year]

Name of well	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration in milligrams per liter					Concentration in cubic centimeters per liter	
			Nitrogen	Argon	Oxygen	Carbon Dioxide	Methane	Air	Nitrogen
W25	Water table	7/13/1997	21.482	0.7800	0.061	7.425	0	*	*
W25	Water table	7/13/1997	21.485	0.7760	0.033	7.450	0	*	*
W26	Water table	8/25/1996	20.759	0.7496	0.018	7.083	0	*	*
W26	Water table	6/8/1997	18.865	0.7125	0.402	13.576	0	*	*
W27	Water table	6/19/1997	18.503	0.7054	3.831	19.698	0.0024	*	*
W33	Water table	8/22/1996	20.32	0.7262	0.376	6.81	0	*	*
W33	Water table	7/7/1997	20.100	0.7570	0.027	7.968	0.0004	*	*
W33	Water table	7/7/1997	20.291	0.7618	0.065	7.735	0.0005	*	*
W34	Water table	8/22/1996	20.15	0.7368	3.618	7.14	0.0014	*	*
W34	Water table	6/10/1997	17.481	0.6774	8.253	6.285	0	*	*
W34	Water table	7/14/1997	19.384	0.7219	7.757	8.498	0.0000	*	*
W34	Water table	7/14/1997	19.368	0.7236	7.239	8.795	0.0001	*	*
W34	Water table	7/14/1997	19.526	0.7175	7.499	8.773	0	*	*
W35	Water table	8/27/1996	34.163	0.9135	5.947	14.571	0.0051	*	*
W35	Water table	7/11/1997	21.937	0.7708	5.693	21.778	0.0052	*	*
W35	Water table	7/11/1997	21.502	0.7636	6.086	21.049	0.0060	*	*
W36	Water table	8/26/1996	19.106	0.7124	4.005	19.308	0.0025	*	*
W36	Water table	8/27/1996	20.775	0.7475	4.298	18.707	0.0029	*	*
W36	Water table	6/17/1997	17.369	0.7012	9.285	19.284	0	*	*
CO1	*104-114*	6/16/1992	21.81	0.9364	0.0	2.4	0.07	0.00	0.00
CO1	*420-430*	6/16/1992	27.37	0.9231	0.1	2.7	0.00	6.77	0.00
FS1-17	Water table	9/24/1991	19.82	0.7527	0.2	3.2	0.28	0.15	0.00
FS1-25	*23-25*	9/25/1991	20.05	0.7579	2.7	0.0	0.00	0.35	0.00

Table 38. Concentrations of gases and excess air and nitrogen in groundwater collected from selected wells in the Mirror Lake watershed, New Hampshire (modified from Busenberg and Plummer, 1996).—Continued

[Date of sample collection is by month/day/year]

Name of well	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration in milligrams per liter					Concentration in cubic centimeters per liter	
			Nitrogen	Argon	Oxygen	Carbon Dioxide	Methane	Air	Nitrogen
FS1-35	*33-35*	9/25/1991	22.98	0.8257	3.2	0.0	0.00	2.85	0.00
FS1	*121-136*	8/5/1991	35.63	1.0923	3.2	9.4	0.00	15.00	0.00
FS1	*309-324*	8/5/1991	23.18	0.8219	0.4	22.5	0.00	3.45	0.00
FS1	*348-363*	8/6/1991	24.78	0.8258	0.2	85.6	0.01	6.45	0.00
FS2	*134-149.3*	7/7/1992	24.99	0.8942	0.0	17.2	0.24	3.48	0.00
FS3C-24	*23-24*	7/19/1992	21.59	0.7604	7.1	25.3	0.18	3.35	0.00
FS3C-24	*23-24*	6/12/1997	17.270	0.7073	8.655	18.735	0	*	*
FS3C-29	*28-29*	7/18/1992	18.57	0.7869	0.0	13.6	0.09	0.00	0.00
FS3	*60-75.1*	7/12/1992	24.16	0.5625	0.0	6.0	0.00	3.46	0.00
FS3	*294-309.1*	7/12/1992	27.04	0.7830	0.0	5.2	0.00	2.10	5.70
FS4 WT	Water table	7/8/1997	17.776	0.6725	5.447	60.638	0.0003	*	*
FS4 WT	Water table	7/8/1997	20.749	0.8659	5.352	75.126	0.0003	*	*
HI	(107-122)	8/13/1991	22.64	0.8262	0.1	2.1	0.00	2.13	0.00
HI	(178-193)	8/13/1991	22.82	0.7515	0.1	2.9	0.06	0.00	3.20
R1-36	Water table	9/26/1991	19.54	0.7561	10.1	7.4	0.00	0.00	0.00
R1-36	Water table	7/10/1995	28.04	0.8659	11.7	6.8	0	*	*
R1-55	*53-55*	9/26/1991	22.31	0.8271	0.2	0.0	0.00	1.44	0.00
R1-55	*53-55*	7/11/1995	21.86	0.7812	0.2	0.1	0.486	*	*
S-40	Water table	7/25/1997	16.420	0.6096	0.662	37.805	0.0174	*	*
S-40	Water table	7/25/1997	18.105	0.6330	0.740	37.957	0.0350	*	*
T1	(57-72)	8/15/1991	22.62	0.7896	0.2	10.2	0.00	3.88	0.00
TR1-63	Water table	7/8/1995	20.55	0.7328	8.6	11.6	0	*	*
TR1-63	Water table	6/25/1997	21.804	0.7262	10.576	10.322	0	*	*

Table 38. Concentrations of gases and excess air and nitrogen in groundwater collected from selected wells in the Mirror Lake watershed, New Hampshire (modified from Busenberg and Plummer, 1996).—Continued

[Date of sample collection is by month/day/year]

Name of well	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Concentration in milligrams per liter					Concentration in cubic centimeters per liter	
			Nitrogen	Argon	Oxygen	Carbon Dioxide	Methane	Air	Nitrogen
TR1	*170-190*	6/30/1992	24.10	0.7534	0.1	0.9	0.01	0.00	4.50
TR1	*271-299.8*	6/30/1992	26.17	0.8042	0.0	1.4	0.09	2.95	3.80
TR1	*298.6-327.4*	7/1/1992	23.50	0.7879	0.0	2.3	0.00	3.15	6.50
TR1	*390-397.8*	7/1/1992	27.60	0.8100	0.0	1.4	0.02	3.75	4.70
TR1	*482-489.8*	7/6/1992	38.03	0.8524	0.0	1.4	0.00	6.80	12.80
TR2	(151-170.1)	6/22/1992	25.14	0.7975	0.0	1.9	0.00	3.00	2.85
TR2	(270-289.1)	6/22/1992	34.00	0.9453	0.0	5.6	0.00	13.20	2.95
TR2	(426-445.1)	6/23/1992	42.19	1.0355	0.0	6.5	0.00	19.00	6.10

[1] *, indicates analysis for this characteristic was not done for water collected from this well on the given date.

Table 39. Concentrations of gases dissolved in water collected from selected wells in the Mirror Lake watershed, New Hampshire: chlorofluorocarbons.

[Date of sample collection is by month/day/year; CFC, chlorofluorocarbon; H_2S, hydrogen sulfide; Cu, copper; S.C., specific conductance; ", inch]

Name of well	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Time of collection	Sample number	Concentration in solution, pictograms per kilogram			Remarks
					CFC-11	CFC-12	CFC-113	
W2	Water table	6/20/1995	*[1]	1	8.9	240	0	
W2	Water table	6/20/1995	*	2	11.2	250	0	
W3	Water table	6/23/1995	*	1	503.6	333.6	59	
W3	Water table	6/23/1995	*	2	507.5	342.4	62.3	
W3	Water table	6/23/1995	*	3	507.9	340.2	62.7	
W3A	Water table	6/23/1995	*	1	932.4	423.4	104.4	
W3A	Water table	6/23/1995	*	2	947.8	430.7	105.4	
W3A	Water table	6/23/1995	*	3	921.0	424.1	92.6	
W16	Water table	8/28/1996	*	1	59.8	31.7	57.5	
W16	Water table	8/28/1996	*	2	89.4	42.8	26.7	
W16	Water table	8/28/1996	*	3	94.3	40.9	29.6	
W16A	Water table	8/27/1996	*	1	569.3	303.8	102.9	
W16A	Water table	8/27/1996	*	2	600	430.4	107.3	
W16A	Water table	8/27/1996	*	3	664	313.1	98	
W18	Water table	7/12/1995	*	1	781.8	407.2	102.3	
W18	Water table	7/12/1995	*	2	727.8	374.3	105.6	
W18	Water table	7/12/1995	*	3	736.1	377.5	110.3	
W25	Water table	6/21/1995	*	1	137.2	166.8	11.3	
W25	Water table	6/21/1995	*	2	165.7	178	15.3	
W25	Water table	6/21/1995	*	3	161.3	171	15.1	
W26	Water table	6/21/1995	*	1	6.4	172.7	0	
W26	Water table	6/21/1995	*	2	3.9	193.3	0	
W26	Water table	6/21/1995	*	3	4.6	180.1	0	
W27	Water table	7/16/1995	*	1	784.5	390.6	102.5	
W27	Water table	7/16/1995	*	2	783.8	398.8	97.7	
W33	Water table	8/22/1996	*	1	389	254.8	15.7	
W33	Water table	8/22/1996	*	2	58.9	247.9	5.4	
W33	Water table	8/22/1996	*	3	514.1	234.9	13.9	
W36	Water table	8/26/1996	*	1	753.8	385.6	115.3	
W36	Water table	8/26/1996	*	2	737.8	387.9	190.7	
W36	Water table	8/26/1996	*	3	734.4	430.6	230.1	
CO1	*104-114*	6/16/1992	1206	1	385.6	80.8	4.4	

Table 39. Concentrations of gases dissolved in water collected from selected wells in the Mirror Lake watershed, New Hampshire: chlorofluorocarbons.—Continued

[Date of sample collection is by month/day/year; CFC, chlorofluorocarbon; H_2S, hydrogen sulfide; Cu, copper; S.C., specific conductance; ", inch]

Name of well	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Time of collection	Sample number	Concentration in solution, pictograms per kilogram			Remarks
					CFC-11	CFC-12	CFC-113	
CO1	*104-114*	6/16/1992	1213	2	521.0	89.2	0.0	
CO1	*104-114*	6/16/1992	1221	3	303.3	76.0	2.1	
CO1	*104-114*	6/16/1992	1246	4	140.4	74.2	0.0	
CO1	*104-114*	6/16/1992	1250	5	119.1	81.8	3.0	
CO1	*104-114*	6/16/1992	1300	6	88.2	79.4	0.0	
CO1	*420-430*	6/16/1992	1515	1	33.3	30.2	0.0	
CO1	*420-430*	6/16/1992	1555	2	39.1	31.4	0.0	
CO1	*420-430*	6/16/1992	1600	3	24.4	15.9	0.0	
CO1	*420-430*	6/16/1992	1628	4	35.7	32.0	0.0	
CO1	*420-430*	6/16/1992	1635	5	31.0	30.7	0.0	
CO1	*420-430*	6/16/1992	1640	6	39.3	29.0	0.0	
CO3	(26-40)	8/17/1991	1701	#[2]	95.0	463.4	ERR[3]	
CO3	(26-40)	8/17/1991	1726	#	85.0	483.2	ERR	Little H_2S
CO3	(26-40)	8/17/1991	1734	#	83.2	479.2	ERR	
CO3	(87-102)	8/17/1991	1400	#	48.8	127.9	ERR	
CO3	(87-102)	8/17/1991	1415	#	50.1	116.2	ERR	
CO3	(87-102)	8/17/1991	1423	#	11.9	90.8	ERR	
CO3	(140-155)	8/17/1991	1118	#	4.7	98.3	ERR	Some H_2S
CO3	(140-155)	8/17/1991	1132	#	0.6	69.2	ERR	F-11 est.
CO3	(140-155)	8/17/1991	1141	#	0.6	74.2	ERR	F-11 est.
CO4	(92-98.8)	6/11/1992	1251	1	244.4	158.6	20.2	
CO4	(92-98.8)	6/11/1992	1258	2	271.9	146.8	52.6	
CO4	(92-98.8)	6/11/1992	1304	3	318.8	157.8	34.7	
CO4	(92-98.8)	6/11/1992	1331	4	386.1	154.5	213.6	
CO4	(92-98.8)	6/11/1992	1334	5	366.9	162.0	141.9	
CO4	(92-98.8)	6/11/1992	1340	6	387.1	153.6	250.0	
FS1-17	Water table	9/24/1991	1000	1	93,907.1	2,313.4	ERR	80mL/min, ½" Nylon
FS1-17	Water table	9/24/1991	1045	3	110,606.3	1,326.8	ERR	Trace H_2S
FS1-17	Water table	9/24/1991	1150	1	124,032.8	1,599.2	ERR	¼" Cu
FS1-17	Water table	9/24/1991	1210	2	93,608.4	579.9	ERR	Little H_2S
FS1-17	Water table	7/18/1995	*	1	9,025.8	392.8	ERR	

Table 39. Concentrations of gases dissolved in water collected from selected wells in the Mirror Lake watershed, New Hampshire: chlorofluorocarbons.—Continued

[Date of sample collection is by month/day/year; CFC, chlorofluorocarbon; H_2S, hydrogen sulfide; Cu, copper; S.C., specific conductance; ", inch]

Name of well	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Time of collection	Sample number	Concentration in solution, pictograms per kilogram			Remarks
					CFC-11	CFC-12	CFC-113	
FS1-17	Water table	7/18/1995	*	2	5,455.4	366.9	63.6	
FS1-17	Water table	7/18/1995	*	3	4,206.8	359.3	75.7	
FS1-17	Water table	7/19/1996	*	1	6,214	85.8	48.8	
FS1-17	Water table	7/19/1996	*	2	8,481.4	389.2	149.4	
FS1-17	Water table	7/19/1996	*	3	6,223.2	386	106.2	
FS1-25	*23-25*	9/25/1991	1500	1	78,289.6	318.7	ERR	80mL/min, ¼" Cu
FS1-25	*23-25*	9/25/1991	1500	2	111,298.1	379.3	ERR	Trace H_2S
FS1-25	*23-25*	9/25/1991	1500	3	95,656.4	330.8	ERR	High pH & S.C., not purged
FS1-25	*23-25*	7/20/1996	*	1	9,403.3	427.1	224.1	
FS1-25	*23-25*	7/20/1996	*	2	88,830.6	393.6	162	
FS1-25	*23-25*	7/20/1996	*	3	9,083.3	372.3	119.9	
FS1-35	*33-35*	9/25/1991	1125	1	55,423.8	206.7	ERR	100 mL/min, ¼" Cu
FS1-35	*33-35*	9/25/1991	1130	3	28,701.1	191.1	ERR	Well not completely purge
FS1-35	*33-35*	7/20/1996	*	1	ERR	1,089.6	ERR	
FS1-35	*33-35*	7/20/1996	*	2	ERR	1,355.5	ERR	
FS1-35	*33-35*	7/20/1996	*	3	ERR	1,128.7	ERR	
FS1	*121-136*	9/25/1991	1340	#	5,2032.3	117.7	ERR	Some H_2S
FS1	*121-136*	9/25/1991	1345	3	6,1385.0	81.2	ERR	Analytical problems
FS1	*121-136*	9/25/1991	1426	5	5,3503.6	89.8	ERR	
FS1	*309-324*	8/5/1991	1905	#	230.0	0.0	ERR	Some H_2S
FS1	*309-324*	8/5/1991	1936	#	112.8	6.3	ERR	
FS1	*309-324*	8/5/1991	1939	3	220.6	0.0	ERR	
FS1	*348-363*	8/6/1991	1127	2	88.8	0.0	ERR	Trace H_2S
FS1	*348-363*	8/6/1991	1132	3	113.0	0.0	ERR	
FS1	*348-363*	8/6/1991	1206	5	80.4	0.0	ERR	
FS2	*134-149.3*	7/7/1992	20	4	918.8	164.0	53.2	
FS2	*134-149.3*	7/7/1992	1934	1	1,232.2	242.8	27.8	
FS2	*134-149.3*	7/7/1992	1939	2	1,189.3	226.6	55.1	
FS2	*134-149.3*	7/7/1992	1943	3	1,200.9	222.4	13.1	
FS2	*134-149.3*	7/7/1992	2056	5	946.6	174.2	7.2	
FS2	*236-251.3*	7/8/1992	1244	1	2,236.4	85.0	16.3	

Table 39. Concentrations of gases dissolved in water collected from selected wells in the Mirror Lake watershed, New Hampshire: chlorofluorocarbons.—Continued

[Date of sample collection is by month/day/year; CFC, chlorofluorocarbon; H_2S, hydrogen sulfide; Cu, copper; S.C., specific conductance; ", inch]

Name of well	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Time of collection	Sample number	Concentration in solution, pictograms per kilogram			Remarks
					CFC-11	CFC-12	CFC-113	
FS2	*236-251.3*	7/8/1992	1249	2	2,413.1	71.0	37.2	
FS2	*236-251.3*	7/8/1992	1255	3	2,089.7	81.8	8.8	
FS2	*236-251.3*	7/8/1992	1358	4	2,232.7	72.8	39.8	
FS2	*236-251.3*	7/8/1992	1402	5	1,963.4	81.8	8.7	
FS2	*236-251.3*	7/8/1992	1407	6	2,065.8	74.5	27.5	
FS2	*384-399.3*	7/8/1992	1733	1	249.9	65.5	39.0	
FS2	*384-399.3*	7/8/1992	1738	2	247.5	74.7	80.5	
FS2	*384-399.3*	7/8/1992	1749	3	206.3	74.8	34.7	
FS2	*384-399.3*	7/8/1992	1827	4	260.2	266.9	95.2	
FS2	*384-399.3*	7/8/1992	1837	6	166.8	186.8	35.9	
FS3	*60-72.4*	7/19/1993	1454	#	17,415.7	110.4	544.4	
FS3	*60-72.4*	7/19/1993	1457	#	18,457.7	114.6	551.7	
FS3	*60-72.4*	7/19/1993	1609	#	16,670.1	99.4	476.3	
FS3	*60-75.1*	7/12/1992	1354	1	1,129.8	31.4	414.9	
FS3	*60-75.1*	7/12/1992	1358	2	1,084.5	34.2	568.3	
FS3	*60-75.1*	7/12/1992	1402	3	1,075.4	30.3	376.3	
FS3	*60-75.1*	7/12/1992	1442	4	1,001.7	34.3	555.7	
FS3	*60-75.1*	7/12/1992	1445	5	1,032.7	33.3	420.9	
FS3	*60-75.1*	7/12/1992	1450	6	973.3	36.6	540.8	
FS3	*294-306.2*	7/20/1993	1117	#	8,205.8	133.0	144.9	
FS3	*294-306.2*	7/20/1993	1206	#	5,686.0	736.4	80.5	
FS3	*294-306.2*	7/20/1993	1210	#	5,674.0	914.7	95.9	
FS3	*294-306.2*	7/20/1993	1214	#	4,972.1	603.1	74.2	
FS3	*294-309.1*	7/12/1992	1745	1	11,948.0	35.0	319.3	
FS3	*294-309.1*	7/12/1992	1755	2	16,108.1	33.1	431.7	
FS3	*294-309.1*	7/12/1992	1801	3	11,407.8	31.5	252.6	
FS3	*294-309.1*	7/12/1992	1806	4	14,554.2	41.9	424.6	
FS3	*294-309.1*	7/12/1992	1904	5	12,961.5	32.6	325.7	
FS3	*294-309.1*	7/12/1992	1908	6	35,959.6	28.7	464.4	
FS3	*294-309.1*	7/12/1992	1920	7	36,510.2	27.6	434.6	
FS3	*365-377.2*	7/20/1993	1621	#	983.1	6.9	14.5	
FS3	*365-377.2*	7/20/1993	1631	#	790.8	5.3	9.3	

Table 39. Concentrations of gases dissolved in water collected from selected wells in the Mirror Lake watershed, New Hampshire: chlorofluorocarbons.—Continued

[Date of sample collection is by month/day/year; CFC, chlorofluorocarbon; H_2S, hydrogen sulfide; Cu, copper; S.C., specific conductance; ", inch]

Name of well	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Time of collection	Sample number	Concentration in solution, pictograms per kilogram			Remarks
					CFC-11	CFC-12	CFC-113	
FS3	*365-377.2*	7/20/1993	1635	#	800.2	6.1	10.1	
FS3	*365-380.1*	7/13/1992	1019	1	9,514.3	20.5	88.5	
FS3	*365-380.1*	7/13/1992	1023	2	9,072.1	19.5	237.4	
FS3	*365-380.1*	7/13/1992	1027	3	9,005.9	19.2	131.5	
FS3	*365-380.1*	7/13/1992	1047	4	8,070.6	17.3	241.7	
FS3	*365-380.1*	7/13/1992	1054	5	7,270.9	15.8	98.2	
FS3	*365-380.1*	7/13/1992	1105	6	6,499.8	14.4	94.3	
FS3	*530-545.1*	7/13/1992	1336	1	9,412.7	35.9	19.2	
FS3	*530-545.1*	7/13/1992	1341	2	8,136.5	36.1	43.7	
FS3	*530-545.1*	7/13/1992	1401	4	6,120.0	21.8	20.2	
FS3	*530-545.1*	7/13/1992	1408	5	5,687.5	19.9	10.9	
FS3	*530-545.1*	7/13/1992	1420	6	6,039.0	18.8	6.8	
FS3C-19	*18-19*	7/14/1995	*	1	1,110.7	408.7	118	
FS3C-19	*18-19*	7/14/1995	*	2	1,096.3	417.3	131.3	
FS3C-19	*18-19*	7/14/1995	*	3	1,060.5	419.9	129.5	
FS3C-19	*18-19*	7/18/1996	*	1	812.9	389.3	163.6	
FS3C-19	*18-19*	7/18/1996	*	2	786.6	382.7	148.4	
FS3C-19	*18-19*	7/18/1996	*	3	860.4	377.8	153.2	
FS3C-24	*23-24*	7/19/1992	1615	1	1,193.2	455.6	142.6	
FS3C-24	*23-24*	7/19/1992	1618	2	1,624.1	488.1	158.9	
FS3C-24	*23-24*	7/19/1992	1734	3	1,186.0	465.1	160.2	
FS3C-24	*23-24*	7/19/1992	1738	4	1,223.0	459.0	78.4	
FS3C-24	*23-24*	7/15/1995	*	1	1,116.5	439.2	242.9	
FS3C-24	*23-24*	7/15/1995	*	2	1,135.2	461.1	214.5	
FS3C-24	*23-24*	7/15/1995	*	3	1,092.7	439.2	205	
FS3C-24	*23-24*	7/18/1996	*	1	939.8	396.5	154.2	
FS3C-24	*23-24*	7/18/1996	*	2	953.1	402.7	161.1	
FS3C-24	*23-24*	7/18/1996	*	3	976.1	386.2	145.8	
FS3C-29	*28-29*	7/18/1992	1906	2	1,505.3	446.1	158.8	
FS3C-29	*28-29*	7/18/1992	1940	4	1,106.3	405.5	108.6	
FS3C-29	*28-29*	7/18/1992	1946	5	1,215.4	391.5	48.7	
FS3C-29	*28-29*	7/18/1992	1951	6	2,136.3	414.1	110.1	

Table 39. Concentrations of gases dissolved in water collected from selected wells in the Mirror Lake watershed, New Hampshire: chlorofluorocarbons.—Continued

[Date of sample collection is by month/day/year; CFC, chlorofluorocarbon; H_2S, hydrogen sulfide; Cu, copper; S.C., specific conductance; ", inch]

Name of well	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Time of collection	Sample number	Concentration in solution, pictograms per kilogram			Remarks
					CFC-11	CFC-12	CFC-113	
FS3C-29	*28-29*	7/17/1996	*	1	952.3	382.2	182.8	
FS3C-29	*28-29*	7/17/1996	*	2	680	281.7	130.1	
FS3C-29	*28-29*	7/17/1996	*	3	931.7	381.8	169.1	
FSE-32	*30-32*	5/27/1992	1118	#	19,383.9	564.9	338.7	
FSE-32	*30-32*	5/27/1992	1208	#	19,887.8	386.7	278.5	
FSE-32	*30-32*	5/27/1992	1524	#	18,717.7	363.5	111.4	
FSE-32	*30-32*	5/27/1992	1527	#	17,897.1	356.4	157.0	
FSE-32	*30-32*	5/27/1992	1530	#	19,427.0	369.5	98.6	
FS3C-34	*28-29*	7/18/1992	1900	1	1,091.9	440.3	37.1	
FSE-43	*41-43*	5/19/1992	1459	#	1,884.4	574.8	63.1	
FSE-43	*41-43*	5/19/1992	1502	#	36,869.4	1,706.0	1691.5	
FSE-43	*41-43*	5/19/1992	1506	#	3,799.2	1,670.6	100.3	
FSE-43	*41-43*	5/19/1992	1747	#	13,882.7	312.1	16.4	
FSE-43	*41-43*	5/19/1992	1750	#	19,505.3	236.4	15.4	
FSE-43	*41-43*	5/19/1992	1756	#	18,768.5	310.6	52.9	
FSE4	(438.2-445.0)	5/18/1992	1700	#	373.7	5.2	24.9	
FSE4	(438.2-445.0)	5/18/1992	1720	#	3,455.7	0.0	35.1	
FSE4	(438.2-445.0)	5/18/1992	1724	#	339.8	6.8	1.4	
FSE4	(438.2-445.0)	5/18/1992	1808	#	3,863.0	0.0	270.2	
FSE4	(438.2-445.0)	5/18/1992	1822	#	3,802.0	0.0	73.1	
FSE5	*108.0-115.0*	9/16/1991	1050	#	185.9	17.7	ERR	New
FSE5	*108.0-115.0*	9/16/1991	1121	#	94.0	24.2	ERR	Little H_2S
FSE5	*108.0-115.0*	9/16/1991	1206	#	105.2	22.4	ERR	New
FSE5	*108.0-115.0*	9/16/1991	1240	#	90.1	18.2	ERR	New
FSE5	*108.0-115.0*	9/16/1991	1526	#	95.4	14.8	ERR	
FSE5	*108.0-115.0*	9/16/1991	1730	#	105.4	14.8	ERR	
FSE5	*108.0-115.0*	9/16/1991	1734	#	127.7	21.2	ERR	New
FSE5	*108.0-115.0*	9/16/1991	1830	#	79.8	24.4	ERR	New
FSE5	*108.0-115.0*	9/16/1991	1933	#	111.1	18.9	ERR	New
FSE5	*108.0-115.0*	9/17/1991	0837	#	104.7	28.3	ERR	New
FSE5	*108.0-115.0*	9/17/1991	1039	#	122.3	15.6	ERR	Little H_2S
FSE5	*108.0-115.0*	9/17/1991	1045	#	96.1	16.6	ERR	

Table 39. Concentrations of gases dissolved in water collected from selected wells in the Mirror Lake watershed, New Hampshire: chlorofluorocarbons.—Continued

[Date of sample collection is by month/day/year; CFC, chlorofluorocarbon; H_2S, hydrogen sulfide; Cu, copper; S.C., specific conductance; ", inch]

Name of well	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Time of collection	Sample number	Concentration in solution, pictograms per kilogram			Remarks
					CFC-11	CFC-12	CFC-113	
FSE5	*108.0-115.0*	9/17/1991	1106	#	116.3	15.4	ERR	
FSE5	*108.0-115.0*	9/17/1991	1215	#	84.7	18.4	ERR	
FSE5	*108.0-115.0*	9/17/1991	1221	#	78.0	14.8	ERR	
FSE6	*93.4-122.0*	8/5/1992	1148	#	29.3	15.2	189.3	
FSE6	*93.4-122.0*	8/5/1992	1202	#	2.7	11.9	7.4	
FSE6	*93.4-122.0*	8/5/1992	1230	#	15.5	15.9	9.9	
FSE6	*93.4-122.0*	8/5/1992	1306	#	5.4	18.9	9.6	
FSE6	*93.4-122.0*	8/5/1992	1333	#	5.6	21.6	11.9	
FSE6	*93.4-122.0*	8/5/1992	1403	#	14.1	23.8	16.1	
FSE6	*93.4-122.0*	8/5/1992	1435	#	13.5	25.6	8.9	
FSE6	*93.4-122.0*	8/5/1992	1503	#	11.5	26.1	15.0	
FSE6	*93.4-122.0*	8/5/1992	1602	#	9.4	29.1	18.3	
FSE6	*93.4-122.0*	8/5/1992	1706	#	12.3	30.6	21.9	
FSE6	*93.4-122.0*	8/5/1992	1803	#	11.0	32.1	36.2	
FSE6	*93.4-122.0*	8/5/1992	1906	#	12.6	38.4	31.1	
FSE6	*93.4-122.0*	8/5/1992	2155	#	11.9	93.5	52.3	
FSE6	*93.4-122.0*	8/6/1992	0913	#	6.4	31.8	71.4	
FSE6	*93.4-122.0*	8/6/1992	1015	#	8.7	34.2	88.3	
FSE6	*93.4-122.0*	8/6/1992	1103	#	10.7	35.1	83.9	
FSE6	*93.4-122.0*	8/6/1992	1210	#	8.3	35.5	131.6	
H1	Open Hole	8/12/1991	1301	#	412.6	174.0	ERR	Some H_2S
H1	Open Hole	8/12/1991	1329	#	391.4	163.2	ERR	
H1	Open Hole	8/12/1991	1510	#	410.9	168.3	ERR	
H1	(107.0-122.0)	8/13/1991	1914	#	72.1	91.2	ERR	Little H_2S
H1	(107.0-122.0)	8/13/1991	2002	#	75.7	92.4	ERR	
H1	(107.0-122.0)	8/13/1991	2012	#	73.1	93.3	ERR	
H1	(178.0-193.0)	8/7/1991	1424	2	813.2	505.6	ERR	Sample contaminate with air
H1	(178.0-193.0)	8/13/1991	1509	#	152.2	94.1	ERR	Variable H_2S-
H1	(178.0-193.0)	8/13/1991	1514	#	153.2	83.0	ERR	Moderate to high
H1	(178.0-193.0)	8/13/1991	1554	#	108.8	75.3	ERR	
H1	(178.0-193.0)	8/13/1991	1559	#	107.5	73.3	ERR	

Table 39. Concentrations of gases dissolved in water collected from selected wells in the Mirror Lake watershed, New Hampshire: chlorofluorocarbons.—Continued

[Date of sample collection is by month/day/year; CFC, chlorofluorocarbon; H_2S, hydrogen sulfide; Cu, copper; S.C., specific conductance; ", inch]

Name of well	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Time of collection	Sample number	Concentration in solution, pictograms per kilogram			Remarks
					CFC-11	CFC-12	CFC-113	
IS1	(56.0-58.8)	6/3/1992	1210	#	438.8	100.7	68.1	
IS1	(56.0-58.8)	6/3/1992	1212	#	94.2	124.5	73.8	
IS1	(56.0-58.8)	6/3/1992	1220	#	82.2	110.4	25.6	
IS1	(56.0-58.8)	6/3/1992	1248	#	315.2	100.9	37.8	
IS1	(56.0-58.8)	6/3/1992	1251	#	75.7	110.7	14.4	
IS1	(56.0-58.8)	6/3/1992	1256	#	144.5	101.0	31.1	
IS1	(364.0-370.8)	6/4/1992	0953	1	347.0	137.6	1,972.3	
IS1	(364.0-370.8)	6/4/1992	0957	2	383.3	116.3	2,997.8	
IS1	(364.0-370.8)	6/4/1992	1000	3	338.0	130.9	1,625.1	
IS1	(364.0-370.8)	6/4/1992	1042	5	258.5	110.8	1,006.0	
IS1	(400.0-406.8)	6/4/1992	1334	1	578.1	136.0	2,105.8	
IS1	(400.0-406.8)	6/4/1992	1336	#	584.0	120.7	3,338.9	
IS1	(400.0-406.8)	6/4/1992	1342	#	559.1	129.9	1,859.3	
IS1	(400.0-406.8)	6/4/1992	1421	#	399.5	120.5	9,180.2	
IS1	(400.0-406.8)	6/4/1992	1430	#	399.0	125.0	2,209.2	
IS1	(466.5-473.3)	6/4/1992	1738	1	169.3	29.3	9.1	
IS1	(466.5-473.3)	6/4/1992	1742	2	222.6	35.4	14.8	
IS1	(466.5-473.3)	6/4/1992	1746	3	228.5	35.0	11.6	
R1-36	Water table	9/26/1991	1315	2	66,099.1	484.2	ERR	
R1-36	Water table	9/26/1991	1320	3	84,719.4	435.4	ERR	250 mL/min, ¼" Cu
R1-36	Water table	9/26/1991	1325	4	83,688.2	418.6	ERR	
R1-36	Water table	7/10/1995	*	1	922.1	422.1	175.5	
R1-36	Water table	7/10/1995	*	2	922.9	421	173.4	
R1-36	Water table	7/10/1995	*	3	892.5	421.1	181.7	
R1-55	*53-55*	9/26/1991	1130	1	0.5	406.6	ERR	Pumped well -100mL/min.
R1-55	*53-55*	9/26/1991	1130	2	79.1	392.9	ERR	Went dry, wait 2 hr, fill ampules
R1-55	*53-55*	9/26/1991	1130	3	0.4	400.2	ERR	High pH, never purged, mod. H_2S
R1-55	*53-55*	7/11/1995	*	1	ERR	609.5	ERR	
R1-55	*53-55*	7/11/1995	*	2	342.1	441.6	ERR	
R1-55	*53-55*	7/11/1995	*	3	ERR	234.6	ERR	

Table 39. Concentrations of gases dissolved in water collected from selected wells in the Mirror Lake watershed, New Hampshire: chlorofluorocarbons.—Continued

[Date of sample collection is by month/day/year; CFC, chlorofluorocarbon; H_2S, hydrogen sulfide; Cu, copper; S.C., specific conductance; ", inch]

Name of well	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Time of collection	Sample number	Concentration in solution, pictograms per kilogram			Remarks
					CFC-11	CFC-12	CFC-113	
R1	*65.0-80.1*	7/14/1992	1314	1	21,901.9	104.9	3.6	
R1	*65.0-80.1*	7/14/1992	1320	2	21,331.6	94.6	0.0	
R1	*65.0-80.1*	7/14/1992	1323	3	21,197.0	94.3	17.7	
R1	*65.0-80.1*	7/14/1992	1346	4	20,861.4	98.8	0.0	
R1	*65.0-80.1*	7/14/1992	1350	5	21,549.6	93.7	10.4	
R1	*65.0-80.1*	7/14/1992	1400	6	21,505.3	88.2	0.0	
R1	*110.0-125.1*	7/14/1992	1559	1	10,511.5	23.5	2.7	
R1	*110.0-125.1*	7/14/1992	1607	2	4,253.3	44.3	0.0	
R1	*110.0-125.1*	7/14/1992	1612	3	3,060.1	51.8	16.9	
R1	*110.0-125.1*	7/14/1992	1621	4	2,046.2	40.8	0.0	
R1	*110.0-125.1*	7/14/1992	1625	5	1,850.5	41.4	0.0	
R1	*110.0-125.1*	7/14/1992	1630	6	1,612.0	42.9	0.0	
R1	*147.0-162.1*	7/15/1992	1155	1	2,073.5	14.7	36.6	
R1	*147.0-162.1*	7/15/1992	1158	2	1,555.6	19.1	88.1	
R1	*147.0-162.1*	7/15/1992	1203	3	1,426.5	18.1	40.5	
R1	*147.0-162.1*	7/15/1992	1232	4	1,239.1	14.1	144.1	
R1	*147.0-162.1*	7/15/1992	1236	5	1,371.0	9.8	91.7	
R1	*147.0-162.1*	7/15/1992	1240	6	1,427.1	10.6	156.0	
R1	*480.0-495.1*	7/15/1992	1304	1	7,186.9	215.6	231.4	
R1	*480.0-495.1*	7/15/1992	1609	2	254.8	85.1	461.1	
R1	*480.0-495.1*	7/15/1992	1612	3	258.3	73.7	369.2	
R1	*480.0-495.1*	7/15/1992	1656	4	199.3	81.5	407.7	
R1	*480.0-495.1*	7/15/1992	1701	5	165.5	57.7	292.4	
R1	*480.0-495.1*	7/15/1992	1704	6	196.2	71.3	375.2	
RR1 PZ	Water table	8/21/1995	*	1	4,133.8	411.5	163.4	
RR1 PZ	Water table	8/21/1995	*	2	4,255.1	376.4	191	
RR1 PZ	Water table	8/21/1995	*	3	4,421.6	415.6	159	
T1	(57.0-72.0)	8/15/1991	1148	#	13.0	130.0	ERR	Some H_2S
T1	(57.0-72.0)	8/15/1991	1152	#	18.3	120.1	ERR	
T1	(57.0-72.0)	8/15/1991	1223	#	7.2	118.3	ERR	
T1	(155.0-172.0)	8/15/1991	1705	#	26.2	406.5	ERR	Some H_2S
T1	(155.0-172.0)	8/15/1991	1732	#	12.0	339.0	ERR	

Table 39. Concentrations of gases dissolved in water collected from selected wells in the Mirror Lake watershed, New Hampshire: chlorofluorocarbons.—Continued

[Date of sample collection is by month/day/year; CFC, chlorofluorocarbon; H_2S, hydrogen sulfide; Cu, copper; S.C., specific conductance; ", inch]

Name of well	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Time of collection	Sample number	Concentration in solution, pictograms per kilogram			Remarks
					CFC-11	CFC-12	CFC-113	
T1	(155.0-172.0)	8/15/1991	1736	#	10.3	325.9	ERR	
T1	(220.0-237.0)	8/15/1991	1118	#	376.2	205.0	ERR	Moderate H_2S
T1	(220.0-237.0)	8/15/1991	1954	#	36.4	239.8	ERR	
T1	(220.0-237.0)	8/15/1991	2003	#	31.3	176.4	ERR	
TR1-63	Water table	9/26/1991	1545	1	824.9	299.5	ERR	
TR1-63	Water table	9/26/1991	1550	2	781.7	293.5	ERR	Good flow, ¼" Cu
TR1-63	Water table	9/26/1991	1555	3	1,174.9	290.8	ERR	
TR1-63	Water table	9/26/1991	1600	4	762.5	298.3	ERR	
TR1-63	Water table	7/8/1995	*	1	5,770.7	347.9	80.9	
TR1-63	Water table	7/8/1995	*	2	5,561	361.4	87.5	
TR1-63	Water table	7/8/1995	*	3	5,181.4	351.6	82.3	
TR1	*170.0-190.0*	6/30/1992	1331	1	149.0	80.0	81.4	
TR1	*170.0-190.0*	6/30/1992	1342	3	137.9	74.3	52.1	
TR1	*170.0-190.0*	6/30/1992	1436	4	274.0	75.2	72.7	
TR1	*170.0-190.0*	6/30/1992	1451	5	136.4	81.4	43.9	
TR1	*170.0-190.0*	6/30/1992	1455	6	284.9	70.2	108.2	
TR1	*170.0-190.0*	6/30/1992	1500	7	230.0	85.5	75.4	
TR1	*271.0-299.8*	6/30/1992	1654	1	1,877.6	60.6	506.4	
TR1	*271.0-299.8*	6/30/1992	1700	3	1,911.2	47.7	564.0	
TR1	*271.0-299.8*	6/30/1992	1703	4	1,716.5	68.2	543.1	
TR1	*271.0-299.8*	6/30/1992	1747	5	1,428.3	44.3	444.9	
TR1	*271.0-299.8*	6/30/1992	1754	6	1,132.2	40.9	733.6	
TR1	*271.0-299.8*	6/30/1992	1758	7	1,217.7	56.2	851.0	
TR1	*298.6-327.4*	7/1/1992	1121	1	2,197.2	51.7	371.0	
TR1	*298.6-327.4*	7/1/1992	1126	2	1,666.1	61.3	400.2	
TR1	*298.6-327.4*	7/1/1992	1135	3	2,047.3	69.9	341.9	
TR1	*298.6-327.4*	7/1/1992	1214	4	1,462.3	46.9	265.5	
TR1	*298.6-327.4*	7/1/1992	1218	5	1,526.1	36.6	223.0	
TR1	*298.6-327.4*	7/1/1992	1226	6	1,470.6	44.9	233.5	
TR1	*390.0-397.8*	7/1/1992	1830	1	990.6	25.7	0.7	
TR1	*390.0-397.8*	7/1/1992	1837	2	904.9	28.8	32.9	
TR1	*390.0-397.8*	7/1/1992	1841	3	890.7	25.6	9.1	

Table 39. Concentrations of gases dissolved in water collected from selected wells in the Mirror Lake watershed, New Hampshire: chlorofluorocarbons.—Continued

[Date of sample collection is by month/day/year; CFC, chlorofluorocarbon; H_2S, hydrogen sulfide; Cu, copper; S.C., specific conductance; ", inch]

Name of well	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Time of collection	Sample number	Concentration in solution, pictograms per kilogram			Remarks
					CFC-11	CFC-12	CFC-113	
TR1	*390.0-397.8*	7/1/1992	1923	4	601.5	25.7	12.1	
TR1	*390.0-397.8*	7/1/1992	1929	5	613.1	30.4	6.3	
TR1	*390.0-397.8*	7/1/1992	1933	6	593.2	24.4	0.0	
TR1	*390.0-397.8*	7/1/1992	1939	7	577.0	26.0	10.6	
TR1	*482.0-489.8*	7/6/1992	1254	1	241.6	23.1	153.9	
TR1	*482.0-489.8*	7/6/1992	1258	2	260.4	11.9	824.4	
TR1	*482.0-489.8*	7/6/1992	1305	3	224.3	19.5	105.1	
TR1	*482.0-489.8*	7/6/1992	1357	4	209.9	15.3	557.7	
TR1	*482.0-489.8*	7/6/1992	1404	5	157.6	17.4	263.2	
TR1	*482.0-489.8*	7/6/1992	1408	6	186.7	18.0	465.7	
TR2	(151.0-170.1)	6/22/1992	1351	1	10.7	4.6	34.4	
TR2	(151.0-170.1)	6/22/1992	1359	2	0.0	6.9	62.2	
TR2	(151.0-170.1)	6/22/1992	1404	3	10.3	7.2	37.6	
TR2	(151.0-170.1)	6/22/1992	1429	4	43.1	7.0	62.3	
TR2	(151.0-170.1)	6/22/1992	1432	5	14.7	17.9	29.0	
TR2	(151-170.3)	7/21/1993	1321	#	52.1	39.5	230.8	
TR2	(151-170.3)	7/21/1993	1330	#	43.7	36.9	261.9	
TR2	(151-170.3)	7/21/1993	1413	#	40.5	38.3	99.6	
TR2	(151-170.3)	7/21/1993	1418	#	41.1	31.2	97.9	
TR2	(270-289.3)	7/21/1993	1656	#	98.3	162.2	17.4	
TR2	(270-289.3)	7/21/1993	1744	#	99.0	87.8	13.9	
TR2	(270-289.3)	7/21/1993	1758	#	100.7	122.4	ERR	
TR2	(270.0-298.1)	6/22/1992	1641	1	68.8	8.7	61.3	
TR2	(270.0-298.1)	6/22/1992	1643	2	78.4	7.0	136.3	
TR2	(270.0-298.1)	6/22/1992	1648	3	64.6	6.3	47.4	
TR2	(270.0-298.1)	6/22/1992	1738	4	45.2	4.7	37.3	
TR2	(270.0-298.1)	6/22/1992	1743	5	53.7	13.2	84.8	
TR2	(270.0-298.1)	6/22/1992	1748	6	69.1	5.8	84.0	
TR2	(426.0-445.1)	6/23/1992	1429	1	40.6	878.1	151.0	
TR2	(426.0-445.1)	6/23/1992	1435	2	68.7	1,158.9	179.1	
TR2	(426.0-445.1)	6/23/1992	1442	3	34.8	11.1	106.7	
TR2	(426.0-445.1)	6/23/1992	1520	4	32.2	14.7	133.0	

Table 39. Concentrations of gases dissolved in water collected from selected wells in the Mirror Lake watershed, New Hampshire: chlorofluorocarbons.—Continued

[Date of sample collection is by month/day/year; CFC, chlorofluorocarbon; H_2S, hydrogen sulfide; Cu, copper; S.C., specific conductance; ", inch]

Name of well	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Time of collection	Sample number	Concentration in solution, pictograms per kilogram			Remarks
					CFC-11	CFC-12	CFC-113	
TR2	(426.0-445.1)	6/23/1992	1529	5	32.8	11.2	78.6	
TR2	(426.0-445.1)	6/23/1992	1539	6	55.2	8.9	123.2	
TR2	(426-445.3)	7/22/1993	0937	#	63.5	33.3	72.0	
TR2	(426-445.3)	7/22/1993	1014	#	35.7	20.7	34.6	
TR2	(426-445.3)	7/22/1993	1025	#	28.1	10.8	19.8	

[1] *, indicates this characteristic was not available for the well on the given date.

[2] #, indicates sample number for was not reported for sample collected at the time noted.

[3] ERR indicates interferences, cannot be quantified.

Table 40. Chemical characteristics of groundwater from bedrock well FSE4 in the Mirror Lake watershed, New Hampshire.

[Analyses were done by the Institute of Ecosystem Studies (D.C. Buso and Scott Nolan). Date of sample collection is by month/day/year]

Name of well	Depth below surface, in feet	Date of sample collection	Concentration in milligrams per liter		Concentration in micromoles per liter	Relative height of gas chromatograph peak indicating presence of Methane
			Dissolved oxygen	Dissolved organic carbon	Dissolved inorganic carbon	
FSE4	65-85	10/23/86	2.95	8.4	2.8	Low
FSE4	80-100	10/26/86	0.00	3.6	5.4	Very low
FSE4	135-155	10/23/86	0.00	1.9	4.0	Medium low
FSE4	430-450	10/29/86	0.00	0.6	13.1	Very low

Table 41. Chemical characteristics of water collected from selected wells in the Mirror Lake watershed, New Hampshire: hardness.

[Date of sample collection is by month/day/year. $CaCO_3$, calcium carbonate; A, B, C, sample zones]

Name of well	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Milligrams per liter	
			Hardness total as $CaCO_3$	Hardness noncarbonate whole water total field as $CaCO_3$
W3	Water table	5/30/1990	15	0
W26	Water table	5/23/1990	23	0
S-40	Water table	5/22/1990	11	3
CO WT	Water table	5/9/1990	7	0
CO1	B (101-209)	5/10/1990	150	41
CO1	B (104-116)	6/21/1990	150	58
CO1	C (409-421)	6/22/1990	110	4
CO2	A (25-104)	5/9/1990	54	0
CO2	B (163-171)	6/29/1990	130	*[1]
FS1-17	Water table	5/30/1990	20	0
FS1-35	*33-35*	5/30/1990	29	0
FS1	A (55-105)	5/31/1990	22	0
FS1	C (217-450)	5/25/1990	71	0
FS2	A (32-105)	5/22/1990	21	0
FS2	B (133-169)	8/7/1990	*	*
FS2	C (236-251)	8/6/1990	220	*
FS3-22	*20-22*	5/24/1990	17	0
FS3	A (38-84)	5/23/1990	44	0
FS3	A (60-75)	8/10/1990	43	*
FS3	C (197-645)	5/25/1990	92	0
FS3	C (365-380)	8/9/1990	77	0
FS3	C (530-545)	8/9/1990	52	*
FSE-23	*21-23*	6/1/1990	150	*
FSE-43	*41-43*	6/1/1990	250	*
FSE2	A (55-105)	6/1/1990	99	*
FSE2	B (107-215)	6/1/1990	*	*
K2-21	Water table	5/17/1990	54	21
K2-41	*39-41*	5/17/1990	46	0
K2	(55-160)	5/17/1990	70	0
K3-22	Water table	5/16/1990	12	7
K3-61	*59-61*	5/16/1990	24	0

Table 41. Chemical characteristics of water collected from selected wells in the Mirror Lake watershed, New Hampshire: hardness.—Continued

[Date of sample collection is by month/day/year. $CaCO_3$, calcium carbonate; A, B, C, sample zones]

Name of well	Sampled zones (feet below top of casing) or *feet below land surface*	Date of sample collection	Milligrams per liter	
			Hardness total as $CaCO_3$	Hardness noncarbonate whole water total field as $CaCO_3$
K3	(75-175)	5/16/1990	84	0
K1-8	Water table	5/21/1990	9	4
K1-39	*37-39*	5/22/1990	170	0
K1	borehole	5/17/1990	*	*
TR1-63	Water table	5/15/1990	18	3
TR1	A (177-199)	5/15/1990	50	0
TR1	B (200-299)	5/17/1990	76	0

[1] *, indicates analysis for this characteristic was not done for water collected from this well on the given date.

Table 42. Physical, chemical, radiochemical isotope, and stable isotope ratio characteristics of water collected from Mirror Lake, New Hampshire, August 1, 1993.

[Values in the table are isotope ratios relative to reference materials of Standard Mean Ocean Water (SMOW) and Vienna Pee Dee Belemnite (VPDB) ; HCO_3^-, bicarbonate; <, less than]

Sampled zone below lake surface, in meters	Field pH pH units	Field Alkalinity, in milligrams per liter as HCO_3^-	Concentration in milligrams per liter[1]					
			Calcium	Magnesium	Sodium	Potassium	Chloride	Sulfate
0.5	6.95	4.6	2.20 *2.23*	0.49 *0.48*	2.40 *2.26*	0.50 *0.43*	3.20 *3.28*	4.2 *4.4*
1.5	*[2]	*	2.20 *2.25*	0.49 *0.48*	2.20 *2.23*	0.41 *0.42*	3.40 *3.31*	4.0 *4.3*
3.0	6.82	4.3	2.30 *2.24*	0.50 *0.48*	2.30 *2.26*	0.50 *0.42*	3.20 *3.31*	4.1 *4.3*
4.5	*	*	2.30 *2.26*	0.51 *0.49*	2.40 *2.37*	0.43 *0.43*	3.40 *3.51*	4.1 *4.3*
6.0	6.53	5.6	2.20 *2.32*	0.49 *0.50*	2.30 *2.48*	0.40 *0.49*	3.10 *3.67*	3.9 *4.0*
6.5	6.48	6.3	2.30 *2.30*	0.49 *0.49*	2.30 *2.30*	0.38 *0.41*	3.00 *3.25*	4.1 *4.0*
7.25	6.24	5.5	2.20 *2.35*	0.50 *0.49*	2.30 *2.22*	0.40 *0.35*	3.00 *3.15*	4.0 *4.1*
8.0	6.03	7.3	2.40 *2.51*	0.50 *0.52*	2.30 *2.28*	0.39 *0.42*	3.20 *3.31*	4.0 *4.1*
8.75	5.89	8.2	2.50 *2.50*	0.55 *0.52*	2.30 *2.28*	0.44 *0.42*	3.10 *3.31*	3.7 *4.0*
9.5	5.91	9.2	2.80 *2.72*	0.61 *0.58*	2.50 *2.35*	0.53 *0.46*	3.10 *3.39*	3.3 *3.6*

Table 42. Physical, chemical, radiochemical isotope, and stable isotope ratio characteristics of water collected from Mirror Lake, New Hampshire, August 1, 1993.—Continued

[Values in the table are isotope ratios relative to reference materials of Standard Mean Ocean Water (SMOW) and Vienna Pee Dee Belemnite (VPDB) ; HCO_3^-, bicarbonate; <, less than]

Sampled zone below lake surface, in meters	Concentration in milligrams per liter[1]								
	Silica as SiO_2	Fluoride	Bromide	Iron	Manganese	Strontium	Ammonium	Nitrate	Ortho phosphate
0.5	2.1 *1.9*	<0.1	<0.010	0.019	<0.005	0.019	*0.06*	*<0.03*	*0.003*
1.5	2.1 *1.9*	<0.1	<0.010	<0.010	<0.005	0.018	*<0.02*	*<0.03*	*0.003*
3.0	2.1 *1.9*	<0.1	<0.010	0.063	<0.005	0.018	*<0.02*	*<0.03*	*0.003*
4.5	2.1 *1.9*	<0.1	<0.010	0.013	<0.005	0.019	*0.02*	*<0.03*	*0.003*
6.0	1.1 *1.0*	<0.1	<0.010	0.011	<0.005	0.019	*0.011*	*0.09*	*0.008*
6.5	1.0 *0.9*	<0.1	<0.010	0.022	<0.005	0.019	*0.06*	*<0.03*	*0.004*
7.25	1.0 *1.0*	<0.1	<0.010	0.021	0.006	0.019	*<0.02*	*<0.03*	*0.002*
8.0	1.4 *1.6*	<0.1	<0.010	0.034	0.051	0.020	*0.02*	*<0.03*	*0.004*
8.75	2.1 *2.0*	<0.1	<0.010	0.121	0.123	0.021	*0.03*	*<0.03*	*0.003*
9.5	2.6 *2.3*	<0.1	<0.010	0.139	0.239	0.023	*<0.02*	*<0.03*	*0.006*

Table 42. Physical, chemical, radiochemical isotope, and stable isotope ratio characteristics of water collected from Mirror Lake, New Hampshire, August 1, 1993.—Continued

[Values in the table are isotope ratios relative to reference materials of Standard Mean Ocean Water (SMOW) and Vienna Pee Dee Belemnite (VPDB) ; HCO_3^-, bicarbonate; <, less than]

Sampled zone below lake surface, in meters	Tritium	per mil ‰		
	Tritium units	δ^2H (SMOW)	$\delta^{18}O$ (SMOW)	$\delta^{13}C$ (VPDB)
0.5	14.7 +/- 0.6	-54.8	-7.31	n.s.[3]
1.5	14.8 +/- 0.6	-54.5	-7.44	-17.65
3.0	13.4 +/- 0.5	-55.2	-7.30	-13.95
4.5	15.4 +/- 0.6	-55.0	-7.33	-15.60
6.0	14.3 +/- 0.6	-58.7	-8.11	-19.80
6.5	13.3 +/- 0.5	n.s.	n.s.	-16.60
7.25	14.7 +/- 0.6	-58.0	-8.04	-17.75
8.0	15.7 +/- 0.6	-59.9	-8.13	-23.50
8.75	14.2 +/- 0.6	-58.7	-8.02	-24.15
9.5	15.3 +/- 0.6	-59.0	-8.05	-25.60

[1] Analytical results from a U.S. Geological Survey (USGS) laboratory are shown in regular type. Analytical results from the Institute of Ecosystem Studies (IES) laboratory are shown in italics.

[2] *, indicates field analysis for this characteristic was not done for water collected from this depth.

[3] n.s., indicates no sample collected.

Note: Water has been collected from the lake and analyses performed by the IES laboratory for decades. To place that long-term dataset in context with analyses obtained from USGS laboratories for groundwater collected from the wells, analyses were performed by both laboratories for water collected from the lake on this date. Water was collected at the deepest point in the lake. Samples were collected by use of a peristaltic pump drawing water from a tube that extended to the desired depth below the lake surface. On the morning of August 2, 1993, water samples were collected at these same depths to perform alkalinity titrations, which were conducted in the field.

Table 43. Helium data for water collected from selected wells in the Mirror Lake watershed, New Hampshire (modified from Drenkard and others 1996).

[ccSTP/g, cubic centimeters of helium (He) at 0 degrees Celsius and one atmosphere per gram of sample water; $^3He/^4He$, ratio of the excess helium component. Helium and tritium samples were not collected at the same time. Date of sample collection is by month/day/year].

Name of well	Sampled zones (feet below top of casing) or feet below land surface	Date of sample collection	Measured $^3He/^4He$ ratio	$^3He/^4He$ error in %	^4He in ccSTP/g	^4He error in %	^3He in ccSTP/g
CO1-18	*16-18*	12/3/1990	1.40×10^{-6}	1	5.43×10^{-8}	1	7.63×10^{-14}
CO1	*104-114*	6/16/1992	7.33×10^{-7}	1.5	2.30×10^{-7}	3	1.69×10^{-13}
FS1-17	Water table	5/30/1990	3.20×10^{-6}	nr[1]	8.19×10^{-9}	4	2.62×10^{-14}
FS1-17	Water table	9/23/1991	1.43×10^{-6}	1.5	6.11×10^{-8}	2	8.75×10^{-14}
FS1-25	*23-25*	9/25/1991	1.58×10^{-6}	1.6	6.84×10^{-8}	2	1.08×10^{-13}
FS1-35	*33-35*	12/5/1990	2.20×10^{-6}	1	8.51×10^{-8}	1	1.87×10^{-13}
FS1-35	*33-35*	9/24/1991	2.30×10^{-6}	1.5	7.75×10^{-8}	2	1.78×10^{-13}
FS1-35	*33-35*	July/1992	7.32×10^{-6}	nr	3.23×10^{-9}	12	2.37×10^{-14}
FS1	*309-324*	8/5/1991	6.35×10^{-6}	nr	8.96×10^{-11}	158	5.69×10^{-16}
FS1	*348-363*	8/6/1991	1.65×10^{-6}	nr	5.22×10^{-10}	18	8.62×10^{-16}
FS2	*134-149.3*	7/7/1992	1.63×10^{-6}	2	4.71×10^{-6}	15	7.69×10^{-12}
FS2	*236-251*	7/8/1992	1.80×10^{-6}	nr	6.12×10^{-10}	12	1.10×10^{-15}
FS2	*384-399.3*	7/8/1992	1.52×10^{-6}	nr	3.22×10^{-9}	3	4.89×10^{-15}
FS3-22	*20-22*	5/24/1990	nr	nr	$<5.00 \times 10^{-11}$	nr	7.28×10^{-14}
FS3-22	*20-22*	12/5/1990	1.65×10^{-6}	1	7.32×10^{-8}	1	1.21×10^{-13}
FS3	*60-75.1*	7/12/1992	1.83×10^{-6}	1.5	2.35×10^{-7}	3	4.30×10^{-13}
FS3	*60-75.1*	7/19/1993	7.97×10^{-5}	nr	7.50×10^{-10}	27	5.97×10^{-14}
FS3	*530-545*	7/13/1992	2.62×10^{-5}	nr	4.10×10^{-10}	57	1.08×10^{-14}
FS3C-29	*28-29*	7/18/1992	1.16×10^{-4}	nr	5.64×10^{-10}	36	6.56×10^{-14}
FSE-32	*30-32*	5/21/1992	1.59×10^{-6}	1	1.29×10^{-7}	2	2.06×10^{-13}
FSE-43	*41-43*	5/19/1992	1.62×10^{-6}	2.5	7.53×10^{-6}	20	1.22×10^{-11}
FSE4	(438.2-445)	5/18/1992	1.44×10^{-6}	nr	2.22×10^{-9}	4	3.19×10^{-15}
H1	(107-122)	8/13/1991	1.14×10^{-6}	1.5	2.53×10^{-7}	6	2.89×10^{-13}
H1	(107-122)	8/13/1991	4.36×10^{-4}	nr	1.52×10^{-10}	138	6.62×10^{-14}
H1	(178-193)	8/13/1991	1.11×10^{-6}	1.5	1.91×10^{-6}	9	2.11×10^{-12}
IS1	(56-58.8)	6/3/1992	2.26×10^{-6}	1.5	1.13×10^{-7}	2	2.56×10^{-13}
K1-8	Water table	11/30/1990	1.38×10^{-6}	1	3.74×10^{-8}	1	5.15×10^{-14}
R1-36	Water table	9/26/1991	1.36×10^{-6}	1	6.25×10^{-8}	1	8.48×10^{-14}
R1	(57-80)	9/16/1990	1.77×10^{-4}	nr	4.26×10^{-10}	49	7.56×10^{-14}

Table 43. Helium data for water collected from selected wells in the Mirror Lake watershed, New Hampshire (modified from Drenkard and others 1996).—Continued

[ccSTP/g, cubic centimeters of helium (He) at 0 degrees Celsius and one atmosphere per gram of sample water; $^{3}He/^{4}He$, ratio of the excess helium component. Helium and tritium samples were not collected at the same time. Date of sample collection is by month/day/year].

Name of well	Sampled zones (feet below top of casing) or feet below land surface	Date of sample collection	Measured $^{3}He/^{4}He$ ratio	$^{3}He/^{4}He$ error in %	^{4}He in ccSTP/g	^{4}He error in %	^{3}He in ccSTP/g
R1	*65-80.1*	7/14/1992	1.48×10^{-6}	1	3.79×10^{-7}	3	5.60×10^{-13}
R1	*110-125.1*	7/14/1992	1.50×10^{-6}	1.5	8.69×10^{-7}	4	1.31×10^{-12}
R1	*147-162.1*	7/15/1992	1.50×10^{-6}	2	1.31×10^{-6}	5	1.97×10^{-12}
T1	(57-72)	8/15/1991	1.72×10^{-6}	1.5	1.27×10^{-6}	4	2.19×10^{-12}
T1	(155-172)	8/15/1991	1.66×10^{-6}	2	9.05×10^{-6}	20	1.51×10^{-11}
TR1-63	Water table	9/26/1991	1.40×10^{-6}	1.2	2.12×10^{-7}	3	2.96×10^{-13}
TR1-63	Water table	9/26/1991	1.39×10^{-6}	1.2	1.87×10^{-7}	3	2.60×10^{-13}
TR1	(170-190)	6/30/1992	2.39×10^{-6}	1	1.12×10^{-7}	1	2.69×10^{-13}
TR1	(170-190)	9/22/1990	1.82×10^{-4}	nr	7.05×10^{-10}	32	1.29×10^{-13}
TR2	(151-170)	6/22/1992	1.69×10^{-6}	2	8.67×10^{-5}	20	1.46×10^{-11}
TR2	(270-289.1)	6/22/1992	2.22×10^{-8}	nr	8.08×10^{-10}	12.5	1.80×10^{-15}
TR2	(426-445.1)	6/23/1992	5.86×10^{-6}	nr	9.87×10^{-11}	96	5.78×10^{-16}

[1] nr indicates not reported.

ISSN 2331-1258
DOI URL http://dx.doi.org/10.3133/ofr20131087