Geohydrology and Water Quality of Stratified-Drift Aquifers in the Winnipesaukee River Basin, Central New Hampshire

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PLATES

[Plates are in pocket]

FIGURES

TABLES

CONVERSION FACTORS, VERTICAL DATUM, AND ABBREVIATED WATER-QUALITY UNITS

CONVERSION FACTORS

Multiply	By	To obtain
	Length	
inch (in.)	25.4	millimeter
foot (ft)	0.3048	meter
mile (mi)	1.609	kilometer
	Slope	
foot per mile (ft/mi)	0.1894	meter per kilometer
	Area	
square mile (mi^2)	2.590	square kilometer
	Volume	
gallon (gal)	3.785	liter
million gallons (Mgal)	3,785	cubic meter
cubic foot (ft^3)	0.02832	cubic meter
	Velocity and Flow	
foot per second (ft/s)	0.3048	meter per second
cubic foot per second (ft^3/s)	0.02832	cubic meter per second
cubic foot per second per second per square mile [$(ft^3/s)/mi^2$]	0.01093	cubic meter per per square kilometer
gallon per minute (gal/min)	0.06309	liter per second
gallon per day (gal/d)	3.7854	liter per day
million gallons per day (Mgal/d)	0.04381	cubic meter per second
million gallons per day per square mile ($Mgal/d/mi^2$)	1,460	cubic meter per second per square kilometer
	Hydraulic Conductivity	
foot per day (ft/d)	0.3048	meter per day
	Transmissivity	
foot squared per day (ft^2/d)	0.09290	meter squared per day

VERTICAL DATUM

Sea level: In this report, "sea level" refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)—a geodetic datum derived from a general adjustment of the first-order level nets of the United States and Canada, formerly called Sea Level Datum of 1929.

ABBREVIATED WATER-QUALITY UNITS

In this report, chemical concentration in water is expressed in milligrams per liter (mg/L) or micrograms per liter (µg/L). Milligrams per liter is a unit expressing the concentration of chemical constituents in solution as weight (milligrams) of solute per unit volume (liter) of water; 1,000 µg/L (micrograms per liter) is equivalent to 1 mg/L (milligram per liter). Water temperature in degrees Celsius (°C) can be converted to degrees Fahrenheit (°F) by use of the following equation:

$$^{o}F = 1.8(^{o}C)+32.$$

Specific conductance of water is express in microsiemens per centimeter at 25 degrees Celsius (µS/cm). This unit is equivalent to micromhos per centimeter at 25 degrees Celsius, formerly used by the U.S. Geological Survey.

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By Joseph D. Ayotte

Abstract

The Winnipesaukee River Basin drains 484 square miles; 66 square miles is underlain by stratified-drift aquifers. Saturated thickness of stratified drift in the study area is locally greater than 100 feet but generally is less. Transmissivity of stratified-drift aquifers locally exceeds 4,000 square feet per day but is generally less than 1,000 square feet per day. In 1993, in the Winnipesaukee River Basin, ground-water withdrawals from stratified drift totaled about 0.1 million gallons per day for public supply. Many of the stratified-drift aquifers in the study area are not fully developed.

The geohydrologic investigation of stratified-drift aquifers focused on basic aquifer properties including aquifer boundaries; recharge, discharge, and direction of ground-water flow; saturated thickness and storage; and transmissivity. Surficial geologic mapping was used in the determination of aquifer boundaries. Data from more than 860 wells and test borings were used to produce maps of water-table altitude, saturated thickness, and transmissivity of stratified drift. More than 7 miles of seismic-refraction profiling and 10 miles of seismic-reflection profiling also were used to construct the water-table and saturated-thickness maps.

A stratified-drift aquifer in Alton and one in Belmont were analyzed by use of a two-dimensional, finite-difference ground-water-flow model to estimate ground-water availability. The available water for the Merrymeeting River aquifer (in Alton) was estimated to be 0.63 to 1.1 million gallons per day, and the available water for the Pumping Station Brook aquifer (in Belmont) was estimated to be 1.6 to 1.8 million gallons per day. Comparison of these estimates with those derived from analytical models for the same areas showed that the estimates are reasonable. Total available water estimates from the analytical models, however, were generally 20 percent greater than estimates from the numerical model.

Results of analysis of water samples from 17 test wells indicate that, with some exceptions, water in the stratified-drift aquifers meets U.S. Environmental Protection Agency primary and secondary drinking-water standards. Sites of known ground-water contamination were not sampled. Elevated concentrations of iron and manganese were the most common water-quality problems.

INTRODUCTION

The population of the 16 central New Hampshire towns in the Winnipesaukee River Basin increased by 15 percent from 1980 to 1990 (New Hampshire Office of State Planning, 1985). Economic development has been rapid in south-central New Hampshire, partly because of the area's proximity to metropolitan Boston. This growth has steadily increased demands for water and has stressed the capacity of existing municipal water systems, some of which depend on ground water for part or all of their water supplies. In 1993, the average withdrawal from stratified-drift aquifers for municipal supply was about 0.1 Mgal/d; this amount represents total withdrawal for that year divided by 365 days, as if the total withdrawal was spread out over a full year (New Hampshire Department of Environmental Services, Water Management Bureau, written commun., 1991). Two of the towns use ground water as their sole supply. In addition to concerns raised by population growth, U.S. Environmental Protection Agency (USEPA) primary and secondary drinking-water standards regarding the treatment requirements of surface-water supplies have prompted municipalities to look closely at their ground-water resources.

Stratified-drift aquifers discontinuously underlie 66 mi^2 of the Winnipesaukee River Basin, which drains an area of 484 mi^2. Many of the aquifers may be capable of supplying enough water to meet domestic, community, and municipal water needs.

The U.S. Geological Survey (USGS), in cooperation with the New Hampshire Department of Environmental Services, Water Resources Division (NHDES-WRD), has done a series of ground-water studies in New Hampshire to provide detailed geohydrologic information necessary to determine the optimal use of existing water supplies and to make decisions regarding the development of new water supplies. The study described in this report encompasses the Winnipesaukee River Basin and its subbasins, which includes the towns around Lake Winnipesaukee and the Winnipesaukee River downstream to its confluence with the Pemigewasset River in Franklin, N.H. (fig. 1). For most of the studies, major watersheds were selected as study areas because they are the natural subdivision of the hydrologic system; only a few stratified-drift aquifers, in Alton and Franklin, extend across major surface-water divides. Completed studies and reports in this series include the Nashua Regional Planning Commission area (Toppin, 1987); the Exeter, Lamprey, and Oyster River Basins (Moore, 1990); the Lower Merrimack and coastal river Basins (Stekl and Flanagan, 1992); the Bellamy, Cocheco, and Salmon Falls River Basins (Mack and Lawlor, 1992); the Middle Merrimack River Basin (Ayotte and Toppin, 1995); the Lower Connecticut River Basin (Moore and others, 1994); and the Contoocook River Basin (Harte and Mack, 1995).

Purpose and Scope

The purpose of this report is to (1) describe the geohydrologic characteristics of the stratified-drift aquifers, including areal extent of stratified-drift aquifers, water-table altitudes, general directions of ground-water flow, saturated thickness, and transmissivity; (2) give estimates of water availability for selected aquifers; and (3) assess the general quality of ground water in stratified-drift aquifers.

The study data and descriptions in this report are limited to the stratified-drift aquifers in the study area. The estimates of water availability from stratified-drift aquifers in Alton and Belmont, currently used by these towns as a sole-source water supply, were derived by use of numerical and analytical models.

Previous Investigations

Previous investigations include a reconnaissance map at a scale of 1:125,000 in which the availability of ground water in the Winnipesaukee River Basin was mapped (Cotton, 1975). Surficial geologic mapping for most of the study area was done by Goldthwait (1968) at a scale of 1:62,500. The maps, which include the Winnipesaukee and Wolfeboro 15-minute quadrangles, are accompanied by a text. Goldthwait and others (1951) examined the effects of the enormous erosive capability of meltwater channels at the ice margin and cite a number of examples of erosive features in the Winnipesaukee and Wolfeboro quadrangles.

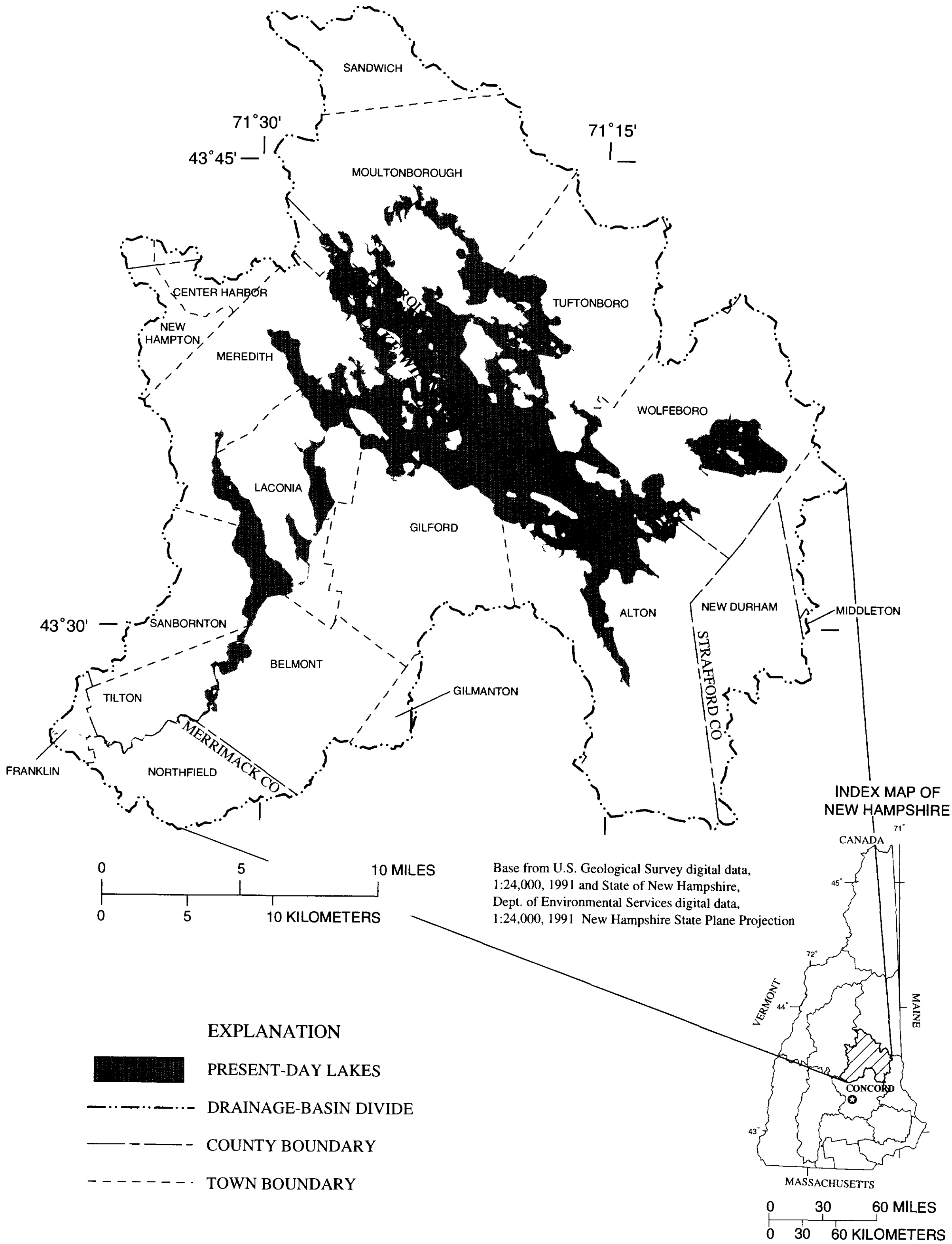


Figure 1. Location of study area and towns in the Winnipesaukee River Basin, central New Hampshire.

Haselton mapped the surficial geology of the town of Gilford (1991, unpublished map on file at Rust Environment Infrastructure, Concord, N.H.). Morgan (1985) prepared a surficial-aquifer delineation and water-use investigation for the town of Moultonborough. Numerous other studies have been done by private consultants for local concerns.

Methods of Study

The following methods were used in this study:

1. Areal extent of the stratified-drift aquifers was delineated by use of soils maps from the U.S. Soil Conservation Service, surficial geologic maps, and field mapping done specifically for this project.
2. Published and unpublished data on ground-water levels and the saturated thickness and stratigraphy of the aquifers were compiled from the USGS, NHDES-WRD, NHDES-Water Supply and Pollution Control, and the New Hampshire Department of Transportation. Additional data were obtained from municipalities, local residents, well-drilling contractors, and geohydrologic consulting firms. The locations of wells, borings, springs, and seismic lines were plotted on base maps, and pertinent well and bore hole data were added to the Ground-Water Site Inventory (GWSI) data base maintained by the USGS. Each data point is cross-referenced to a site-identification number and to any other pertinent information about the site.
3. Seismic-refraction surveying, a surface geophysical technique, was used to determine depths to the water table and depths to the bedrock surface. Locations of these profiles are shown on plates 1–4. The seismic data were interpreted by use of a time-delay, ray-tracing computer program developed by Scott and others (1972). Data from nearby wells and test holes were used to verify the interpretations. Actual depths to the bedrock surface are within 10 percent of the estimates from seismic-refraction profiling. Till is not identified in these interpretations because it is generally thin and cannot be distinguished from stratified drift by use of seismic-refraction methods. Where till is present but is not identified in the interpretation, the computed depth to bedrock is slightly less than the actual depth.
4. Seismic-reflection surveying, another surface geophysical method, was used to determine depths to bedrock and to infer the sediment type of the aquifers that lie beneath water bodies. Haeni (1986, 1988b) outlines methods for collecting seismic-reflection data. Seismic-reflection results differ from seismic-refraction results in that information about the texture of the subsurface can sometimes be inferred from the reflection records.
5. Test borings were made at 56 locations to improve definition of the thicknesses and geohydrologic characteristics of the stratified-drift aquifers. Locations of these test borings and wells are shown on plates 1–4. Split-spoon samples of the subsurface sediments collected at 5- to 10-foot intervals were used to estimate the horizontal hydraulic conductivity at those depths and to determine the stratigraphic sequence of materials comprising the aquifers. Where test borings indicated that the aquifer would yield sufficient water for municipal supplies, a 2-inch inside-diameter well with a polyvinyl chloride (PVC) casing and a slotted well screen was installed. Water levels were measured periodically in these wells, and water samples were collected from selected wells.
6. Data collected as described in items 2, 3, 4, and 5 were used to construct maps showing the water-table altitude and saturated thickness of the stratified-drift aquifers.
7. Hydraulic conductivities of aquifer materials were estimated from grain-size-distribution data from 454 samples of aquifer material collected during the completion of test borings and wells in southern New Hampshire. Transmissivities were estimated from logs of test borings and wells by assigning horizontal hydraulic conductivities to each interval sampled, multiplying the hydraulic conductivities by the saturated

thickness of the interval, and summing these results. Additional transmissivity values were obtained from reports by geohydrologic consultants and from analysis of unpublished aquifer-test data. This information was used to prepare maps showing the transmissivity distribution of the stratified-drift aquifers (pls. 5–8).

8. Flow-duration data from eight long-term streamflow-gaging stations within and near the Winnipesaukee River Basin were analyzed and used to correlate miscellaneous low-flow streamflow measurements on ungaged streams. Streamflows measured where the stream flowed into and out of major aquifers in the area during periods of low flow can be used to estimate potential aquifer yields.
9. An aquifer in Alton and one in Belmont were selected to demonstrate a technique for estimating water availability on the basis of a two-dimensional numerical model that simulates ground-water flow. The computer program, developed by McDonald and Harbaugh (1988), is a three-dimensional model that can be used to simulate flow in two dimensions. The model was used to estimate the potential yield and the sources of water to wells in the modeled areas.
10 Samples of ground water from 17 wells constructed during this study were collected and shipped to the USGS National Water Quality Laboratory in Arvada, Colo. for analysis. Selected physical properties (specific conductance, pH, temperature) were measured, and concentrations of inorganic constituents were determined. The data provided by these analyses were used to assess the general quality of water from the stratified-drift aquifers.

Numbering System for Wells, Borings, and Springs

Local numbers assigned to wells and borings entered into GWSI consist of a two-letter town designation (table 1), a supplemental letter designation ("A" for borings done for hydrologic investigations, "B" for borings done primarily for construction, “S” for springs, and "W" for all wells in which a casing was set), and a sequential number within each town. For example, the first well listed for the town of Alton is AHW-1.

Table 1. Two-letter town codes used as prefixes in the numbering system for wells, borings, and springs in the Winnipesaukee River Basin, central New Hampshire

Town	Two-letter code	Town	Two-letter code
Alton	AH	New Durham	NF
Belmont	BL	New Hampton	NH
Center Harbor	CH	Northfield	NR
Franklin	FK	Sanbornton	SC
Gilford	GF	Sandwich	SE
Laconia	LA	Tilton	TS
Meredith	MH	Tuftonboro	TZ
Middleton	ML	Wolfeboro	WR
Moultonborough	MM		

Acknowledgments

The author thanks the many State and Federal agencies, municipalities, consulting firms, well-drilling companies, and private companies who provided data for this study. Thanks are also given to the many residents and land owners in the study area who graciously allowed access to their land for purposes of data collection.

GEOHYDROLOGIC SETTING

Three types of aquifers are present in the study area: (1) stratified drift, which can be a major source of ground water for municipalities; (2) till, which locally can supply minor amounts of water for domestic use; and (3) bedrock, which supplies water to some municipalities and small communities and to most households in the study area that are not connected to a municipal supply.

Stratified Drift and its Depositional Environment

Coarse-grained stratified drift, the focus of this study, consists of layered, sorted, mostly coarse-grained sediments (sands and gravels) deposited by glacial meltwater at the time of deglaciation. Hydrologic characteristics of these sediments that affect ground-water storage and movement are related to the environment in which the sediments were deposited. Stratified-drift deposits are composed of distinct layers with different grain-size distributions, sorted according to the depositional environment. For example, fast-moving meltwater streams deposit coarse-grained sediments with large pore spaces between grains. If saturated, these sediments store and transmit water readily.

Fine-grained stratified drift (which consists of fine sand, very fine sand, silt, and clay) was deposited in lacustrine environments characterized by slow-moving and ponded glacial meltwater; these fine-grained deposits do not transmit water as readily as the coarse-grained sediment does.

The depositional environments associated with deglaciation had a pronounced effect in determining the type of stratified-drift aquifer that was formed. Deglaciation of the study area appears to have been predominantly a systematic process of stagnation-zone retreat (Koteff and Pessl, 1981). Numerous examples of large deltas fed by eskers and by valley-fill deposits support this type of deglaciation. Aquifers deposited by this mechanism are the largest and potentially the most productive. Downwasting of ice (Goldthwait, 1968), although an important mechanism of stratified-drift deposition in the basin, was most likely responsible for thin (less than 20 ft), discontinuous deposits of sand and gravel. Examples of these are the deposits in and around Center Sandwich. Glacial lakes predominated in the basin during deglaciation, and the largest amounts of stratified drift were deposited in these lakes.

In most of the southern part of the basin where streams presently drain north to Lake Winnipesaukee, southward glacial drainage was obstructed by the highlands to the south and the retreating ice margin to the north. This obstruction resulted in the formation of numerous ice-dammed glacial lakes into which glacial meltwater carried sediment deposited as subaqueous fans or deltas. These deposits are referred to as "ice-dammed-glacial-lake deposits" (fig. 2). As the ice margin retreated, successively lower drainageways were uncovered to the west and the east. As lake levels declined in response to lower drainageways, fans and deltas formed at the new, lower lake elevations.

In the northern part of the basin, where drainage of glacial meltwater was largely unobstructed by upland areas or glacial ice, the deposits that formed are typical of ice-contact heads of outwash and outwash deltas. These deposits are typically fluvial at the upstream end and grade into deltas where the meltwater streams emptied into a glacial lake; they are referred to as "fluviolacustrine deposits" (fig. 3). Deposits formed in this depositional environment include eskers, kames, kame terraces, and outwash usually in contact with deltaic deposits. These deposits compose stratified-drift aquifers and are referred to here as "fluviodeltaic aquifers."

Ice-Dammed Glacial-Lake Deposits

Deglaciation of the Winnipesaukee River Basin was complex and included deposition of sediment into glacial lakes that existed at various elevations and times relative to one another. In many places, the retreat of the ice, exposed a new, lower outlet that redirected glacial meltwater, formed new lakes or added to older glacial lakes.

The surfaces defining the previous levels of the glacial lakes in the Winnipesaukee River Basin were uplifted in response to the removal of the glacial ice (isostatic rebound), the uplift being greatest to the

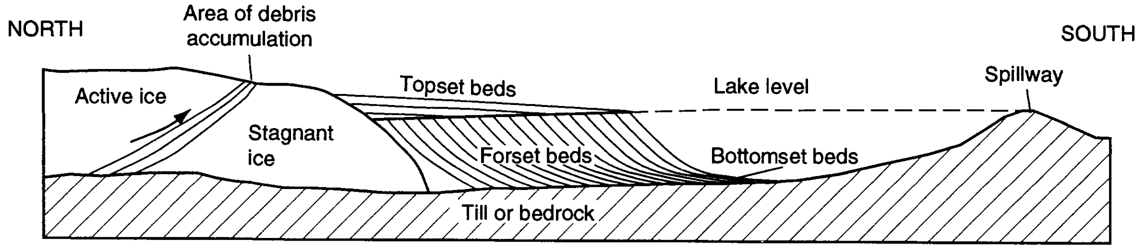


Figure 2. Sectional diagram of an ice-dammed glaciolacustrine deltaic aquifer.

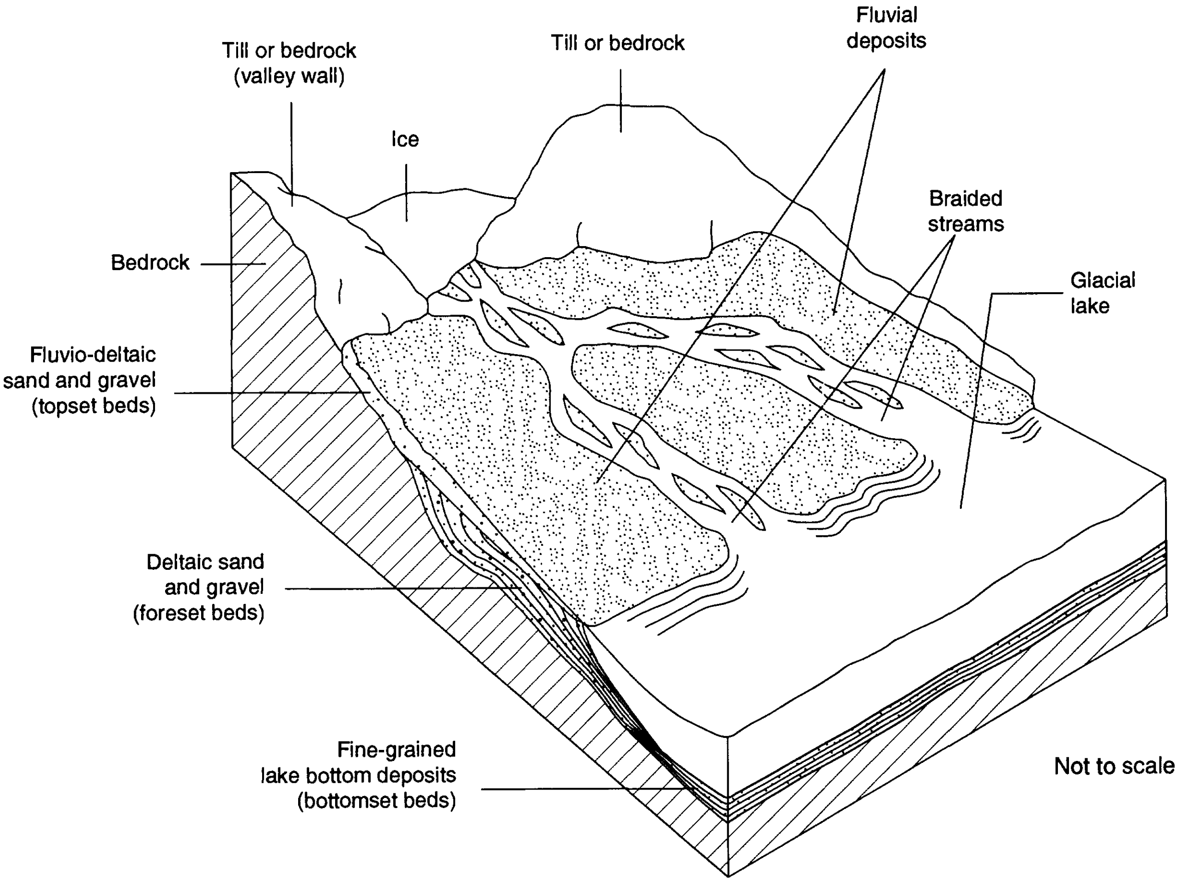


Figure 3. Block diagram of the formation of a glaciofluvial deltaic aquifer.

north-northwest. Projections of these lake surfaces now dip to the south-southeast. No studies have been done in the Winnipesaukee River Basin to determine the exact slope of the projected lake surfaces; however an estimate can be made by examination of deltas in valleys near the study area to the west and south, as well as to the southeast near the coast.

West of the Winnipesaukee River basin, in the Connecticut River Valley, a stabilized level of glacial Lake Hitchcock is indicated by 23 ice-contact deltas and numerous other deltas that have not been modified by collapse and whose topset-foreset contacts fall along a single plane. This stable lake level indicates that the postglacial uplift of New England that resulted from the melting of the continental ice sheet, was delayed by about 5,000 years (Koteff and Larsen, 1989). This plane, after the postglacial uplift, now dips about 4.8 ft/mi downward in the direction of S. 21° E. (Koteff and Larsen, 1989). Likewise, the projected lake-level surfaces of glacial lakes to the south, in the Merrimack River Valley (glacial Lakes Tyngsboro, Merrimack, and Hooksett) now slope 4.7 to 4.9 ft/mi downward to the south-southeast (Koteff and others, 1984). Moore (1995) found that this slope was reasonable for the deltas in the Contoocook River Basin given elevations derived from topographic maps. Similarly, to the southeast, the projected sea-level surface into which numerous glaciomarine deltas were deposited now slopes about 4.5 ft/mi downward in the direction of S. 28.5° E. (Koteff and others, 1993). From this information, the plane of previous lake levels of glacial lakes in the Winnipesaukee River Basin is assumed to have a slope of 4.5 to 4.8 ft/mi downward to the south-southeast.

Projecting these ice-dammed-glacial-lake surfaces helped to determine the maximum extent of the glacial lakes in the basin and to determine which deposits are related to a given lake stage in the areas where the glacial lake history is complex. The maximum probable extent of glacial lake environments, including glacial Lake Winnipesaukee and numerous other local glacial lake, is shown in figure 4.

The initial drainage of glacial Lake Winnipesaukee during deglaciation was probably across the present-day drainage divide between the Merrymeeting River and the Ela River (pl. 2), and water flowed into the Cocheco River Basin. Before the last glaciation, surface water may have drained in this direction; the elevation of the till and (or) bedrock controlled outlet on the Ela River, below the stratified-drift dam, is approximately 500 ft. The elevation of the bedrock controlled outlet at the present-day dam at Lakeport in Laconia is also approximately 500 ft. Because both outlets were approximately at the same elevation, the preglacial drainage of the lake was possibly—but not necessarily—out of the Cocheco Basin. The relative elevations of these outlets before glacial erosion and till deposition along the Ela River may have been significantly different.

White (1938) predicted that the depth of the Lake Winnipesaukee Basin due to glacial scour as opposed to stratified-drift damming could be assessed if appropriate data became available. Data collected during this study indicate that the Merrymeeting River valley is filled with more than 100 ft of stratified drift. The actual spillway for the glacial lake, however, was controlled by a till and (or) bedrock high on the Ela River. Bedrock is also the control on the Lakeport outlet. The depth of the Lake Winnipesaukee Basin, therefore, is likely due entirely to scour by glacial ice.

As the ice retreated to the north in the Merrymeeting River Valley from the drainage divide with the Ela River (pl. 2), a thick (at least 100 ft) sequence of stratified drift filled the now-divided preglacial river valley. Subsequent retreat caused a series of narrow, small glacial lakes to form in the Merrymeeting River Valley, north toward Alton Bay. At successive ice-marginal positions, morphosequences of eskers feeding glaciolacustrine deltas formed. These morphosequences are discussed in detail in the section on "Description of Selected Aquifers."

Subsequent retreat of the ice margin to the north of present-day Lake Wentworth enlarged glacial Lake Winnipesaukee to the north, east, and west (coincident, in part, with present-day Lake Winnipesaukee and Lake Wentworth). Goldthwait (1968, p. 30) indicates that some water from the glacial Lake Wentworth area drained out the Merrymeeting River/Ela River outlet, but most drained out to the east of Lake Wentworth. The outlet elevation to the east of Lake Wentworth is approximately 670 ft above sea level; this level is approximately 70 ft higher than the elevation of the delta between Hersey Brook and Harvey Brook. Davis and others (1993, p. EE-9) suggest that water could not drain to the southwest when the Lake Wentworth Basin became ice-free. Nevertheless, deposits in the Lake Wentworth area, as interpreted on the basis of delayed uplift theory (Koteff and others, 1993), appear to be graded to the Merrymeeting River/Ela River outlet, 12 mi to the south. A delta that formed where Harvey Brook and Hersey Brook drain into Lake Wentworth (pl. 4) stands at an elevation of approximately 600 ft. The projected water-plane elevation at this area, based on the Merrymeeting River/Ela River outlet, is approximately 585 ft. Therefore, drainage appears to have been to the southwest when Lake Wentworth became ice free.

At about the same time that glacial Lake Winnipesaukee began to form, other ice-dammed glacial lakes, such as the glacial lake in Belmont, also were forming. Deglaciation of the south-western part of the Winnipesaukee River Basin formed a glacial lake that occupied much of Belmont.

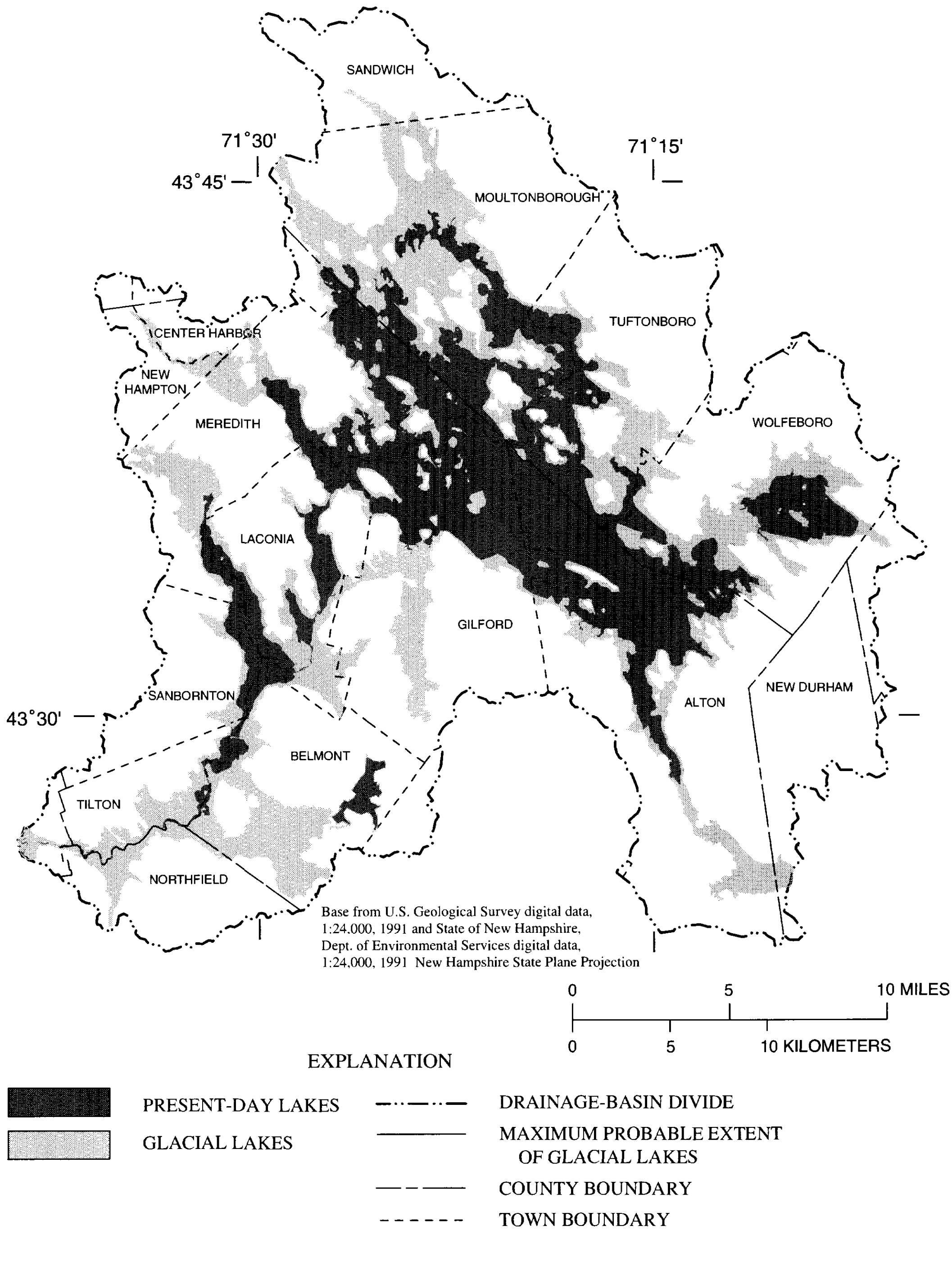


Figure 4. Maximum extent of glacial-lake environments in the Winnipesaukee River Basin, central New Hampshire.

The level of this glacial lake was controlled by a bedrock spillway 1,000 ft north of the Belmont-Gilmanton town line along NH Route 106 (pl. 1). The spillway elevation is approximately 640 ft above sea level, and the deposits in the area of Pumping Station Brook in Belmont are graded to this spillway. The most prominent deposit in this area is a delta that is exposed for 60 to 80 ft. Deposits below the land surface are greater than 60 ft thick and are composed of materials that are coarser than the exposed delta sediments. An eroded drainage channel originating on the south side of Bean Hill Road, 1,000 ft from the intersection with Union Road leads to an esker trending southeast toward the Belmont delta. this channel indicates that drainage to this area probably came from Winnisquam Lake over a narrow divide near Bean Hill Road. The Tioga River Valley and the Winnipesaukee River Valley below Silver Lake could have been blocked by ice at this point.

Stratified drift along Durkee Brook and Jewett Brook in Laconia (pl. 1) and along the Gunstock River in Gilford (pl. 1) was deposited into smaller, localized glacial lakes that formed against highlands to the south and the ice margin to the north.

Retreating ice from Gardners Grove to Lochmere to Winnisquam (pl. 1) enlarged the glacial lake between Winnisquam Lake and Silver Lake and resulted in the deposition of fine-grained sediment in the Silver Lake and Gardners Grove area. Subsequently, stratified drift from glacial meltwater flowing along Gulf Brook, which originates near the Tilton-Sanbornton town line (pl. 1), was deposited. The coarse-grained Gulf Brook deposits overlie and may interfinger with the fine-grained deposits south of Silver Lake. A lithologic log for well TSW-80 shows 15 ft of coarse gravel overlying 97 ft of silt and clay; here, coarse gravels from the Gulf Brook spillway must have been deposited after the fine-grained lake-bottom sediment. These deposits appear to be graded to a spillway elevation of 510 ft along Interstate 93, 2 mi south of Exit 19 (pl. 1). Much of the very fine grained and fine-grained sediment may have been transported downstream to Northfield and deposited into a glacial lake that existed there at a lower elevation. Test borings NRW-59 and NRW-61 in Northfield show 75 and 47 ft of very fine sands, respectively, overlying till or bedrock in the Northfield delta.

When the ice retreating to the north-northwest cleared Saunders Bay in Gilford, a lower elevation outlet of glacial Lake Winnipesaukee was exposed through Lily Pond, Black Brook, and Lakeport (pls. 1 and 3). This exposure would have caused the outlet of glacial Lake Winnipesaukee to change from Alton Bay to this new, lower Lakeport outlet at 530 ft, dropping the lake level by approximately 65 ft. This spillway is controlled by till at Black Brook and by a deep channel cut through till immediately east of the dam at Lakeport. After the ice margin retreated back north of Paugus Bay, glacial Lake Winnipesaukee was lowered by another 30 ft to near its present-day level.

Glaciolacustrine Deposits

Along the northern shore of present-day Lake Winnipesaukee, stratified-drift deposition probably occurred by stagnation-zone retreat (morphosequence deposition) and by downwasting of stagnant ice. Many of the deposits are associated with ice-marginal drainage near Red Hill and the Ossipee Mountains. Deposits in this part of the basin typically begin as fluvial sequences and are graded to the Lakeport stage (the last stage) of glacial Lake Winnipesaukee. Some of these deposits, however, appear to be graded to the previous level of glacial Lake Winnipesaukee, when the lake drained through Alton Bay. This would be possible if the northeastern side of the ice margin had pulled away from the valley wall enough to allow the formation of a narrow arm of the larger lake to the south. This lake would have extended from the Merrymeeting River spillway up Alton Bay and would have included all of Lake Wentworth. Stratified-drift deposits that may be associated with the possible arm of glacial Lake Winnipesaukee are found near Center Tuftonboro, along the Melvin River, and along Shannon Brook.

As the ice margin retreated north beyond Center Sandwich, Moultonborough, and Center Harbor, glacial Lake Winnipesaukee probably extended northward up narrow valleys that now drain southward into the present-day lake. Glacial Lake Winnipesaukee may have included Squam Lake. The lake-plane elevation at the divide between the two basins (near

Wakonda Pond), projected from the Lakeport outlet (pl. 4), is approximately 580 ft. The elevation of the divide itself, also approximately 580 ft, indicates that Squam Lake proper may have been connected to glacial Lake Winnipesaukee by a narrow arm. From similar analysis to the east of Red Hill, former glacial Lake Winnipesaukee would have extended up the Red Hill River for just more than a mile beyond the Moultonborough-Sandwich town line and would have included Berry Pond and the valleys of Halfway Brook. The deposits of the northern part of the basin include stratified-drift deposited in glacial Lake Winnipesaukee and other local glacial-lake environments, as well as stratified drift deposits not associated with glacial lakes. The Moultonborough Airport is probably built on a delta graded to the elevation of glacial Lake Winnipesaukee, as is the large cemetery in Meredith, north of the town park, along Route 25.

In Tuftonboro, to the east, the Melvin River aquifer consists partly of glacial-lake-bottom and deltaic deposits that appear to be graded to the Merrymeeting River outlet of glacial Lake Winnipesaukee. Thick sequences of lacustrine sands can be found in this area. Test boring TZW-3 was drilled to a depth of 103 ft below land surface without reaching the bedrock surface, and it penetrated mostly fine to medium sands. To the east of this area and immediately south of Route 171, an extensive kame field is present in the valley at the base of the Ossipee Mountains. These high deposits are not directly related to glacial Lake Winnipesaukee and are representative of ice-contact deposits.

Till

Till is an unsorted mixture of clay, silt, sand, gravel, and rock fragments deposited directly by glacial ice. Within the basin, till covers most of the bedrock surface and is overlain locally by stratified drift and Holocene stream deposits. The average thickness of till in the Winnipesaukee River Basin is 35 ft, but the thickness can be locally greater than 200 ft (Goldthwait, 1968, p. 19). Koteff (1970) describes two tills in south-central New Hampshire that are thought to represent two separate major glacial advances over the region. Goldthwait (1968, p. 20) describes two tills—ablation till and basal (lodgement) till—but does not relate them to separate glacial advances.

Till is not considered to be a major source of ground water because of its low hydraulic conductivity. Large-diameter wells completed in till can provide modest amounts of water, commonly less than 3 gal/min, for household needs, but water-level fluctuations within till can be large enough to make these wells unreliable during dry seasons.

Bedrock

Bedrock in the Winnipesaukee River Basin consists of three main groups, as described by Goldthwait (1968, p. 5). The first group consists primarily of metamorphosed sedimentary rocks and includes schists and gneisses of Devonian age known as the Littleton Formation. The second group consists of intrusive igneous rocks known as the New Hampshire Plutonic Series and includes granites and diorites of Middle Devonian age. The third group consists generally of intrusive and extrusive rocks of the White Mountain plutonic-volcanic series of the Late Triassic. Well-known examples of rocks in the third group are Red Hill, the Ossipee Mountains, Copple Crown Mountain, and Belknap Mountain.

GEOHYDROLOGY OF STRATIFIED-DRIFT AQUIFERS

The geohydrology of stratified-drift aquifers was described by identifying (1) aquifer boundaries, (2) direction of ground-water flow from recharge to discharge areas, (3) aquifer thickness and storage, (4) aquifer transmissivity, and (5) amounts of water potentially available from selected aquifers. Data sources in this investigation included surficial geologic maps, lithologic logs of wells and test borings, and seismic-refraction and seismic-reflection data. Results of the geohydrologic investigation are presented on plates 1–8 and in the text that follows.

Delineation of Aquifer Boundaries

Stratified-drift aquifers in the study area are composed of fine- to coarse-grained sands and gravels deposited by glacial meltwaters; these deposits, in part, are now sufficiently saturated to yield significant quantities of water to wells and springs. Locations of the lateral boundaries of the aquifers are defined as the contacts between the stratified drift and till and (or) bedrock. The position of the contact was determined by use of surficial geologic maps, soil maps, test-boring logs, and field mapping done specifically for this study. The bottom boundary is the contact of the stratified drift with the till and (or) bedrock surface and was determined by use of data from seismic refraction, seismic reflection, test borings, and domestic water wells. The upper boundary is the water table.

Areal Extent of Stratified-Drift Aquifers

The areal extent of the stratified-drift aquifers is shown on plates 1–8. Because of the regional scale of this investigation, aquifer boundaries are approximate. Coarse-grained stratified-drift aquifers may be present beneath fine-grained lacustrine deposits but may not have been identified because of the complexity of the stratigraphy and (or) the absence of data. Available data for coarse sediment underlying fine-grained sediment are discussed in the section "Descriptions of Selected Stratified-Drift Aquifers." Although the lacustrine clay, silts, and very fine sands are not capable of supplying adequate amounts of water for domestic and community use, the coarse-grained deposits that may lie below could be productive aquifers.

Aquifer boundaries are shown as solid, dashed, or dotted lines. In the explanation on the plates, solid lines represent "approximately located" boundaries, dashed lines represent “inferred” boundaries, and dotted lines represent “concealed” boundaries. The lateral boundaries of stratified-drift aquifers were delineated from the previously cited published and surficial geologic maps and by interpretation of soil maps of Belknap, Carroll, Merrimack, and Strafford Counties.

Stratigraphy of Geohydrologic Units

Data for the stratigraphy of geohydrologic units were obtained from available records of subsurface exploration within the study area. Additional test drilling and surface geophysical exploration were done to delineate texturally different geohydrologic units within the stratified drift.

Ground-Water Site Inventory

Subsurface data from wells and borings were inventoried, and data locations within the stratified-drift aquifers are plotted on plates 1–4. Geohydrologic data for approximately 2,500 sites were added to the GWSI data base and checked for accuracy. Data for approximately 2,100 of the 2,500 sites were transferred to GWSI from the NHDES-WRD well inventory data base. Approximately 500 of the 2,100 NHDES-WRD sites are within stratified-drift aquifer areas. Approximately 900 sites of the 2,500 total sites added to the GWSI data base are in the stratified-drift aquifer areas. appendix A contains selected data from the GWSI data base for wells, borings, and springs within the stratified-drift aquifer areas that were used to construct the accompanying map plates. These data include an identification number for the well, latitude and longitude, depth of the well, water level, and yield of the well. appendix B contains stratigraphic logs of selected wells and borings in stratified drift. These data were used primarily for estimating the transmissivity of the aquifers where no aquifer-test data or grain-size data were available.

Seismic Refraction

Seismic-refraction profiles, totaling more than 7 mi, were completed at 60 locations to determine depths to the water table (pls. 1–4) and depths to the bedrock surface (pls. 5–8). A 12-channel, signal-enhancing seismograph was used to record arrival times of compressional wave energy generated by a sound source. The data were collected and interpreted according to methods described by Haeni (1988a). The interpretations, made with the aid of a computer program developed by Scott and others (1972), are shown in appendix C.

Seismic velocities calculated for the materials under investigation and used in the seismic interpretations range from 500 to 1,500 ft/s for unsaturated stratified drift, approximately 5,000 ft/s for saturated stratified drift, and between 10,000 and 20,000 ft/s for bedrock. Interpreted seismic profiles in this report show (1) the top of the profile, which represents land surface in feet above sea level; (2) an estimate of the altitude of the water table within unconsolidated deposits at the time the seismic data were collected; and (3) an estimate of altitude of the bedrock surface. The relative altitudes of each geophone and shot were determined by leveling if altitude differences greater than 5 ft between geophones were observed. The actual altitudes, relative to sea level, were estimated from USGS topographic maps and are assumed to be accurate to half a contour interval or about 10 ft. Till is not accounted for in these interpretations because it is usually thin (less than 10 ft) and, therefore, cannot be detected with seismic-refraction methods. Where till is present in significant thickness and is not accounted for in the interpretation of seismic data, the computed depth to the bedrock is slightly less than the actual depth. Additional error results if the relief of the bedrock surface differs considerably over distances less than the 50- or 100-foot geophone spacing used in profiling.

Estimated depths to the water table and to the bedrock surface are generally compared with control data, such as nearby well or boring logs and water-table and bedrock-outcrop observations. The accuracy of the depths to water table and bedrock are within 10 percent of the true depth, as determined from test borings made along selected profiles.

Seismic Reflection

High-resolution, continuous seismic-reflection data were collected according to methods described by Haeni (1986, 1986b) along approximately 5 mi of the Merrymeeting River within the study area. Data were also collected on navigable reaches of the Winnipesaukee River from near exit 20 on Interstate 93 at Tilton upstream to Silver Lake in Belmont. Parts of Winnisquam Lake also were surveyed. These data were used to map depths to the bedrock surface beneath the water bodies. During data collection, an array of receivers was towed behind a boat that traveled slowly up or down the river. Compressional waves, generated from a sound source, penetrated the river bottom and were reflected back to the surface in response to the physical differences in the geologic strata. The reflected sound waves were received at the water surface, converted to an electrical signal, and displayed on a graphic recorder. Data collection was often affected by the presence of strong reflectors at the water bottom. These strong reflectors cause multiple reflections of the water-bottom to appear on the record and obscure data below.

Altitude of the Water Table

The approximate altitude of the water table in the stratified drift is shown on plates 1–4. These maps were constructed from (1) altitudes of streams, ponds, and lakes as shown on 1:24,000-scale USGS topographic maps; (2) water-level data from wells stored in GWSI; and (3) analysis of seismic-refraction data. Ground-water altitudes in fine-grained lacustrine deposits represent the ground-water altitude in those deposits only. Saturated coarse-grained stratified drift may be present below fine-grained material in some areas, and a second, deeper potentiometric surface (in confined aquifers) may be present.

Water-level measurements were made monthly at selected wells in the study area during 1991 and 1992 and were stored in GWSI. A hydrograph showing water levels in well FKW-1 near the study area (near the confluence of the Winnipesaukee and Pemigewasset Rivers) is shown in figure 5. Well FKW-1 represents water-level fluctuations in a stratified-drift aquifer. The data from this well support the conclusion reached for other parts of New Hampshire. Natural water-level fluctuations in coarse-grained stratified drift are usually less than 5 ft but can be as much as 10 ft (Cotton, 1987; Toppin, 1987; Moore, 1990; Mack and Lawlor, 1992; Moore and others, 1994, Harte and Johnson, 1995, Ayotte and Toppin, 1995); therefore, a 20-foot contour interval for water-table altitudes under natural conditions is reasonable for producing a generalized water-table map from water-level measurements made at different times.

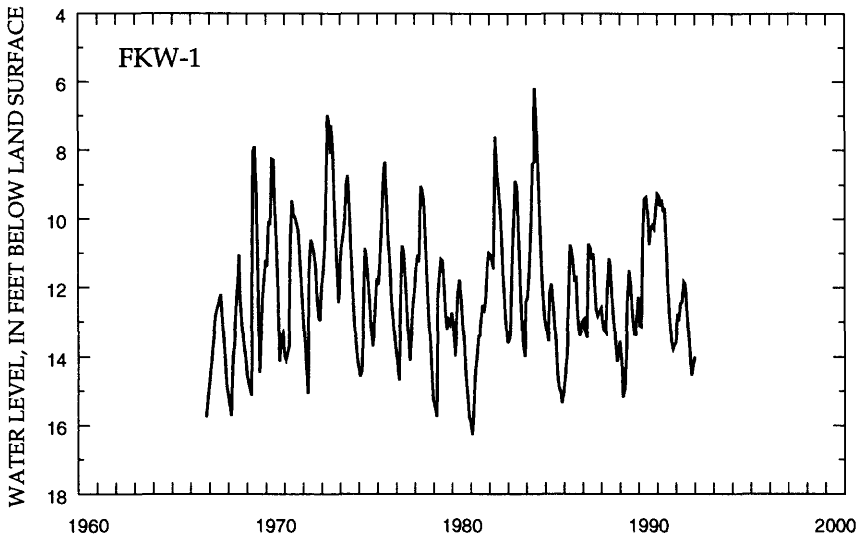


Figure 5. Long-term water levels at observation well FKW-1 in stratified drift, central New Hampshire.

Recharge, Discharge, and Direction of Ground-Water Flow

Ground-water recharge includes natural recharge from precipitation that falls directly on the aquifer and infiltrates the water table, lateral inflow from adjacent till and bedrock areas, and, in some places, leakage from streams that traverse the aquifer. Natural recharge is the difference between precipitation and the amount of water lost to evapotranspiration and to surface runoff.

Recharge to stratified-drift aquifers can be estimated from stream-discharge measurements made during periods in which there is no change in ground-water storage, as indicated by the position of the water table. Making such estimates requires the assumption that the ground-water discharge consists mostly of ground-water runoff. During periods of low flow and after an extended period without precipitation, this assumption is reasonable. This method probably gives conservative estimates of natural recharge to aquifers.

Estimated ground-water recharge falling directly onto stratified-drift aquifers is approximately half the annual precipitation in glaciated areas of eastern Massachusetts (Knott and Olimpio, 1986) and in southern Maine (Morrissey, 1983). Most of the recharge in the study area occurs in late fall and early spring, when precipitation is greatest and evapotranspiration is lowest.

Recharge to the stratified-drift aquifers occurs in part from adjacent till and (or) bedrock uplands. Lateral inflow from upland areas not drained by perennial streams recharges the stratified-drift aquifer at the till and (or) bedrock contact. Recharge to stratified-drift aquifers from upland areas not drained by streams can be estimated by measuring ground-water discharge from till and (or) bedrock uplands that are drained by streams. Ayotte and Toppin (1995), who examined long-term (1963 to present) streamflow data from Stony Brook Tributary in south-central, New Hampshire, found that the average discharge from till uplands with small drainage areas (3.60 mi^2 for Stony Brook) can be as high as 1.95 [(ft^3/s)/mi^2]. For a 23-square-mile till-covered drainage in Maine, the estimated average annual lateral inflow of ground water from upland areas to a stratified-drift aquifer was 0.5 [(ft^3/s)/mi^2]. (Morrissey, 1983). Upland areas not drained by streams are generally small but may contribute a significant amount of recharge to aquifers.

Recharge to stratified-drift aquifers from streams that lose water to the aquifer through permeable streambeds was documented by Randall (1978) and by Morrissey and others (1988). This type of recharge was not observed in any of the base-flow measurements made in this study, although it probably occurs on a small scale within the ±5-percent error associated with base-flow measurements. Such tributary-stream infiltration occurs where the tributary streams flow into aquifers that have a water table below the stream-bottom elevation at the stratified-drift and till and (or) bedrock contact (D.J. Morrissey, U.S. Geological Survey, written commun., 1989).

Ground-water discharge includes natural leakage into streams, lakes, and wetlands; ground-water evapotranspiration; and withdrawal from wells. During periods of low streamflow, usually in late summer and early fall and after extended periods without rainfall, streamflow consists almost entirely of ground-water discharge. Streamflow measurements were made during such a period on July 3, 1991 (appendix D).

Streamflow-gaging stations 01064500 on the Saco River near Conway, 01065500 on the Ossipee River at Cornish, Maine, 01075800 on Stevens Brook near Wentworth, 01076500 on the Pemigewasset River at Plymouth (northwest of the study area), 01078000 on the Smith River near Bristol, 01081000 on the Winnipesaukee River at Tilton, 01081500 on the Merrimack River at Franklin Junction, and 01089100 on the Soucook River at Pembroke Road near Concord were used to monitor flow conditions in and near the basin (fig. 6). Flow duration, in percent, for each of these eight streamflow-gaging stations is given in table 2. Flow duration indicates how often the average daily streamflow is equaled or exceeded. The average flow duration at the eight sites on July 3, 1991, was 93 percent. Under these conditions, flow within the basin was low, and ground-water discharge was assumed to be natural recharge from ground-water runoff. If this discharge is assumed to be composed entirely of ground-water runoff (a reasonable assumption for these measurements) it can be used as an estimate of recharge to aquifers in the study area. These measurements are discussed further in the section on "Description of Selected Stratified-Drift Aquifers."

Artificial sources of recharge to or discharge from an aquifer complicate the construction of water-table maps that are intended to represent natural conditions. Withdrawals of ground water affect the direction and slope of ground-water flow in an aquifer. Two stratified-drift aquifers in the basin (in Alton and Belmont) are affected by ground-water withdrawals. The amount of drawdown in a withdrawal well is determined in part by the location of the well in relation to the valley wall (stratified drift and till contact) and to potential recharge boundaries (streams, rivers, and surface-water bodies). Ground-water-flow lines and drawdowns due to withdrawal near an impermeable boundary are shown in figure 7. Drawdown is significantly greater on the impermeable boundary side than on the opposite side where the aquifer is of infinite areal extent. A withdrawal well located near a potential recharge boundary, such as a pond or river (fig. 8), will have significantly less drawdown than a withdrawal well at greater distance from the recharge boundary.

Direction of ground-water flow in an unconfined aquifer is determined by the water-table gradient. Water-table gradients differed throughout the study area because of differences in topography and hydraulic conductivity of the stratified-drift deposits. Water-table gradients in fine-grained stratified drift commonly exceeded 5 percent in areas of high topographic relief. Water-table gradients in coarse-grained stratified drift in areas of low topographic relief were less than 0.1 percent. Potentiometric surfaces within confined aquifers (coarse-grained deposits beneath fine-grained deposits) were not contoured because of insufficient data.

Aquifer Characteristics

The geohydrology of stratified-drift aquifers shown on plates 5–8 is based partly on aquifer characteristics that include saturated thickness, storage, and hydraulic conductivity. Estimates of saturated thickness and hydraulic conductivity were used to calculate transmissivity (pls. 5–8). These properties can be used to assess the water-supply potential of stratified-drift aquifers. Values of aquifer storage can be used to provide an estimate of aquifer yield.

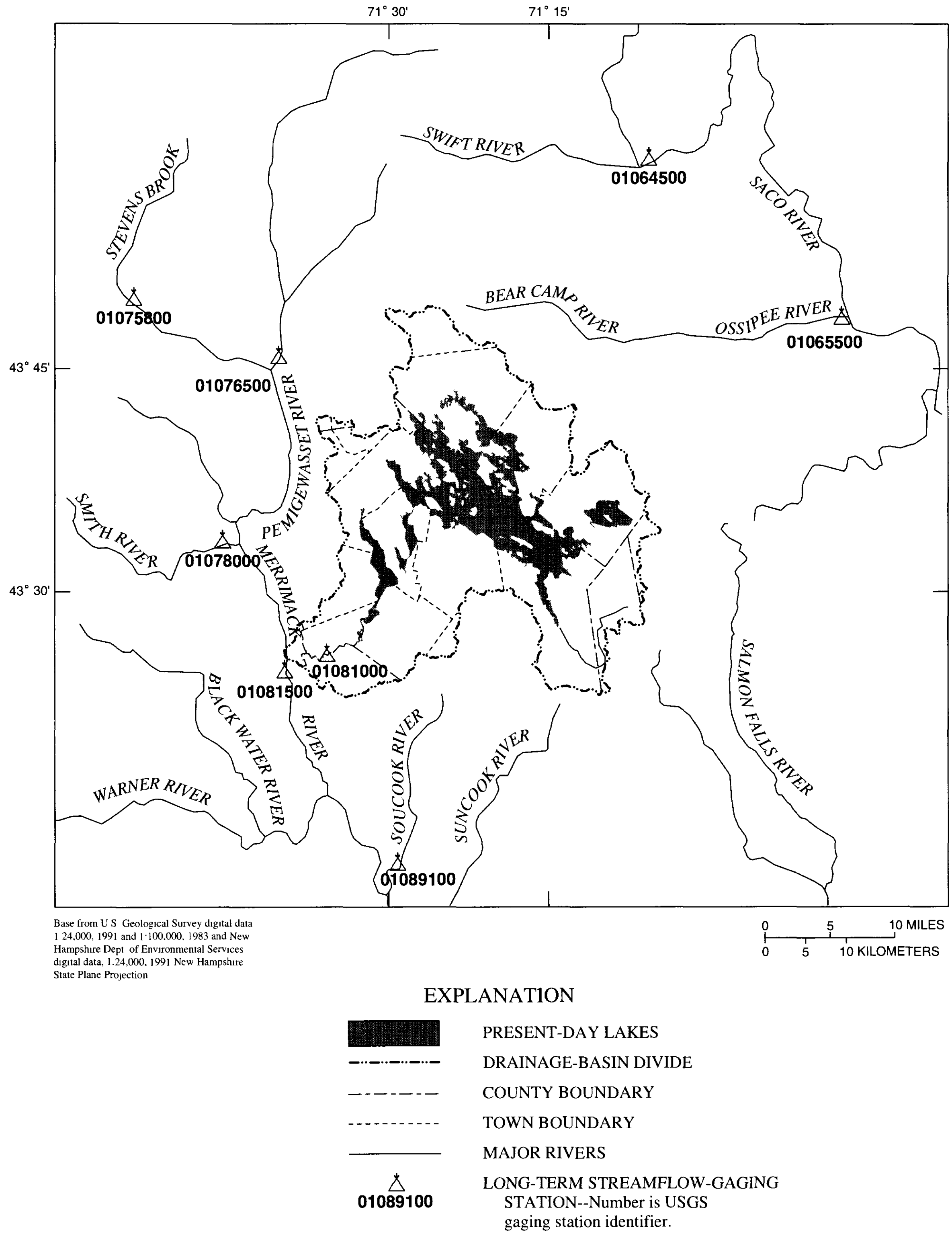


Figure 6. Locations of selected long-term streamflow-gaging stations in and near the Winnipesaukee River Basin, central New Hampshire.

Table 2. Percentage of flow duration on July 3, 1991, for selected U.S. Geological Survey streamflow-gaging stations in and near the Winnipesaukee River Basin, central New Hampshire

[USGS, U.S. Geological Survey; mi^2, square mile, N.H., New Hampshire]

USGS gaging station No.	Name of site	Drainage area (mi^2)	Percentage of flow duration on July 3, 1991
01064500	Saco River near Conway, N.H.	385	93.8
01065500	Ossipee River at Cornish, Maine	452	92.2
01075800	Stevens Brook near Wentworth, N.H.	2.94	95.5
01076500	Pemigewasset River at Plymouth, N.H	622	95.8
01078000	Smith River near Bristol, N.H.	85.8	93.8
01081000	Winnipesaukee River at Tilton, N.H	471	90.7
01081500	Merrimack River at Franklin Junction, N.H.	143	97.8
01089100	Soucook River at Pembroke Road near Concord, N.H.	81.9	83.3

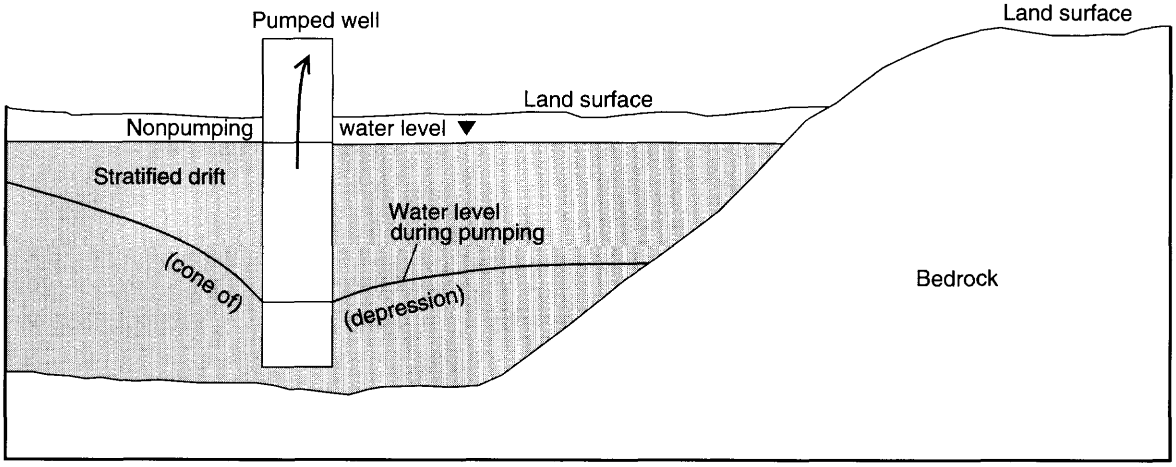


Figure 7. Ground-water flow and water-level drawdowns at a withdrawal well near an impermeable boundary.

Saturated Thickness and Storage

Saturated thickness of an unconfined stratified-drift aquifer is the vertical distance between the water table and the base of the aquifer. The base of a stratified-drift aquifer is usually the contact between stratified drift and the till or bedrock surface; for some aquifers, however, the base is the contact between the upper coarse-grained deposits and the underlying fine-grained lacustrine deposits. However, saturated thicknesses depicted on plates 5–8 include these fine-grained deposits. Saturated thickness contours were constructed from test-boring data, well data, seismic-refraction data, and seismic-reflection data. The saturated thickness multiplied by the specific yield of an unconfined aquifer determines the amount of ground water that can be released from storage.

The storage coefficient of an aquifer is defined as the volume of water released from or taken into storage per unit surface area of aquifer per unit change in head (Lohman and others, 1972). In unconfined aquifers, the storage coefficient is approximately equal to the specific yield, which is the amount of water released by gravity drainage from a unit volume of aquifer per unit decrease in hydraulic head. A value of 0.2 is commonly used for specific yield for stratified-drift aquifers in New

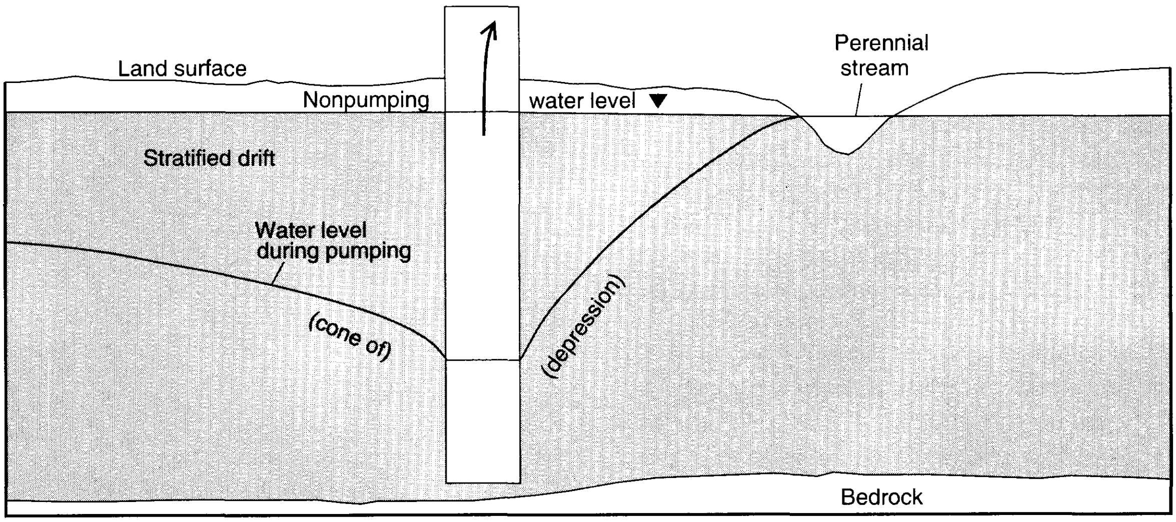


Figure 8. Ground-water flow and water-level drawdowns at a withdrawal well near a recharge boundary.

England (Moore, 1990) and for unconsolidated deposits in other areas (Freeze and Cherry, 1979). Specific yields of 13 samples of stratified drift from southern New Hampshire ranged from 0.14 to 0.34 and averaged 0.26 (Weigle and Kranes, 1966).

Water released from storage in confined aquifers results from expansion of water and compression of the aquifer as hydraulic head declines. Storage coefficients for confined aquifers, which are significantly smaller than specific yields for unconfined aquifers, range from 0.00005 to 0.005. Smaller storage coefficients associated with confined aquifers indicate that the amount of water derived from expansion and aquifer compression is much less than that from dewatering by gravity drainage.

Saturated-thickness maps can be used to estimate the amount of ground water stored in an aquifer. The saturated volume of an unconfined aquifer is approximately equal to the sum of the products of the areas between successive pairs of saturated-thickness contours multiplied by the average saturated thickness for each area. The actual volume of ground water stored in the aquifer is the product of the saturated volume multiplied by the porosity.

Transmissivity and Hydraulic Conductivity

Transmissivity is defined as the rate at which water at the prevailing kinematic viscosity can be transmitted through a unit width of an aquifer under a unit hydraulic gradient (Lohman and others, 1972). The transmissivity (*T*) of an aquifer is equal to the saturated thickness (*b*), in feet, multiplied by the horizontal hydraulic conductivity (*K*, a directional measure of the permeability), in ft/d, and is expressed in feet squared per day (ft^2/d); thus,

$$T = K(b). \qquad (1)$$

Transmissivity at a specific site was derived from estimates of hydraulic conductivity of lithologic units in the aquifers. Hydraulic conductivity, in turn, was estimated from grain-size distributions of samples of aquifer materials by use of the regression equation developed by Olney (1983). Hydraulic conductivity, however, which has a vertical and a horizontal vector component, is not accounted for by this equation. In this relation, an effective grain size (D_{10}, in phi units) was used to estimate hydraulic conductivity (*K*, in feet per day) with the following equation:

$$K = 2{,}100 \times 10^{-0.655(D_{10})}. \qquad (2)$$

The effective grain size (D_{10}) is a controlling factor for the hydraulic conductivity of stratified drift in New Hampshire and is defined as that grain size where 10 percent of the sample consists of smaller grains and 90 percent of the sample consists of larger grains. Olney (1983) developed this relation from results of permeameter tests of stratified-drift samples from Massachusetts. Moore (1990) found that this relation yielded results that fall within the range of results from other relations that have been developed between grain-size distribution and hydraulic conductivity (Krumbein and Monk, 1942; Bedinger, 1961; and Masch and Denney, 1966). Comparisons with aquifer-test data, however, indicate that equation 2 may not give accurate results for very coarse grained sand and (or) gravel. Estimates of hydraulic conductivity for aquifers with coarse sands and gravels were, in part, based on comparisons to aquifer-test data for similar deposits. Hydraulic conductivity (and transmissivity) based on grain-size relations are only estimates and are vectortless and may differ from results of aquifer-test analyses. Additionally, transmissivities calculated from aquifer-test data may be affected by the presence of hydrologic boundaries such as rivers or valley walls.

Hydraulic conductivity was estimated for 454 samples of stratified drift from southern New Hampshire by means of equation 2. The samples were collected in the Exeter and Lamprey River Basins (Moore, 1990); in the seacoast area and the Lower Merrimack River Basin (Flanagan and Stekl, 1990); in the Bellamy, Cocheco, Salmon Falls River Basins (Mack and Lawlor, 1992); in the Lower Connecticut River Basin (Moore and others, 1994); in the Contoocook River Basin (Harte and Johnson, 1995), and for this study. The grain-size distribution and the effective grain size (D_{10}) were determined for these 454 samples.

Hydraulic conductivities calculated from equation 2 were plotted against median grain size in phi groups, and the resulting plot was divided into three categories of degree of sorting (fig. 9). These relative categories are used to describe the types of stratified-drift-aquifer deposits found in New Hampshire. The degree of sorting was based on the standard deviation of each individual sample.

If standard deviations were greater than 1.75 phi, the samples were considered poorly sorted; if standard deviations were 1.25 to 1.75 phi, the samples were considered moderately sorted; and if standard deviations were less than 1.25 phi, the samples were considered well sorted. A regression equation was developed for each of the three categories to determine the relation between hydraulic conductivity and median grain size (fig. 9). The coefficient of determination (R^2) was 0.93 for the well sorted samples, 0.72 for the moderately sorted samples, and 0.54 for the poorly sorted samples. The calculated hydraulic conductivity, grouped by ranges of median grain size and by ranges of standard deviation (degree of sorting), is shown in table 3.

Hydraulic conductivities were calculated for each median phi group and were averaged to determine a mean hydraulic conductivity per group. For example, the mean hydraulic conductivity of sediment samples whose median grain size was described as medium sand and well sorted was 38 ft/d (the average of 25 and 51 ft/d; table 3).

Very fine sand, silt, and clay deposits in the study area were not analyzed for grain-size distribution because their hydraulic conductivities are typically low (less than 4 ft/d) and, therefore, considered insignificant in terms of total transmissivity (Todd, 1980).

The values in table 3 were used to estimate hydraulic conductivities from lithologic descriptions given in logs from test borings and wells. For example, for a lithologic description of 10 ft of moderately sorted coarse sand overlying 20 ft of well sorted fine sand overlying bedrock, the hydraulic conductivities assigned would be 39 ft/d (the average of 30 and 48 ft/d) and 9 ft/d (the average of 12 and 6 ft/d), respectively. The estimate of transmissivity, based on the same description, would be (10 ft × 39 ft/d) + (20 ft × 9 ft/d), which equals 570 ft^2/d.

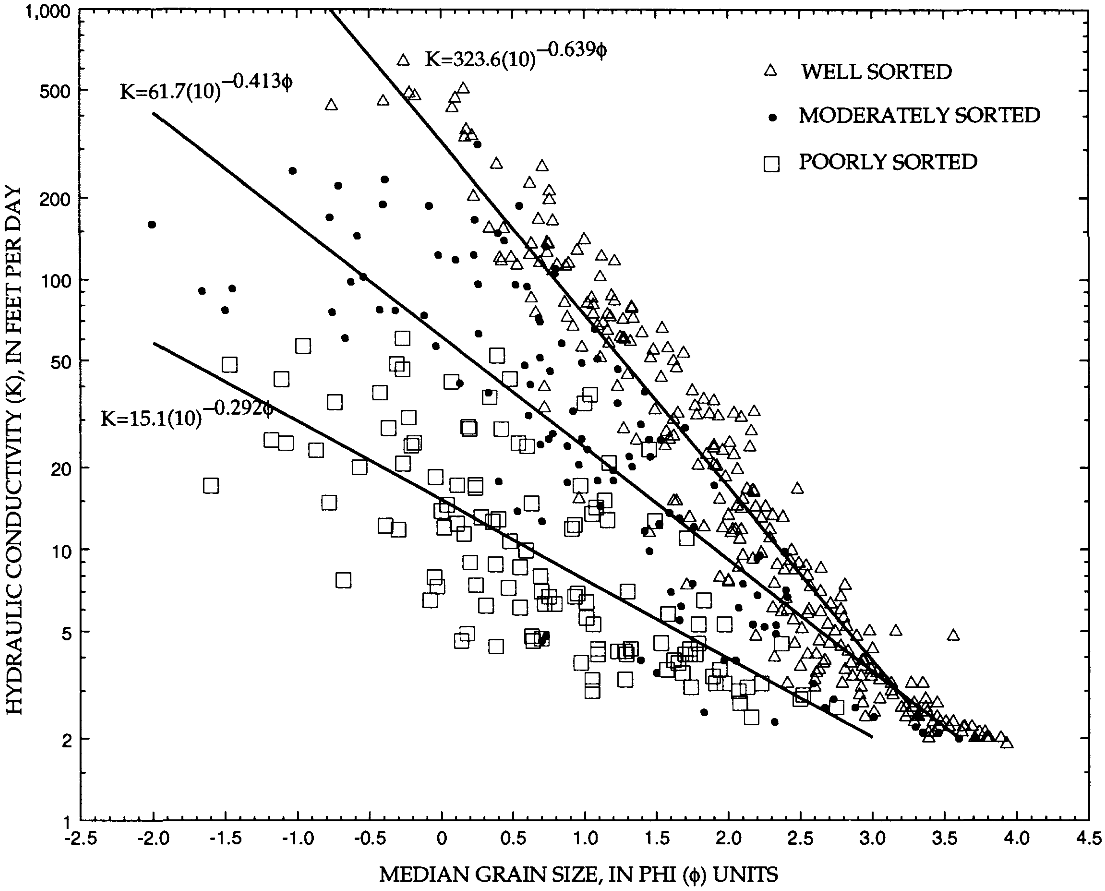


Figure 9. Relation between estimated hydraulic conductivity, median grain size, and degree of sorting of stratified drift in New Hampshire.

Table 3. Relation of mean bulk hydraulic conductivity to median grain size and degree of sorting of stratified drift in New Hampshire

[**Mean bulk hydraulic conductivity (*K*):** vectorless and calculated by use of methods described by Olney (1983). <, actual value less than value shown; >, actual value is greater than actual value shown; --, no data. Data from Ayotte and Toppin, 1995]

Median grain size (phi units)	Median grain description	Mean bulk hydraulic conductivity (*K*), in feet per day		
		Well sorted (standard deviation <1.25 phi)	Moderately sorted (standard deviation 1.25 phi to 1.75 phi)	Poorly sorted (standard deviation >1.75 phi)
-1.75	Granules	--	320	49
-1.25	Granules	--	200	35
-.75	Very coarse sand	970	120	25
-.25	Very coarse sand	470	78	18
.25	Coarse sand	220	48	13
.75	Coarse sand	110	30	9
1.25	Medium sand	51	19	7
1.75	Medium sand	25	12	5
2.25	Fine sand	12	7	3
2.75	Fine sand	6	4	2
3.25	Very fine sand	3	3	--
3.75	Very fine sand	2	2	--

Description of Selected Stratified-Drift Aquifers

The most extensive and most productive aquifers in the study area are discussed in this section. Stratified-drift aquifers in the southern part of the basin are typically continuous and are present in the former drainageways of glacial Lake Winnipesaukee and the associated glacial lakes of adjacent upland areas. Aquifers are discussed by plate, starting with plate 5 at the southwestern part of the basin and ending with plate 8 in the northeastern part of the basin (fig. 10).

Gulf Brook Aquifer

The Gulf Brook aquifer is in the northern part of Tilton, east of Interstate 93. The head of outwash is near the Tilton-Sanbornton town line north of the The Gulf, which is a deeply incised glacial drainageway cut by fast-moving meltwater. The fast-moving water deposited coarse sand to cobble gravel to the south toward the Winnipesaukee River, and this coarse material partially covers the fine-grained sediment below. The saturated thickness of the coarse-grained aquifer is generally less than 20 ft in the northern half but is greater to the south. The log from well TSW-80 shows 15 ft of coarse-grained material below land surface and fine sand and silt from 15 to 112 ft. Much of the unsaturated coarse-grained material in this area has been excavated. The transmissivity of the aquifer is less than 1,000 ft^2/d in the northern part but exceeds 1,000 ft^2/d in the southern half, mostly because of the substantial increase in the saturated thickness. This aquifer is hydraulically connected to the Gardners Grove aquifer.

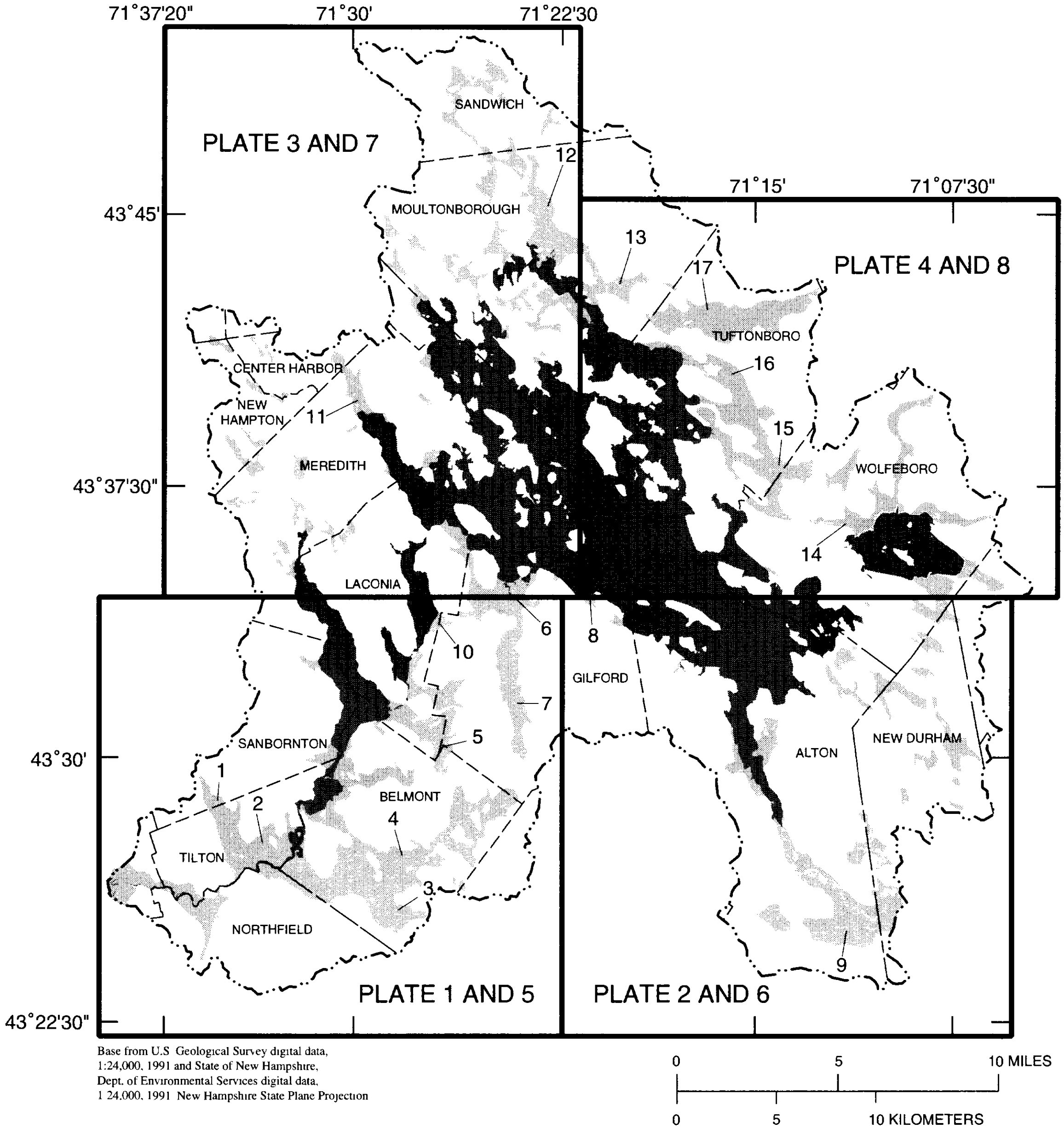
Gardners Grove Aquifer

The Gardners Grove aquifer is mostly south of Silver Lake in Belmont, although part of it extends to the east up the Tioga River toward the center of Belmont. Glacial meltwater draining from Winnisquam Lake to Silver Lake deposited the fine to medium sands into a glacial lake that once occupied this area. The deposits are graded to the elevation of the glacial-lake outlet, which was the till channel of the Winnipesaukee River near Interstate 93 in the northeastern part of Tilton. The elevation of the channel is approximately 460 ft above sea level. Test borings BLW-80 and BLW-83 (pl. 1) revealed that the saturated thickness of much of this aquifer exceeds 100 ft and is locally greater than 120 ft. Hydraulic conductivities estimated from grain-size analyses of aquifer material collected at observation well BLW-80 are 50 ft/d for the upper 20 ft and approximately 20 ft/d from 20 to 90 ft. The transmissivity of this area is about 1,500 ft^2/d. At well BLW-83, the hydraulic conductivity calculated from grain-size analyses was generally less than 30 ft/d. Transmissivity for this part of the aquifer is about 600 ft^2/d. Transmissivity for the rest of the aquifer is estimated to exceed 1,000 ft^2/d mostly because of the saturated thickness of the deposit.

Pumping Station Brook Aquifer

The Pumping Station Brook aquifer in southern Belmont is used by the town for water supply. Two wells near Pout Pond supply approximately 0.08 Mgal/d to a population of 1,200 (Frank Clairmont, Town of Belmont, oral commun., 1992). These glaciolacustrine deposits are graded to the level of a glacial lake that occupied southern Belmont. The glacial lake drained south, through an outlet at an elevation of 640 ft, 1,000 ft north of the Belmont-Gilmanton town line at New Hampshire Route 106. Two coarse-grained eskers lead to the large, flat-topped delta east of Pout Pond, near Pumping Station Brook (pl. 5). Remnants of the eskers are identifiable to the north of Route 140 and trend southeast toward Pout Pond (pl. 5). BLW-28 and BLW-13 (pl. 2) are the municipal wells, and both are within or near an esker. A geologic section through the delta and esker deposits is shown in figure 11. Observation well BLW-84 is drilled through part of an esker that is partially covered by the large delta (fig. 11). In a 4-hour aquifer test at well BLW-13 in June 1967, ground water was withdrawn at a rate of 350 gal/min with 5 ft of drawdown (pl. 2).

The transmissivity of the aquifer was estimated to be as much as 5,000 ft^2/d (Hydro Group, written commun., 1992). The proximity of this aquifer test to Pout Pond may have limited the total drawdown measured during the test.



MAJOR AQUIFERS

1 Gulf Brook
2 Gardners Grove
3 Pumping Station Brook
4 Union Road
5 Durkee Brook
6 Laconia Airport
7 Gunstock River
8 Ellacoya
9 Merrymeeting River
10 Black Brook
11 Hawkins Brook
12 Halfway Brook
13 Shannon Brook
14 Hersey Brook
15 Ninteen Mile Brook
16 Copps Pond
17 Melvin River

EXPLANATION

PRESENT-DAY LAKES
SELECTED AQUIFERS
DRAINAGE-BASIN DIVIDE
PLATE BOUNDARY
COUNTY BOUNDARY
TOWN BOUNDARY

Figure 10. General locations of selected aquifers in the Winnipesaukee River Basin, central New Hampshire.

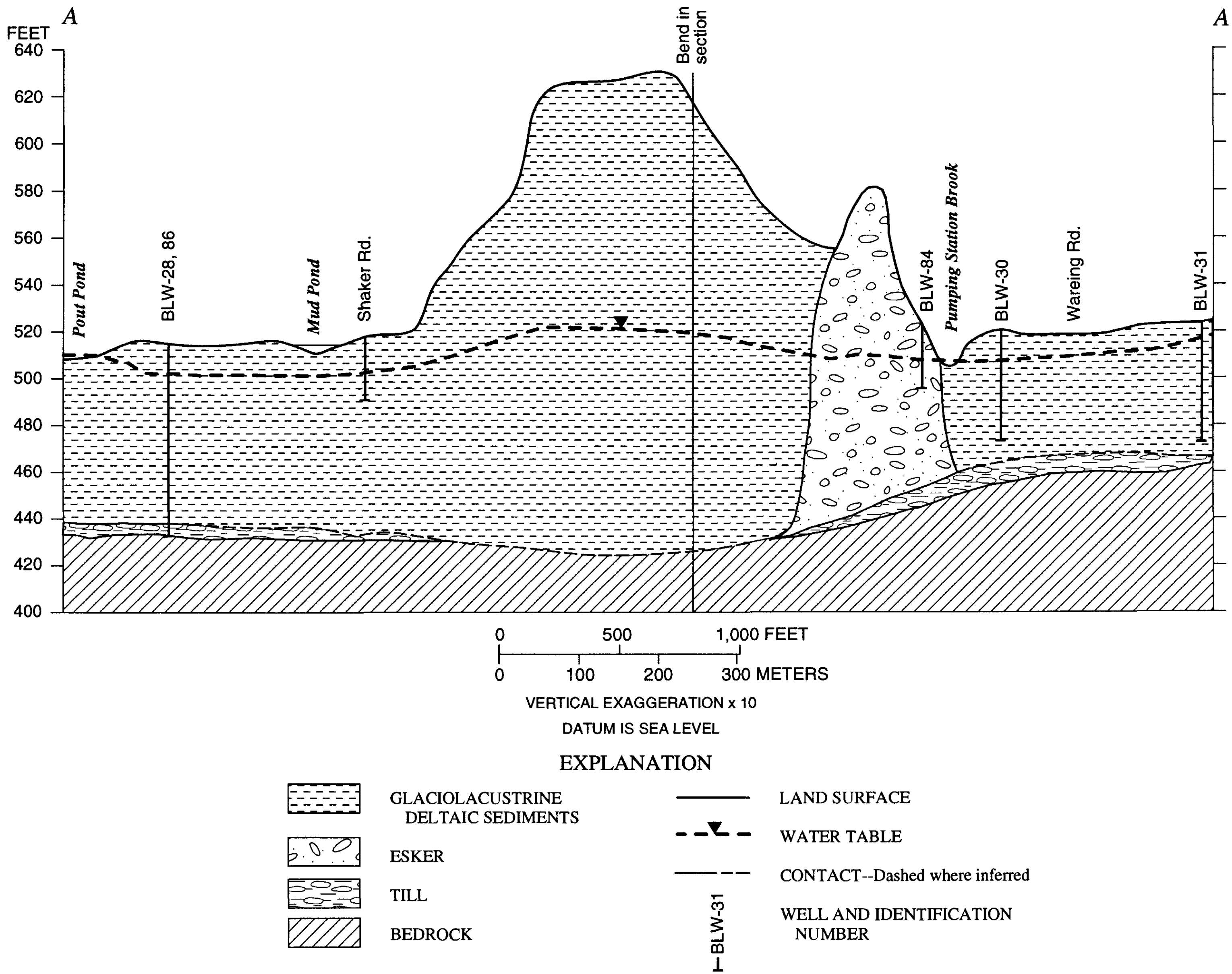


Figure 11. Geologic section through the Pumping Station Brook aquifer, Belmont, New Hampshire.

The estimated transmissivity of this aquifer at observation well BLW-86 (on the southeast side of Pout Pond near well BLW-28) is about 3,000 ft^2/d. This estimate is based on the grain-size distribution of aquifer-material samples collected in the field at the time the well was installed. The estimated transmissivity of this part of the aquifer is between 2,000 to 4,000 ft^2/d.

Wells BLW-30, BLW-31, and BLW-32 (pl. 1) all show the saturated thickness to be less than 20 ft. Additional wells, if installed near the esker, would likely be suitable for municipal supply. North of Belmont center, near Badger Pond, the aquifer becomes thin (less than 20 feet thick). A technique for evaluating water availability and the results of the application of this technique to the Pumping Station Brook aquifer are discussed in the section "Estimation of Water Availability for Selected Aquifers."

Union Road Aquifer

The Union Road Aquifer is at the southeastern end of Winnisquam Lake, near Lochmere (pl. 7). This aquifer is composed of coarse-grained ice-contact sands. Evidence of fast-moving glacial meltwater can be seen in the numerous channels cut in till uplands on the northeast side of Silver Lake in Belmont and in the deeply incised channel near Bean Hill Road, 1 mi to the west of Silver Lake. A seismic-refraction survey (Belmont h-h′, pl. 1, appendix C6) showed the saturated thickness of the aquifer to be greater than 40 ft at Union Road and greater than 80 ft at the shore of Winnisquam Lake. This was confirmed during the installation of observation well BLW-81 (pl. 1). Additionally, wells BLW-160, BLW-161, and BLW-162, which are 0.5 mi to the west, are open-ended holes finished in gravel that yield approximately 10 gal/min. Transmissivity in this area as calculated from the grain-size-distribution analysis of aquifer material collected during test drilling, is greater than 1,700 ft^2/d. This aquifer is hydraulically connected to Winnisquam Lake, and ground-water withdrawals could induce flow from the lake to the aquifer. This aquifer would be suitable for high-yielding wells because of the highly transmissive aquifer material present and the potential to induce recharge from Winnisquam Lake.

Across Winnisquam Lake, on a peninsula approximately 1 mi to the northwest between East Tilton and Winnisquam, data for domestic wells indicate coarse-grained ice-contact aquifer materials buried beneath approximately 40 ft of glacial till. Well TSW-61 is an open-ended well finished in the buried gravel deposit. This well reportedly yields 15 gal/min. Logs from other wells in this area indicate that the buried stratified-drift aquifer may be as much as 50 ft thick. The lateral extent of the deposit and its hydraulic connection to Winnisquam Lake is not well understood; additional data collection would be necessary to define the aquifer spatially and hydraulically.

Durkee Brook Aquifer

The Durkee Brook aquifer extends from the Laconia-Gilford-Belmont town line northward to Lake Winnipesaukee (pl. 5). Northward drainage of meltwater against the retreating ice margin formed the glacial lake in which this aquifer was deposited. The saturated thickness exceeds 20 ft for most of the aquifer but is generally less than 40 ft. The transmissivity of most of the aquifer is less than 1,000 ft^2/d but is slightly greater than 1,000 ft^2/d where the saturated thickness is greatest. At observation well BLW-85 (pl. 1), transmissivity estimated from grain-size distribution data from aquifer samples, is 1,050 ft^2/d. Development of this aquifer is limited not by the hydraulic properties of the aquifer but by the amount of water available to potential wells. Low streamflow at measurement site 26 (pl. 1, appendix D) was 0.80 ft^3/s (0.5 Mgal/d) in Durkee Brook on July 3, 1991. Only some of this water, plus ground water in storage, would potentially be available to wells.

Laconia Airport Aquifer

The Laconia Airport aquifer underlies all of the airport area and is hydraulically connected to the Gunstock River deposits to the east (pl. 5). Saturated stratified-drift deposits are generally greater than 40 ft thick and locally exceed 80 ft in thickness.

These deposits are glaciolacustrine fine to very fine sands; test boring GFA-2 penetrated 57 ft of saturated very fine sand and silt before reaching till. The northeastern part of this aquifer contains a zone of coarse-grained ice-contact material, which may be an esker or crevasse filling, and is partially covered by the fine-grained lacustrine deposits. Test borings GFB-6, GFB-7, and GFB-8 (pl. 1) penetrated these coarse deposits and mark the position of the feature. In general, the very fine and fine sands of this aquifer make it unsuitable for large-scale development.

Gunstock River Aquifer

The Gunstock River aquifer, in a valley to the west of Gunstock and Belknap Mountains (pl. 5), is an example of a multistage glacial-lake deposit resulting from northward drainage of meltwater. Ice retreating to the northwest formed a glacial lake between the ice margin and the uplands to the south. As the ice retreated, it uncovered successively lower meltwater drainageways to the west, toward Laconia. Deposits at the southern end of the aquifer were deposited in glacial lakes at higher elevation than deposits at the northern end. Deposits at the southern end locally exceed 60 feet thick, and their transmissivity exceeds 1,000 ft^2/d; however, detailed information about the hydraulic properties of this area is not available.

To the north, the saturated thickness decreases to about 20 ft before increasing to greater than 60 ft near well GFW-11. The saturated thickness at observation well GFW-15 and GFW-11 is 22 ft and 61 ft, respectively. Test boring GFA-1, approximately 1 mi to the north, revealed a saturated thickness of less than 20 ft (pl. 5), indicating that the thick deposit near well GFW-11 is not extensive. The transmissivity, however, is estimated to be 2,000 to 4,000 ft^2/d.

This aquifer is limited not by the hydraulic properties of the aquifer but by the amount of water available to potential wells. Low streamflow at measurement site 19 (pl. 1, appendix D) was 0.78 ft^3/s (0.5 Mgal/d) in Gunstock Brook on July 3, 1991. Only some of this water, plus ground water in storage, would potentially be available to wells.

The saturated thickness near test boring GFA-3 is less than 10 ft and remains less than 20 ft thick until the valley widens again approximately 7,500 ft north of Gilford Center. The saturated thickness at observation well GFW-13 (pl. 1) is 30 ft and increases rapidly to greater than 80 ft at well GFW-12 and 70 ft at well GFW-14. A geologic section through this portion of the aquifer is shown in figure 12. The transmissivity of this part of the aquifer is greater than 1,000 ft^2/d and locally (near GFW-14) greater than 2,000 ft^2/d. A geologic section through this part of the aquifer is shown in figure 12. This part of the aquifer is hydraulically connected to the Laconia Airport aquifer that was previously described.

Development of the Gunstock River aquifer is limited by the hydraulic properties of the aquifer, not by the amount of water available to potential wells. Low streamflow at measurement site 22 (pl.1, appendix D) was 1.13 ft^3/s (0.73 Mgal/d) in Gunstock Brook on July 3, 1991. The sediments in this location are generally too fine to produce high yields.

Ellacoya Aquifer

Ellacoya State Park overlies a small but potentially productive aquifer along the shore of Lake Winnipesaukee (pls. 2 and 4). This aquifer consists of very coarse grained material in the upper few feet of the subsurface. A seismic-refraction survey (Gilford, line h-h′, pl. 2, appendix C9) indicates that the saturated thickness of this aquifer may exceed 100 ft locally. Test boring GFB-2 was drilled to a depth of 24 ft in coarse gravel without reaching bedrock. Large cobbles near the surface prevented attempts during this study to confirm seismic-refraction results with test drilling. The transmissivity of this aquifer is greater than 1,000 ft^2/d, but may be 2,000 to 4,000 ft^2/d if the aquifer is as thick as seismic-refraction results indicate and the materials are coarse. This small deposit has a potential to be a high yield aquifer because it is hydraulically connected to Lake Winnipesaukee and because withdrawal wells could induce flow from the lake to the aquifer.

Merrymeeting River (Alton) Aquifer

The Merrymeeting River aquifer extends from the southern tip of Alton Bay south to the drainage divide between the Merrymeeting and Ela Rivers (pl. 2). The Ela River is in part of the Cocheco River Basin that was studied by Mack and Lawlor (1992).

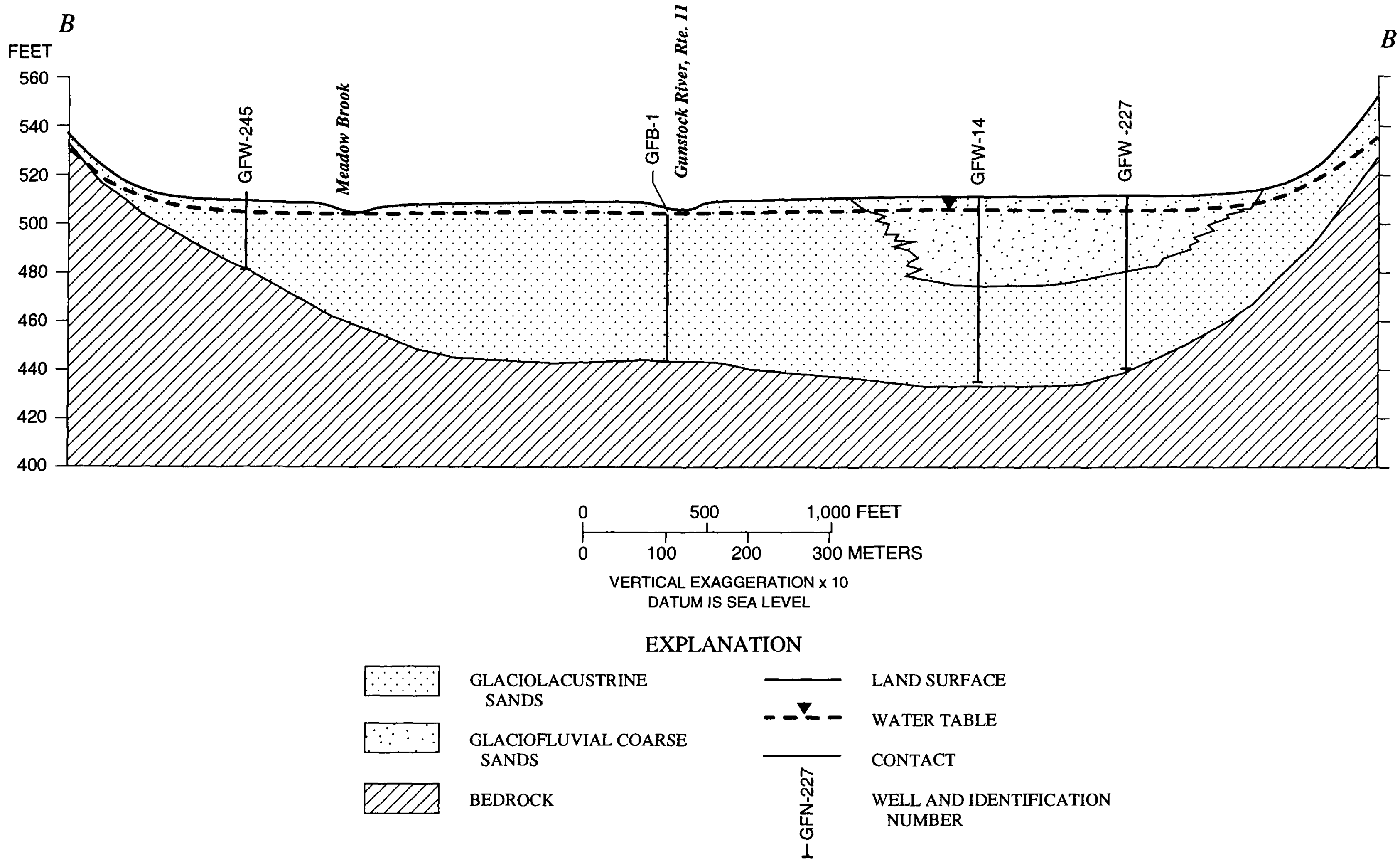


Figure 12. Geologic section through the Gunstock River aquifer, Guilford, New Hampshire.

This aquifer was deposited in a glacial lake when meltwater drained south out of the Merrymeeting Valley and down the Ela River in the Cocheco River Basin. This spillway, near the basin divide, probably conveyed water for a long time and was the last easterly draining outlet for glacial Lake Winnipesaukee before the lake began to drain to the west, down the Winnipesaukee River.

From Alton Bay south to the Merrymeeting River Wildlife Management Area, the saturated thickness of the aquifer is typically 20 to 40 ft. Several test borings done for this study (AHW-64, AHW-369, AHA-81, and AHW-63, pl. 2) reached refusal or bedrock between 30 and 40 ft. Further to the south, near the Alton-New Durham town line, the aquifer becomes thicker and locally as much as 100 ft thick near the drainage divide with the Ela River. Wells NFW-1 and NFW-54 were drilled to refusal at depths of 96 and 81 ft, respectively. The transmissivity of this aquifer is generally greater than 1,000 ft^2/d and is locally 4,000 to 8,000 ft^2/d.

The narrow valley segment of the aquifer, in the northern part, is typical of the morphosequence depositional model described by Koteff and Pessl (1981). At least three distinct sequences of deposits are identifiable in this section of the valley. A good example is the esker-delta sequence that begins about 1,000 ft south of Alton Bay, on the west side of the river. The esker is traceable south to New Hampshire Route 140, near where it crosses the Merrymeeting River. A geologic section through this deposit shows the position of the esker (mostly buried), Alton water-supply well AHW-3 (fig. 13), and the delta that formed in the early stages of glacial Lake Winnipesaukee.

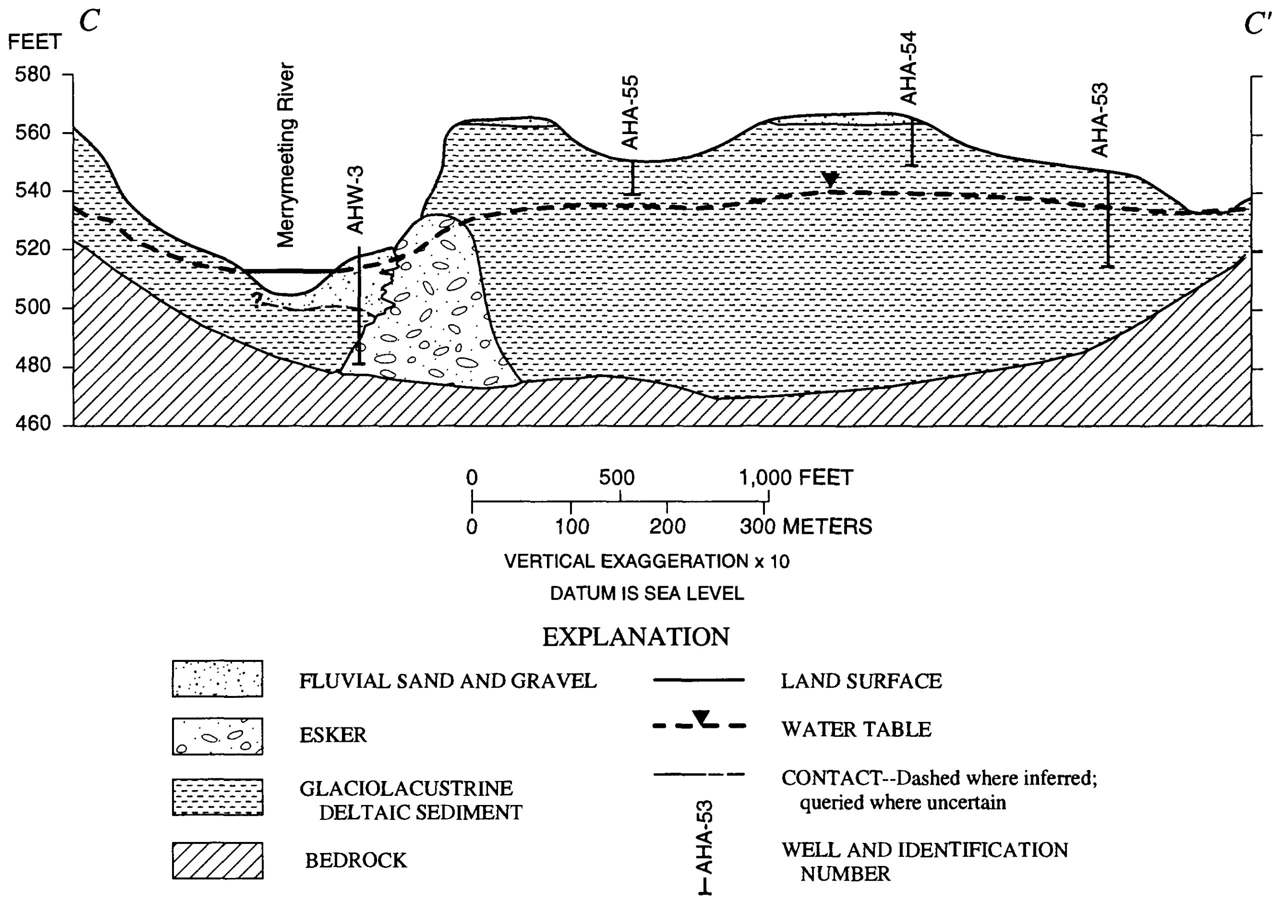


Figure 13. Geohydrologic section through the Merrymeeting River aquifer, Alton, New Hampshire.

The coarse-grained esker formed where fast-moving meltwater flowed in tunnels in the ice, whereas the finer grained delta formed where the fast-moving meltwater slowed as it emptied into the glacial lake. Identification of these sequences of deposits can help in predicting the presence of coarse- or fine-grained stratified-drift aquifers. At least two other similar morphosequences are identifiable in this valley.

The transmissivity of the Merrymeeting River aquifer is variable and is related to the morphology of a deposit in a given sequence of deposits. The transmissivity near well AHW-64 is about 1,800 ft^2/d and near well AHW-3 is about 3,800 ft^2/d. Both of these wells are finished in coarse-grained sediments characteristic of an esker. Test borings AHA-52, AHA-53, AHA-56, and AHA-57 (pl. 2) are finished in the associated glaciolacustrine delta. The estimated transmissivity near these wells is less than 1,200 ft^2/d. The fairly high transmissivity near AHW-3 is typical of ice-contact coarse-grained stratified drift, whereas the fairly low transmissivity near AHA-53 is typical of fine grained deltaic deposits.

Additional wells, if installed near esker segments, would likely be suitable for municipal supply and would increase the amount of water available from the aquifer. A technique for evaluation of water availability and results of the application of this technique to the Merrymeeting River aquifer are discussed in the section, "Estimation of Water Availability for Selected Aquifers."

Black Brook Aquifer

The Black Brook aquifer is at the southeastern end of Paugus Bay, immediately west of Lily Pond (pl. 5). Logs from wells drilled into this deposit provide conflicting information regarding the thickness of the stratified-drift aquifer. The saturated thickness of the aquifer is estimated to be greater than 20 ft but may be as much as 100 ft. Aquifer transmissivity estimated from logs of domestic wells exceeds 1,000 ft^2/d where the saturated thickness is the greatest.

Hawkins Brook Aquifer

The Hawkins Brook aquifer is north of the town of Meredith and extends upvalley from Meredith Bay (pl. 7). The aquifer occupies a narrow valley, and the saturated thickness is locally greater than 60 ft; for example, the saturated thickness at observation well MHW-1 (pl. 3) is 67 ft and at MHW-2 (pl. 3) is 44 ft. The transmissivity is generally less than 1,000 ft^2/d but is 1,000 to 2,000 ft^2/d in the center of the valley where the aquifer is composed of medium to coarse sand. Based on grain-size analysis of sediment samples collected during test drilling, the transmissivity at observation well MHW-1 is about 1,100 ft^2/d and at observation well MHW-2 is about 1,200 ft^2/d. This aquifer is hydraulically connected to Meredith Bay; ground-water withdrawals from the aquifer, near the bay, may induce water from the lake to the aquifer.

The upstream end of the aquifer, at the head of the large delta (near MHW-1), has potential for development of a medium-yield well. Coarse sands also were found at observation well MHW-2. A geohydrologic section through the delta and associated deposits is shown on figure 14.

Low streamflow at measurement site 23 (pl. 3, appendix D) was 0.14 ft^3/s (0.09 Mgal/d) in Hawkins Brook on July 3, 1991. Some of this water, plus ground water in storage, would potentially be available to withdrawal wells. The aquifer materials in this location are generally too fine to be developed as a high-yield supply, and only a small amount of streamflow is available for induced infiltration.

Halfway Brook Aquifer

The Halfway Brook aquifer extends along the Halfway Brook drainage from 3,000 ft southeast of Moultonborough (pl. 7). The saturated thickness of the aquifer is locally greater than 40 ft. Lithologic logs of holes drilled for domestic wells indicate that the transmissivity in this small zone is 1,000 to 2,000 ft^2/d. To the south, toward State Landing, no information was available to determine the saturated thickness or transmissivity; based on data for the vicinity of the Halfway Brook aquifer and the data for the area near State Landing, transmissivity is probably less than 1,000 ft^2/d but may exceed 1,000 ft^2/d in some areas.

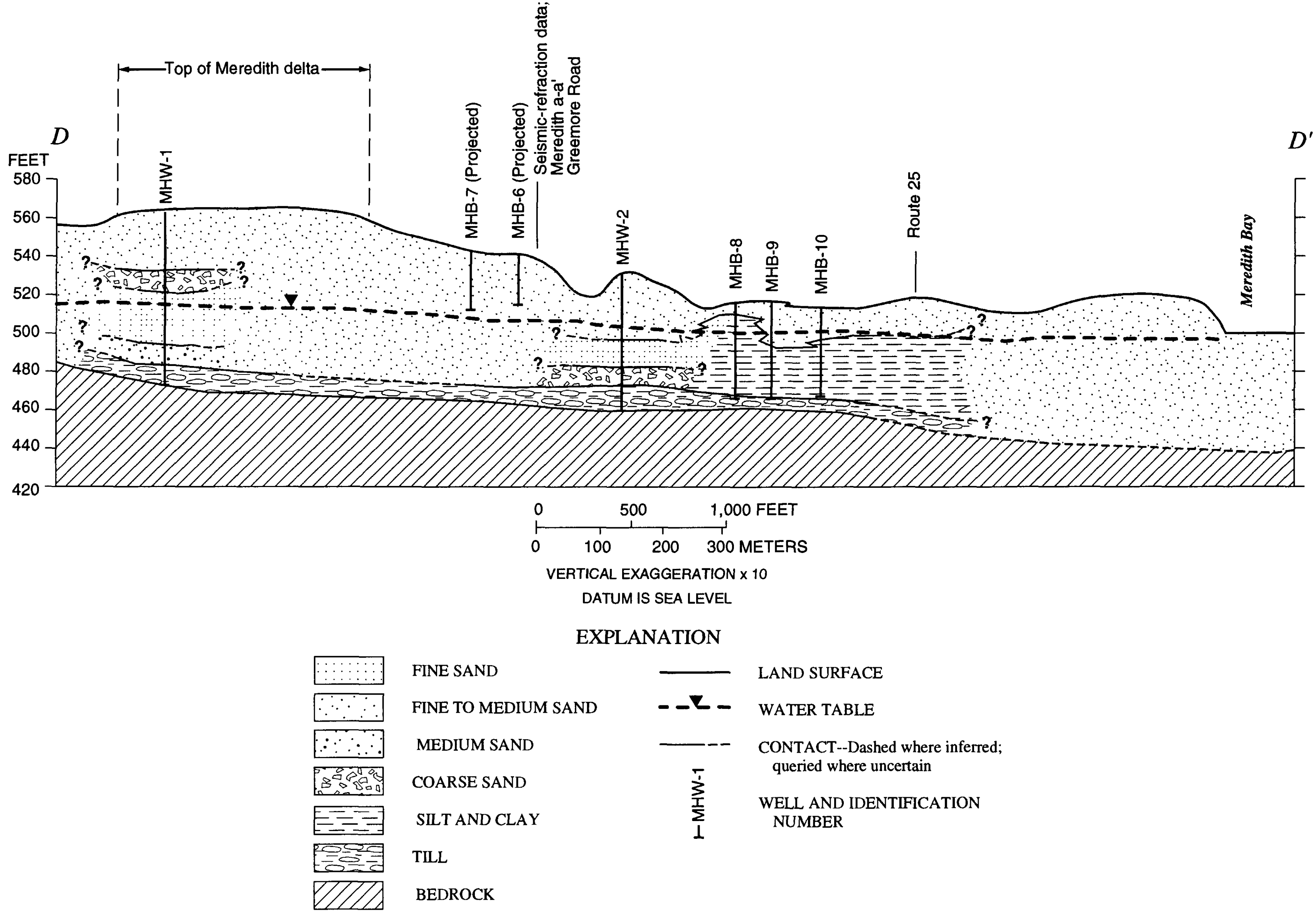


Figure 14. Geohydrologic section through the Hawkins Brook aquifer, Meredith, New Hampshire.

Test borings MWA-1 and MWA-2 (pl. 3) show the saturated thickness to be 0 and 10 ft, respectively. The transmissivity at test boring MWA-2 is estimated to be approximately 100 ft^2/d. Logs from holes drilled for domestic wells indicated that some of the overburden material may be composed of till, so the depth to bedrock minus the depth to the water table may not be an accurate estimate of the saturated thickness of the stratified-drift aquifer in this area. Much of this aquifer may be underlain by a thick till unit.

Shannon Brook Aquifer

The Shannon Brook aquifer is 2,000 ft northeast of Clark Landing along Shannon Brook (pl. 8). Seismic-refraction profiles for Moultonborough lines b-b′ and d-d′ (pl. 4, appendix C) indicate that the saturated thickness of the aquifer in this area is as much as 60 ft. The saturated thickness at observation well MWW-20 is 41 ft. The transmissivity of this narrow valley aquifer is locally greater than 1,000 ft^2/d. At wells MWW-20 and MWW-275 (pl. 4), the transmissivities are estimated to be 1,250 and 1,425 ft^2/d, respectively. To the west of MWW-20, the aquifer thins and, in places, is covered by alluvial fan deposits and (or) till reworked by fluvial processes.

Hersey Brook Aquifer

The Hersey Brook aquifer is on the northwest shore of Lake Wentworth (pl. 8). The aquifer is generally thin, but saturated thickness exceeds 40 ft locally. The log of test boring WRA-1 indicates that the transmissivity of the aquifer is less than 500 ft^2/d. Lithologic logs of holes drilled for domestic wells indicate that the aquifer is coarser to the northwest than near WRA-1; the estimated transmissivity in this area is 1,000 to 2,000 ft^2/d.

Nineteen Mile Brook Aquifer

The Nineteen Mile Brook aquifer is along New Hampshire Route 109A, 3,000 ft from the Moultonborough-Tuftonboro town line (pl. 8). The saturated thickness of this aquifer is as much as 60 ft in the middle of the valley, though most of the adjacent aquifer is less than 20 ft thick. The transmissivity at test boring TZA-9 is approximately 825 ft^2/d, based on grain-size analysis of sediment samples collected during test drilling. The lithologic log of the hole drilled for domestic well TZW-158, however, indicates coarse-grained aquifer material, and the transmissivity near this site is estimated to be 1,000 to 2,000 ft^2/d.

Copps Pond Aquifer

The Copps Pond aquifer is adjacent to and beneath Copps Pond, 5,000 ft east of Melvin Bay (pl. 8). The aquifer is composed of coarse-grained ice-contact stratified drift associated with retreating ice and stagnant ice blocks that formed the Copps Pond kettle. Seismic-refraction profiling (Tuftonboro line i-i′, pl. 4, appendix C20) indicates that the saturated thickness is more than 20 ft. The saturated thickness is locally greater than 60 ft. The transmissivity is greater than 1,000 ft^2/d for much of the aquifer but probably does not exceed 2,000 ft^2/d. The estimated transmissivity at observation well TZW-167 is about 1,300 ft^2/d.

Melvin River Aquifer

The Melvin River aquifer is northwest of Melvin Village, at the base of the Ossipee Mountains (pl. 8). This aquifer is areally extensive and the stratified-drift deposits are generally greater than 20 ft thick. The aquifer is a hummocky mix of ice-contact kames and deltaic deposits. In the western part, fine-grained lacustrine sediment was found during drilling of test borings TZA-7 and TZA-8 (pl. 4). The saturated thickness at both sites is less than 20 ft, and the transmissivity is less than 500 ft^2/d. In the western part, however, the saturated thickness is locally more than 100 ft (TZW-3). The transmissivity at observation well TZW-3 is estimated to be approximately 2,500 ft^2/d. The transmissivity decreases to less than 1,000 ft^2/d eastward, toward the middle of the deposit. At test boring TZA-16, the aquifer is more than 90 ft thick, but the saturated thickness is less than 15 ft. At observation well TZW-8, the saturated thickness is only 6 ft. Continuing east, the saturated thickness is again locally greater than 20 ft and the transmissivity is 1,000 to 2,000 ft^2/d. At observation well TZW-2, the saturated thickness is 30 ft; transmissivity, based on grain-size analysis of sediment samples collected during test drilling, is approximately 1,500 ft^2/d.

The aquifer is hydraulically connected to the Melvin River, but streamflows measured at sites 10, 11, and 12 (pl. 4, appendix D) indicate that available water to wells would come primarily from ground-water storage.

Estimation of Water Availability for Selected Aquifers

Two aquifers were selected to estimate potential water availability by use of a numerical model that simulates ground-water flow. The aquifers are in Alton and Belmont, and both are ice-contact stratified-drift aquifers that include esker and deltaic deposits. The Merrymeeting River aquifer, in Alton, is fairly thin (less than 45 ft) and is hydraulically connected to the Merrymeeting River, which may provide recharge as induced infiltration. The Pumping Station Brook aquifer, in Belmont, is locally greater than 60 ft thick and is hydraulically connected to Pumping Station Brook.

Model Construction

A numerical finite-difference model, MODFLOW (McDonald and Harbaugh, 1988), was used to estimate water availability from the two aquifers. Lapham (1988) cites numerous examples of ground-water availability studies in which analytical models were used to determine rates of combined withdrawal from wells distributed throughout an aquifer. Each of the models used in this study was developed as an aid in estimating water availability and is founded on nearly as many simplifying assumptions as simple analytical models, which do not allow the aquifer system to be discretized. The numerical model enables the user to simulate (1) areal variations of the saturated thickness and hydraulic conductivity of an aquifer, (2) the location of streams overlying the aquifer and variations of the stream characteristics along selected reaches, and (3) drawdown on all sides of a stream boundary. Sources of water to wells was from storage and induced infiltration from surface water bodies. The numerical model was chosen over analytical methods because a numerical model more closely represents the aquifer geometry and hydraulics as mapped on plates 5–8 of this report.

The models were designed to represent the geohydrologic characteristics of ground-water flow in stratified-drift aquifers. The following simplifying assumptions about the ground-water-flow system were made in developing the models:

1. **Two-dimensional flow is adequate to represent the flow system.** Ground-water flow is predominantly horizontal. Vertical gradients are downward in areas of ground-water recharge and upward in areas of ground-water discharge. Strong vertical gradients are also present near discharging wells, however, the magnitude of the vertical flow gradients diminishes rapidly with distance from the well (Harte and Mack, 1992). The error associated with simulation of water availability by considering only two-dimensional horizontal flow is negligible.
2. **Water-supply wells are fully penetrating and 100 percent efficient.** Wells used for supply are generally not fully penetrating and are commonly screened in the bottom 25 percent of the aquifer. In addition, these wells are not 100 percent efficient. Increased drawdown in the well results from energy loss between the aquifer and the well, which is a function of well design and construction. The effect of this simplifying assumption is that less drawdown is simulated than would occur in the real system.
3. **There is no flow of ground water between till and (or) bedrock and the stratified-drift aquifer.** The model areas are stratified-drift aquifers in till-covered bedrock valleys. In an aquifer where horizontal and vertical gradients are found between the stratified drift and the underlying till and (or) bedrock, ground-water flow may occur between the aquifer and the surrounding geologic units but this type of recharge was not simulated. Although lateral flow from uplands adjacent to the edge of the

stratified drift does occur, it is generally less than 0.1 $(ft^3/s)/mi^2$ (0.05 $(Mgal/d)/mi^2$) (Harte and Mack, 1992, Ayotte and Toppin, 1995) during the summer months and its contribution is considered negligible and was not simulated.

4. **Finite-difference approximation of the nonlinear, partial differential equations governing three-dimensional ground-water flow results in reasonable estimates of yield for an aquifer.** Flow in the numerical model is described by linear differential equations that are solved by use of a finite-difference approximation. The aquifers are discretized into blocks (cells) in which hydraulic properties are assumed to be constant. For unconfined systems, the linear equations are not strictly applicable because changes in the potentiometric surface (water table) affect the transmissivity, and changes in the transmissivity with time result in a nonlinear aquifer response. The model accounts for this, in part, by readjusting the values of transmissivity due to the declining water table for each of the 20 time steps (specified by the user) in the simulation. Because the changes in transmissivity are small throughout most of the aquifer, inaccuracies that result from this approximation are minimal. Exact solutions to the linear equations are impossible; therefore, the solutions are determined by solving a series of linear equations, through the process of iteration, until the greatest change in the solution is less than some stated limit. A limit of 0.01 ft was used to end the iteration.

Model Input Parameters

Model input parameters consisted of: (1) the position of the water table, (2) saturated thickness, (3) hydraulic conductivity, (4) specific yield, and (5) the streambed hydraulic conductivity. The model simulated a period of 180 days with no areal recharge to account for extended periods without recharge. Sources of water to hypothetical wells are from storage and induced infiltration from surface-water bodies such as rivers.

Position of the Water Table

In both models, the initial water table was assumed to be flat and at an elevation of zero. Resulting declines in the water table were thus negative values. Because the models were designed to estimate water availability—not to be a calibrated representation of the actual ground-water-flow system—a flat initial water table is reasonable.

Saturated Thickness and Hydraulic Conductivity

The saturated-thickness data for the aquifers were taken directly from plate 1 for the Pumping Station Brook aquifer and from plate 2 for the Merrymeeting River aquifer. The saturated-thickness contours were overlain on the model grid, and the appropriate saturated thickness was assigned to each cell. Hydraulic conductivity (K) is related to saturated thickness, b, and transmissivity, T, by $T = K(b)$. These values were taken directly from the saturated thickness and transmissivity maps.

Specific Yield

The specific yield of the aquifers was not measured for the model areas. Johnson (1967) summarized the results of specific yield for sediments from many studies. He reported that the average specific yield for fine sands was 0.21; for coarse sands, 0.27; and for gravels, 0.22. Ayotte and Toppin (1995) found that a shallow, coarse-grained aquifer in south-central New Hampshire had specific yields ranging from 0.21 to 0.29. A value of 0.2 was used for both aquifers as a conservative estimate of specific yield.

Streambed Hydraulic Conductivity

The average vertical hydraulic conductivity of streambed materials in both aquifers was not measured for either aquifer in the model area.

Rather, a conservative value of 1 ft/d was used in all cases. This value is somewhat lower than hydraulic conductivities reported for similar areas in New England. Lapham (1988), in a similar water availability study in Massachusetts, used 5 ft/d. Harte and Mack (1992), however, used 3 ft/d for most reaches but used 1 ft/d where the channel contained fine-grained sands and organic material. Ayotte and Toppin (1995) used 3 ft/d on the basis of grain-size analysis of sediment cores collected from the river in the model area. In this study, streams appear to be flowing over a range of sediment types and, in some cases, over organic material.

Results of Ground-Water-Availability Estimates

For each aquifer, the model was run twice—once in which the surface-water bodies (streams and rivers) contributed to the total available water and once in which only water from storage contributed to the total available water. This double simulation provides a range of estimated available water from an aquifer over a period of 180 days, both with and without recharge from nearby surface-water sources. Commonly, public-supply wells in stratified drift are near or adjacent to a surface-water body to take advantage of potential induced recharge when the wells are pumped.

Merrymeeting River Aquifer

For the Merrymeeting River aquifer, the model grid consisted of 84 rows and 45 columns; each cell was 100 by 100 ft. Ground-water withdrawals were simulated at five wells in the zones of highest transmissivity. Simulated withdrawals were adjusted so that the total drawdown at the well was no more than 70 percent of the saturated thickness of the aquifer. Calculated drawdown in the cell was the average drawdown for the cell and was less than drawdown at the hypothetical well.

In the simulation of water derived solely from storage, the total water available was 0.63 Mgal/d. In the simulation of water derived from storage and from induced infiltration, the total water available was 1.1 Mgal/d (table 4). In the latter simulation, 0.09 Mgal/d came from storage and 1.01 Mgal/d came from induced infiltration.

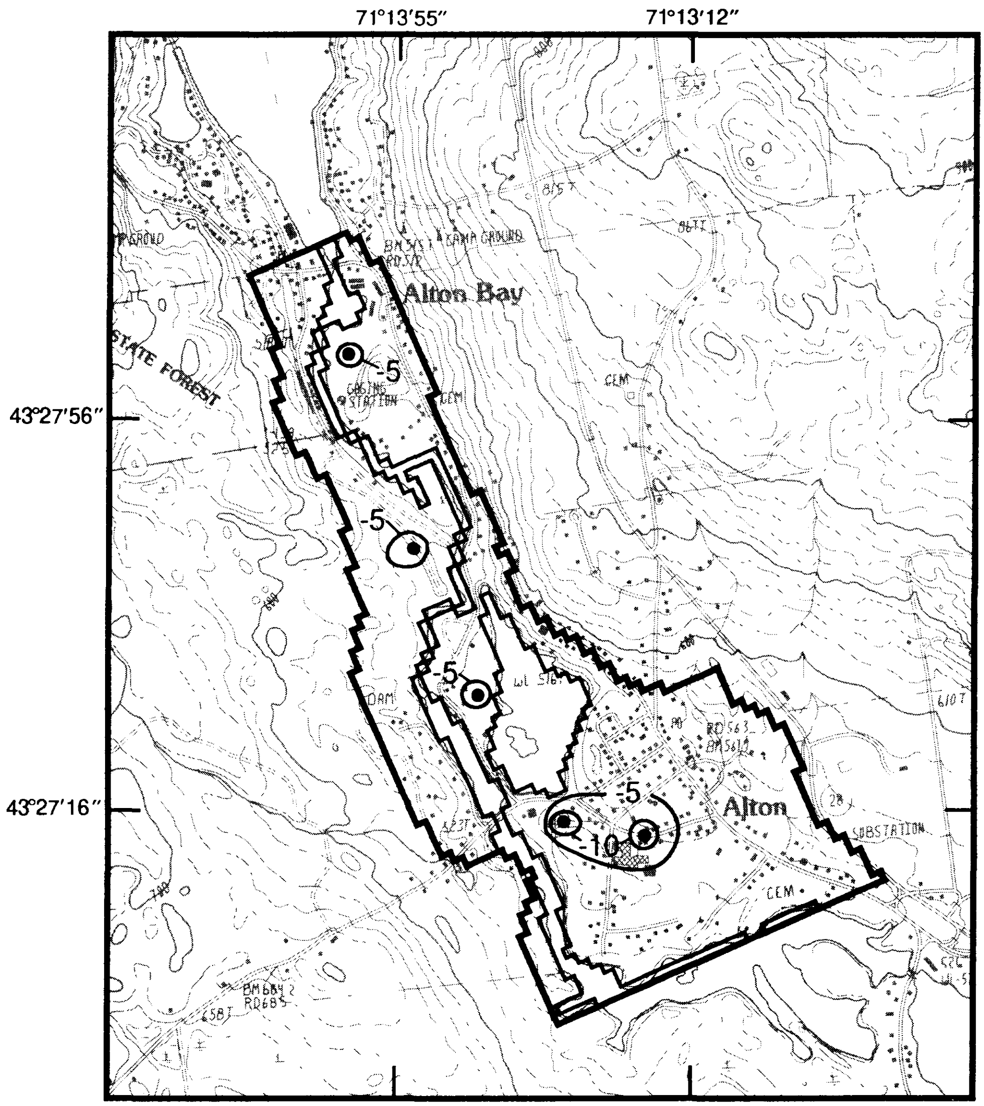
Induced infiltration calculated by simulation was compared to the amount of water flowing in the stream at a period of low flow (approximately 93-percent flow duration) to determine whether the simulated withdrawals would deplete the available streamflow. The nearest measurement of the Merrymeeting River upstream from or adjacent to the aquifer was near Main Street in New Durham (site 1, pl. 2). Low streamflow measured on July 3, 1991, was 8.6 ft^3/s (5.5 Mgal/d). Induced infiltration calculated by the model (1.01 Mgal/d) represents only 18 percent of the streamflow (table 4).

The model boundary, surface-water boundaries, and locations of hypothetical wells are shown in figures 15 and 16. The drawdown, shown as negative values, as a result of simulated withdrawal with induced infiltration is shown in figure 15, and drawdown without induced infiltration is shown in figure 16.

Table 4. Water-availability estimates for two simulations of the Merrymeeting River aquifer, central New Hampshire

[**Low streamflow measurement on July 3, 1991:** site 1, appendix D. Mgal/d, million gallons per day; ft^3/s, cubic foot per second; --, no data]

Water-availability estimate from:	Ground-water storage (Mgal/d)	Induced infiltration (Mgal/d)	Total available water, numerical model (Mgal/d)	Low streamflow measurement on July 3, 1991 (ft^3/s)
Ground-water storage only	0.63	--	0.63	--
Ground-water storage plus induced infiltration	.09	1.01	1.1	8.6



Base from U.S. Geological Survey
Alton, N.H., 1:24,000, 1987

0 0.2 0.4 0.6 0.8 1 MILES

0 0.2 0.4 0.6 0.8 1 KILOMETERS

CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL
DATUM OF 1929

EXPLANATION

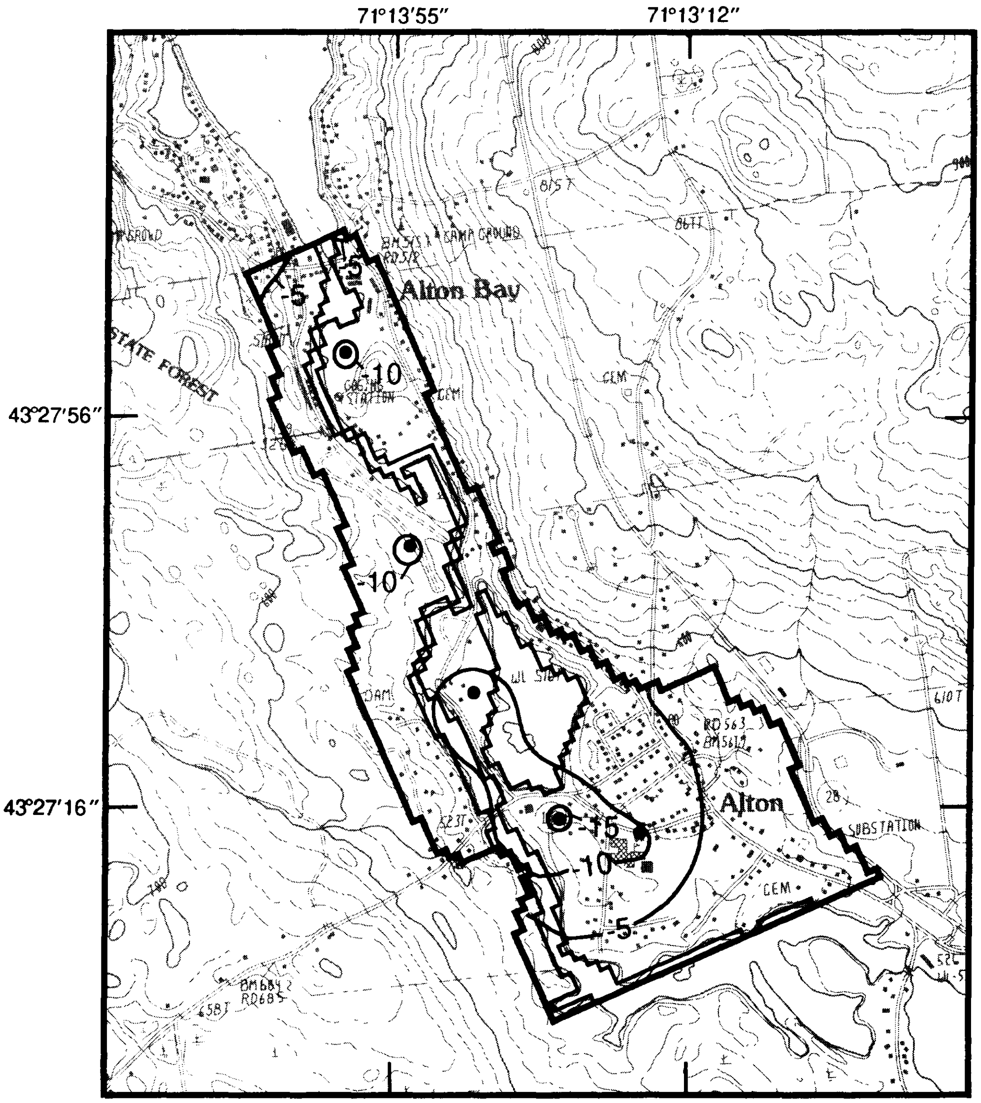
MODEL BOUNDARY

RIVER CELLS

● HYPOTHETICAL WELLS

— -5 — DRAWDOWN CONTOUR—Shows drawdown from a flat water table after 180 days of pumping. Contour interval is 5 feet

Figure 15. Model boundary, surface-water boundaries, hypothetical wells, and drawdown contours for the Merrymeeting River aquifer, central New Hampshire with simulation of induced infiltration.



Base from U.S. Geological Survey
Alton, N.H., 1:24,000, 1987

0 0.2 0.4 0.6 0.8 1 MILES

0 0.2 0.4 0.6 0.8 1 KILOMETERS

CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL
DATUM OF 1929

EXPLANATION

MODEL BOUNDARY

RIVER CELLS

● HYPOTHETICAL WELLS

— -5 — DRAWDOWN CONTOUR—Shows drawdown from a flat water table after 180 days of pumping. Contour interval is 5 feet

Figure 16. Model boundary, surface-water boundaries, hypothetical wells, and drawdown contours for the Merrymeeting River aquifer, central New Hampshire with simulation of no induced infiltration.

The area of calculated drawdown is significantly greater for the simulation with no induced infiltration (fig. 16) than for the simulation with induced infiltration from the Merrymeeting River (fig. 15). This comparison indicates that drawdown at withdrawal wells can be reduced and simulated withdrawals can be maximized by locating the wells near the Merrymeeting River. Water availability in this aquifer is limited by available drawdown and not by available recharge. By placing additional wells along the Merrymeeting River, more water could be withdrawn than if wells were placed elsewhere in the aquifer.

Pumping Station Brook Aquifer

For the Pumping Station Brook aquifer the model grid consisted of 75 rows and 50 columns; each cell was 100 by 100 ft. Ground-water withdrawals were simulated at six hypothetical wells in the zones of highest transmissivity. Simulated withdrawals were adjusted so that the total drawdown at the well was not more than 70 percent of the saturated thickness of the aquifer. Calculated drawdown in the cell was the average drawdown for the cell and was less than the drawdown at the hypothetical well.

In the simulation of water derived solely from storage, the total water available was 1.6 Mgal/d. In the simulation of water derived from storage and from induced infiltration, the total water available was 1.8 Mgal/d (table 5). In the latter simulation, 1.5 Mgal/d came from storage and 0.3 Mgal/d from induced infiltration.

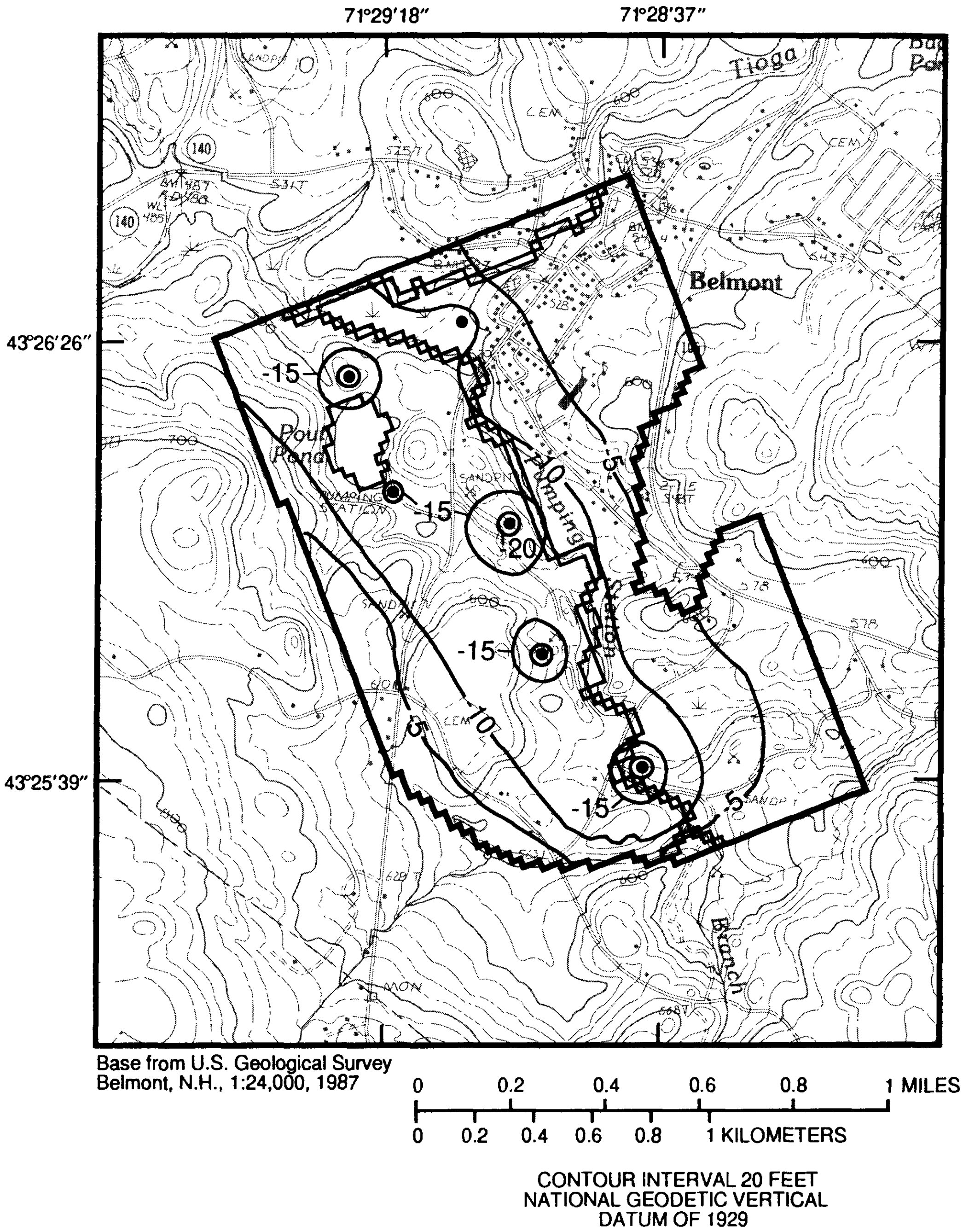
Induced infiltration calculated by simulation was compared to the amount of water flowing in the stream at a period of low flow (approximately 93-percent flow duration) to determine whether the simulated withdrawals would deplete the available streamflow. The nearest measurement of the Tioga River upstream from or adjacent to the aquifer was near Route 140, at the northern end of the model area (site 34, pl. 1). Low streamflow measured on July 3, 1991, was 3.9 ft^3/s (2.5 Mgal/d) (table 5). Induced infiltration calculated by the model (0.3 Mgal/d) represents 12 percent of the stream flow (table 5).

Table 5. Water-availability estimates from two simulations of the Pumping Station Brook aquifer, central New Hampshire

[**Low streamflow measurement on July 3, 1991:** site 34, appendix D. Mgal/d, million gallons per day; ft^3/s, cubic foot per second]

Water-availability estimate from:	Ground-water storage (Mgal/d)	Induced infiltration (Mgal/d)	Total available water numerical model (Mgal/d)	Low streamflow measurement on July 3, 1991 (ft^3/s)
Ground-water storage only......	1.6	--	1.6	--
Ground-water storage plus induced infiltration.........	1.5	0.3	1.8	3.9

The model boundary, surface-water boundaries, and locations of hypothetical wells are shown in figures 17 and 18. The drawdown due to simulated withdrawal with induced infiltration is shown in figure 17, and drawdown without induced infiltration is shown in figure 18. The area of calculated drawdown for the simulation without induced infiltration (fig. 18) is similar to that for the simulation with induced infiltration from the Pumping Station Brook aquifer (fig. 17). This comparison indicates that drawdown at pumped wells cannot be significantly reduced by inducing infiltration and that available water is mainly limited by the amount of water available from storage.



EXPLANATION

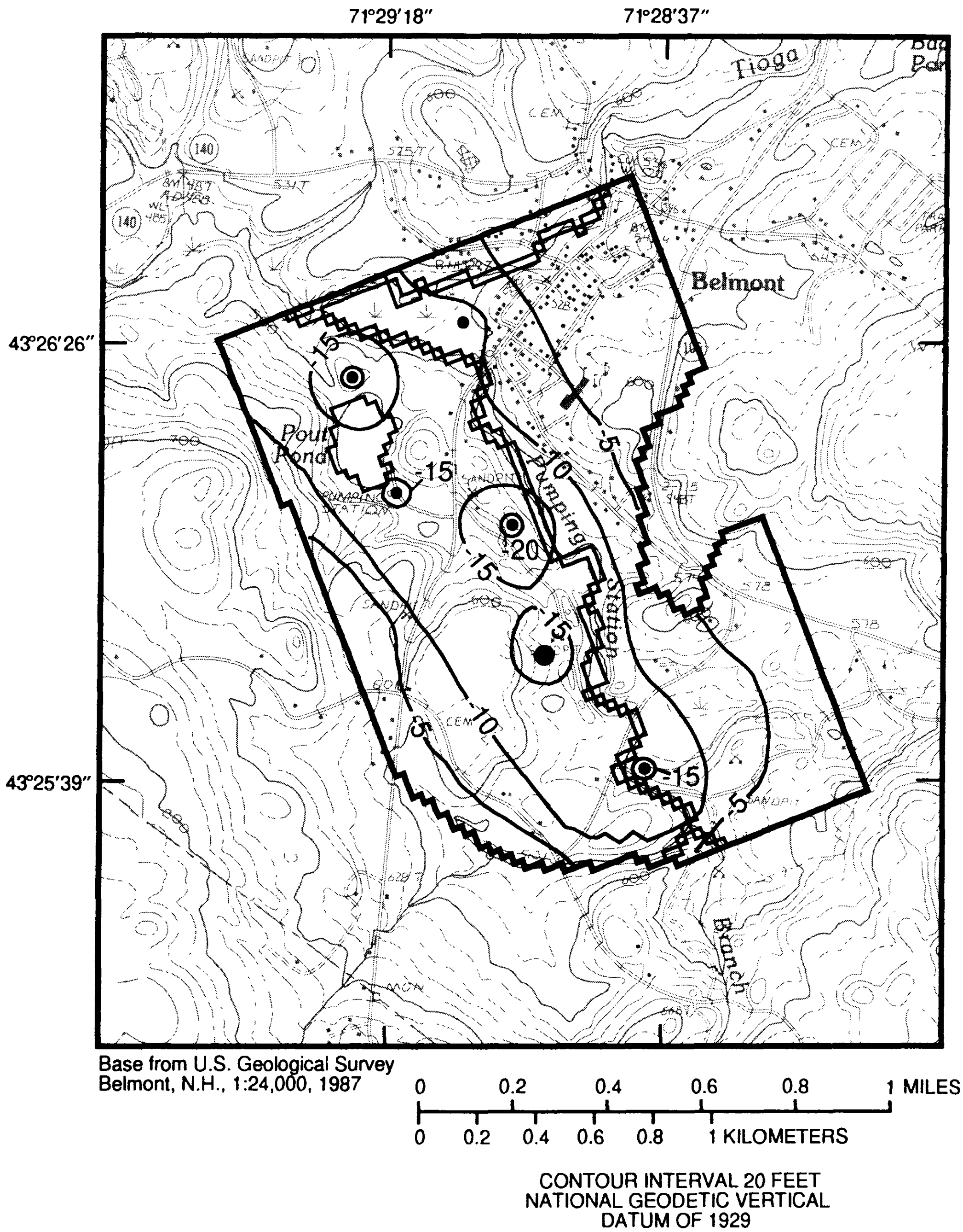
MODEL BOUNDARY

RIVER CELLS

• HYPOTHETICAL WELLS

— -5 — DRAWDOWN CONTOUR—Shows drawdown from a flat water table after 180 days of pumping. Contour interval is 5 feet

Figure 17. Model boundary, surface-water boundaries, hypothetical wells, and drawdown contours for the Pumping Station Brook aquifer, central New Hampshire with simulation of induced infiltration.



EXPLANATION

MODEL BOUNDARY

RIVER CELLS

● HYPOTHETICAL WELLS

— -5 — DRAWDOWN CONTOUR—Shows drawdown from a flat water table after 180 days of pumping. Contour interval is 5 feet

Figure 18. Model boundary, surface-water boundaries, hypothetical wells, and drawdown contours for the Pumping Station Brook aquifer, central New Hampshire with simulation of no induced infiltration.

GROUND-WATER QUALITY

Water samples from 17 wells were collected in January and August 1991 and were analyzed for inorganic compounds. The results were used to evaluate the background water quality of the stratified-drift aquifers in the Winnipesaukee River Basin. Results of the analyses indicate that water from the stratified-drift aquifers is generally suitable for drinking and other domestic or municipal uses. During the sampling phase of this study, known areas of ground-water contamination were avoided.

All of the sampled wells were developed either with compressed air or with a centrifugal pump to remove water introduced during drilling, foreign material, and sediment and to improve the hydraulic connection with the aquifer. Wells were allowed to stabilize for at least 1 month before sampling. Just before sampling, the wells were pumped until temperature and specific conductance stabilized and at least three times the volume of water in the well was evacuated. This procedure helped ensure that the sampled water represented water from within the aquifer.

All water samples were analyzed by the USGS National Water Quality Laboratory (NWQL) in Arvada, Colo. Samples were collected and analyzed according to procedures described by Fishman and Friedman (1989).

Results of the chemical analyses are presented and compared with the U.S. Environmental Protection Agency (1991a,b, 1992) primary and secondary drinking-water regulations and the New Hampshire Department of Environmental Services, Water Supply Engineering Bureau drinking-water recommendations (New Hampshire Department of Environmental Services, Water Supply Engineering Bureau, written commun., 1990) in table 6. Naturally occurring constituents that have no recommended limits, but whose concentrations are generally less than a few micrograms per liter, also are included in table 6. Many of the constituents listed in table 6 were not detectable in water samples from the stratified-drift aquifers in the study area. Individual constituents and properties are discussed in the following paragraphs.

Specific Conductance

Specific conductance—a measure of the ability of water to conduct electrical current—ranged from 49 µS/cm in water from well NRW-59 to 440 µS/cm in water from well WRW-1. The median for all water samples in this study (112 µS/cm) was less than the median for the entire State (132 µS/cm) for public-supply wells completed in stratified-drift aquifers (Morrissey and Regan, 1987).

Dissolved Solids

Dissolved-solids (solids residue) concentrations in water include all ionized and un-ionized dissolved solids in solution. The concentrations of all water samples from stratified-drift aquifers ranged from 32 mg/L (well TZW-3) to 236 mg/L (well WRW-1) and were less than the maximum recommended limit for drinking water of 500 mg/L established by the New Hampshire Department of Environmental Services, Water Supply Engineering Bureau (1990). The low concentration of dissolved solids in these stratified-drift aquifers can be attributed to the low solubility of the aquifer matrix and the relatively short time that the water is in contact with the aquifer (Morrissey and Regan, 1987).

pH

The pH of water is a measure of the hydrogen ion activity. Water having a pH of 7.0 is neutral, less than 7.0 is acidic, and greater than 7.0 is alkaline. The pH of most ground water in the United States ranges from about 6.0 to 8.5 (Hem, 1985, p. 63-64). The pH of water sampled during this study ranged from 5.4 to 7.2; the median was 6.3. The range of pH in stratified-drift aquifers sampled in previous studies in this series (Moore, 1990; Flanagan and Stekl, 1990; Lawlor and Mack, 1992; Ayotte and Toppin, 1995) in this series was from 5.3 to 8.5, and the median was 6.4. The most basic or alkaline ground-water samples came from well BLW-83 (7.2). The most acidic water was from wells AHW-1 (6.4), AHW-63 (6.3), AHW-64 (6.4), BLW-28 (6.3), BLW-80 (5.8), BLW-84 (6.2), BLW-85 (5.5), GFW-11 (5.8), MHW-1 (5.4), MHW-2 (6.3), MWW-20 (5.9), NRW-59 (6.4), TZW-3 (5.9), and TZW-9 (6.3). Each of these samples had a pH less than the SMCL of 6.5 established by the USEPA (U.S. Environmental Protection Agency, 1992).

Table 6. Chemical analyses of ground-water samples from the Winnipesaukee River Basin, central New Hampshire

[ft, foot; µS/cm, microsiemens per centimeter at 25 degrees Celsius; °C, degree Celsius; mg/L, milligram per liter: µg/L, microgram per liter; <, actual value is less than value shown; --, no data; SMCL, Secondary Maximum Contaminant Level: Contaminants that affect the esthetic quality of drinking water. At high concentrations or values, health implications as well as esthetic degradation may also exist. SMCL's are not Federally enforceable but are intened as guidelines for the States (U.S. Environmental Protection Agency, 1992); MCL, Maximum Contaminant Level: Enforceable, health-based regulation that is to be set as close as is feasible to the level at which no known or anticipated adverse effects on the health of a person occur. The definition of feasible means the use of the best technology, treatment techniques, and other means that the Administrator of the U.S. Environmental Protection Agency finds, after examination for efficacy under field conditions and not solely under laboratory conditions, are generally available (taking cost into consideration) (U.S. Environmental Protection Agency, 1992)]

Local well No. (plates 1-4)	Date of sample collection	Water level in depth below land surface (ft)	Depth of well, total (ft)	Depth to top of sample interval (ft)	Elevation of land surface (ft above sea level)	Specific conductance, field (µS/cm)	pH, field (standard units)	Temperature of water (°C)	Dissolved oxygen (mg/L)	Hardness (mg/L as $CaCO_3$)	Calcium, dissolved (mg/L)
AHW 4	8-02-91	--	38.0	--	520	142	6.4	9.5	7.5	--	--
AHW 63	8-08-91	7.91	20.5	17.0	535	257	6.3	10.5	--	--	--
AHW 64	8-08-91	8.15	39.0	36.5	515	180	6.4	11.0	--	48	16
BLW 28	8-02-91	--	52.0	--	500	138	6.3	9.5	8.2	--	--
BLW 80	1-29-91	4.21	82.5	80.0	470	56	5.8	7.5	9.4	12	3.1
BLW 83	8-07-91	7.92	80.0	77.5	500	110	7.2	10.5	--	33	7.9
BLW 84	8-07-91	34.25	60.0	57.7	540	78	6.2	9.0	--	27	6.9
BLW 85	8-07-91	35.07	50.0	47.5	665	71	5.5	10.5	--	16	4.4
GFW 11	1-28-91	5.33	53.0	51.5	780	299	5.8	8.0	8.1	31	9.8
GFW 12	1-28-91	4.54	80.0	77.5	515	122	6.7	9.0	5.0	--	.04
MHW 1	8-09-91	17.58	35.0	32.5	565	89	5.4	8.5	--	18	5.5
MHW 2	1-28-91	7.98	55.0	52.5	515	210	6.3	7.0	11.3	37	11
MWW 20	1-18-91	7.88	30.0	27.5	600	67	5.9	8.5	7.5	30	10
NRW 59	8-06-91	7.75	80.0	57.5	435	49	6.4	12.5	--	--	--
TZW 3	8-09-91	17.20	51.0	48.5	577	71	5.9	9.5	--	17	6.0
TZW 9	8-09-91	8.46	27.0	24.0	615	125	6.3	9.0	--	41	13
WRW 1	8-08-91	10.80	20.0	17.5	550	440	6.5	10.0	--	7	2.1
U.S. Environmental Protection Agency drinking-water regulations for listed property or chemical constituent											
SMCL	--	--	--	--	--	--	6.5-8.0	--	--	--	--
MCL	--	--	--	--	--	--	--	--	--	--	--

Table 6. Chemical analyses of ground-water samples from the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local well No. (plates 1-4)	Date of sample collection	Magnesium, dissolved (mg/L)	Potassium, dissolved (mg/L)	Sodium, dissolved (mg/L)	Sodium (percent)	Alkalinity wat wh tot fet field (mg/L as $CaCO_3$)	Sulfate, dissolved (mg/L)	Chloride, dissolved (mg/L)	Fluoride, dissolved (mg/L)	Silica, dissolved (mg/L)	Solids, residue at 180°C dissolved (mg/L)
AHW 4	8-02-91	--	--	--	--	--	--	--	--	--	--
AHW 63	8-08-91	--	--	--	--	--	--	--	--	--	--
AHW 64	8-08-91	2.0	1.4	12	34	35	2.1	27	0.10	12	99
BLW 28	8-02-91	--	--	--	--	--	--	--	--	--	--
BLW 80	1-29-91	1.0	1.8	3.0	32	16	5.0	1.7	<.10	14	34
BLW 83	8-07-91	3.2	2.0	5.5	25	45	14	1.0	.20	19	72
BLW 84	8-07-91	2.4	1.0	2.6	17	27	4.2	5.4	.20	11	49
BLW 85	8-07-91	1.1	.60	4.2	36	8	9.9	5.2	<.10	14	50
GFW 11	1-28-91	1.6	4.9	44	72	14	10	75	<.10	9.8	158
GFW 12	1-28-91	<.01	1.5	.30	--	34	5.3	10	.10	<.01	69
MHW 1	8-09-91	1.1	.80	5.7	39	13	2.7	14	.10	16	67
MHW 2	1-28-91	2.4	2.3	23	55	20	9.7	45	<.10	7.5	109
MWW 20	1-18-91	1.3	1.2	4.9	25	--	4.1	11	.20	14	70
NRW 59	8-06-91	--	--	--	--	29	--	--	--	--	--
TZW 3	8-09-91	.48	.90	3.2	28	15	5.9	3.0	.10	13	32
TZW 9	8-09-91	2.0	1.2	4.3	18	46	3.5	8.2	.20	19	69
WRW 1	8-08-91	.33	1.1	81	96	24	7.3	100	.10	12	236
U.S. Environmental Protection Agency drinking-water regulations for listed property or chemical constituent											
SMCL	--	--	--	[1]20-250	--	--	[1]250	[1]250	[1]2.0	--	[1]500
MCL	--	--	--	--	--	--	--	250	4.0	--	500

Table 6. Chemical analyses of ground-water samples from the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local well No. (plates 1-4)	Date of sample collection	Solids, sum of constituents, dissolved (mg/L)	Nitrogen, nitrite, dissolved (mg/L as N)	Nitrogen, NO_2+NO_3, dissolved (mg/L as N)	Nitrogen, ammonium, dissolved (mg/L as N)	Nitrogen, ammonium + organic, dissolved (mg/L as N)	Phosphorus, dissolved (mg/L as P)	Phosphorous ortho, dissolved (mg/L as P)	Barium, dissolved (µg/L)	Beryllium, dissolved (µg/L)	Cadmium, dissolved (µg/L)
AHW 4	8-02-91	--	--	--	--	--	--	--	--	--	--
AHW 63	8-08-91	--	--	--	--	--	--	--	--	--	--
AHW 64	8-08-91	99	<0.010	1.10	<0.010	<0.20	0.010	<0.010	19	<.5	<1.0
BLW 28	8-02-91	--	--	--	--	--	--	--	--	--	--
BLW 80	1-29-91	39	<.010	<.100	.020	<.20	<.010	<.010	<2	<.5	<1.0
BLW 83	8-07-91	84	.010	<.050	.050	<.20	.070	<.010	27	.6	<1.0
BLW 84	8-07-91	53	<.010	.780	.020	<.20	<.010	<.010	15	.9	<1.0
BLW 85	8-07-91	46	<.010	.440	.020	<.20	<.010	<.010	21	.7	<1.0
GFW 11	1-28-91	172	<.010	1.70	<.010	<.20	.030	<.010	17	<.5	<1.0
GFW 12	1-28-91	--	<.010	<.100	<.010	<.20	.010	<.010	<2	<.5	<1.0
MHW 1	8-09-91	56	<.010	<.050	.460	.70	.010	<.010	21	<.5	<1.0
MHW 2	1-28-91	114	<.010	.200	<.010	<.20	<.010	.010	9	<.5	<1.0
MWW 20	1-18-91	63	<.010	1.00	.010	.30	<.010	<.010	<2	<.5	<1.0
NRW 59	8-06-91	--	--	--	--	--	--	--	--	--	--
TZW 3	8-09-91	44	<.010	.480	.020	<.20	<.010	<.010	12	<.5	<1.0
TZW 9	8-09-91	85	<.010	<.050	.040	<.20	<.010	<.010	17	<.5	<1.0
WRW 1	8-08-91	222	<.010	.860	<.010	<.20	.010	<.010	16	<.5	<1.0
U.S. Environmental Protection Agency drinking-water regulations for listed property or chemical constituent											
SMCL	--	--	--	--	--	--	--	[1]250	--	--	--
MCL	--	--	--	10	--	--	--	250	2,000	4	5

Alkalinity

The alkalinity of a solution is defined as the capacity for solutes in water to react with and neutralize acid (Hem, 1985, p. 106). It is commonly thought of as an indicator of buffering capacity—the water's ability to resist changes in pH upon addition of an acid. Almost all of the alkalinity in most natural water can be attributed to carbonate and bicarbonate ions. Because stratified-drift aquifers in New Hampshire consist of sediment derived from bedrock having a low carbonate-mineral content, alkalinity in New Hampshire ground water is generally low. Alkalinity in water samples from this study was determined by incremental titration of unfiltered samples with aliquots of 0.01639N sulfuric acid to an endpoint of pH 4.5. For all the water samples, alkalinity ranged from 8 mg/L as $CaCO_3$ (at well BLW-85) to 46 mg/L as $CaCO_3$ (at well TZW-9). The median alkalinity, 24 mg/L as $CaCO_3$, indicates that ground water from this area has low alkalinity and, therefore, has low buffering capacity

Calcium, Magnesium, and Hardness

Calcium and magnesium are common elements of the alkaline-earth minerals. Calcium and magnesium are also the predominant cations in most natural ground water (Hem, 1985). Concentrations of calcium in the samples ranged from 0.04 to 16 mg/L, and the median for the 13 samples was 7.9 mg/L. Concentrations of magnesium in the samples ranged from <0.01 to 3.2 mg/L, and the median for the 13 samples was 1.3 mg/L.

Table 6. Chemical analyses of ground-water samples from the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local well No. (plates 1-4)	Date of sample collection	Cobalt, dissolved (μg/L)	Copper, dissolved (μg/L)	Iron, dis-solved (μg/L)	Lead, dis-solved (μg/L)	Lithium, dissolved (μg/L)	Manga-nese, dissolved (μg/L)	Molyb-denum, dissolved (μg/L)	Strontium, dissolved (μg/L)	Vanadium, dissolved (μg/L)	Zinc, dis-solved (μg/L)
AHW 4	8-02-91	--	--	--	--	--	--	--	--	--	--
AHW 63	8-08-91	--	--	--	--	--	--	--	--	--	--
AHW 64	8-08-91	<3	<10	8	<10	<4	330	<10	140	<6	4
BLW 28	8-02-91	--	--	--	--	--	--	--	--	--	--
BLW 80	1-29-91	<3	<10	6	<10	<4	76	<10	28	<6	3
BLW 83	8-07-91	<3	<10	4,000	<10	5	300	<10	60	<6	4
BLW 84	8-07-91	<3	<10	6	<10	<4	12	<10	64	<6	<3
BLW 85	8-07-91	<3	<10	72	<10	<4	35	<10	41	<6	6
GFW 11	1-28-91	<3	<10	6	<10	<4	390	<10	200	<6	<3
GFW 12	1-28-91	<3	<10	<3	<10	18	<1	<10	<1	<6	<3
MHW 1	8-09-91	<3	<10	1,900	<10	<4	37	<10	55	<6	5
MHW 2	1-28-91	<3	<10	11	<10	<4	16	<10	100	<6	6
MWW 20	1-18-91	<3	<10	5	<10	<4	16	<10	75	<6	<3
NRW 59	8-06-91	--	--	--	--	--	--	--	--	--	--
TZW 3	8-09-91	<3	<10	6	<10	<4	52	<10	51	<6	4
TZW 9	8-09-91	<3	<10	4,400	<10	<4	1,200	<10	85	<6	<3
WRW 1	8-08-91	<3	<10	10	<10	<4	2	<10	79	<6	3
U.S. Environmental Protection Agency drinking-water regulations for listed property or chemical constituent											
SMCL	--	--	1,000	300	--	--	50	--	--	--	5,000
MCL	--	--	--	--	50	--	--	--	--	--	5,000

[1] Secondary level set by the New Hampshire Department of Environmental Services, Water Supply Bureau (New Hampshire Department of Environmental Services, Water Supply Bureau, written commun., 1987)

Hardness of water, expressed in milligrams per liter as $CaCO_3$, is caused by divalent metallic cations dissolved in the water. In freshwater, these cations are primarily calcium and magnesium, but iron, manganese, and strontium also may contribute to hardness. Hardness ranged from 7 mg/L at well WRW-1 to 48 mg/L at well AHW-64. Hardness in all the 12 samples was less than 60 mg/L; thus, these waters are considered to be soft (table 7).

Sodium and Chloride

Sodium (Na) and chloride (Cl) can be introduced into ground water from nonindigenous sources (wet or dry deposition, such as sea salt and aerosols) and anthropogenic sources. The major anthropogenic source of sodium and chloride is road salt. On the basis of limited data, it is estimated that New Hampshire towns and cities used about 33,000 tons per year of NaCl for deicing roads (Hall, 1975). The highest concentration of chloride was 100 mg/L from well WRW-1, less than one-half of the U.S. Environmental Protection Agency (1992) secondary maximum contaminant level (SMCL[1]) for chloride, established as a taste threshold. Water samples from three wells had sodium concentrations that exceeded the 20-mg/L Health Advisory Level for sodium established by the

[1]SMCL, Secondary Maximum Contaminant Level: Contaminants that affect the aesthetic quality of drinking water. At high concentrations or values, health implications as well as aesthetic degradation may also exist. SMCL's are not Federally enforceable but are intended as guidelines for the States.

Table 7. Cassification of hardness of water

[$CaCO_3$, calcium carbonate; modified from Durfor and Becker, 1964, p. 27]

Descriptive rating	Range of hardness, as $CaCO_3$ (milligrams per liter)
Soft	0 - 60
Moderately hard	61 - 120
Hard	121 - 180
Very hard	181 or greater

U.S. Environmental Protection Agency (1992) as a recommended limit for people with heart, hypertension, or kidney problems (23 mg/L at well MHW-2, 44 mg/L at well GFW-11, and 81 mg/L at well WRW-1). The ratio of Na to Cl in water from well WRW-1 was close to 1 to 1 milliequivalents per liter, indicating that NaCl (probably from road salt) is the source of both constituents.

Nitrate

The predominant form of inorganic nitrogen in natural water is nitrate, an oxidized, highly soluble compound. Excess nitrate in ground water can originate from fertilizer applications, leachate from sewage systems, or agricultural wastes. Nitrate (NO_3 as N) in ground water has been linked to methemoglobinemia, or blue-baby syndrome (Lukens, 1987). For all the samples, the concentration of NO_3 as N was at or below the detection limit of 0.010 mg/L. These concentrations are well below the 10-mg/L maximum contaminant level (MCL[2]) for NO_3 as N established by the USEPA (1992). Inorganic nitrogen also can be present in water as nitrite or ammonium. Among the water sample collected during this study, nitrogen concentrations as ammonium ranged from less than 0.01 to 0.46 mg/L.

[2]MCL, Maximum Contaminant Level: Enforceable, health-based regulation that is to be set as close as is feasible to the level at which no known or anticipated adverse effects on the health of a person occur. The definition of feasible means the use of the best technology, treatment techniques, and other means that the Administrator of the U.S. Environmental Protection Agency finds, after examination for efficacy under field conditions and not solely under laboratory conditions, are generally available (taking cost into consideration).

Sulfate

The sulfate ion (SO_4^{2-}) is one of the major anions in natural water. Oxidation of sulfide ores, gypsum, and anhydrite and atmospheric deposition are sources of sulfate, but sulfate-producing minerals generally are not present in stratified-drift aquifers in New Hampshire. Sulfate is reduced by anaerobic bacteria to hydrogen sulfide gas (H_2S), which can be detected by smell at concentrations of only a few tenths of a milligram per liter. The sulfate concentration among all the ground-water samples ranged from 2.1 to 14 mg/L, and the median was 5.3 mg/L. The SMCL for sulfate (SO_4^{2-}) in drinking water is 250 mg/L.

Iron and Manganese

Iron and manganese are common elements in minerals in stratified-drift deposits within this study area. Elevated concentrations of manganese, often accompanied by elevated concentrations of iron, were the most common water-quality problem found during this study. Manganese, an abundant metallic element, is an undesirable impurity in water because of its tendency to deposit black oxide stains (Hem, 1985, p. 85). Water from six wells had manganese concentrations that exceeded the SMCL of 50 µg/L (U.S. Environmental Protection Agency, 1991a): 330 µg/L at AHW-64, 76 µg/L at BLW-80, 300 µg/L at BLW-83, 390 µg/L at GFW-11, 52 µg/L at TZW-3, and 1,200 µg/L at TZW-9. Iron, if present in excessive amounts in residential water supplies, forms red oxyhydroxide precipitates that can stain clothes and plumbing fixtures. Concentrations of iron in water from three of the sampled wells—4,000 µg/L at well BLW-83, 1,900 µg/L at well MHW-1, and 4,400 µg/L at well TZW-9—exceeded the SMCL of 300 µg/L (U.S. Environmental Protection Agency, 1992).

Trace Elements

Most trace metals are present in the soil as cations that are strongly adsorbed by oxides and hydroxides (particularly aluminum, iron, and manganese) and complexed by organic ligands at near-neutral pH (Drever, 1982); the dissolved concentrations are, therefore, usually low. All of the ground-water samples analyzed had trace metal concentrations that were below the detection limit for the following metals: cadmium, cobalt, copper, lead, molybdenum, and vanadium. In addition, the concentrations of the following metals were within the range of values commonly found in natural water (Hem, 1985): dissolved barium, lithium, strontium, and zinc. None of the samples exceeded the U.S. Environmental Protection Agency's SMCL for copper of 1,000 µg/L (1991b).

SUMMARY AND CONCLUSIONS

The Winnipesaukee River Basin in central New Hampshire encompasses an area of 484 mi^2 and contains approximately 66 mi^2 of stratified drift. A 15-percent increase in population from 1980 to 1990 has increased the demand on the water resources of this area. In 1992, total ground-water withdrawals from stratified drift for public supply within the basin are approximately 0.1 Mgal/d. The towns of Alton and Belmont are the primary users of this ground water. Many of the shallow stratified-drift aquifers within the study area could be valuable sources of domestic and municipal water supplies, but they are not developed to their fullest potential.

Stratified-drift deposits in the basin largely reflect local and regional glacial-lake environments that existed at the time of deposition. Many are deltas deposited directly into glacial lakes or locally ponded meltwater and represent the downstream end of a morphosequence deposit (Koteff and Pessl, 1981). Some are deposits that begin as valley-fill deposits and grade into deltas as the meltwater streams emptied into a glacial lake.

Stratified-drift aquifers in the southern part of the study area are potentially the most productive. Transmissivities are locally greater than 4,000 ft^2/d but are generally less than 1,000 ft^2/d. Saturated thicknesses exceed 100 ft locally but are generally less than 40 ft. Stratified drift in the southern part of the basin was deposited directly into glacial lakes that formed against the uplands to the south and the active ice margin to the north. Aquifers in this part of the study area are typically composed of kames, eskers, and deltas. Some of these deposits are capable of supplying enough potable water for domestic or small community supplies.

Stratified-drift aquifers in the northern part of the study area are more typical of ice-contact heads of outwash. Stratified drift in this part of the study area was deposited by meltwater streams flowing in valleys that fed into glacial Lake Winnipesaukee. Deposits include kames, kame terraces, eskers, outwash, and outwash deltas. Transmissivities of stratified-drift aquifers are locally greater than 2,000 ft^2/d but are generally less than 1,000 ft^2/d. Saturated thicknesses exceed 100 ft locally but are generally less than 40 ft.

Twenty-nine of the aquifers in the basin have areas where transmissivities exceed 2,000 ft^2/d. Ten of these have areas where transmissivities exceed 4,000 ft^2/d. Of the potentially productive aquifers in the Winnipesaukee River Basin, only the Merrymeeting River aquifer and the Pumping Station Brook aquifer are currently (1992) being used for a public water supply. These aquifers may not be developed to their fullest potential. Stratified-drift aquifers with the greatest potential for supply include the Gulf Brook - Gardners Grove aquifer, the Union Road aquifer, the Durkee Brook aquifer, the Gunstock River aquifer, the Ellacoya aquifer, the Hawkins Brook aquifer, the Shannon Brook aquifer, the Hersey Brook aquifer, and the Copps Pond aquifer.

Stratified-drift aquifers in Alton and Belmont were selected for an analysis of water availability. Both are among the most productive aquifers in the study area. The Merrymeeting River aquifer in Alton is hydraulically connected to a river system, and water is available for induced infiltration; the Pumping Station Brook aquifer in Belmont is hydraulically connected to a small brook, but little water is available for induced infiltration. A two-dimensional numerical flow model was used to simulate the aquifer systems. The results showed that the Merrymeeting River aquifer may be capable of supplying 0.63 to 1.1 Mgal/d and the Pumping Station Brook aquifer may be capable of supplying 1.6 to 1.8 Mgal/d, based on only one of many possible withdrawal scenarios. The analysis indicates that, for the Merrymeeting River aquifer, available drawdown is the limiting factor for water availability; however, installing wells close to the river may increase the amount of available water. For the Pumping Station Brook aquifer, the simulation showed that the available water estimate was limited by induced infiltration from the small stream to the aquifer.

Ground-water quality in water from 17 wells finished in stratified drift was generally shown to be suitable for drinking and other domestic uses. Sites of known ground-water contamination were not sampled. Water samples from wells MHW-2, GFW-11, and WRW-1 had elevated sodium concentration of 23, 44, and 81 mg/L, respectively. These elevated concentrations may be a result of the proximity of the wells to highways where road salt is applied for deicing.

Water samples from 3 wells had elevated iron concentrations at 4,000 µg/L, 1,900 µg/L, and 4,400 µg/L, respectively. Water samples from six wells had manganese concentrations that equaled or exceeded the SMCL of 50 µg/L (U.S. Environmental Protection Agency, 1991a). The pH of water from wells in stratified drift was, in general, less than the SMCL of 6.5 established by USEPA in secondary drinking-water regulations (1992).

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GLOSSARY

Ablation Till: Loosely consolidated rock debris, formerly carried by glacial ice, that accumulated in places as the surface ice was removed by melting, evaporation, or other processes.

Aquifer: A geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable materials to yield significant quantities of water to wells and springs. Where water only partly fills an aquifer, the upper surface of the saturated zone is free to rise and decline.

Aquifer boundary: A geologic or hydrologic feature that limits the extent of an aquifer.

Bedrock: Solid rock, locally called "ledge," that forms the earth's crust. It may be exposed at the surface but more commonly is buried beneath a few inches to more than 100 feet of unconsolidated deposits.

Confined aquifer: An aquifer saturated with water and bounded above and below by material having a distinctly lower hydraulic conductivity than the aquifer itself.

Contact: A plane or irregular surface between two different types or ages of rocks or unconsolidated sediments.

Cubic feet per second (ft^3/s): A unit expressing rate of discharge. One cubic foot per second is equal to the discharge of a stream 1 foot wide and 1 foot deep flowing at an average velocity of 1 foot per second.

Cubic feet per second per square mile [$(ft^3/s)/mi^2$]: A unit expressing average number of cubic feet of water flowing per second from each square mile of area drained.

Darcy's Law: An equation relating the factors controlling ground-water flow. Darcy's law is $Q = KA\ (dh/dl)$, where Q is the quantity of water per unit of time; K is the hydraulic conductivity, which depends on the size and arrangement of the water-transmitting openings (pores and fractures) and on the dynamic characteristics of the fluid (water) such as kinematic viscosity, density, and the strength of the gravitational field; A is the cross-sectional area, at a right angle to the flow direction, through which the flow occurs; and dh/dl is the hydraulic gradient.

Deposit: Earth material that has accumulated by natural processes.

Dissolved solids: The residue from a clear sample of water after evaporation and drying for 1 hour at 180°C; consists primarily of dissolved mineral constituents, but may also contain organic matter and water of crystallization.

Drainage area: The area or tract of land, measured in a horizontal plane, that gathers water and contributes it ultimately to some point on a stream channel, lake, reservoir, or other water body.

Drawdown: The lowering of the water table or potentiometric surface caused by the withdrawal of water from an aquifer by pumping; equal to the difference between the static water level and the pumping water level.

Effective grain size: The grain size at which 10 percent of the sample consists of smaller grains and 90 percent consists of larger grains.

Esker: A long ridge of sand and gravel that was deposited by water flowing in tunnels within or beneath glacial ice.

Flow duration (of a stream): The percentage of time during which specified daily discharges are equaled or exceeded within a given time period.

Fluvial: Pertaining to the flow of liquid water in the natural environment.

Fluviolacustrine: Pertaining to sedimentation partly in lakes and partly in streams or to sediments deposited under alternating or overlapping lacustrine and fluvial conditions

Fracture: A break, crack, or opening in bedrock along which water may move.

Glacial lake: A lake containing water largely from the melting of glaciers. In this study area, it refers to areas where such lake water was dammed by local topographic or geomorphic features.

Glaciofluvial: Pertaining to the flow of meltwater streams from glacial ice and to the deposits associated with streams, including kames, kame terraces, and outwash.

Glaciolacustrine: Deposits in glacial lakes, especially deposits such as deltas and varved sediments, composed of material deposited by meltwater streams flowing into lakes adjacent to and (or) near the glacier.

Gneiss: A coarse-grained metamorphic rock with alternating bands of granular and micaceous minerals.

Granite: A coarse-grained, light colored, igneous rock.

Gravel: Unconsolidated rock debris composed principally of particles larger than 2 millimeters in diameter.

Ground water: Water in the saturated zone that is under pressure equal to or greater than atmospheric pressure.

Ground-water discharge: The discharge of water from the saturated zone by (1) natural processes such as ground-water seepage into stream channels and ground-water evapotranspiration and (2) discharge through wells and other manmade structures.

Ground-water divide: A hypothetical line on a water table on each side of which the water table slopes downward in a direction away from the line. In the vertical dimension, a plane across which ground water does not flow.

Ground-water recharge: Water that is added to the saturated zone of an aquifer.

Ground-Water Site Inventory (GWSI): A computerized file maintained by the U.S. Geological Survey that contains information about wells and springs collected throughout the United States.

Head, static: The height of the surface of a water column above a standard datum that can be supported by the static pressure of a given point.

Hydraulic conductivity (*K*): A measure of the ability of a porous medium to transmit a fluid that can be expressed in unit length per unit time. A material has a hydraulic conductivity of 1 foot per day if it will transmit in 1 day, 1 cubic foot of water at the prevailing kinematic viscosity through a 1 foot square cross section of aquifer, measured at right angles to the direction of flow, under a hydraulic gradient of 1 foot change in head over 1 foot length of flow path.

Hydraulic gradient: The change in static head per unit of distance in a given direction. If not specified, the direction is generally understood to be that of the maximum rate of decrease in head.

Hydrograph: A graph showing stage (height), flow velocity, or other property of water with respect to time.

Ice-contact deposits: Stratified drift deposited in contact with melting glacial ice. Landforms include eskers, kames, kame terraces, and grounding-line deltas.

Igneous: Descriptive term for rocks or minerals solidified from molten or partially molten material (that is, from a magma) such as basalt or granite.

Induced infiltration: The process by which water infiltrates an aquifer from an adjacent surface-water body in response to ground-water withdrawal from that aquifer.

Kame: A ridge, mound, or hummock that may be irregular and is composed of stratified sand and gravel deposited by glacial meltwater; the precise mode of formation is uncertain.

Kame terrace: A ridge consisting of stratified sand and gravel deposited in a glaciofluvial environment between a melting glacier or stagnant ice lobe and a higher valley wall. The deposit has a terrace appearance after the ice has left the area.

Lacustrine: Pertaining to lake environments. In this report, it refers to areas associated with glacial lake environments.

Lodgement till: A firm, compact clay-rich till deposited beneath a moving glacier, containing abraded stones oriented, in general, with their long axes parallel to the direction of ice movement.

Mean (arithmetic): The sum of the individual values of a set, divided by their total number; also referred to as the "average."

Median: The middle value of a set of measurements that are ordered from lowest to highest; 50 percent of the measurements are lower than the median and 50 percent are higher.

Metamorphic: Descriptive term for rocks such as gneiss and schist that have formed, in the solid state, from other rocks.

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

Milligrams per liter (mg/L): A unit for expressing the concentration of chemical constituents in solution as the mass (milligrams) of a constituent per unit volume (liter) of water.

Morphosequence: A continuum of time-equivalent landforms composed of meltwater deposits from more collapsed forms as a result of melting of ice blocks at the head or upstream parts of outwash to progressively less collapsed forms downstream. A sequence can thus be viewed as a body of stratified drift laid down, layer upon layer, by meltwater at and beyond the margin of a glacier.

Outwash: Stratified deposits chiefly of sand and gravel removed or "washed out" from a glacier by meltwater streams and deposited beyond the margin of a glacier, usually found in flat or gently sloping outwash plains.

Outwash deltas: Deltas formed beyond the margin of the glacier where glacial meltwater entered a water body.

pH: The negative logarithm of the hydrogen ion concentration. A pH of 7.0 indicates neutrality; values below 7.0 denote acidity, and those above 7.0 denote alkalinity.

Phi grade scale: A logarithmic transformation of the Wentworth grade scale based on the negative logarithm to the base 2 of the particle diameter, in millimeters.

Porosity: The property of a rock or unconsolidated deposit that is a measure of the size and number of internal voids or open spaces; it may be expressed quantitatively as the ratio of the volume of its open spaces to its total volume.

Precipitation: The discharge of water from the atmosphere, either as a liquid or a solid.

Quartzite: A metamorphic rock consisting mainly of quartz and formed by recrystallization of quartz.

Runoff: That part of the precipitation that appears in streams. It is the same as streamflow unaffected by artificial diversions, storage, or other human activities in or on the stream channels.

Saturated thickness (of stratified drift): Thickness of stratified drift extending down from the water table to the till or bedrock surface.

Saturated zone: The subsurface zone in which all open (interconnected) spaces are filled with water. Water below the water table, the upper limit of the saturated zone, is under pressure greater than atmospheric.

Schist: A metamorphic rock with subparallel orientation of the visible micaceous minerals, which dominate its composition.

Sediment: Fragmental material that originates from weathering of rocks. It can be transported by, suspended in, or deposited by water.

Slate: A compact, fine-grained platey metamorphic rock formed from shale.

Specific capacity (of a well): The rate of discharge of water divided by the corresponding drawdown of the water level in the well; stated in this report in gallons per minute per foot [(gal/min)/ft].

Specific yield: The ratio of the volume of water that a rock or soil will yield, by gravity drainage, after being saturated to the total volume of the rock or soil.

Standard deviation: A measure of the amount of variability within a sample; it is the square root of the average of the squares of the deviations about the arithmetic mean of a set of data.

Storage coefficient: The volume of water an aquifer releases from or takes into storage per unit surface area of the aquifer per unit change in head. In an unconfined aquifer, the storage coefficient is virtually equal to the specific yield.

Stratified drift: Sorted and layered unconsolidated material deposited in meltwater streams flowing from glaciers or settled from suspension in quiet-water bodies fed by meltwater streams.

Surficial geology: The study of or distribution of unconsolidated deposits at or near the land surface.

Till: A predominantly nonsorted, nonstratified sediment deposited directly by a glacier and composed of boulders, gravel, sand, silt, and clay mixed in various proportions.

Transmissivity: The rate at which water is transmitted through a unit width of aquifer under a unit hydraulic gradient. Equal to the average hydraulic conductivity times the saturated thickness.

Unconfined aquifer (water-table aquifer): An aquifer only partly filled with water. In such aquifers,the water table or upper surface of the saturated zone is at atmospheric pressure and is free to rise and fall.

Unsaturated zone: The zone between the water table and the land surface in which the open spaces are not completely filled with water.

Water availability: An amount of water potentially available for water supply; in this report, it refers to water wells.

Water table: The upper surface of the saturated zone. Water at the water table is at atmospheric pressure.

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APPENDIX A. Description of selected wells, borings, and springs in the Winnipesaukee River Basin, central New Hampshire

Table A-1. Description of selected wells, borings, and springs in the Winnipesaukee River Basin, central New Hampshire

Local site number: First two characters are U.S. Geological Survey town code. Third-character codes are the following: **A**, auger hole; **B**, highway bridge boring; **S**, spring; **W**, well. The numbers are sequential numbers for each town.

Latitude, longitude: Accurate within 5 seconds.

Owner: NHDOT, New Hampshire Department of Transportation; Indus, Industry; Assoc, Association; Const, Construction; Vill, village; Bldrs, Builders; Corp, corporation; Mtn View Ter, Mountain View Terrace; Co., company; Rte, route; Const Deve, construction developer; Aqu., Aqueduct; ENVDrilling, Environmental Drilling.

Elevation: Elevations are expressed in feet above National Geodetic Vertical Datum of 1929: Those in whole feet are interpolated from U.S. Geological Survey topographic maps and are accurate to plus or minus half the contour interval of the map (5 to 10 feet); those in tenths of feet are instrumentally determined.

Depth to bottom of casing: Depth to the bottom of casing, in feet below land-surface datum (for wells where "Primary aquifer code" is BEDROCK, the depth to the bottom of casing can be used to indicate the depth to the bedrock surface).

Casing-material code: **P**, Polyvinyl choloride or plastic; **S**, steel; **R**, rock or stone.

Type of finish: **G**, Gravel Pack; **S**, screen; **W**, Walled; **X**, open hole; **Z**, other.
Type of site: **Bor**, Boring; **BrW**, Bedrock well; **Cbl**, cable tool; **Dug**, dug; **Dvn**, Driven; **TH**, Test hole; **Sp**, spring

Water level: Water level, in feet below land-surface datum; mm-dd-yy is month-day-year.
Use: Use-of-water codes are the following: **C**, commercial; **H**, domestic; **P**, public; **N**, industrial; **T**, institutional; **U**, unused; **Z**, other.

Yield: Discharge in gallons per minute (gal/min).
Specific capacity: In gallons per minute.
Pumping period: The length of time, in hours, that the well was pumped prior to the measurements of production.

Name of driller or New Hampshire Water Resources Division driller number: NH HWY DEPT, New Hampshire Highway Department; NHWRD, New Hampshire Water Resources Division; USGS, U.S. Geological Survey, Soil Expl., Soil Exploration.

Table A-1. Description of selected wells, borings, and springs in the Winnipesaukee River Basin, central New Hampshire
[--, on data available]

BELKNAP COUNTY

Alton

Local site number	Lat-itude	Long-itude	Owner or user	Date of con-struction	Ele-vat-tion (feet)	Diameter of casing (inches)	Depth to bottom of casing (feet)	Casing mater-ial	Type of fin-ish	Type of site
AHA 52	432708	0711308	Alton, Town of	11-00-67	545	--	--	--	--	TH
AHA 53	432712	0711302	Alton, Town of	11-00-67	545	--	--	--	--	TH
AHA 54	432716	0711311	Alton, Town of	11-00-67	560	--	--	--	--	TH
AHA 55	432715	0711324	Alton, Town of	11-00-67	550	--	--	--	--	TH
AHA 56	432705	0711325	Alton, Town of	11-00-67	550	--	--	--	--	TH
AHA 57	432705	0711320	Alton, Town of	11-00-67	550	--	--	--	--	TH
AHA 58	432722	0711317	Alton, Town of	11-00-67	570	--	--	--	--	TH
AHA 59	432721	0711322	Alton, Town of	11-00-67	570	--	--	--	--	TH
AHA 60	432718	0711330	Alton, Town of	11-00-67	540	--	--	--	--	TH
AHA 61	432725	0711323	Alton, Town of	11-00-67	570	--	--	--	--	TH
AHA 62	432725	0711327	Alton, Town of	11-00-67	565	--	--	--	--	TH
AHA 63	432725	0711346	Alton, Town of	11-00-67	530	--	--	--	--	TH
AHA 64	432731	0711324	Alton, Town of	11-00-67	570	--	--	--	--	TH
AHA 65	432737	0711335	Alton, Town of	11-00-67	570	--	--	--	--	--
AHA 66	432743	0711340	Alton, Town of	11-00-67	570	--	--	--	--	TH
AHA 67	432734	0711344	Alton, Town of	11-00-67	530	--	--	--	--	TH
AHA 68	432759	0711351	Alton, Town of	11-00-67	530	--	--	--	--	TH
AHA 69	432810	0711356	Alton, Town of	11-00-67	520	--	--	--	--	TH
AHA 71	432838	0711426	Alton, Town of	11-00-67	510	--	--	--	--	TH
AHA 72	432844	0711429	Alton, Town of	11-00-67	510	--	--	--	--	TH
AHA 73	432854	0711433	Alton, Town of	11-00-67	530	--	--	--	--	--
AHA 74	432854	0711434	Alton, Town of	11-00-67	530	--	--	--	--	TH
AHA 75	432910	0711451	Alton, Town of	11-00-67	530	--	--	--	--	--
AHA 76	432750	0711345	Alton, Town of	11-00-67	530	--	--	--	--	TH
AHA 77	432805	0711354	Alton, Town of	11-00-67	520	--	--	--	--	TH
AHA 78	433200	0711012	--	10-21-90	735	--	--	--	--	Bor
AHA 79	433213	0711212	--	10-19-90	580	--	--	--	--	Bor
AHA 80	432609	0711142	White, Don	06-27-91	540	--	--	--	--	Bor
AHA 81	432655	0711315	Alton Sand and Gravel	10-07-91	530	--	--	--	--	Bor
AHB 1	433219	0711221	--	03- -64	552.3	--	--	--	--	Bor
AHB 2	432813	0711403	--	10- -33	500.5	--	--	--	--	Bor
AHB 3	432947	0711532	NHDOT	--	501	--	--	--	--	--
AHW 3	432716	0711338	Alton, town of	05-05-38	520	24	26	S	G	Cbl
AHW 4	432804	0711357	Alton, town of	-- -61	520	18	21	S	G	Cbl
AHW 51	432645	0711243	Alton, Town of	09- -67	530	--	--	--	--	--
AHW 52	432747	0711344	Alton, Town of	09- -67	530	--	--	--	--	--
AHW 54	432801	0711408	Alton, Town of	09- -67	510	--	--	--	--	--
AHW 55	432804	0711408	Alton, Town of	09- -67	510	--	--	--	--	--
AHW 56	432813	0711413	Alton, Town of	09- -67	550	--	--	--	--	--
AHW 57	432816	0711418	Alton, Town of	09- -67	540	--	--	--	--	--
AHW 59	432826	0711433	Alton, Town of	09- -67	--	--	--	--	--	--
AHW 60	432834	0711430	Alton, Town of	09- -67	550	--	--	--	--	--
AHW 61	432836	0711429	Alton, Town of	09- -67	540	--	--	--	--	--
AHW 63	432638	0711221	Spera, John	08-01-90	535	--	--	--	S	Bor
AHW 64	432725	0711348	Alton, Town of	10-17-90	515	--	--	--	S	Bor
AHW 65	432513	0711232	Sleeper, David	10-18-90	550	--	--	--	S	Bor
AHW 66	432911	0711459	Stocker, Ted	10-26-90	535	2	30	--	S	Bor
AHW 68	432644	0711245	Carlton, Bob; Water Indus	--	535	--	--	--	W	Dug
AHW 69	433158	0711200	Roberts, Irving	--	580	--	--	--	W	Dug
AHW 70	432911	0711451	Selesky	05-03-84	520	--	25.0	--	X	BrW
AHW 72	433012	0711503	Giacalone, J.	06-01-84	550	--	20.0	--	X	BrW
AHW 76	432947	0711526	Hanson	06-13-84	530	--	72.0	--	X	BrW
AHW 77	432500	0711149	Coppinding	08-14-84	600	--	69.0	--	X	BrW
AHW 78	432623	0711229	Bowman, L.& B.	08-27-84	600	--	39.0	--	X	BrW
AHW 79	433022	0711544	Williams	09-14-84	520	--	54.0	--	X	BrW

Local site number	Water level Depth (feet)	Water level Date (mm-dd-yy)	Top of screen (feet)	Bottom of screen (feet)	Use of water	Yield (gal/min)	Drawdown (feet)	Specific capacity	Pumping period (hours)	Driller or NHWRD number
BELKNAP COUNTY										
Alton										
AHA 52	--	--	--	--	--	--	--	--	--	Clattenburg
AHA 53	--	--	--	--	--	--	--	--	--	Clattenburg
AHA 54	--	--	--	--	--	--	--	--	--	Clattenburg
AHA 55	--	--	--	--	--	--	--	--	--	Clattenburg
AHA 56	--	--	--	--	--	--	--	--	--	Clattenburg
AHA 57	--	--	--	--	--	--	--	--	--	Clattenburg
AHA 58	--	--	--	--	--	--	--	--	--	Clattenburg
AHA 59	--	--	--	--	--	--	--	--	--	Clattenburg
AHA 60	--	--	--	--	--	--	--	--	--	Clattenburg
AHA 61	--	--	--	--	--	--	--	--	--	Clattenburg
AHA 62	--	--	--	--	--	--	--	--	--	Clattenburg
AHA 63	--	--	--	--	--	--	--	--	--	Clattenburg
AHA 64	--	--	--	--	--	--	--	--	--	Clattenburg
AHA 65	--	--	--	--	--	--	--	--	--	Clattenburg
AHA 66	--	--	--	--	--	--	--	--	--	Clattenburg
AHA 67	--	--	--	--	--	--	--	--	--	Clattenburg
AHA 68	--	--	--	--	--	--	--	--	--	Clattenburg
AHA 69	--	--	--	--	--	--	--	--	--	Clattenburg
AHA 71	--	--	--	--	--	--	--	--	--	Clattenburg
AHA 72	--	--	--	--	--	--	--	--	--	Clattenburg
AHA 73	--	--	--	--	--	--	--	--	--	Clattenburg
AHA 74	--	--	--	--	--	--	--	--	--	Clattenburg
AHA 75	--	--	--	--	--	--	--	--	--	Clattenburg
AHA 76	--	--	--	--	--	--	--	--	--	Clattenburg
AHA 77	--	--	--	--	--	--	--	--	--	Clattenburg
AHA 78	--	--	--	--	--	--	--	--	--	USGS
AHA 79	--	--	--	--	--	--	--	--	--	USGS
AHA 80	--	--	--	--	U	--	--	--	--	USGS
AHA 81	15	10-07-91	--	--	U	--	--	--	--	USGS
AHB 1	--	--	--	--	--	--	--	--	--	NHDOT
AHB 2	--	--	--	--	--	--	--	--	--	NHDOT
AHB 3	--	--	--	--	--	--	--	--	--	--
AHW 3	1.5	05-28-38	26	36	P	190	27	7.45	72	Layne-NE
AHW 4	8.1	-- 61	21	31	P	388	13	29.8	72	Layne-NE
AHW 51	--	--	--	--	--	--	--	--	--	Clattenburg
AHW 52	4	09- -67	--	--	--	--	--	--	--	Clattenburg
AHW 54	0	09- -67	--	--	--	--	--	--	--	Clattenburg
AHW 55	0	09- -67	--	--	--	--	--	--	--	Clattenburg
AHW 56	0	09- -67	--	--	--	--	--	--	--	Clattenburg
AHW 57	0	09- -67	--	--	--	--	--	--	--	Clattenburg
AHW 59	0	09- -67	--	--	--	--	--	--	--	Clattenburg
AHW 60	0	09- -67	--	--	--	--	--	--	--	Clattenburg
AHW 61	0	09- -67	--	--	--	--	--	--	--	Clattenburg
AHW 63	4.86	07-02-91	17	20.5	U	--	--	--	--	USGS
AHW 64	4.7	07-02-91	36.5	39	U	--	--	--	--	USGS
AHW 65	17.9	07-02-91	25	30	U	--	--	--	--	USGS
AHW 66	15.9	07-02-91	27.5	30	U	--	--	--	--	USGS
AHW 68	8.02	06-17-91	--	--	H	--	--	--	--	CARLTON, B.
AHW 69	7.01	06-17-91	--	--	H	--	--	--	--	--
AHW 70	12.0	05-03-84	--	--	--	1.20	--	--	6.0	NHWRD 158
AHW 72	10.0	06-02-84	--	--	H	.75	--	--	1.0	NHWRD 90
AHW 76	20.0	06-13-84	--	--	H	20.0	--	--	1.0	NHWRD 192
AHW 77	15.0	08-14-84	--	--	H	6.00	--	--	--	NHWRD 541
AHW 78	--	--	--	--	H	8.50	--	--	1.0	NHWRD 90
AHW 79	--	--	--	--	H	3.00	--	--	.3	NHWRD 3

Table A-1. Description of selected wells, borings, and springs in the Winnipesaukee River Basin, central New Hampshire

Local site number	Latitude	Longitude	Owner or user	Date of construction	Elevation (feet)	Diameter of casing (inches)	Depth to bottom of casing (feet)	Casing material	Type of finish	Type of site
			BELKNAP COUNTY							
			Alton—*Continued*							
AHW 83	432549	0711458	Alden Jr.	10-29-84	660	--	41.0	--	X	BrW
AHW 92	433205	0711121	True, G.	05-12-84	710	--	74.0	--	X	BrW
AHW 94	433018	0711506	Niconchuk, A.	02-18-84	530	--	20.0	--	X	BrW
AHW 97	432536	0711233	Barbarosa, S.	12-21-84	540	--	30.0	--	X	BrW
AHW 99	433038	0711451	Tanguay, R.	06-19-84	570	--	11.0	--	X	BrW
AHW 100	432510	0711235	Tuck, J.	08-07-84	540	--	134	--	X	BrW
AHW 101	432512	0711219	Lamper, F.	01-05-85	560	--	57.0	--	--	--
AHW 107	432628	0711231	Carr, D.	05-08-85	570	--	--	--	X	BrW
AHW 119	432513	0711239	Morse, D.	06-28-85	540	--	1.0	--	--	Dug
AHW 123	432919	0711455	Sanborn, S.	07-26-85	550	--	62.0	--	X	BrW
AHW 126	432537	0711449	Crampoli, A.	09-11-85	620	--	13.0	--	X	BrW
AHW 131	432951	0711531	Bourgault	03-06-86	520	--	51.0	--	X	BrW
AHW 142	433009	0711445	Saunders, R.	04-20-86	540	--	84.0	--	X	BrW
AHW 144	432558	0711227	Chapman, C.	05-07-86	570	--	39.0	--	X	BrW
AHW 175	432522	0711339	Barrett, A.	06-20-87	580	--	45.0	--	X	BrW
AHW 189	432835	0711402	Roberts, E.	11-06-86	520	--	51.0	--	X	BrW
AHW 190	432940	0711522	Burke, M.	08-22-86	560	--	50.0	--	X	BrW
AHW 196	432643	0711143	Moore, K.	08-14-87	620	--	22.0	--	X	BrW
AHW 206	432937	0711520	Bill, K.	11-08-87	550	--	27.0	--	X	BrW
AHW 211	432916	0711453	Bristol, D.	10-19-87	560	--	71.0	--	X	BrW
AHW 213	432509	0711224	Stevens, C.	05-21-87	540	--	69.0	--	X	BrW
AHW 228	433257	0711818	Benard, R.	05-07-87	515	--	59.0	--	X	BrW
AHW 243	432922	0711504	Young, W.	06-19-88	520	--	34.0	--	X	BrW
AHW 244	433007	0711446	Davis, R.	06-27-88	520	--	39.0	--	X	BrW
AHW 245	432952	0711548	Bates, B.	07-01-88	530	--	40.0	--	X	BrW
AHW 254	432644	0711224	Huss, S.	06-17-88	530	--	61.0	--	X	BrW
AHW 262	433242	0711203	Tyler, M.	08-29-88	640	--	100	--	X	BrW
AHW 264	432909	0711508	Lomband, L.	09-02-88	580	--	59.0	--	X	BrW
AHW 265	432909	0711510	Nickerson, G.	09-26-88	590	--	23.0	--	X	BrW
AHW 266	432336	0711259	Miele, J.	11-29-88	660	--	73.0	--	X	BrW
AHW 277	432537	0711219	Northern Land Traders	12-07-88	540	--	86.0	--	X	BrW
AHW 281	432942	0711517	Larsen	11-20-87	540	--	83.0	--	X	BrW
AHW 282	432939	0711513	TDF Corp	02-01-88	530	--	69.0	--	X	BrW
AHW 283	432937	0711514	Greer	02-02-88	520	--	66.0	--	X	BrW
AHW 284	432940	0711517	TDF Corp	01-31-88	540	--	99.0	--	X	BrW
AHW 291	433020	0711429	Webb, W.	04-12-89	590	--	39.0	--	X	BrW
AHW 292	433018	0711436	Kidney, C.	04-10-89	580	--	39.0	--	X	BrW
AHW 293	433019	0711431	Gray, N.	04-06-89	590	--	39.0	--	X	BrW
AHW 294	432521	0711345	Gussman	12-14-88	580	--	42.0	--	X	BrW
AHW 295	433007	0711440	Lundy, F.	05-22-89	560	--	66.0	--	X	BrW
AHW 297	432916	0711459	Anctil, B.	06-16-89	540	--	69.0	--	X	BrW
AHW 306	433147	0711141	& L. Clifford, P.	08-29-89	660	--	39.0	--	X	BrW
AHW 309	433021	0711439	Harris, W.	07-24-89	570	--	39.0	--	X	BrW
AHW 311	432530	0711417	Portique, H.	06-04-89	580	--	25.0	--	X	BrW
AHW 313	432520	0711334	Zerro, J.	10-12-89	580	--	34.0	--	X	BrW
AHW 321	432559	0711229	Cornelissen, M.	12-07-89	580	--	59.0	--	X	BrW
AHW 327	432915	0711502	Stark, R.	03-27-90	530	--	80.0	--	X	BrW
AHW 334	432957	0711535	Morse, F.	06-07-90	520	--	49.0	--	X	BrW
AHW 340	432522	0711351	Hunter, S.	08-10-90	590	--	19.0	--	X	BrW
AHW 350	433030	0711553	Royhall, J.	06-03-90	540	--	43.0	--	X	BrW
AHW 357	432835	0711429	Newton, H.	10-07-90	530	--	20.0	--	X	BrW
AHW 361	433028	0711437	Jones, B.	10-04-90	580	--	39.0	--	X	BrW
AHW 362	433026	0711436	Boody, L.	10-08-90	580	--	49.0	--	X	BrW
AHW 364	432452	0711218	Dube, J.	01-18-91	600	--	124	--	X	BrW

–Continued

Local site number	Water level Depth (feet)	Water level Date (mm-dd-yy)	Top of screen (feet)	Bottom of screen (feet)	Use of water	Yield (gal/min)	Drawdown (feet)	Specific capacity	Pumping period (hours)	Driller or NHWRD number
BELKNAP COUNTY										
Alton–*Continued*										
AHW 83	--	--	--	--	H	0.50	--	--	--	NHWRD 406
AHW 92	20.0	05-12-84	--	--	H	20.0	--	--	1.0	NHWRD 277
AHW 94	18.0	02-18-84	--	--	H	4.50	--	--	1.0	NHWRD 277
AHW 97	15.0	12-21-84	--	--	H	9.00	--	--	--	NHWRD 158
AHW 99	12.0	06-19-84	--	--	H	8.00	--	--	1.0	NHWRD 277
AHW 100	17.0	08-07-84	--	--	H	10.0	--	--	1.0	NHWRD 277
AHW 101	18.0	01-07-85	--	--	H	12.0	--	--	72.0	NHWRD 158
AHW 107	35.0	05-08-85	--	--	H	40.0	--	--	1.0	NHWRD 3
AHW 119	2.0	06-30-85	--	--	U	172	--	--	4.0	NHWRD 585
AHW 123	35.0	07-26-85	--	--	H	7.00	--	--	2.0	NHWRD 158
AHW 126	6.0	09-12-85	--	--	H	30.0	--	--	1.0	NHWRD 534
AHW 131	--	--	--	--	H	25.0	--	--	.5	NHWRD 319
AHW 142	25.0	04-20-86	--	--	H	10.0	--	--	.5	NHWRD 277
AHW 144	--	--	--	--	H	1.00	--	--	.5	NHWRD 319
AHW 175	15.0	06-20-87	--	--	H	9.00	--	--	2.0	NHWRD 158
AHW 189	--	--	--	--	H	40.0	--	--	1.0	NHWRD 192
AHW 190	20.0	08-22-86	--	--	H	25.0	--	--	.5	NHWRD 382
AHW 196	--	--	--	--	H	3.00	--	--	.5	NHWRD 319
AHW 206	30.0	11-08-87	--	--	H	4.00	--	--	1.0	NHWRD 277
AHW 211	50.0	10-19-87	--	--	H	50.0	--	--	.5	NHWRD 22
AHW 213	--	--	--	--	H	4.00	--	--	1.0	NHWRD 143
AHW 228	--	--	--	--	H	100	--	--	.3	NHWRD 247
AHW 243	2.0	06-19-88	--	--	H	8.00	--	--	1.0	NHWRD 277
AHW 244	--	--	--	--	H	10.0	--	--	1.0	NHWRD 277
AHW 245	--	--	--	--	H	5.00	--	--	1.0	NHWRD 3
AHW 254	--	--	--	--	H	1.00	--	--	1.0	NHWRD 457
AHW 262	10.0	08-31-88	--	--	H	15.0	--	--	.5	NHWRD 22
AHW 264	54.0	09-02-88	--	--	H	10.0	--	--	1.0	NHWRD 277
AHW 265	27.0	09-26-88	--	--	H	7.00	--	--	1.0	NHWRD 277
AHW 266	--	--	--	--	H	8.00	--	--	1.0	NHWRD 3
AHW 277	--	--	--	--	H	5.00	--	--	1.0	NHWRD 3
AHW 281	--	--	--	--	H	15.0	--	--	1.0	NHWRD 644
AHW 282	--	--	--	--	H	10.0	--	--	1.0	NHWRD 644
AHW 283	--	--	--	--	H	40.0	--	--	1.0	NHWRD 644
AHW 284	--	--	--	--	H	20.0	--	--	1.0	NHWRD 644
AHW 291	--	--	--	--	H	40.0	--	--	1.0	NHWRD 143
AHW 292	--	--	--	--	H	10.0	--	--	1.0	NHWRD 143
AHW 293	--	--	--	--	H	30.0	--	--	1.0	NHWRD 143
AHW 294	--	--	--	--	H	2.00	--	--	1.0	NHWRD 457
AHW 295	45.0	05-22-89	--	--	H	18.0	--	--	1.0	NHWRD 277
AHW 297	--	--	--	--	H	40.0	--	--	.8	NHWRD 204
AHW 306	41.0	08-29-89	--	--	H	16.0	--	--	2.0	NHWRD 158
AHW 309	--	--	--	--	H	5.00	--	--	1.0	NHWRD 143
AHW 311	5.0	06-04-89	--	--	H	13.0	--	--	2.0	NHWRD 158
AHW 313	--	--	--	--	H	3.00	--	--	--	NHWRD 327
AHW 321	5.0	12-08-89	--	--	H	10.0	--	--	1.0	NHWRD 534
AHW 327	30.0	03-27-90	--	--	H	60.0	--	--	1.0	NHWRD 192
AHW 334	--	--	--	--	H	20.0	--	--	.5	NHWRD 319
AHW 340	--	--	--	--	H	5.00	--	--	.5	NHWRD 406
AHW 350	19.0	06-03-90	--	--	H	6.00	--	--	1.0	NHWRD 277
AHW 357	21.0	10-07-90	--	--	H	10.0	--	--	1.0	NHWRD 277
AHW 361	--	--	--	--	H	8.00	--	--	1.0	NHWRD 143
AHW 362	--	--	--	--	H	15.0	--	--	1.0	NHWRD 143
AHW 364	20.0	01-21-91	--	--	H	20.0	--	--	1.0	NHWRD 534

Table A-1. Description of selected wells, borings, and springs in the Winnipesaukee River Basin, central New Hampshire

Local site number	Lat-itude	Long-itude	Owner or user	Date of con-struction	Ele-vat-tion (feet)	Diameter of casing (inches)	Depth to bottom of casing (feet)	Casing mater-ial	Type of fin-ish	Type of site
				BELKNAP COUNTY						
				Alton—*Continued*						
AHW 369	432652	0711258	Alton Sand and Gravel	10-07-91	525	2	35	P	S	Bor
AHW 370	432600	0711105	Duncan, Rick (contact)	10-08-91	530	2	40	P	S	Bor
				Belmont						
BLA 26	432603	0712902	Parent, L.	03- -88	532.1	--	--	--	--	TH
BLA 27	432601	0712900	Parent, L.	03- -88	522.2	--	--	--	--	TH
BLA 28	432557	0712855	Parent, L.	03- -88	551.2	--	--	--	--	TH
BLA 29	432608	0712909	Parent, L	11-08-88	516	--	--	--	--	Bor
BLA 30	432710	0712837	Beapre, Richard	04-13-92	645	--	--	--	--	Bor
BLA 31	432705	0712829	Beapre, Richard	04-13-92	610	--	--	--	--	Bor
BLA 32	432725	0712724	New Hampshire, State of	04-13-92	680	--	--	--	--	Bor
BLB 26	432612	0713108	--	--	512	--	--	--	--	Bor
BLB 27	432704	0712815	--	--	565	--	--	--	--	Bor
BLB 28	433006	0713038	--	--	482.0	--	--	--	--	TH
BLW 13	432611	0712912	Belmont, Town of	08- -38	520	--	--	--	S	--
BLW 28	432611	0712920	Belmont, Town of	-- -71	500	12	52.7	P	G	--
BLW 29	432540	0712847	Nutter	06-02-67	550	8	63	S	S	--
BLW 30	432549	0712847	Belmont, Town of	01-07-69	515	--	--	--	S	--
BLW 31	432549	0712835	Belmont, Town of	01-09-69	510	--	--	--	S	--
BLW 76	432739	0712949	--	--	610	--	--	--	--	--
BLW 77	432744	0712953	Belmont Landfill	12-24-86	572	--	--	--	S	--
BLW 78	432744	0712947	Belmont Landfill	12-24-86	573	--	--	--	S	--
BLW 79	432741	0712944	Belmont Landfill	12-22-86	573	--	--	--	S	--
BLW 80	432719	0713205	Bardwell, Ray	09-11-90	470	2	76.5	P	S	Bor
BLW 81	432836	0713104	Dejaeger, Peter	08-02-90	500	2	76.5	P	S	Bor
BLW 82	432638	0712941	Weeks, Everett	08-01-90	480	2	24.5	P	S	Bor
BLW 83	432647	0713134	USGS -- NH Route 140	09-12-90	500	2	80	P	S	Bor
BLW 84	432556	0712851	Parent Bros.	10-17-90	540	2	57.5	P	S	Bor
BLW 85	433007	0712654	Mooney, Mark	09-13-90	665	2	47.5	P	S	Bor
BLW 86	432613	0712921	Belmont, Town of	05-06-91	510	2	57.5	P	S	Bor
BLW 87	432608	0712910	Parent, L.	11-08-88	509	2	18.9	P	S	Bor
BLW 88	432609	0712909	Parent, L.	11-08-88	516	2	21.2	P	S	Bor
BLW 89	432610	0712909	Parent, L.	11-08-88	517	2	25.6	P	S	Bor
BLW 90	432608	0712908	Parent, L.	11-08-88	517	2	25.9	P	S	Bor
BLW 91	432553	0712804	Wilson, Leo	--	555	--	--	--	W	Dug
BLW 92	432655	0712808	Clairmont, Lawrence	--	625	--	--	--	W	Dug
BLW 93	432733	0712957	Duggan Construction	07-23-91	590	2	40	P	S	Bor
BLW 94	432933	0713023	Dionne, R.	07-18-84	500	--	79.0	--	--	--
BLW 95	433013	0713029	Parkinson	02-17-84	490	--	154	--	X	BrW
BLW 96	432834	0713039	Drouin Bldrs	02-29-84	500	--	73.0	--	X	BrW
BLW 99	433019	0713015	Gallant	05-24-84	520	--	100	--	X	BrW
BLW 100	432725	0712808	Fullerton	04-17-84	600	--	29.0	--	X	BrW
BLW 103	432815	0712529	Drouin Bldrs	06-12-84	820	--	59.0	--	X	BrW
BLW 104	432735	0712721	Lauriel	07-25-84	660	--	51.0	--	X	BrW
BLW 105	432933	0713019	Letourneau	07-20-84	500	--	99.0	--	X	BrW
BLW 106	432933	0713017	O'Keefe	07-12-84	500	--	64.0	--	X	BrW
BLW 107	432754	0713013	Gilman	07-14-84	660	--	29.0	--	X	BrW
BLW 110	432933	0713021	Drouin Bldrs	11-21-84	500	--	99.0	--	X	BrW
BLW 112	432742	0712836	Stewart, A.	08-28-84	680	--	39.0	--	X	BrW
BLW 113	432857	0712502	Reynolds, T.	03-26-85	820	--	19.0	--	X	BrW
BLW 114	432735	0712756	Jezak, W.	04-15-85	640	--	39.0	--	X	BrW
BLW 116	432739	0712753	Jusczak, W.	09-25-85	670	--	61.0	--	X	BrW

Local site number	Water level		Top of screen (feet)	Bottom of screen (feet)	Use of water	Yield (gal/min)	Drawdown (feet)	Specific capacity	Pumping period (hours)	Driller or NHWRD number
	Depth (feet)	Date (mm-dd-yy)								
BELKNAP COUNTY										
Alton–*Continued*										
AHW 369	3.1	10-07-91	32.5	35	U	--	--	--	--	USGS
AHW 370	6	10-17-91	37.5	40	U	--	--	--	--	USGS
Belmont										
BLA 26	24.2	03- -88	--	--	--	--	--	--	--	--
BLA 27	19.1	03- -88	--	--	--	--	--	--	--	--
BLA 28	--	--	--	--	--	--	--	--	--	--
BLA 29	--	--	--	--	U	--	--	--	--	Aries Engineer
BLA 30	13	04-13-92	--	--	U	--	--	--	--	USGS
BLA 31	3	04-13-92	--	--	U	--	--	--	--	USGS
BLA 32	6	04-13-92	--	--	U	--	--	--	--	USGS
BLB 26	--	--	--	--	--	--	--	--	--	NHDOT
BLB 27	--	--	--	--	--	--	--	--	--	NHDOT
BLB 28	--	--	--	--	U	--	--	--	--	--
BLW 13	14	10-23-49	--	--	P	350	5	--	4	Layne-Bowler
BLW 28	8.1	-- -71	53	68	P	--	--	--	--	Lauman CO.
BLW 29	8	06-02-67	63	73	U	440	38	--	84	LAYNE N.E.
BLW 30	15.1	01-07-69	41	46	U	40	2.3	--	3	Layne N.E.
BLW 31	6	01-09-69	41	46	U	20	7	--	1	Layne N.E.
BLW 76	51.8	01-20-87	--	--	--	--	--	--	--	--
BLW 77	.4	01-27-87	--	--	--	--	--	--	--	Maine Test
BLW 78	.49	01-27-87	--	--	--	--	--	--	--	Maine Test
BLW 79	1.42	01-27-87	--	--	--	--	--	--	--	Maine Test
BLW 80	3.54	01-01-93	80	82.5	U	--	--	--	--	USGS
BLW 81	12.8	07-02-91	76.5	79.0	U	--	--	--	--	USGS
BLW 82	6.04	07-02-91	24.5	27	U	--	--	--	--	USGS
BLW 83	5.25	07-02-91	77.5	80	U	--	--	--	--	USGS
BLW 84	30.1	07-02-91	57.5	60	U	--	--	--	--	USGS
BLW 85	31.2	07-02-91	47.5	50	U	--	--	--	--	USGS
BLW 86	12.2	08-21-91	55.0	57.5	U	--	--	--	--	USGS
BLW 87	10.9	11-10-88	8.9	18.9	U	--	--	--	--	Aries Engineer
BLW 88	16.2	11-10-88	11.2	21.2	U	--	--	--	--	Aries Engineer
BLW 89	18	11-10-88	15.6	25.6	U	--	--	--	--	Aries Engineer
BLW 90	17.8	11-10-88	15.9	25.9	U	--	--	--	--	Aries Engineer
BLW 91	17.3	06-12-91	--	--	H	--	--	--	--	Nutter
BLW 92	9.8	06-12-91	--	--	H	--	--	--	--	--
BLW 93	15	07-23-91	37	40	U	--	--	--	--	USGS
BLW 94	--	--	--	--	H	50.0	--	--	.5	NHWRD 319
BLW 95	10.0	02-17-84	--	--	H	7.00	--	--	2.0	NHWRD 192
BLW 96	--	--	--	--	H	4.00	--	--	1.0	NHWRD 319
BLW 99	--	--	--	--	H	1.00	--	--	1.0	NHWRD 3
BLW 100	6.0	04-17-84	--	--	H	7.00	--	--	.3	NHWRD 13
BLW 103	--	--	--	--	H	--	--	--	--	NHWRD 319
BLW 104	--	--	--	--	H	7.00	--	--	.5	NHWRD 319
BLW 105	--	--	--	--	H	3.00	--	--	.5	NHWRD 319
BLW 106	--	--	--	--	H	3.00	--	--	.5	NHWRD 319
BLW 107	--	--	--	--	H	2.00	--	--	.5	NHWRD 319
BLW 110	--	--	--	--	H	50.0	--	--	.5	NHWRD 319
BLW 112	--	--	--	--	H	20.0	--	--	.5	NHWRD 247
BLW 113	--	--	--	--	H	8.00	--	--	--	NHWRD 319
BLW 114	--	--	--	--	H	25.0	--	--	.5	NHWRD 319
BLW 116	--	--	--	--	H	6.00	--	--	.5	NHWRD 319

Table A-1. Description of selected wells, borings, and springs in the Winnipesaukee River Basin, central New Hampshire

Local site number	Lat-itude	Long-itude	Owner or user	Date of con-struction	Ele-vat-tion (feet)	Diameter of casing (inches)	Depth to bottom of casing (feet)	Casing mater-ial	Type of fin-ish	Type of site
BELKNAP COUNTY										
Belmont–*Continued*										
BLW 120	432938	0713001	Sutton, J.	10-22-85	540	--	20.0	--	X	BrW
BLW 122	432735	0712734	Fortin, J.	08-06-85	640	--	39.0	--	X	BrW
BLW 123	432932	0713023	Drouin Bldrs	08-15-85	500	--	79.0	--	X	BrW
BLW 124	432653	0713050	Weeks	08-16-85	520	--	67.0	--	X	BrW
BLW 125	432922	0713021	Mallards Landing Assoc	07-18-85	500	--	119	--	X	BrW
BLW 126	432923	0713021	Mallards Landing Assoc	07-16-85	500	--	140	--	X	BrW
BLW 127	432738	0713216	Poulin, R.	10-03-85	470	--	19.0	--	X	BrW
BLW 130	432556	0712919	Dalton, F.	09-19-85	580	--	29.0	--	X	BrW
BLW 131	432932	0713017	Drouin Bldrs	05-10-85	500	--	94.0	--	X	BrW
BLW 132	432931	0713019	Drouin Bldrs	05-14-85	500	--	99.0	--	X	BrW
BLW 135	432904	0713037	Northland Devel	06-27-85	520	--	26.0	--	X	BrW
BLW 138	432734	0712753	Lakewood Devel Corp	07-24-85	630	--	40.0	--	X	BrW
BLW 139	432731	0712705	Salta, B.	07-15-85	720	--	30.0	--	X	BrW
BLW 140	432732	0712708	Brough, N.	08-12-85	710	--	40.0	--	X	BrW
BLW 141	432730	0712658	GN Const	01-03-86	750	--	20.0	--	X	BrW
BLW 146	432733	0712701	Zielski, D.	04-10-86	740	--	29.0	--	X	BrW
BLW 147	432947	0713048	Parris, E.	12-01-85	485	--	117	--	X	BrW
BLW 150	432711	0712843	Woundy, B.	12-01-85	640	--	51.0	--	X	BrW
BLW 151	432731	0712815	Audet, P.	12-01-85	640	--	63.0	--	X	BrW
BLW 157	432719	0712829	Seigel, R.	11-26-85	620	--	30.0	--	X	BrW
BLW 158	432630	0712837	Lewandoski, C.	01-01-85	600	--	20.0	--	X	BrW
BLW 159	432744	0712747	Jusczak, W.	09-24-85	710	--	--	--	X	BrW
BLW 160	432835	0713136	Morway, R.	04-03-86	490	--	94.0	--	--	--
BLW 161	432836	0713132	Morway, R.	04-08-86	490	--	84.0	--	--	--
BLW 162	432835	0713134	Morway, R.	04-08-86	490	--	79.0	--	--	--
BLW 165	432947	0713015	Northland Devel	06-25-86	490	--	39.0	--	X	BrW
BLW 167	432924	0713033	Reed, R.	06-28-86	490	--	13.0	--	S	--
BLW 168	432741	0712743	Ekberg, W.	07-10-86	660	--	64.0	--	X	BrW
BLW 170	432812	0712534	Plummer, C.	03-06-86	790	--	59.0	--	X	BrW
BLW 171	432809	0712525	Lurvey, C.	12-28-86	820	--	25.0	--	X	BrW
BLW 172	432821	0713102	Drouin Bldrs	09-18-86	560	--	79.0	--	X	BrW
BLW 173	432821	0713100	Drouin Bldrs	09-15-86	560	--	79.0	--	X	BrW
BLW 174	432823	0713101	Drouin Bldrs	09-12-86	560	--	82.0	--	X	BrW
BLW 176	432911	0713036	Corbishley, H.	11-08-86	490	--	104	--	X	BrW
BLW 179	432731	0712701	Peterson, W.	05-11-87	740	--	40.0	--	X	BrW
BLW 181	432923	0712612	Eber, C.	03-12-87	860	--	20.0	--	X	BrW
BLW 183	432655	0712623	Gilbert, D.	06-24-87	770	--	20.0	--	X	BrW
BLW 184	432718	0712830	Dutile	07-02-87	630	--	40.0	--	X	BrW
BLW 185	432844	0713051	Croes, B.	08-03-87	510	--	29.0	--	X	BrW
BLW 186	432847	0713055	Guyer, D.	08-05-87	500	--	32.0	--	X	BrW
BLW 188	432855	0713105	Chao, F.	09-09-86	500	--	84.0	--	X	BrW
BLW 189	432947	0712752	Sewall, P.	11-03-86	740	--	20.0	--	X	BrW
BLW 190	432722	0712839	Lakeland Const	03-26-87	620	--	19.0	--	X	BrW
BLW 191	433003	0713034	McCormick, S.	06-23-86	500	--	154	--	X	BrW
BLW 198	433052	0712854	Searls, W.	09-11-86	640	--	81.0	--	X	BrW
BLW 199	432930	0712754	Scott, R.	07-03-86	740	--	37.0	--	X	BrW
BLW 200	432943	0712858	Kitching, G.	07-03-86	660	--	120	--	X	BrW
BLW 201	432712	0712906	Gammon, G.	06-19-86	610	--	20.0	--	X	BrW
BLW 202	433047	0712903	Ladd	11-20-87	680	--	83.0	--	X	BrW
BLW 206	432937	0712910	Drouin, W.	04-11-86	630	--	61.0	--	X	BrW
BLW 207	432939	0712903	Farrar, K.	07-28-86	660	--	74.0	--	X	BrW
BLW 209	432715	0712906	Wood & Clay Bldrs	08-20-87	610	--	19.0	--	X	BrW
BLW 210	432855	0712506	Wilking, E.	09-11-87	810	--	21.0	--	X	BrW
BLW 211	432650	0712600	Lamothe, R.	09-09-87	800	--	19.0	--	X	BrW
BLW 212	432916	0712606	Davis, C.	09-29-87	840	--	39.0	--	X	BrW

Local site number	Water level Depth (feet)	Water level Date (mm-dd-yy)	Top of screen (feet)	Bottom of screen (feet)	Use of water	Yield (gal/min)	Drawdown (feet)	Specific capacity	Pumping period (hours)	Driller or NHWRD number
					BELKNAP COUNTY					
					Belmont–*Continued*					
BLW 120	--	--	--	--	H	3.00	--	--	0.5	NHWRD 319
BLW 122	--	--	--	--	H	2.00	--	--	.5	NHWRD 319
BLW 123	--	--	--	--	H	3.00	--	--	.5	NHWRD 319
BLW 124	--	--	--	--	H	3.00	--	--	1.0	NHWRD 90
BLW 125	50.0	07-18-85	--	--	P	100	--	--	2.0	NHWRD 90
BLW 126	60.0	07-18-85	--	--	P	45.0	--	--	2.0	NHWRD 90
BLW 127	--	--	--	--	H	--	--	--	--	NHWRD 382
BLW 130	14.0	09-19-85	--	--	H	7.00	--	--	--	NHWRD 819
BLW 131	--	--	--	--	H	50.0	--	--	.5	NHWRD 319
BLW 132	--	--	--	--	H	5.00	--	--	.5	NHWRD 319
BLW 135	--	--	--	--	P	30.0	--	--	2.0	NHWRD 319
BLW 138	--	--	--	--	H	5.00	--	--	.3	NHWRD 315
BLW 139	11.0	07-15-85	--	--	H	13.0	--	--	--	NHWRD 819
BLW 140	7.0	08-12-85	--	--	H	8.00	--	--	--	NHWRD 819
BLW 141	--	--	--	--	H	5.00	--	--	1.0	NHWRD 406
BLW 146	30.0	04-10-86	--	--	H	11.0	--	--	2.0	NHWRD 158
BLW 147	--	--	--	--	H	7.00	--	--	--	NHWRD 382
BLW 150	--	--	--	--	H	10.0	--	--	1.0	NHWRD 192
BLW 151	--	--	--	--	H	2.50	--	--	1.0	NHWRD 192
BLW 157	--	--	--	--	H	3.00	--	--	.5	NHWRD 319
BLW 158	--	--	--	--	H	5.00	--	--	1.0	NHWRD 192
BLW 159	--	--	--	--	H	15.0	--	--	.5	NHWRD 319
BLW 160	--	--	--	--	H	10.0	--	--	--	NHWRD 549
BLW 161	--	--	--	--	H	12.0	--	--	--	NHWRD 549
BLW 162	--	--	--	--	H	12.0	--	--	--	NHWRD 549
BLW 165	--	--	--	--	P	30.0	--	--	.5	NHWRD 319
BLW 167	3.0	06-28-86	--	--	H	9.00	--	--	1.0	NHWRD 371
BLW 168	16.0	07-10-86	--	--	H	10.0	--	--	.5	NHWRD 277
BLW 170	1.5	07-14-86	--	--	H	12.0	--	--	1.0	NHWRD 172
BLW 171	--	--	--	--	H	5.00	--	--	.8	NHWRD 406
BLW 172	--	--	--	--	H	10.0	--	--	.5	NHWRD 319
BLW 173	--	--	--	--	H	6.00	--	--	.5	NHWRD 319
BLW 174	100	09-12-86	--	--	H	1.00	--	--	.5	NHWRD 319
BLW 176	--	--	--	--	H	20.0	--	--	.5	NHWRD 319
BLW 179	10.0	05-11-87	--	--	H	5.00	--	--	2.0	NHWRD 158
BLW 181	10.0	03-13-87	--	--	H	5.00	--	--	.3	NHWRD 1
BLW 183	--	--	--	--	H	5.00	--	--	.5	NHWRD 319
BLW 184	--	--	--	--	H	4.00	--	--	.5	NHWRD 319
BLW 185	--	--	--	--	H	3.00	--	--	.5	NHWRD 319
BLW 186	--	--	--	--	C	4.00	--	--	.5	NHWRD 319
BLW 188	--	--	--	--	H	12.0	--	--	1.0	NHWRD 192
BLW 189	20.0	11-04-86	--	--	--	4.00	--	--	1.0	NHWRD 192
BLW 190	--	--	--	--	H	12.0	--	--	.5	NHWRD 382
BLW 191	--	--	--	--	H	50.0	--	--	.5	NHWRD 382
BLW 198	--	--	--	--	H	1.50	--	--	.5	NHWRD 20
BLW 199	--	--	--	--	H	60.0	--	--	.5	NHWRD 20
BLW 200	--	--	--	--	H	50.0	--	--	.5	NHWRD 20
BLW 201	--	--	--	--	H	6.00	--	--	1.0	NHWRD 192
BLW 202	20.0	11-20-87	--	--	H	6.00	--	--	1.0	NHWRD 192
BLW 206	--	--	--	--	H	4.00	--	--	.3	NHWRD 247
BLW 207	--	--	--	--	H	20.0	--	--	.3	NHWRD 247
BLW 209	--	--	--	--	H	3.00	--	--	.5	NHWRD 319
BLW 210	--	--	--	--	H	30.0	--	--	--	NHWRD 319
BLW 211	--	--	--	--	H	.50	--	--	.5	NHWRD 319
BLW 212	--	--	--	--	H	8.00	--	--	.5	NHWRD 319

Table A-1. Description of selected wells, borings, and springs in the Winnipesaukee River Basin, central New Hampshire

Local site number	Lat-itude	Long-itude	Owner or user	Date of con-struction	Ele-vat-tion (feet)	Diameter of casing (inches)	Depth to bottom of casing (feet)	Casing mater-ial	Type of fin-ish	Type of site
					BELKNAP COUNTY					
					Belmont—*Continued*					
BLW 213	432932	0712923	Laurent, C.	10-19-87	640	--	72.0	--	X	BrW
BLW 215	433048	0712902	Duggan, J.	09-22-86	580	--	80.0	--	X	BrW
BLW 216	433050	0712901	Duggan, R.	09-24-86	580	--	100	--	X	BrW
BLW 217	432735	0712700	Powel	12-22-87	740	--	32.0	--	X	BrW
BLW 219	432943	0712856	Gouveau, M.	10-19-87	660	--	69.0	--	--	--
BLW 220	432553	0712809	Dindo, J.	01-25-88	560	--	72.0	--	X	BrW
BLW 221	432917	0712933	Collins	11-02-87	540	--	19.0	--	X	BrW
BLW 222	432843	0713049	McMenaman, J.	11-12-87	520	--	29.0	--	X	BrW
BLW 224	432716	0712809	Drouin, M.	01-15-88	600	--	20.0	--	X	BrW
BLW 226	432834	0713149	Rogers, A.	05-30-87	500	--	130	--	X	BrW
BLW 227	432942	0712703	Rotonnelli, J.	02-02-88	960	--	39.0	--	X	BrW
BLW 230	432959	0712648	MacIntosh, E.	03-30-88	750	--	28.0	--	X	BrW
BLW 231	432710	0712840	AE Mitchell	05-02-88	640	--	37.0	--	X	BrW
BLW 234	432822	0713136	Marock, T.	03-29-88	530	--	63.0	--	X	BrW
BLW 235	432720	0712839	deJagger, P.	02-01-88	630	--	19.0	--	X	BrW
BLW 238	432715	0712841	Aubut, R.	05-07-87	640	--	59.0	--	X	BrW
BLW 240	432819	0713114	Bjelt, R.	12-07-87	560	--	59.0	--	X	BrW
BLW 243	432905	0713045	Pickering, G.	11-03-87	510	--	89.0	--	X	BrW
BLW 244	432720	0712834	deJagger, P.	04-05-88	630	--	19.0	--	X	BrW
BLW 248	432717	0712808	Drouin, M.	04-04-88	610	--	19.0	--	X	BrW
BLW 253	432732	0712705	Carignon, R.	03-24-88	720	--	39.0	--	X	BrW
BLW 255	432743	0712632	Bossey, T.	07-15-88	730	--	41.0	--	X	BrW
BLW 257	432951	0713045	Smart, R.	09-18-88	485	--	147	--	X	BrW
BLW 258	432904	0712442	Grant, S.	07-09-88	860	--	37.0	--	X	BrW
BLW 262	432550	0712920	Booth, P.	06-17-88	510	--	29.0	--	X	BrW
BLW 263	432554	0712920	Booth, P.	06-17-88	500	--	19.0	--	X	BrW
BLW 264	432739	0712838	Smock	06-17-88	660	--	49.0	--	X	BrW
BLW 271	432718	0712806	Drouin Bldrs	09-19-88	610	--	19.0	--	X	BrW
BLW 275	432911	0712504	Caldwell, J.	10-20-88	860	--	26.0	--	X	BrW
BLW 276	432658	0712620	Kierman, D.	06-09-88	765	--	39.0	--	X	BrW
BLW 277	432659	0712620	Donavan, L.	05-19-88	765	--	40.0	--	X	BrW
BLW 278	432943	0712647	Reilly, D.	05-27-88	900	--	19.0	--	X	BrW
BLW 286	432848	0713051	Clement, R.	12-06-88	510	--	19.0	--	X	BrW
BLW 287	432852	0713041	Piper, R.	03-10-89	580	--	79.0	--	X	BrW
BLW 288	432810	0713051	Kathcort, R.	12-20-88	660	--	40.0	--	X	BrW
BLW 290	432817	0713112	Rogacki	10-24-88	580	--	60.0	--	X	BrW
BLW 291	432817	0713110	Duggan	10-25-88	570	--	60.0	--	X	BrW
BLW 292	432933	0713037	Scott, R.	02-27-89	490	--	119	--	X	BrW
BLW 293	432934	0713045	Doyon, A.	04-15-89	490	--	139	--	X	BrW
BLW 294	432825	0713039	Creteau, R.	10-07-88	510	--	99.0	--	X	BrW
BLW 296	432703	0712913	Wincox, D.	06-17-89	580	--	24.0	--	X	BrW
BLW 297	432848	0713157	Walton, R.	06-11-89	500	--	154	--	X	BrW
BLW 303	432852	0713045	Treh Bldrs Inc	09-13-89	580	--	62.0	--	X	BrW
BLW 306	432945	0713046	Bohlin Property	11-01-89	490	--	125	--	X	BrW
BLW 308	432745	0713206	Jackson, S.	11-27-89	470	--	110	--	X	BrW
BLW 309	432741	0712636	Senechal, N.	09-29-89	740	--	49.0	--	X	BrW
BLW 315	432904	0712445	Jausqak, W.	03-08-89	860	--	40.0	--	X	BrW
BLW 316	432849	0713038	Shulze	04-26-89	600	--	61.0	--	X	BrW
BLW 318	432906	0713042	Robinson, J.	07-17-90	490	--	79.0	--	X	BrW
BLW 321	432836	0713048	Clive, T.	06-15-90	500	--	89.0	--	X	BrW
BLW 322	432933	0713041	Conant, R.	06-20-90	490	--	130	--	X	BrW
BLW 323	432946	0713045	Fletcher, R.	07-12-90	490	--	131	--	X	BrW
BLW 325	432737	0712621	Jusczak, W.	09-14-89	750	--	40.0	--	X	BrW
BLW 327	432651	0713128	Yellow Freight Terminal	10-16-90	520	--	59.4	--	X	BrW
BLW 329	432708	0712623	Wilder, D.	08-15-90	770	--	19.0	--	X	BrW

Local site number	Water level Depth (feet)	Water level Date (mm-dd-yy)	Top of screen (feet)	Bottom of screen (feet)	Use of water	Yield (gal/min)	Drawdown (feet)	Specific capacity	Pumping period (hours)	Driller or NHWRD number
BELKNAP COUNTY										
Belmont–*Continued*										
BLW 213	--	--	--	--	H	25.0	--	--	0.5	NHWRD 319
BLW 215	25.0	09-23-86	--	--	H	3.00	--	--	.5	NHWRD 302
BLW 216	20.0	09-24-86	--	--	H	20.0	--	--	.5	NHWRD 302
BLW 217	--	--	--	--	H	10.0	--	--	--	NHWRD 126
BLW 219	--	--	--	--	H	20.0	--	--	.8	NHWRD 204
BLW 220	--	--	--	--	H	12.0	--	--	.5	NHWRD 319
BLW 221	--	--	--	--	H	1.00	--	--	.5	NHWRD 319
BLW 222	--	--	--	--	H	3.00	--	--	.5	NHWRD 319
BLW 224	--	--	--	--	H	20.0	--	--	.5	NHWRD 319
BLW 226	--	--	--	--	H	1.00	--	--	.5	NHWRD 225
BLW 227	30.0	02-02-88	--	--	H	8.00	--	--	--	NHWRD 819
BLW 230	--	--	--	--	H	6.00	--	--	--	NHWRD 819
BLW 231	--	--	--	--	H	6.00	--	--	1.0	NHWRD 192
BLW 234	--	--	--	--	H	3.00	--	--	1.0	NHWRD 192
BLW 235	20.0	02-06-88	--	--	H	15.0	--	--	.5	NHWRD 382
BLW 238	--	--	--	--	H	20.0	--	--	.3	NHWRD 247
BLW 240	--	--	--	--	H	5.00	--	--	.3	NHWRD 247
BLW 243	--	--	--	--	H	3.00	--	--	.3	NHWRD 247
BLW 244	15.0	04-05-88	--	--	H	50.0	--	--	.5	NHWRD 382
BLW 248	--	--	--	--	H	3.00	--	--	.5	NHWRD 319
BLW 253	15.0	03-25-88	--	--	H	7.50	--	--	.5	NHWRD 142
BLW 255	--	--	--	--	H	6.00	--	--	1.0	NHWRD 192
BLW 257	--	--	--	--	H	12.0	--	--	1.0	NHWRD 192
BLW 258	3.0	07-09-88	--	--	H	15.0	--	--	2.0	NHWRD 158
BLW 262	20.0	06-17-88	--	--	H	--	--	--	--	NHWRD 382
BLW 263	20.0	06-18-88	--	--	H	.50	--	--	.5	NHWRD 382
BLW 264	--	--	--	--	H	5.00	--	--	.3	NHWRD 247
BLW 271	--	--	--	--	H	11.0	--	--	.5	NHWRD 319
BLW 275	11.0	10-20-88	--	--	H	10.0	--	--	--	NHWRD 819
BLW 276	--	--	--	--	H	10.0	--	--	.5	NHWRD 225
BLW 277	--	--	--	--	H	3.00	--	--	1.0	NHWRD 225
BLW 278	--	--	--	--	H	.50	--	--	1.0	NHWRD 143
BLW 286	--	--	--	--	H	15.0	--	--	.5	NHWRD 319
BLW 287	--	--	--	--	H	9.00	--	--	.3	NHWRD 247
BLW 288	5.0	12-21-88	--	--	H	1.50	--	--	.5	NHWRD 142
BLW 290	10.0	10-25-88	--	--	H	3.00	--	--	.5	NHWRD 142
BLW 291	20.0	10-26-88	--	--	H	10.0	--	--	.5	NHWRD 142
BLW 292	--	--	--	--	H	25.0	--	--	.5	NHWRD 319
BLW 293	--	--	--	--	H	7.00	--	--	.5	NHWRD 319
BLW 294	--	--	--	--	H	20.0	--	--	1.0	NHWRD 192
BLW 296	--	--	--	--	H	5.00	--	--	.3	NHWRD 90
BLW 297	--	--	--	--	H	1.50	--	--	.8	NHWRD 90
BLW 303	--	--	--	--	H	8.00	--	--	.2	NHWRD 238
BLW 306	--	--	--	--	H	30.0	--	--	1.0	NHWRD 192
BLW 308	10.0	11-27-89	--	--	H	5.00	--	--	1.0	NHWRD 192
BLW 309	--	--	--	--	H	7.00	--	--	1.0	NHWRD 143
BLW 315	10.0	03-09-89	--	--	H	2.00	--	--	.5	NHWRD 142
BLW 316	20.0	04-27-89	--	--	H	25.0	--	--	.5	NHWRD 142
BLW 318	--	--	--	--	H	6.00	--	--	.5	NHWRD 319
BLW 321	--	--	--	--	H	10.0	--	--	1.0	NHWRD 123
BLW 322	3.0	06-20-90	--	--	H	4.00	--	--	--	NHWRD 819
BLW 323	--	--	--	--	H	3.00	--	--	1.0	NHWRD 192
BLW 325	15.0	09-14-89	--	--	H	7.00	--	--	10.0	NHWRD 302
BLW 327	--	--	--	--	H	10.0	--	--	--	NHWRD 192
BLW 329	--	--	--	--	H	6.00	--	--	.3	NHWRD 247

Table A-1. Description of selected wells, borings, and springs in the Winnipesaukee River Basin, central New Hampshire

Local site number	Lat-itude	Long-itude	Owner or user	Date of con-struction	Ele-vat-tion (feet)	Diameter of casing (inches)	Depth to bottom of casing (feet)	Casing mater-ial	Type of fin-ish	Type of site
				BELKNAP COUNTY						
				Belmont—*Continued*						
BLW 331	432708	0712617	Pease	11-15-89	780	--	19.0	--	X	BrW
BLW 332	432646	0713051	Jusczak, W.	07-10-90	515	--	83.0	--	X	BrW
BLW 334	432858	0713051	Lenardis, J.	09-08-90	500	--	54.0	--	X	BrW
BLW 335	432857	0713057	Gobeille, L.	08-29-90	500	--	74.0	--	X	BrW
BLW 336	432905	0713051	Dawkins, E.	07-27-90	500	--	89.0	--	X	BrW
BLW 341	432945	0712649	Small, R.	10-01-90	900	--	17.0	--	X	BrW
BLW 342	432818	0712558	Gilbert, A.	11-01-90	740	--	28.0	--	X	BrW
BLW 346	432817	0713103	R & A Assoc	07-31-89	560	--	51.0	--	X	BrW
BLW 347	432906	0712458	Durocher, M.	05-25-91	840	--	22.0	--	X	BrW
BLW 349	432845	0713156	Nordel, L.	07-02-91	--	--	139	--	X	BrW
BLW 350	432741	0712615	Jusczah, W.	06-17-91	--	--	36.0	--	X	BrW
BLW 353	432816	0713159	Lochmere Vill. District	04- -92	470	1.25	11	P	S	Dug
BLW 354	432650	0713207	Tilton-Northfield Aqua.	12-06-94	485	2.5	20	S	S	BOR
BLW 355	432625	0713122	Tilton-Northfield Aqua.	12-08-94	520	--	--	--	--	BOR
				Center Harbor						
CHW 1	434225	0712748	Finn	05-29-84	540	--	47.0	--	X	BrW
CHW 2	434229	0712759	Allard, M.	08-13-84	600	--	24.0	--	X	BrW
CHW 3	434230	0712804	Kneeland, W.	08-05-84	640	--	19.0	--	X	BrW
CHW 5	434231	0712744	Parker, G.	10-10-84	540	--	--	--	X	BrW
CHW 6	434242	0712753	Heath	08-26-85	560	--	19.0	--	X	BrW
CHW 7	434223	0712749	Dole, J.	08-10-85	540	--	69.0	--	X	BrW
CHW 11	434053	0713042	Skawinski, W.	11-27-84	620	--	20.0	--	X	BrW
CHW 14	434230	0712801	Poff, H.	07-20-84	600	--	55.0	--	X	BrW
CHW 23	434041	0713035	LaBraney, J.	03-31-86	620	--	20.0	--	X	BrW
CHW 25	434103	0713315	Fisher, D.	06-06-86	780	--	20.0	--	X	BrW
CHW 29	434232	0712753	--	--	570	--	--	--	--	BrW
				Gilford						
GFA 1	433212	0712421	Gilford, Town of	10-16-90	760	--	--	--	--	Bor
GFA 2	433416	0712507	Laconia Airport Authority	06-25-91	518	--	--	--	--	Bor
GFA 3	433242	0712419	Gilford, Town of	06-26-91	750	--	--	--	--	Bor
GFB 1	433443	0712416	--	--	509	--	--	--	--	Bor
GFB 2	433422	0712121	--	--	517	--	--	--	--	Bor
GFB 3	433614	0712547	NHDOT	--	506	--	--	--	--	Bor
GFB 4	433158	0712624	Lemays Garage	03-08-88	610	--	--	--	--	Bor
GFB 5	433201	0712621	Lemays Garage	03-18-88	610	--	--	--	--	Bor
GFB 6	433447	0712531	Gilford Landfill	09-12-86	550	--	--	--	--	Bor
GFB 7	433434	0712508	Gilford Landfill	09-08-86	520	--	--	--	--	Bor
GFB 8	433435	0712518	Gilford Landfill	09-10-86	510	--	--	--	--	Bor
GFB 9	433442	0712524	Gilford Landfill	09-04-86	530	--	--	--	--	Bor
GFB 10	433443	0712515	Gilford Landfill	09-10-86	570	--	--	--	--	Bor
GFB 11	433446	0712523	Gilford Landfill	09-10-86	550	--	--	--	--	Bor
GFB 12	433159	0712619	Lemays Garage	07-06-88	610	--	--	--	--	TH
GFB 13	433157	0712624	Lemays Garage	03-08-88	610	--	--	--	--	Bor
GFW 7	433445	0712539	Gilford Landfill	--	548.22	--	--	--	--	--
GFW 9	433349	0712625	Getty Petroleum	--	530	--	--	--	--	--
GFW 11	433145	0712414	Gilford, Town of	10-15-90	780	2	51.5	P	S	Bor
GFW 12	433423	0712404	Roberts, Steven	11-01-90	515	2	77.5	P	S	Bor
GFW 13	433358	0712359	Howe, P. D.	09-14-90	540	2	32.5	P	S	Bor
GFW 14	433445	0712359	Gilford, Town of	06-25-91	510	2	68	P	S	Bor
GFW 15	433125	0712403	Lyman, John	06-26-91	800	2	42	P	S	Bor
GFW 16	433110	0712340	Piche	--	980	--	--	--	W	Dug
GFW 17	433021	0712349	Liptak	05-14-84	1080	--	170	--	X	BrW

Local site number	Water level Depth (feet)	Water level Date (mm-dd-yy)	Top of screen (feet)	Bottom of screen (feet)	Use of water	Yield (gal/min)	Drawdown (feet)	Specific capacity	Pumping period (hours)	Driller or NHWRD number
BELKNAP COUNTY										
Belmont–*Continued*										
BLW 331	--	--	--	--	H	8.00	--	--	0.3	NHWRD 247
BLW 332	20.0	07-10-90	--	--	H	5.00	--	--	.5	NHWRD 302
BLW 334	--	--	--	--	H	6.00	--	--	.5	NHWRD 319
BLW 335	--	--	--	--	H	4.00	--	--	.5	NHWRD 319
BLW 336	--	--	--	--	H	4.00	--	--	.5	NHWRD 319
BLW 341	60.0	10-01-90	--	--	H	6.50	--	--	.8	NHWRD 110
BLW 342	3.0	11-01-90	--	--	H	10.0	--	--	.8	NHWRD 110
BLW 346	20.0	08-01-89	--	--	H	4.00	--	--	.5	NHWRD 142
BLW 347	1.0	05-26-91	--	--	H	7.00	--	--	2.0	NHWRD 240
BLW 349	--	--	--	--	H	4.00	--	--	.5	NHWRD 319
BLW 350	7.0	06-17-91	--	--	H	18.0	--	--	--	NHWRD 819
BLW 353	6	04- -92	11	13	U	--	--	--	--	D.L. Maher
BLW 354	3.2	12-06-94	20	26	U	--	--	--	--	D.L. Maher
BLW 355	18.2	12-08-94	--	--	U	--	--	--	--	D.L. Maher
Center Harbor										
CHW 1	--	--	--	--	H	6.00	--	--	1.5	90
CHW 2	--	--	--	--	H	10.0	--	--	2.0	90
CHW 3	--	--	--	--	H	4.50	--	--	1.0	90
CHW 5	--	--	--	--	H	3.00	--	--	.5	247
CHW 6	--	--	--	--	H	20.0	--	--	1.0	90
CHW 7	--	--	--	--	H	.75	--	--	1.0	90
CHW 11	--	--	--	--	H	4.00	--	--	.5	NHWRD 20
CHW 14	--	--	--	--	H	4.50	--	--	.5	NHWRD 20
CHW 23	--	--	--	--	H	2.00	--	--	.5	NHWRD 20
CHW 25	--	--	--	--	H	1.50	--	--	.5	NHWRD 20
CHW 29	60	08-10-89	--	--	H	--	--	--	--	--
Gilford										
GFA 1	--	--	--	--	U	--	--	--	--	USGS
GFA 2	--	--	--	--	U	--	--	--	--	USGS
GFA 3	--	--	--	--	U	--	--	--	--	USGS
GFB 1	4	- -70	--	--	--	--	--	--	--	NHDOT
GFB 2	--	--	--	--	--	--	--	--	--	NHDOT
GFB 3	--	--	--	--	--	--	--	--	--	NHDOT
GFB 4	4.52	07-12-88	--	--	U	--	--	--	--	Kennedy
GFB 5	7.73	07-12-88	--	--	U	--	--	--	--	Kennedy
GFB 6	3	09-12-86	--	--	U	--	--	--	--	Con-Tec, Inc
GFB 7	1.3	09-09-86	--	--	U	--	--	--	--	Con-Tec, Inc
GFB 8	1.3	09-10-86	--	--	U	--	--	--	--	Con-Tec, Inc
GFB 9	1.6	09-04-86	--	--	U	--	--	--	--	Con-Tec, Inc
GFB 10	12	09-10-86	--	--	U	--	--	--	--	Con-Tec, Inc
GFB 11	21	09-10-86	--	--	U	--	--	--	--	Con-Tec, Inc
GFB 12	--	--	--	--	U	--	--	--	--	Kennedy
GFB 13	8.95	07-18-88	--	--	U	--	--	--	--	Kennedy
GFW 7	--	--	--	--	U	--	--	--	--	--
GFW 9	--	--	--	--	U	--	--	--	--	--
GFW 11	6.56	07-02-91	51.5	53	U	--	--	--	--	USGS
GFW 12	5.79	07-02-91	77.5	80	U	--	--	--	--	USGS
GFW 13	13.6	07-02-91	32.5	35	U	--	--	--	--	USGS
GFW 14	5.24	07-02-91	68	70.5	U	--	--	--	--	USGS
GFW 15	21.0	07-02-91	39.5	42	U	--	--	--	--	USGS
GFW 16	8.65	06-17-91	--	--	H	--	--	--	--	--
GFW 17	--	--	--	--	H	.50	--	--	.5	NHWRD 319

Table A-1. Description of selected wells, borings, and springs in the Winnipesaukee River Basin, central New Hampshire

Local site number	Lat-itude	Long-itude	Owner or user	Date of con-struction	Ele-vat-tion (feet)	Diameter of casing (inches)	Depth to bottom of casing (feet)	Casing mater-ial	Type of fin-ish	Type of site
BELKNAP COUNTY										
Gilford—*Continued*										
GFW 18	433344	0712635	Johnson	05-25-84	520	--	59.0	--	X	BrW
GFW 19	433147	0712354	Hutchins	01-01-84	860	--	115	--	X	BrW
GFW 21	433402	0712403	Ritson	03-16-84	540	--	60.0	--	X	BrW
GFW 22	433405	0712030	Olsen	04-18-84	620	--	39.0	--	X	BrW
GFW 23	433102	0712334	Dickinson, G.	08-06-84	960	--	39.0	--	X	BrW
GFW 24	433349	0712642	Bilodeau, A.	07-25-84	520	--	141	--	X	BrW
GFW 31	433030	0712404	Haley, S.	01-09-84	1020	--	99.0	--	X	BrW
GFW 32	433401	0712040	Mooney	07-17-84	620	--	29.0	--	X	BrW
GFW 33	433349	0712640	King, S.	08-10-84	520	--	21.0	--	S	--
GFW 35	433406	0712540	Moody, F.	03-15-85	530	--	154	--	X	BrW
GFW 37	433438	0712414	Gilford Square	12-23-85	510	--	121	--	X	BrW
GFW 38	433348	0712644	Sargent Mobile Home Park	12-05-84	520	--	15.5	--	S	--
GFW 39	433143	0712621	Page, L.	04-23-85	680	--	114	--	X	BrW
GFW 40	433107	0712335	Ginter, E.	05-02-85	1020	--	119	--	X	BrW
GFW 43	433029	0712404	Sanborn, J.	07-26-85	1010	--	83.0	--	X	BrW
GFW 44	433416	0712027	Gamble, V.	09-12-85	560	--	125	--	X	BrW
GFW 52	433059	0712643	Flanders, K.	09-03-85	740	--	90.0	--	X	BrW
GFW 58	433354	0712546	Elliott, S.	11-12-85	570	--	134	--	X	BrW
GFW 63	433033	0712402	McCabe, D.	05-01-85	1020	--	128	--	X	BrW
GFW 66	433453	0712419	McGrath, P.	02-01-85	510	--	84.0	--	X	BrW
GFW 67	433346	0712540	Realty Resources	02-01-85	640	--	104	--	X	BrW
GFW 70	433150	0712350	Scott, D.	02-01-85	900	--	104	--	X	BrW
GFW 74	433412	0712038	Gen Inc & Devel Corp	09-01-85	620	--	55.0	--	X	BrW
GFW 75	433044	0712624	April, J.	07-12-84	860	--	20.0	--	X	BrW
GFW 78	433413	0712019	Egan, D.	11-01-86	560	--	104	--	X	BrW
GFW 81	433402	0712357	Droin Bldrs	05-10-86	520	--	99.0	--	X	BrW
GFW 82	433400	0712531	Shep Brown's Boat Basin	04-24-86	540	--	24.0	--	X	BrW
GFW 88	433452	0712338	Watts, G.	05-30-86	510	--	85.0	--	X	BrW
GFW 89	433119	0712342	Wright, H.	07-28-86	970	--	39.0	--	X	BrW
GFW 91	433142	0712426	Smith, D.	09-08-86	820	--	39.0	--	X	BrW
GFW 92	433342	0712536	Realty Resources	09-01-86	670	--	122	--	X	BrW
GFW 98	433349	0712552	Boulleard, P.	02-10-87	580	--	101	--	X	BrW
GFW 100	433258	0712415	Gilford Village Water Dis	01-01-86	720	--	59.0	--	X	BrW
GFW 101	433302	0712415	Town of Gilford	02-13-87	690	--	84.0	--	X	BrW
GFW 112	433140	0712626	Village West II	10-21-86	640	--	109	--	X	BrW
GFW 114	433132	0712610	Audet, L.	08-27-87	780	--	174	--	X	BrW
GFW 118	433404	0712403	Hoyt-Dupont, K.	09-16-87	530	--	99.0	--	X	BrW
GFW 120	433417	0712028	Persons, W.	10-30-87	560	--	159	--	X	BrW
GFW 121	433301	0712444	Parisi, C.	04-26-86	840	--	41.0	--	X	BrW
GFW 123	433500	0712327	Hoffman, J.	04-03-87	510	--	102	--	X	BrW
GFW 124	433401	0712538	Reed Elwell Realtor	03-27-87	530	--	63.0	--	X	BrW
GFW 126	433319	0712400	Harter Brook House	10-04-87	630	--	64.0	--	X	BrW
GFW 134	433538	0712537	Robertson, C.	12-03-86	550	--	41.0	--	X	BrW
GFW 136	433453	0712413	Englehardt, L.	06-06-86	510	--	94.0	--	X	BrW
GFW 139	433417	0712425	Silven, P.	11-25-87	520	--	126	--	X	BrW
GFW 147	433503	0712233	Broadview Condo Assoc	04-20-88	510	--	113	--	X	BrW
GFW 148	433420	0712549	Vernitron Corp	03-11-88	540	--	70.0	--	X	BrW
GFW 151	433420	0712551	Trapper Brown Corp	02-25-88	540	--	84.0	--	X	BrW
GFW 153	433415	0712410	Gokey, B.	04-28-88	520	--	114	--	X	BrW
GFW 159	433505	0712324	Crocker, J.	09-09-88	520	--	60.0	--	X	BrW
GFW 162	433413	0712024	Noel, D.	09-22-88	570	--	126	--	X	BrW
GFW 167	433129	0712418	Cesati, R.	08-17-88	800	--	45.0	--	X	BrW
GFW 169	433412	0712519	Sky Bright Hangers	11-10-88	530	--	179	--	X	BrW
GFW 178	433400	0712405	A. Fletcher Const, R.	11-03-88	540	--	41.0	--	X	BrW
GFW 182	433020	0712359	Murphy, L.	12-08-88	1060	--	132	--	X	BrW

Local site number	Water level Depth (feet)	Water level Date (mm-dd-yy)	Top of screen (feet)	Bottom of screen (feet)	Use of water	Yield (gal/min)	Drawdown (feet)	Specific capacity	Pumping period (hours)	Driller or NHWRD number
					BELKNAP COUNTY					
					Gilford–*Continued*					
GFW 18	30.0	05-25-84	--	--	H	6.50	--	--	1.5	NHWRD 90
GFW 19	20.0	01-01-84	--	--	H	100	--	--	2.0	NHWRD 192
GFW 21	10.0	03-19-84	--	--	H	50.0	--	--	.5	NHWRD 319
GFW 22	--	--	--	--	H	10.0	--	--	1.0	NHWRD 237
GFW 23	--	--	--	--	H	12.0	--	--	.5	NHWRD 319
GFW 24	10.0	07-25-84	--	--	H	8.00	--	--	2.0	NHWRD 192
GFW 31	--	--	--	--	H	2.00	--	--	.5	NHWRD 247
GFW 32	--	--	--	--	H	5.00	--	--	.5	NHWRD 247
GFW 33	12.0	08-10-84	--	--	C	30.0	--	--	2.0	NHWRD 371
GFW 35	--	--	--	--	H	5.00	--	--	.5	NHWRD 319
GFW 37	11.0	05-23-85	--	--	--	50.0	--	--	1.0	NHWRD 3
GFW 38	12.5	12-05-84	--	--	P	25.0	--	--	2.0	NHWRD 371
GFW 39	--	--	--	--	H	6.00	--	--	.5	NHWRD 319
GFW 40	--	--	--	--	H	4.00	--	--	--	NHWRD 319
GFW 43	40.0	07-26-85	--	--	H	5.00	--	--	1.0	NHWRD 158
GFW 44	--	--	--	--	H	50.0	--	--	.8	NHWRD 406
GFW 52	--	--	--	--	H	10.0	--	--	.5	NHWRD 319
GFW 58	--	--	--	--	H	6.00	--	--	.5	NHWRD 319
GFW 63	--	--	--	--	H	5.00	--	--	1.0	NHWRD 192
GFW 66	--	--	--	--	H	12.0	--	--	2.0	NHWRD 192
GFW 67	20.0	02-14-85	--	--	C	30.0	--	--	48.0	NHWRD 192
GFW 70	--	--	--	--	H	6.00	--	--	2.0	NHWRD 192
GFW 74	--	--	--	--	H	60.0	--	--	1.0	NHWRD 192
GFW 75	--	--	--	--	H	10.0	--	--	.5	NHWRD 20
GFW 78	--	--	--	--	H	15.0	--	--	1.0	NHWRD 192
GFW 81	--	--	--	--	H	30.0	--	--	.5	NHWRD 319
GFW 82	--	--	--	--	C	--	--	--	--	NHWRD 319
GFW 88	12.0	06-01-86	--	--	H	10.0	--	--	1.0	NHWRD 208
GFW 89	8.0	07-28-86	--	--	H	14.0	--	--	--	NHWRD 819
GFW 91	--	--	--	--	H	5.50	--	--	.5	NHWRD 319
GFW 92	--	--	--	--	H	20.0	--	--	.5	NHWRD 319
GFW 98	--	--	--	--	P	25.0	--	--	.5	NHWRD 319
GFW 100	--	--	--	--	P	50.0	--	--	1.0	NHWRD 192
GFW 101	20.0	02-13-87	--	--	P	65.0	--	--	1.0	NHWRD 192
GFW 112	--	--	--	--	C	5.00	--	--	.3	NHWRD 247
GFW 114	--	--	--	--	H	10.0	--	--	.5	NHWRD 319
GFW 118	--	--	--	--	H	10.0	--	--	.5	NHWRD 319
GFW 120	--	--	--	--	H	5.00	--	--	.5	NHWRD 319
GFW 121	20.0	04-26-86	--	--	H	20.0	--	--	1.0	NHWRD 192
GFW 123	--	--	--	--	H	8.00	--	--	1.0	NHWRD 192
GFW 124	2.0	03-27-87	--	--	C	3.00	--	--	1.0	NHWRD 192
GFW 126	--	--	--	--	H	10.0	--	--	1.0	NHWRD 192
GFW 134	--	--	--	--	P	50.0	--	--	1.0	NHWRD 192
GFW 136	--	--	--	--	H	25.0	--	--	1.0	NHWRD 192
GFW 139	--	--	--	--	H	50.0	--	--	1.0	NHWRD 192
GFW 147	20.0	04-20-88	--	--	P	60.0	--	--	1.0	NHWRD 192
GFW 148	--	--	--	--	C	35.0	--	--	1.0	NHWRD 192
GFW 151	20.0	02-25-88	--	--	H	15.0	--	--	1.0	NHWRD 192
GFW 153	--	--	--	--	H	10.0	--	--	.5	NHWRD 319
GFW 159	--	--	--	--	H	50.0	--	--	1.0	NHWRD 192
GFW 162	--	--	--	--	H	50.0	--	--	1.0	NHWRD 192
GFW 167	--	--	--	--	H	10.0	--	--	.5	NHWRD 319
GFW 169	--	--	--	--	H	200	--	--	.3	NHWRD 247
GFW 178	--	--	--	--	H	50.0	--	--	1.0	NHWRD 192
GFW 182	--	--	--	--	H	4.00	--	--	.5	NHWRD 20

Table A-1. Description of selected wells, borings, and springs in the Winnipesaukee River Basin, central New Hampshire

Local site number	Lat-itude	Long-itude	Owner or user	Date of con-struction	Ele-vat-tion (feet)	Diameter of casing (inches)	Depth to bottom of casing (feet)	Casing mater-ial	Type of fin-ish	Type of site
				BELKNAP COUNTY						
				Gilford—*Continued*						
GFW 183	433505	0712318	Dept of Safety Services	01-25-89	510	--	--	--	S	--
GFW 187	433452	0712335	Cupples, A.	11-26-89	510	--	92.0	--	X	BrW
GFW 188	433414	0712020	W. Flaler, C.	10-19-88	540	--	105	--	X	BrW
GFW 190	433412	0712014	Ouellette, R.	03-30-89	520	--	20.0	--	X	BrW
GFW 194	433450	0712416	Mountain View Yacht Club	05-05-89	510	--	121	--	X	BrW
GFW 200	433452	0712416	Smith, C.	06-19-89	510	--	89.0	--	X	BrW
GFW 204	433035	0712404	Ross, E.	11-09-89	1000	--	134	--	X	BrW
GFW 205	433335	0712659	Walter, R.	09-08-89	520	--	92.0	--	X	BrW
GFW 213	433424	0712410	Mawson	10-04-89	510	--	124	--	X	--
GFW 219	433545	0712548	Blixt, C.	06-02-88	510	--	99.0	--	X	BrW
GFW 223	433419	0712547	ES Johnson Const	08-23-90	540	--	100	--	X	BrW
GFW 224	433424	0712412	Lucas	07-20-90	510	--	124	--	X	--
GFW 225	433153	0712624	McGinley	09-07-89	620	--	81.0	--	X	BrW
GFW 227	433446	0712351	Lockes Hill Marine & Spor	08-13-90	510	--	80.0	--	X	BrW
GFW 234	433348	0712549	Plante, A.	12-18-90	600	--	120	--	X	BrW
GFW 235	433208	0712423	Patterson, J.	01-15-91	790	--	74.0	--	--	--
GFW 237	433501	0712327	Sheldon, E.	01-10-91	510	--	99.0	--	X	BrW
GFW 243	433225	0712415	Godbout, A.	07-18-91	760	--	85.0	--	S	BrW
GFW 244	433122	0712417	Bobotas, J.	09-17-91	--	--	31.0	--	X	BrW
GFW 245	433448	0712440	Misty Harbour	07-12-91	520	--	49.0	--	X	BrW
GFW 246	433501	0712321	Ekholm, L.	07-19-91	520	--	100	--	X	BrW
GFW 250	433423	0712539	TBC Corp	08-26-87	--	--	106	--	X	BrW
GFW 251	433424	0712534	Sugarloaf Mountain Bldrs	01-01-86	--	--	109	--	X	BrW
GFW 252	433420	0712524	Laconia Water Dept	11-10-67	530	--	--	--	--	Bor
GFW 253	433425	0712527	Laconia Water Dept.	11-14-67	540	--	--	--	--	Bor
GFW 254	433425	0712514	Laconia Water Dept.	11-14-67	530	--	--	--	--	Wsh
GFW 255	433435	0712539	Laconia Water Dept.	11-17-67	530	--	--	--	--	Wsh
GFW 256	433423	0712451	Laconia Water Dept.	11-20-67	520	--	--	--	S	Wsh
GFW 257	433425	0712446	Laconia Water Dept.	11-22-67	520	--	--	--	S	Wsh
				Laconia						
LAA 1	433106	0712703	State of NH -- USGS	10-16-90	680	--	--	--	--	Bor
LAB 1	433045	0712716	--	--	597	--	--	--	--	Bor
LAB 2	433609	0712551	--	--	502	--	--	--	--	Bor
LAB 3	433128	0712834	--	--	481	--	--	--	--	Bor
LAB 4	433211	0712806	--	--	499	--	--	--	--	Bor
LAB 5	433205	0712809	--	--	498	--	--	--	--	Bor
LAB 6	433209	0712810	--	--	500	--	--	--	--	Bor
LAW 1	433133	0712843	Winconia (Boston) Inc.	--	486.95	--	--	--	--	--
LAW 5	433014	0712701	Wright, Eugene	--	660	--	--	--	W	Dug
LAW 7	433058	0712659	Champoux	01-01-84	700	--	89.0	--	X	BrW
LAW 9	433541	0713056	Weeks, J.	08-10-84	680	--	19.0	--	X	BrW
LAW 12	433541	0713037	Giguere, M.	09-01-84	670	--	99.0	--	X	BrW
LAW 16	433624	0712624	Salta, B.	10-01-84	510	--	29.0	--	X	BrW
LAW 17	433550	0713025	Lovely, M.	06-23-84	640	--	29.0	--	X	BrW
LAW 41	433340	0712701	Rudzinski, J.	03-03-87	510	--	159	--	X	BrW
LAW 43	433610	0712558	Lermer, W.	08-22-87	510	--	80.0	--	X	BrW
LAW 47	433240	0712745	Rudzinski, P.	01-02-88	580	--	79.0	--	X	BrW
LAW 54	433049	0712742	Henry, J.	04-01-88	560	--	60.0	--	X	BrW
LAW 59	433133	0712848	Winconia Inc	12-14-88	490	--	--	--	S	--
LAW 70	433636	0713005	Brown, A.	01-16-90	650	--	88.0	--	X	BrW
LAW 71	433109	0712843	Sanborn's Mobil Station	04-02-90	490	--	4.0	--	G	--
LAW 75	433606	0712629	Fresta Sr, S.	11-07-90	560	--	21.0	--	X	BrW

Local site number	Water level Depth (feet)	Water level Date (mm-dd-yy)	Top of screen (feet)	Bottom of screen (feet)	Use of water	Yield (gal/min)	Drawdown (feet)	Specific capacity	Pumping period (hours)	Driller or NHWRD number
					BELKNAP COUNTY					
					Gilford–*Continued*					
GFW 183	5.0	02-01-89	--	--	U	--	--	--	--	NHWRD 100
GFW 187	6.0	01-03-89	--	--	H	3.00	--	--	.5	NHWRD 319
GFW 188	30.0	10-19-88	--	--	H	40.0	--	--	1.0	NHWRD 192
GFW 190	--	--	--	--	H	3.50	--	--	.5	NHWRD 319
GFW 194	7.0	05-06-89	--	--	C	50.0	--	--	.3	NHWRD 105
GFW 200	--	--	--	--	H	25.0	--	--	.3	NHWRD 247
GFW 204	--	--	--	--	H	1.50	--	--	.5	NHWRD 319
GFW 205	--	--	--	--	H	8.00	--	--	.5	NHWRD 319
GFW 213	10.0	10-04-89	--	--	H	30.0	--	--	1.0	NHWRD 192
GFW 219	--	--	--	--	P	50.0	--	--	.3	NHWRD 247
GFW 223	20.0	08-23-90	--	--	H	15.0	--	--	1.0	NHWRD 192
GFW 224	20.0	07-20-90	--	--	H	20.0	--	--	1.0	NHWRD 192
GFW 225	30.0	09-08-89	--	--	C	4.00	--	--	.5	NHWRD 20
GFW 227	--	--	--	--	C	1.00	--	--	.5	NHWRD 319
GFW 234	--	--	--	--	H	6.00	--	--	--	NHWRD 192
GFW 235	--	--	--	--	H	--	--	--	--	NHWRD 192
GFW 237	--	--	--	--	H	100	--	--	--	NHWRD 192
GFW 243	--	--	--	--	H	50.0	--	--	.5	NHWRD 319
GFW 244	--	--	--	--	H	6.00	--	--	.5	NHWRD 319
GFW 245	20.0	07-12-91	--	--	P	150	--	--	.5	NHWRD 247
GFW 246	--	--	--	--	H	10.0	--	--	1.0	NHWRD 192
GFW 250	--	--	--	--	C	30.0	--	--	--	NHWRD
GFW 251	--	--	--	--	C	5.00	--	--	--	NHWRD 247
GFW 252	12.2	11-10-67	--	--	U	--	--	--	--	D.L. Maher
GFW 253	11.5	11-14-67	--	--	U	--	--	--	--	D.L. Maher
GFW 254	8.17	11-14-67	--	--	U	40	--	--	1	D.L. Maher
GFW 255	9.58	11-17-67	--	--	U	--	--	--	--	D.L. Maher
GFW 256	6.0	11-20-67	--	--	U	50	3.75	13.3	2	D.L. Maher
GFW 257	6.8	11-22-67	--	--	U	--	--	--	--	D.L. Maher
					Laconia					
LAA 1	--	--	--	--	--	--	--	--	--	USGS
LAB 1	--	--	--	--	--	--	--	--	--	NHDOT
LAB 2	--	--	--	--	--	--	--	--	--	NHDOT
LAB 3	--	--	--	--	--	--	--	--	--	NHDOT
LAB 4	--	--	--	--	--	--	--	--	--	NHDOT
LAB 5	--	--	--	--	--	--	--	--	--	NHDOT
LAB 6	--	--	--	--	--	--	--	--	--	NHDOT
LAW 1	4.7	12-14-88	--	--	U	--	--	--	--	--
LAW 5	1.57	06-13-91	--	--	H	--	--	--	--	--
LAW 7	10.0	01-01-84	--	--	H	15.0	--	--	1.0	NHWRD 192
LAW 9	--	--	--	--	H	50.0	--	--	.5	NHWRD 319
LAW 12	--	--	--	--	H	6.00	--	--	.5	NHWRD 319
LAW 16	--	--	--	--	H	10.0	--	--	1.0	NHWRD 90
LAW 17	--	--	--	--	H	4.00	--	--	.5	NHWRD 247
LAW 41	--	--	--	--	H	30.0	--	--	.5	NHWRD 319
LAW 43	--	--	--	--	H	5.00	--	--	1.0	NHWRD 3
LAW 47	--	--	--	--	H	5.00	--	--	--	NHWRD 319
LAW 54	--	--	--	--	H	2.00	--	--	.5	NHWRD 20
LAW 59	5.0	12-20-88	--	--	U	--	--	--	--	NHWRD 100
LAW 70	--	--	--	--	H	30.0	--	--	.5	NHWRD 319
LAW 71	8.0	04-02-90	--	--	U	--	--	--	--	NHWRD 147
LAW 75	--	--	--	--	H	--	--	--	--	NHWRD 192

Table A-1. Description of selected wells, borings, and springs in the Winnipesaukee River Basin, central New Hampshire

Local site number	Lat- itude	Long- itude	Owner or user	Date of con- struction	Ele- vat- tion (feet)	Diameter of casing (inches)	Depth to bottom of casing (feet)	Casing mater- ial	Type of fin- ish	Type of site
					BELKNAP COUNTY					
					Meredith					
MHB 1	433902	0712954	--	--	555	--	--	--	--	Bor
MHB 2	433908	0713001	--	--	506	--	--	--	--	Bor
MHB 3	434026	0712953	Meredith, Town of	11-12-70	570	--	--	--	--	TH
MHB 4	434029	0712955	Meredith, Town of	11-12-70	570	--	--	--	--	TH
MHB 6	434001	0712951	Meredith, Town of	11-12-70	540	--	--	--	--	Bor
MHB 7	434003	0712952	Meredith, Town of	11-12-70	540	--	--	--	--	TH
MHB 8	433951	0712945	Meredith, Town of	11-18-70	530	--	--	--	--	TH
MHB 9	433949	0712945	Meredith, Town of	11-16-70	530	--	--	--	--	TH
MHB 10	433947	0712942	Meredith, Town of	11-17-70	520	--	--	--	--	TH
MHB 11	433950	0712958	Meredith, Town of	11-17-70	510	--	--	--	--	TH
MHB 12	434014	0712951	Meredith, Town of	11-18-70	560	--	--	--	--	TH
MHB 13	434021	0712953	Meredith, Town of	11-10-70	575	--	--	--	--	TH
MHB 14	434024	0712954	Meredith, Town of	11-12-70	570	--	--	--	--	TH
MHW 1	434017	0713006	Meredith, Town of	11-01-90	565	--	--	--	S	Bor
MHW 2	433956	0712951	Meredith, Town of	10-31-90	515	--	--	--	S	Bor
MHW 13	433610	0713059	Trombetta, L.	12-11-84	650	--	22.0	--	X	BrW
MHW 24	433926	0712856	Zis, S.	09-25-85	530	--	79.0	--	X	BrW
MHW 28	433924	0712854	McGrath	06-20-85	540	--	39.0	--	X	BrW
MHW 29	434046	0712715	Tiege, P.	06-02-85	510	--	59.0	--	X	BrW
MHW 33	434011	0712953	Crosby Peck	02-05-85	540	--	79.0	--	X	BrW
MHW 58	433801	0712737	Grimes, P.	09-28-85	520	--	29.0	--	X	BrW
MHW 61	434043	0712715	Lee, J.	12-14-85	510	--	60.0	--	X	
MHW 85	433537	0713212	Hoyler, R.	05-14-86	510	--	19.0	--	X	BrW
MHW 90	433621	0713047	Cook	06-19-87	660	--	20.0	--	X	BrW
MHW 91	433753	0712848	Stevens, R.	06-24-87	520	--	42.0	--	X	BrW
MHW 95	433758	0712849	Boyer, N.	06-17-87	520	--	33.0	--	X	BrW
MHW 101	433539	0713215	Rist, R.	12-08-86	600	--	40.0	--	X	BrW
MHW 111	433522	0713219	Kessler, G.	12-22-87	490	--	34.0	--	X	BrW
MHW 125	434-43	0712731	Crognale, G.	5-17-88	540	--	39.0	--	X	BrW
MHW 136	433946	0713113	Rousseau, J.	09-12-88	550	--	10.0	--	X	BrW
MHW 143	433635	0713159	& R. Dawson, D.	07-15-88	535	--	40.0	--	X	BrW
MHW 147	433957	0713021	Brady, D.	04-20-88	560	--	58.0	--	X	BrW
MHW 162	433534	0713214	Sheridan, J.	05-13-87	500	--	27.0	--	X	BrW
MHW 164	433624	0713106	Russell	03-06-87	660	--	20.0	--	X	BrW
MHW 167	433807	0712727	Estano, B.	01-26-87	550	--	60.0	--	X	BrW
MHW 185	433923	0712854	The Timbers	10-26-88	540	--	60.0	--	X	BrW
MHW 203	433510	0713219	Gallagar, T.	06-28-88	490	--	66.0	--	X	BrW
MHW 212	433618	0713045	Lerner, J.	07-06-89	640	--	18.0	--	X	BrW
MHW 216	433758	0712749	Dwyer, T.	03-20-89	510	--	31.0	--	X	BrW
MHW 223	434009	0712952	Interlakes Mobile Park	03-03-89	560	--	79.0	--	X	BrW
MHW 228	434105	0712722	Milette, A.	12-11-89	510	--	69.0	--	X	BrW
MHW 236	433657	0713218	Plunkett, M.	04-25-89	510	--	51.0	--	X	BrW
MHW 237	433639	0713159	Forton, S.	04-27-89	520	--	40.0	--	X	BrW
MHW 242	433507	0713217	Tamposi, S.	05-11-89	490	--	29.0	--	X	BrW
MHW 258	433711	0713235	Golden, W.	09-22-90	530	--	39.0	--	X	BrW
MHW 262	433753	0712852	Settele, J.	07-23-91	530	--	60.0	--	--	--
					New Hampton					
NHS 1	434123	0713457	--	--	590	--	--	--	--	Sp
NHW 33	434047	0713421	Dawber, William	--	555	--	--	--	--	BrW
NHW 34	434120	0713542	Saunders, John and Kriste	--	700	--	--	--	--	BrW
					Sanbornton					
SCB 3	433008	0713045	--	--	482	--	--	--	--	TH
SCW 45	433007	0713129	Gilman, M.	04- -56	505	--	--	--	--	BrW

–Continued

Local site number	Water level Depth (feet)	Water level Date (mm-dd-yy)	Top of screen (feet)	Bottom of screen (feet)	Use of water	Yield (gal/min)	Drawdown (feet)	Specific capacity	Pumping period (hours)	Driller or NHWRD number
BELKNAP COUNTY										
Meredith										
MHB 1	--	--	--	--	--	--	--	--	--	NHDOT
MHB 2	--	--	--	--	--	--	--	--	--	NHDOT
MHB 3	--	--	--	--	U	--	--	--	--	R.E. Chapman
MHB 4	--	--	--	--	U	--	--	--	--	R.E. Chapman
MHB 6	--	--	--	--	U	--	--	--	--	R.E. Chapman
MHB 7	--	--	--	--	U	--	--	--	--	R.E. Chapman
MHB 8	--	--	--	--	U	--	--	--	--	R.E. Chapman
MHB 9	--	--	--	--	U	--	--	--	--	R.E. Chapman
MHB 10	--	--	--	--	U	--	--	--	--	R.E. Chapman
MHB 11	--	--	--	--	U	--	--	--	--	R.E. Chapman
MHB 12	3.2	11-18-70	--	--	U	--	--	--	--	R.E. Chapman
MHB 13	--	--	--	--	U	--	--	--	--	R.E. Chapman
MHB 14	--	--	--	--	U	--	--	--	--	R.E. Chapman
MHW 1	17.2	07-25-91	32.5	35	U	--	--	--	--	USGS
MHW 2	9.01	07-02-91	52.5	55	U	--	--	--	--	USGS
MHW 13	20.0	12-11-84	--	--	H	6.00	--	--	1.0	NHWRD 90
MHW 24	--	--	--	--	H	70.0	--	--	1.0	NHWRD 90
MHW 28	--	--	--	--	H	4.00	--	--	1.0	NHWRD 90
MHW 29	5.0	06-02-85	--	--	H					NHWRD 90
MHW 33	24.0	02-18-85	--	--	P	30.0	--	--	48.0	NHWRD 90
MHW 58	20.0	09-29-85	--	--	H	2.75	--	--	.5	NHWRD 20
MHW 61	60.0	06-02-85	--	--	H					NHWRD 61
MHW 85	--	--	--	--	H	50.0	--	--	.3	NHWRD 247
MHW 90	--	--	--	--	H	30.0	--	--	1.0	NHWRD 192
MHW 91	--	--	--	--	H	10.0	--	--	1.0	NHWRD 192
MHW 95	15.0	06-17-87	--	--	H	100	--	--	1.0	NHWRD 59
MHW 101	--	--	--	--	H	8.00	--	--	.5	NHWRD 20
MHW 111	8.0	12-22-87	--	--	H	10.0	--	--	--	NHWRD 819
MHW 125	20.0	5-17-88	--	--	H					NHWRD 382
MHW 136	--	--	--	--	H	1.00	--	--	.3	NHWRD 247
MHW 143	50.0	07-16-88	--	--	H	30.0	--	--	.5	NHWRD 20
MHW 147	50.0	04-21-88	--	--	H	60.0	--	--	.5	NHWRD 20
MHW 162	15.0	05-14-87	--	--	H	2.50	--	--	.5	NHWRD 20
MHW 164	25.0	03-07-87	--	--	H	1.50	--	--	.5	NHWRD 20
MHW 167	20.0	01-27-87	--	--	H	5.00	--	--	.5	NHWRD 20
MHW 185	--	--	--	--	P	50.0	--	--	.5	NHWRD 20
MHW 203	15.0	06-29-88	--	--	H	15.0	--	--	.5	NHWRD 142
MHW 212	--	--	--	--	H	10.0	--	--	.5	NHWRD 90
MHW 216	--	--	--	--	H	7.00	--	--	.3	NHWRD 90
MHW 223	38.0	03-03-89	--	--	P	35.0	--	--	48.0	NHWRD 90
MHW 228	6.0	12-14-89	--	--	-					NHWRD 90
MHW 236	10.0	04-26-89	--	--	H	10.0	--	--	.5	NHWRD 142
MHW 237	15.0	04-28-89	--	--	H	7.50	--	--	.5	NHWRD 142
MHW 242	8.0	05-12-89	--	--	H	100	--	--	.5	NHWRD 20
MHW 258	--	--	--	--	H	30.0	--	--	.5	NHWRD 319
MHW 262	20.0	07-23-91	--	--	H	30.0	--	--	1.0	NHWRD 192
New Hampton										
NHS 1	--	--	--	--	--	--	--	--	--	--
NHW 33	--	--	--	--	H	--	--	--	--	--
NHW 34	20	11-08-84	--	--	H	--	--	--	--	--
Sanbornton										
SCB 3	--	--	--	--	U	--	--	--	--	--
SCW 45	--	--	--	--	--	--	--	--	--	Daniels

Table A-1. Description of selected wells, borings, and springs in the Winnipesaukee River Basin, central New Hampshire

Local site number		Lat-itude	Long-itude	Owner or user	Date of con-struction	Ele-vat-tion (feet)	Diameter of casing (inches)	Depth to bottom of casing (feet)	Casing mater-ial	Type of fin-ish	Type of site
					BELKNAP COUNTY						
					Sanbornton—*Continued*						
SCW	49	433002	0713158	Nelson	07- -60	585	--	--	--	--	BrW
SCW	69	433250	0713215	LaFond, T.	07-30-84	540	--	39.0	--	X	BrW
SCW	81	433309	0713158	Taylor, S.	01-01-85	640	--	20.0	--	X	BrW
SCW	88	433230	0713121	Rosenberg	05-13-86	500	--	69.0	--	X	BrW
SCW	94	433037	0713059	Drouin, L.	11-17-86	500	--	49.0	--	X	BrW
SCW	97	432910	0713512	Kent, D.	04-22-87	720	--	15.0	--	X	BrW
SCW	110	433017	0713048	Garside, J.	09-16-86	500	--	79.0	--	X	BrW
SCW	130	433010	0713051	Teco Corp.	04-08-86	485	2	75	P	S	Bor
SCW	131	433007	0713050	Teco Corp.	04-18-86	485	2	80	P	S	Bor
SCW	132	433006	0713054	Teco Corp.	04-16-86	485	2	85	P	S	Bor
SCW	133	433004	0713053	Sylvestros Tires	10-10-89	499.62	2	10	P	S	Bor
SCW	134	433005	0713051	Sylvestros Tires	10-10-89	499.77	2	10	P	S	Bor
					Tilton						
TSB	1	432706	0713347	--	--	469	--	--	--	--	Bor
TSB	3	432819	0713159	--	--	450	--	--	--	--	Bor
TSB	4	432822	0713230	Aries Eng.	--	500	--	--	--	--	TH
TSB	5	432816	0713228	Aries Eng.	--	480	--	--	--	--	TH
TSW	1	432635	0713515	Layne, NE	08-15-68	440	--	--	--	--	Bor
TSW	2	432617	0713550	Layne, NE	12-10-68	420	--	--	--	--	Bor
TSW	4	432712	0713251	Quinn-T Corp.	02-20-86	479.33	2	15	P	S	Bor
TSW	5	432717	0713302	Quinn-T Corp.	02-18-86	485.5	2	45	P	S	Bor
TSW	6	432714	0713302	Quinn-T Corp.	02-20-86	479	2	15	P	S	Bor
TSW	7	432712	0713258	Quinn-T Corp.	03-03-86	475	2	41	P	S	Bor
TSW	8	432721	0713246	Quinn-T Corp.	03-21-86	485	2	15	P	S	Bor
TSW	9	432726	0713241	Quinn-T Corp.	03-19-86	485	2	15	P	S	Bor
TSW	10	432730	0713255	Quinn-T Corp.	03-30-86	485	2	3	P	S	Bor
TSW	11	432733	0713313	Quin-T Corp.	02-24-89	489.43	2	16	P	S	Bor
TSW	12	432730	0713316	Quin-T Corp.	02-24-89	491.64	2	20	P	S	Bor
TSW	13	432729	0713317	Quin-T Corp.	03-01-89	489.35	2	65	P	S	Bor
TSW	14	432729	0713315	Quin-T Corp.	02-27-89	489.72	2	20	P	S	Bor
TSW	15	433004	0713052	Sylvestros Tires	10-10-89	499.5	2	5	P	S	Bor
TSW	16	432720	0713358	Pike Industries, Inc	01-24-90	475	2	15	P	S	Bor
TSW	17	432718	0713358	Pike Industries, Inc.	01-24-90	472	2	15	P	S	Bor
TSW	18	432719	0713357	Pike Industries, Inc.	01-24-90	473	2	15	P	S	Bor
TSW	19	432717	0713358	Pike Industries, Inc.	01-24-90	469	2	15	P	S	Bor
TSW	20	432721	0713356	Pike Industries, Inc.	01-24-90	474	2	15	P	S	Bor
TSW	21	432722	0713357	Pike Industries, Inc.	01-24-90	477	2	15	P	S	Bor
TSW	22	432724	0713351	Pike Industries, Inc.	01-25-90	478	2	15	P	S	Bor
TSW	23	432720	0713353	Pike Industries, Inc.	01-25-90	471	2	15	P	S	Bor
TSW	24	432736	0713240	Jackson	--	470	--	--	--	W	Dug
TSW	25	432827	0713236	Tilton Nursery	06-07-84	500	--	64.0	--	X	BrW
TSW	26	432714	0713409	McDonald's Corp	11-02-84	480	--	167	--	X	BrW
TSW	28	432845	0713221	Goodsell, D.	10-15-84	520	--	146	--	X	BrW
TSW	33	432828	0713210	Lodge, G.	06-18-85	500	--	1.0	--	--	Dug
TSW	34	432900	0713157	Crawford, J.	01-15-87	490	--	101	--	X	BrW
TSW	35	432958	0713108	Tioga Realty	12-11-86	495	--	59.0	--	X	BrW
TSW	36	432925	0713135	Garofalo, V.	11-21-86	490	--	94.0	--	X	BrW
TSW	40	432755	0713257	Trapper Brown Corp	10-26-87	480	--	83.0	--	X	BrW
TSW	41	432903	0713156	Donavon, T.	10-08-87	500	--	99.0	--	X	BrW
TSW	42	432905	0713158	Mears, R.	09-24-87	510	--	119	--	X	BrW
TSW	43	432722	0713353	Pike Industries Inc	07-26-86	470	--	146	--	X	BrW
TSW	44	432957	0713106	Tioga Realty	01-13-88	500	--	94.0	--	X	BrW
TSW	45	432901	0713153	Internicola, J.	11-06-87	485	--	99.0	--	X	BrW

Local site number	Water level Depth (feet)	Water level Date (mm-dd-yy)	Top of screen (feet)	Bottom of screen (feet)	Use of water	Yield (gal/min)	Drawdown (feet)	Specific capacity	Pumping period (hours)	Driller or NHWRD number
					BELKNAP COUNTY					
					Sanbornton–*Continued*					
SCW 49	--	--	--	--	--	--	--	--	--	Daniels
SCW 69	--	--	--	--	H	6.00	--	--	.5	NHWRD 247
SCW 81	--	--	--	--	H	100	--	--	1.0	NHWRD 192
SCW 88	10.0	05-01-86	--	--	H	14.0	--	--	--	NHWRD 819
SCW 94	--	--	--	--	H	25.0	--	--	.5	NHWRD 319
SCW 97	20.0	04-23-87	--	--	H	7.00	--	--	1.0	NHWRD 534
SCW 110	--	--	--	--	H	4.00	--	--	.3	NHWRD 247
SCW 130	6.8	04-08-86	75	80	U	--	--	--	--	Aries Engineer
SCW 131	6.3	04-18-86	80	83	U	--	--	--	--	Granite
SCW 132	9.5	04-16-86	85	91	U	--	--	--	--	Granite
SCW 133	13.9	10-26-89	10	20	U	--	--	--	--	Dunn Geo
SCW 134	13.3	10-10-89	10	20	U	--	--	--	--	Dunn Geo
					Tilton					
TSB 1	--	--	--	--	--	--	--	--	--	NHDOT
TSB 3	--	--	--	--	--	--	--	--	--	NHDOT
TSB 4	.3	05-18-88	--	--	U	--	--	--	--	--
TSB 5	.6	05-19-88	--	--	U	--	--	--	--	--
TSW 1	12	08-15-68	--	--	--	--	--	--	--	Layne
TSW 2	9	12-10-68	--	--	--	--	--	--	--	Layne
TSW 4	14.1	02-20-86	15	25	U	--	--	--	--	Con-Tec, Inc
TSW 5	19.7	02-18-86	45	50	U	--	--	--	--	Con-Tec, Inc
TSW 6	14.1	02-20-86	15	25	U	--	--	--	--	Con-Tec, Inc
TSW 7	1.02	03-03-86	41	46	U	--	--	--	--	Con-Tec, Inc
TSW 8	14	03-21-86	15	30	U	--	--	--	--	Con-Tec, Inc
TSW 9	14	03-19-86	15	30	U	--	--	--	--	Con-Tec, Inc
TSW 10	6.5	03-30-86	3	13	U	--	--	--	--	Con-Tec, Inc
TSW 11	17.4	02-28-89	16	26	U	--	--	--	--	Soil Expl.
TSW 12	22.5	02-28-89	20	30	U	--	--	--	--	Soil Expl.
TSW 13	--	--	65	75	U	--	--	--	--	Soil Expl.
TSW 14	21.1	02-28-89	20	30	U	--	--	--	--	Soil Expl.
TSW 15	12.9	10-26-89	5	15	U	--	--	--	--	Kennedy
TSW 16	6.76	01-29-90	5	15	U	--	--	--	--	Aries Engineer
TSW 17	4.52	01-29-90	5	15	U	--	--	--	--	Aries Engineer.
TSW 18	5.23	01-29-90	5	15	U	--	--	--	--	Aries Engineer
TSW 19	1.84	01-29-90	5	15	U	--	--	--	--	Aries Engineer.
TSW 20	5.63	01-29-90	5	15	U	--	--	--	--	Aries Engineer
TSW 21	8.92	01-29-90	5	15	U	--	--	--	--	Aries Engineer
TSW 22	9.23	01-29-90	5	15	U	--	--	--	--	Aries Engineer.
TSW 23	4.28	01-29-90	5	15	U	--	--	--	--	Aries Engineer
TSW 24	7.41	06-13-91	--	--	H	--	--	--	--	Gilbert, L.
TSW 25	20.0	06-07-84	--	--	Z	20.0	--	--	1.0	NHWRD 280
TSW 26	20.0	11-02-84	--	--	C	10.0	--	--	2.0	NHWRD 427
TSW 28	--	--	--	--	H	10.0	--	--	.5	NHWRD 1
TSW 33	5.0	06-20-85	--	--	H	--	--	--	--	NHWRD 536
TSW 34	--	--	--	--	H	2.00	--	--	.5	NHWRD 319
TSW 35	--	--	--	--	H	6.00	--	--	.5	NHWRD 319
TSW 36	--	--	--	--	H	5.00	--	--	.5	NHWRD 319
TSW 40	10.0	10-26-87	--	--	H	4.00	--	--	1.0	NHWRD 192
TSW 41	--	--	--	--	H	6.00	--	--	.5	NHWRD 319
TSW 42	--	--	--	--	H	15.0	--	--	.5	NHWRD 319
TSW 43	--	--	--	--	H	30.0	--	--	1.0	NHWRD 192
TSW 44	--	--	--	--	C	1.00	--	--	--	NHWRD 319
TSW 45	--	--	--	--	H	2.00	--	--	.5	NHWRD 319

Table A-1. Description of selected wells, borings, and springs in the Winnipesaukee River Basin, central New Hampshire

Local site number		Lat-itude	Long-itude	Owner or user	Date of con-struction	Ele-vat-tion (feet)	Diameter of casing (inches)	Depth to bottom of casing (feet)	Casing mater-ial	Type of fin-ish	Type of site
				BELKNAP COUNTY							
				Tilton—*Continued*							
TSW	49	432920	0713145	Lyons, S.	02-26-88	520	--	99.0	--	X	BrW
TSW	50	432902	0713202	Dion, R.	07-11-88	500	--	149	--	X	BrW
TSW	52	432736	0713229	Champagne, W.	08-22-88	480	--	139	--	X	BrW
TSW	55	433004	0713050	Bayside Landing	11-07-88	485	--	119	--	X	BrW
TSW	57	432901	0713155	Blakeslee	11-10-88	500	--	114	--	X	BrW
TSW	58	432901	0713156	Nielson, C.	11-07-88	495	--	109	--	X	BrW
TSW	59	432905	0713154	Lynch, B.	11-03-88	500	--	111	--	X	BrW
TSW	60	432900	0713154	Nielson, P.	11-02-88	490	--	104	--	X	BrW
TSW	61	432909	0713155	Thompson, M.	11-01-88	520	--	56.0	--	--	--
TSW	65	432735	0713236	Ritarick, J.	11-23-88	480	--	154	--	X	BrW
TSW	67	432713	0713410	Super 8 Hotel	01-18-89	480	--	144	--	X	BrW
TSW	69	432846	0713228	DES-Lochmere Xtra Mart	03-20-89	540	--	76.0	--	G	--
TSW	80	432730	0713343	Fisher Management Co.	10-29-92	490	8	133	S	O	--
				CARROLL COUNTY							
				Moultonborough							
MWA	1	434403	0712152	unknown	04-21-92	550	--	--	--	--	Bor
MWA	2	434402	0712155	unknown	04-21-92	550	--	--	--	--	Bor
MWW	1	434420	0712416	Fowler	04-19-84	580	--	19.0	--	X	BrW
MWW	2	434423	0712422	Buoniello	03-23-84	520	--	20.0	--	X	BrW
MWW	3	434423	0712420	Buoniello	03-26-84	520	--	19.0	--	X	BrW
MWW	4	434501	0712316	Harkins, G.	08-10-84	560	--	113	--	X	BrW
MWW	5	434421	0712900	Schultz, W.	11-06-84	600	--	19.0	--	X	BrW
MWW	6	434613	0712206	Werien, R.	10-18-84	580	--	19.0	--	X	BrW
MWW	7	434407	0712837	Allen, D.	07-20-85	580	--	20.0	--	X	BrW
MWW	9	434508	0712321	Kelly, W.	07-01-85	570	--	64.0	--	X	BrW
MWW	10	434456	0712257	MacPhail, L.	08-06-84	580	--	80.0	--	X	BrW
MWW	11	434531	0712326	Richardson, V.	09-19-85	580	--	57.0	--	X	BrW
MWW	12	434409	0712838	Mills, L.	08-15-85	580	--	20.0	--	X	BrW
MWW	15	434522	0712338	Covell, E.	04-03-87	600	--	140	--	X	BrW
MWW	16	434518	0712346	Holden, S.	07-16-87	600	--	49.0	--	X	BrW
MWW	18	434422	0712830	Mardis, S.	05-08-86	560	--	20.0	--	X	BrW
MWW	19	434521	0712257	White, Jeff	10-30-90	575	2	29.5	P	S	Bor
MWW	20	434253	0712009	Vappi, Frank	10-29-90	600	2	27.5	P	S	Bor
MWW	21	434540	0712248	Rush, Everett	--	620	--	--	--	--	Dug
MWW	23	434329	0712635	Ramage	04-24-84	530	--	39.0	--	X	BrW
MWW	30	434359	0712816	Frustino, G.	08-14-84	540	--	24.0	--	X	BrW
MWW	31	434321	0712624	Sullivan, D.	08-24-84	560	--	59.0	--	X	BrW
MWW	33	434323	0712628	Bonnell, H.	11-09-84	540	--	109	--	X	BrW
MWW	35	434203	0712141	Mitra	10-25-84	510	--	64.0	--	X	BrW
MWW	36	434233	0712102	Woodworth, R.	11-25-84	530	--	43.0	--	X	BrW
MWW	52	434233	0712149	Curtis	12-14-84	540	--	39.0	--	X	BrW
MWW	53	434206	0712115	Cobham, W.	12-18-84	515	--	39.0	--	X	BrW
MWW	54	434132	0712413	Richards, R.	11-15-85	520	--	40.0	--	X	BrW
MWW	55	434205	0712139	Anagnos	11-15-85	610	--	80.0	--	X	BrW
MWW	64	434442	0712307	Keyser, D.	03-23-84	540	--	50.0	--	X	BrW
MWW	66	434402	0712806	Passamonti, J.	06-07-84	540	--	20.0	--	X	BrW
MWW	68	434311	0712617	Wheeler, R.	09-08-84	520	--	21.0	--	X	BrW
MWW	70	434325	0712553	Abbott, H.	10-25-84	560	--	22.0	--	X	BrW
MWW	71	434211	0712203	Caplis	11-27-84	600	--	20.0	--	X	BrW
MWW	72	434233	0712222	Snuffer, C.	03-21-84	530	--	131	--	X	BrW

Local site number	Water level Depth (feet)	Water level Date (mm-dd-yy)	Top of screen (feet)	Bottom of screen (feet)	Use of water	Yield (gal/min)	Drawdown (feet)	Specific capacity	Pumping period (hours)	Driller or NHWRD number
					BELKNAP COUNTY					
					Tilton–*Continued*					
TSW 49	--	--	--	--	P	8.00	--	--	0.3	NHWRD 247
TSW 50	--	--	--	--	H	7.00	--	--	.3	NHWRD 247
TSW 52	--	--	--	--	H	20.0	--	--	.3	NHWRD 247
TSW 55	--	--	--	--	H	10.0	--	--	.8	NHWRD 406
TSW 57	15.0	11-11-88	--	--	H	2.00	--	--	.5	NHWRD 126
TSW 58	40.0	11-08-88	--	--	H	2.00	--	--	.5	NHWRD 126
TSW 59	30.0	11-05-88	--	--	H	12.0	--	--	.5	NHWRD 123
TSW 60	30.0	11-04-88	--	--	H	4.00	--	--	.5	NHWRD 126
TSW 61	25.0	11-01-88	--	--	H	15.0	--	--	1.0	NHWRD 126
TSW 65	20.0	11-25-88	--	--	H	6.00	--	--	.5	NHWRD 142
TSW 67	--	--	--	--	C	50.0	--	--	.3	NHWRD 247
TSW 69	19.0	03-02-89	--	--	U	--	--	--	--	NHWRD 141
TSW 80	--	--	--	--	C	--	--	--	--	L. Cushing
					CARROLL COUNTY					
					Moultonborough					
MWA 1	--	04-21-92	--	--	--	--	--	--	--	USGS
MWA 2	8.2	04-21-92	--	--	--	--	--	--	--	USGS
MWW 1	--	--	--	--	H	11.0	--	--	.5	NHWRD 319
MWW 2	--	--	--	--	H	2.00	--	--	.5	NHWRD 319
MWW 3	--	--	--	--	H	3.00	--	--	.5	NHWRD 319
MWW 4	23.0	08-10-84	--	--	H	--	--	--	--	NHWRD 22
MWW 5	33.0	11-07-84	--	--	H	1.50	--	--	1.0	NHWRD 3
MWW 6	20.0	10-30-84	--	--	H	7.00	--	--	1.0	NHWRD 90
MWW 7	--	--	--	--	H	1.50	--	--	.5	NHWRD 315
MWW 9	--	--	--	--	H	20.0	--	--	1.0	NHWRD 192
MWW 10	--	--	--	--	H	20.0	--	--	.5	NHWRD 175
MWW 11	--	--	--	--	H	20.0	--	--	.5	NHWRD 175
MWW 12	5.0	08-20-85	--	--	H	6.00	--	--	.5	NHWRD 175
MWW 15	--	--	--	--	H	.25	--	--	.5	NHWRD 22
MWW 16	15.0	07-16-87	--	--	H	2.00	--	--	.5	NHWRD 22
MWW 18	--	--	--	--	H	2.00	--	--	.5	NHWRD 175
MWW 19	8.23	07-02-91	29.5	32	U	--	--	--	--	USGS
MWW 20	10.6	07-02-91	27.5	30	U	--	--	--	--	USGS
MWW 21	2.68	06-18-91	--	--	U	--	--	--	--	--
MWW 23	7.0	04-26-84	--	--	H	2.50	--	--	1.0	NHWRD 3
MWW 30	--	--	--	--	H	2.00	--	--	1.0	NHWRD 90
MWW 31	--	--	--	--	H	3.00	--	--	1.0	NHWRD 90
MWW 33	25.0	11-13-84	--	--	H	1.50	--	--	.5	NHWRD 22
MWW 35	15.0	10-29-84	--	--	H	1.50	--	--	1.0	NHWRD 90
MWW 36	25.0	11-26-84	--	--	H	2.00	--	--	1.0	NHWRD 397
MWW 52	--	--	--	--	H	2.25	--	--	1.0	NHWRD 90
MWW 53	--	--	--	--	H	4.00	--	--	1.0	NHWRD 90
MWW 54	3.0	11-15-85	--	--	H	6.00	--	--	--	NHWRD 819
MWW 55	--	--	--	--	H	1.00	--	--	.5	NHWRD 319
MWW 64	--	--	--	--	H	13.0	--	--	.5	NHWRD 20
MWW 66	--	--	--	--	H	1.75	--	--	.5	NHWRD 20
MWW 68	--	--	--	--	H	4.00	--	--	.5	NHWRD 20
MWW 70	--	--	--	--	H	1.00	--	--	.5	NHWRD 20
MWW 71	--	--	--	--	H	30.0	--	--	.5	NHWRD 20
MWW 72	--	--	--	--	H	6.00	--	--	.5	NHWRD 20

Table A-1. Description of selected wells, borings, and springs in the Winnipesaukee River Basin, central New Hampshire

Local site number	Lat-itude	Long-itude	Owner or user	Date of con-struction	Ele-vat-tion (feet)	Diameter of casing (inches)	Depth to bottom of casing (feet)	Casing mater-ial	Type of fin-ish	Type of site
				CARROLL COUNTY						
				Moultonborough—*Continued*						
MWW 81	434226	0712342	Merryfield Nelson	08-27-85	540	--	20.0	--	X	BrW
MWW 84	434316	0712229	Difazio, R.	10-24-85	520	--	40.0	--	X	BrW
MWW 88	434340	0712213	& E. McGuigan, D.	06-04-86	550	--	80.0	--	X	BrW
MWW 96	434233	0712338	Smalley, R.	05-05-87	540	--	20.0	--	X	BrW
MWW 101	434342	0712215	Hesseltine	06-13-87	560	--	79.0	--	X	BrW
MWW 103	434349	0712239	Lundari, J.	06-29-87	510	--	36.0	--	X	BrW
MWW 106	434254	0712242	T & C Bldrs	08-08-87	520	--	20.0	--	X	BrW
MWW 111	434353	0712215	Duclos, R.	10-20-86	540	--	59.0	--	X	BrW
MWW 114	434236	0712724	Straffordshire Condo	07-23-86	520	--	30.0	--	X	BrW
MWW 116	434230	0712524	Levesque, F.	07-25-86	515	--	20.0	--	X	BrW
MWW 120	434230	0712521	& C. Rix, C.	09-19-86	510	--	40.0	--	X	BrW
MWW 132	434320	0712552	Blackadar, W.	06-23-86	570	--	20.0	--	X	BrW
MWW 153	434347	0712219	MacDonald, A.	03-31-88	540	--	72.0	--	X	BrW
MWW 155	434402	0712811	& J. McKinnon, J.	09-05-85	535	--	19.0	--	X	BrW
MWW 165	434344	0712231	Chen, M.	04-15-88	520	--	110	--	X	BrW
MWW 171	434543	0712147	Rice, M.	07-01-88	860	--	40.0	--	X	BrW
MWW 177	434550	0712257	Poole, D.	07-08-87	640	--	40.0	--	X	BrW
MWW 179	434155	0712025	Broadbent	07-14-87	600	--	140	--	X	BrW
MWW 180	434146	0712134	Jannson, B.	06-02-87	520	--	40.0	--	X	BrW
MWW 181	434241	0712228	Sampson, J.	06-01-87	520	--	29.0	--	X	BrW
MWW 183	434455	0712308	Gravelle, K.	02-11-87	560	--	100	--	X	BrW
MWW 187	434524	0712256	& L. White, W.	11-19-87	590	--	40.0	--	X	BrW
MWW 194	434521	0712348	Town of Moultonborough	08-13-87	620	--	40.0	--	X	BrW
MWW 197	434522	0712346	Town of Moultonborough	07-08-87	580	--	60.0	--	X	BrW
MWW 198	434400	0712808	Rose, J.	07-01-88	540	--	20.0	--	X	BrW
MWW 199	434359	0712806	Welch	02-24-88	540	--	40.0	--	X	BrW
MWW 201	434252	0712238	Richard Murphy Const	05-26-88	510	--	40.0	--	X	BrW
MWW 203	434541	0712313	Peaslee, E.	05-20-88	580	--	40.0	--	X	BrW
MWW 206	434338	0712221	Nelson, J.	09-14-88	520	--	54.0	--	X	BrW
MWW 207	434147	0712135	Zimmer, V.	09-28-88	520	--	29.0	--	X	BrW
MWW 210	434551	0712540	Knu, D.	10-20-88	670	--	61.0	--	X	BrW
MWW 214	434421	0712822	Lessard, R.	10-28-88	560	--	20.0	--	X	BrW
MWW 217	434242	0712253	Richard Murphy Const	01-13-89	540	--	40.0	--	X	BrW
MWW 218	434242	0712249	Richard Murphy Const	01-10-89	530	--	40.0	--	X	BrW
MWW 219	434242	0712252	Richard Murphy Const	01-07-89	540	--	40.0	--	X	BrW
MWW 220	434500	0712311	Moreau	12-05-88	560	--	163	--	X	BrW
MWW 221	434323	0712557	Autenzio, R.	01-31-88	570	--	19.0	--	X	BrW
MWW 222	434544	0712203	Allan, D.	01-13-89	800	--	99.0	--	X	BrW
MWW 225	434607	0712212	Wheely, P.	10-05-88	810	--	87.0	--	X	BrW
MWW 227	434313	0712620	& M. Vitas, T.	12-17-88	520	--	377	--	X	BrW
MWW 228	434232	0712225	Puntonio, J.	11-17-88	540	--	60.0	--	X	BrW
MWW 232	434242	0712323	Chapman, D.	06-09-89	525	--	19.0	--	X	BrW
MWW 234	434521	0712246	Shaw, D.	07-15-89	600	--	67.0	--	X	BrW
MWW 238	434234	0712230	Cordello, J.	05-24-89	540	--	19.0	--	X	BrW
MWW 257	434401	0712802	Casella, R.	09-27-88	540	--	26.0	--	X	BrW
MWW 258	434219	0712342	Salvati, I.	10-06-88	540	--	19.0	--	X	BrW
MWW 265	434213	0712353	Ahne, J.	07-01-88	540	--	19.0	--	X	BrW
MWW 275	434251	0712104	Anderson, A.	12-18-89	560	--	80.0	--	X	BrW
MWW 287	434129	0712422	Middlebrook, B.	06-27-90	510	--	38.0	--	X	BrW
MWW 295	434230	0712236	Mover, L.	03-02-89	560	--	40.0	--	X	BrW
MWW 301	434537	0712303	Hoyt, F.	07-13-89	600	--	25.0	--	X	BrW
MWW 303	434128	0712425	Hazel, R.	11-01-89	510	--	40.0	--	X	BrW
MWW 304	434200	0712111	Young, R.	05-15-90	510	--	--	--	--	Dug
MWW 307	434213	0712136	Smith, B.	10-05-90	540	--	34.0	--	X	BrW
MWW 309	434225	0712309	Morril, S.	01-23-90	520	--	40.0	--	X	BrW

Local site number	Water level Depth (feet)	Water level Date (mm-dd-yy)	Top of screen (feet)	Bottom of screen (feet)	Use of water	Yield (gal/min)	Drawdown (feet)	Specific capacity	Pumping period (hours)	Driller or NHWRD number
					CARROLL COUNTY					
					Moultonborough–*Continued*					
MWW 81	--	--	--	--	H	50.0	--	--	0.5	NHWRD 20
MWW 84	15.0	10-24-85	--	--	H	15.0	--	--	.5	NHWRD 20
MWW 88	--	--	--	--	H	2.00	--	--	.5	NHWRD 1
MWW 96	--	--	--	--	H	1.50	--	--	.5	NHWRD 319
MWW 101	30.0	06-14-87	--	--	H	3.00	--	--	.3	NHWRD 126
MWW 103	--	--	--	--	H	8.00	--	--	.5	NHWRD 315
MWW 106	20.0	08-11-87	--	--	H	12.0	--	--	.3	NHWRD 126
MWW 111	20.0	10-23-86	--	--	H	1.50	--	--	1.0	NHWRD 192
MWW 114	--	--	--	--	P	100	--	--	.5	NHWRD 20
MWW 116	--	--	--	--	H	20.0	--	--	.5	NHWRD 20
MWW 120	--	--	--	--	H	4.00	--	--	.5	NHWRD 20
MWW 132	--	--	--	--	H	4.00	--	--	.5	NHWRD 20
MWW 153	25.0	04-02-88	--	--	H	1.00	--	--	1.0	NHWRD 22
MWW 155	--	--	--	--	H	6.00	--	--	1.0	NHWRD 90
MWW 165	7.0	04-15-88	--	--	H	2.50	--	--	1.0	NHWRD 3
MWW 171	60.0	07-05-88	--	--	H	12.0	--	--	.5	NHWRD 22
MWW 177	30.0	07-09-87	--	--	H	30.0	--	--	.5	NHWRD 20
MWW 179	--	--	--	--	H	10.0	--	--	.5	NHWRD 20
MWW 180	--	--	--	--	H	4.00	--	--	.5	NHWRD 20
MWW 181	3.0	06-02-87	--	--	H	7.00	--	--	.5	NHWRD 20
MWW 183	--	--	--	--	H	10.0	--	--	.5	NHWRD 20
MWW 187	--	--	--	--	H	1.00	--	--	.5	NHWRD 20
MWW 194	30.0	08-30-87	--	--	P	1.50	--	--	.5	NHWRD 20
MWW 197	--	--	--	--	P	.00	--	--	.5	NHWRD 20
MWW 198	10.0	07-02-88	--	--	H	4.00	--	--	.5	NHWRD 20
MWW 199	40.0	02-25-88	--	--	H	1.00	--	--	.5	NHWRD 20
MWW 201	--	--	--	--	H	4.00	--	--	.5	NHWRD 20
MWW 203	--	--	--	--	C	20.0	--	--	.5	NHWRD 20
MWW 206	--	--	--	--	H	2.50	--	--	.5	NHWRD 319
MWW 207	--	--	--	--	H	1.00	--	--	.5	NHWRD 319
MWW 210	--	--	--	--	H	1.00	--	--	.5	NHWRD 319
MWW 214	--	--	--	--	H	10.0	--	--	.5	NHWRD 20
MWW 217	--	--	--	--	P	.00	--	--	.5	NHWRD 20
MWW 218	30.0	01-11-89	--	--	P	24.0	--	--	.5	NHWRD 20
MWW 219	20.0	01-08-89	--	--	P	5.00	--	--	.5	NHWRD 20
MWW 220	--	--	--	--	H	--	--	--	--	NHWRD 90
MWW 221	--	--	--	--	C	2.00	--	--	.5	NHWRD 90
MWW 222	--	--	--	--	H	2.00	--	--	--	NHWRD 90
MWW 225	10.0	10-07-88	--	--	H	.50	--	--	.5	NHWRD 142
MWW 227	10.0	12-19-88	--	--	H	4.00	--	--	.5	NHWRD 142
MWW 228	15.0	11-18-88	--	--	H	2.50	--	--	.5	NHWRD 142
MWW 232	6.0	06-12-89	--	--	H	11.0	--	--	1.0	NHWRD 534
MWW 234	40.0	07-16-89	--	--	H	5.00	--	--	1.0	NHWRD 3
MWW 238	--	--	--	--	H	3.50	--	--	.5	NHWRD 90
MWW 257	--	--	--	--	H	30.0	--	--	1.0	NHWRD 90
MWW 258	--	--	--	--	H	10.0	--	--	1.0	NHWRD 90
MWW 265	--	--	--	--	H	10.0	--	--	1.0	NHWRD 90
MWW 275	65.0	12-22-89	--	--	H	.50	--	--	1.0	NHWRD 22
MWW 287	--	--	--	--	H	60.0	--	--	1.0	NHWRD 90
MWW 295	--	--	--	--	H	15.0	--	--	.5	NHWRD 20
MWW 301	--	--	--	--	H	20.0	--	--	.5	NHWRD 20
MWW 303	--	--	--	--	H	4.00	--	--	.5	NHWRD 20
MWW 304	6.0	05-15-90	--	--	H	10.0	--	--	3.0	NHWRD 125
MWW 307	20.0	10-06-90	--	--	H	2.25	--	--	.5	NHWRD 20
MWW 309	8.0	01-24-90	--	--	H	25.0	--	--	.5	NHWRD 20

Table A-1. Description of selected wells, borings, and springs in the Winnipesaukee River Basin, central New Hampshire

Local site number	Latitude	Longitude	Owner or user	Date of construction	Elevation (feet)	Diameter of casing (inches)	Depth to bottom of casing (feet)	Casing material	Type of finish	Type of site
				CARROLL COUNTY						
				Moultonborough—*Continued*						
MWW 310	434150	0712025	Terry, J.	01-26-90	560	--	100	--	X	BrW
MWW 316	434221	0712315	McTwigan, G.	09-27-90	540	--	30.0	--	X	BrW
MWW 321	434534	0712316	Murphy, K.	09-03-90	580	--	29.0	--	X	BrW
MWW 323	434407	0712156	Mason, T.	10-20-90	550	--	--	--	X	BrW
MWW 324	434408	0712158	Mason, T.	10-25-90	550	--	50.0	--	X	BrW
MWW 326	434335	0712643	Wood & Clay	12-15-90	520	--	33.0	--	X	BrW
MWW 330	434535	0712153	Cameron, D.	12-26-89	840	--	31.0	--	X	BrW
MWW 331	434306	0712556	Viccard, N.	12-19-89	590	--	40.0	--	X	BrW
MWW 332	434624	0712419	Hume, D.	11-09-89	580	--	40.0	--	X	BrW
MWW 334	434341	0712229	Roach, E.	10-04-89	510	--	105	--	X	BrW
MWW 335	434359	0712834	Soltis	10-11-89	550	--	45.0	--	X	BrW
MWW 339	434359	0712207	Economo, L.	08-31-90	540	--	88.0	--	X	BrW
MWW 340	434331	0712833	McAntire, F.	03-22-90	580	--	60.0	--	X	BrW
MWW 343	434243	0712231	Landrine, J.	06-12-90	520	--	40.0	--	X	BrW
MWW 355	434522	0712311	Carson, C.	05-14-91	580	--	29.0	--	X	BrW
				Sandwich						
SEW 10	434821	0712634	Pohl, P.	03-26-87	650	--	40.0	--	X	BrW
SEW 15	434842	0712610	Gabriel Jr, R.	07-03-86	660	--	43.0	--	X	BrW
SEW 21	434925	0712520	Quimby, L.	06-07-85	760	--	39.0	--	X	BrW
SEW 31	434900	0712453	Paterno, B.	08-20-86	640	--	1.0	--	--	Dug
SEW 49	434905	0712446	Seeley, M.	03-21-88	670	--	40.0	--	X	BrW
SEW 50	434734	0712652	Toby Eaton Bldrs	03-09-88	620	--	94.0	--	X	BrW
SEW 53	434829	0712629	Hadley, T.	05-13-88	680	--	40.0	--	X	BrW
SEW 60	434822	0712615	Sandwich Home Ind	07-06-88	650	--	40.0	--	X	BrW
SEW 61	434826	0712630	Kimball, G.	05-23-88	680	--	40.0	--	X	BrW
SEW 105	434825	0712624	Houston, A.	03-01-89	660	--	40.0	--	X	BrW
SEW 108	434738	0712655	Rawson, J.	08-06-90	630	--	39.0	--	X	BrW
SEW 150	434847	0712557	Nolan	09-18-85	660	--	34.0	--	X	BrW
SEW 151	434824	0712630	Piper, D.	06-11-85	660	--	139	--	X	BrW
				Tuftonboro						
TZA 1	434208	0711507	Tuftonboro Landfill	08- -74	700	--	--	--	--	Bor
TZA 2	434159	0711506	Tuftonboro Landfill	08- -74	700	--	--	--	--	Bor
TZA 3	434155	0711510	Tuftonboro Landfill	08- -74	680	--	--	--	--	Bor
TZA 4	434158	0711514	Tuftonboro Landfill	08- -74	680	--	--	--	--	Bor
TZA 5	434205	0711514	Tuftonboro Landfill	08- -74	700	--	--	--	--	Bor
TZA 6	434211	0711511	Tuftonboro Landfill	08- -74	700	--	--	--	--	Bor
TZA 7	434213	0711807	Berry, T	07-31-90	585	--	--	--	--	Bor
TZA 8	434159	0711807	Berry, T	07-31-90	575	--	--	--	--	Bor
TZA 9	433814	0711517	Hunter, S.	10-25-90	535	--	--	--	--	Bor
TZA 10	433854	0711640	Tuftonboro, Town of	06-27-91	510	--	--	--	--	Bor
TZA 12	434051	0711721	Nash Comp.	09-09-87	520	--	--	--	--	Bor
TZA 13	434052	0711723	Nash Comp.	09-10-87	520	--	--	--	--	Bor
TZA 14	434053	0711727	Nash Comp.	09-11-87	515	--	--	--	--	Bor
TZA 15	433931	0711558	McWhirter, George	07-23-91	535	--	--	--	--	Bor
TZA 16	434158	0711557	Sargent, Fred	07-26-91	640	--	--	--	--	Bor
TZA 17	433811	0711438	State Rte. 190A	10-23-90	560	--	--	--	--	Bor
TZA 18	434006	0711547	Bill Stockman	10-13-92	595	--	--	--	--	Bor
TZW 1	434210	0711509	Hunter, Steven	--	690	--	--	--	--	--
TZW 2	434211	0711437	State Rte. 171	10-29-90	690	--	--	--	S	Bor
TZW 3	434203	0711727	Detwiler	06-28-91	577	2	51	P	S	Bor
TZW 4	434002	0711523	Unknown	--	640	--	--	--	W	Dug
TZW 5	434043	0711600	Williams, Barbara	--	585	--	--	--	W	Dug
TZW 6	434221	0711507	Smith, Doris	--	760	--	--	--	W	Dug

–Continued

Local site number	Water level Depth (feet)	Water level Date (mm-dd-yy)	Top of screen (feet)	Bottom of screen (feet)	Use of water	Yield (gal/min)	Drawdown (feet)	Specific capacity	Pumping period (hours)	Driller or NHWRD number
CARROLL COUNTY										
Moultonborough–*Continued*										
MWW 310	35.0	01-27-90	--	--	H	30.0	--	--	0.5	NHWRD 20
MWW 316	--	--	--	--	H	3.00	--	--	1.0	NHWRD 90
MWW 321	--	--	--	--	H	1.50	--	--	.5	NHWRD 319
MWW 323	--	--	--	--	P	30.0	--	--	1.0	NHWRD 3
MWW 324	--	--	--	--	P	40.0	--	--	1.0	NHWRD 3
MWW 326	--	--	--	--	H	2.00	--	--	.5	NHWRD 319
MWW 330	20.0	12-26-89	--	--	H	40.0	--	--	.5	NHWRD 142
MWW 331	--	--	--	--	H	1.25	--	--	.5	NHWRD 142
MWW 332	30.0	11-11-89	--	--	H	.75	--	--	.5	NHWRD 142
MWW 334	10.0	10-05-89	--	--	H	1.00	--	--	.5	NHWRD 142
MWW 335	20.0	10-12-89	--	--	H	75.0	--	--	.5	NHWRD 142
MWW 339	10.0	09-01-90	--	--	H	2.00	--	--	.5	NHWRD 142
MWW 340	20.0	03-23-90	--	--	H	3.50	--	--	.5	NHWRD 142
MWW 343	20.0	06-13-90	--	--	H	1.00	--	--	.5	NHWRD 142
MWW 355	--	--	--	--	H	50.0	--	--	.5	NHWRD 319
Sandwich										
SEW 10	--	--	--	--	H	.50	--	--	1.0	NHWRD 22
SEW 15	--	--	--	--	H	5.00	--	--	1.0	NHWRD 192
SEW 21	--	--	--	--	H	2.50	--	--	2.0	NHWRD 3
SEW 31	--	--	--	--	H	--	--	--	--	NHWRD 125
SEW 49	20.0	03-21-88	--	--	H	7.00	--	--	.5	NHWRD 22
SEW 50	--	--	--	--	H	8.00	--	--	.5	NHWRD 319
SEW 53	--	--	--	--	H	4.00	--	--	1.0	NHWRD 3
SEW 60	15.0	07-07-88	--	--	C	15.0	--	--	.5	NHWRD 20
SEW 61	--	--	--	--	H	5.00	--	--	.5	NHWRD 20
SEW 105	15.0	03-02-89	--	--	H	6.00	--	--	.5	NHWRD 20
SEW 108	--	--	--	--	H	10.0	--	--	.5	NHWRD 22
SEW 150	--	--	--	--	H	4.00	--	--	.5	NHWRD 1
SEW 151	--	--	--	--	H	12.0	--	--	1.0	NHWRD 90
Tuftonboro										
TZA 1	38	08- -74	--	--	U	--	--	--	--	Clattenburg
TZA 2	40	08- -74	--	--	U	--	--	--	--	Clattenburg
TZA 3	--	--	--	--	U	--	--	--	--	Clattenburg
TZA 4	--	--	--	--	U	--	--	--	--	Clattenburg
TZA 5	--	--	--	--	U	--	--	--	--	Clattenburg
TZA 6	--	--	--	--	U	--	--	--	--	Clattenburg
TZA 7	--	--	--	--	--	--	--	--	--	USGS
TZA 8	--	--	--	--	U	--	--	--	--	USGS
TZA 9	--	--	--	--	--	--	--	--	--	USGS
TZA 10	--	--	--	--	U	--	--	--	--	USGS
TZA 12	15.2	09-09-87	--	--	P	16.0	--	--	48.0	D.L. Maher CO
TZA 13	11.2	09-10-87	--	--	U	--	--	--	--	D.L. Maher CO
TZA 14	3.7	09-11-87	--	--	U	--	--	--	--	D.L. Maher CO
TZA 15	10	07-23-91	--	--	U	--	--	--	--	USGS
TZA 16	77	07-26-91	--	--	U	--	--	--	--	USGS
TZA 17	--	--	--	--	--	--	--	--	--	USGS
TZA 18	--	--	--	--	U	--	--	--	--	USGS
TZW 1	--	--	--	--	U	--	--	--	--	--
TZW 2	4.74	07-02-91	21.5	23	U	--	--	--	--	USGS
TZW 3	14.7	07-02-91	48.5	51	U	--	--	--	--	USGS
TZW 4	4.86	06-17-91	--	--	H	--	--	--	--	--
TZW 5	7.0	06-18-91	--	--	H	--	--	--	--	Owner
TZW 6	8.35	06-18-91	--	--	H	--	--	--	--	Smith

Table A-1. Description of selected wells, borings, and springs in the Winnipesaukee River Basin, central New Hampshire

Local site number		Lat-itude	Long-itude	Owner or user	Date of con-struction	Ele-vat-tion (feet)	Diameter of casing (inches)	Depth to bottom of casing (feet)	Casing mater-ial	Type of fin-ish	Type of site
				CARROLL COUNTY							
				Tuftonboro—*Continued*							
TZW	8	434201	0711634	Bean, Edward	07-24-91	600	2	20	P	S	Bor
TZW	9	434221	0711658	Thompson, Lester	07-25-91	615	2	27	P	S	Bor
TZW	11	434110	0711753	Mason	04-19-84	510	--	52.0	--	X	BrW
TZW	16	434213	0711445	Bolton, J.	12-20-84	700	--	169	--	X	BrW
TZW	18	434123	0711844	Ladd Const	11-27-84	540	--	56.0	--	X	BrW
TZW	26	433816	0711438	Morgan, E.	12-20-85	570	--	41.0	--	X	BrW
TZW	27	434117	0711832	Hanson, N.	08-27-85	515	--	84.0	--	X	BrW
TZW	29	434110	0711748	Swift, C.	11-01-85	530	--	49.0	--	X	BrW
TZW	35	433941	0711735	Johnson, B.	02-14-84	510	--	112	--	X	BrW
TZW	39	433957	0711712	Sawyer, N.	05-08-86	530	--	249	--	X	BrW
TZW	43	433919	0711706	Red Gate Cottage Colony	04-30-86	530	--	41.0	--	X	BrW
TZW	44	433745	0711555	McGrath, J.	04-24-86	520	--	20.0	--	X	BrW
TZW	47	434110	0711332	Leroux, A.	08-11-86	1080	--	20.0	--	X	BrW
TZW	48	434118	0711843	Hodges, B.	06-11-86	510	--	100	--	X	BrW
TZW	63	433915	0711651	Edge-O-Lakes Trailers	12-18-86	550	--	30.0	--	X	BrW
TZW	71	434017	0711526	Healy, B.	07-15-87	650	--	79.0	--	X	BrW
TZW	88	434217	0711723	Hunter, P.	10-22-87	660	--	29.0	--	X	BrW
TZW	95	433821	0711444	Roseen, E.	09-16-87	580	--	80.0	--	X	BrW
TZW	99	433958	0711709	Triolo, A.	04-07-88	520	--	202	--	X	BrW
TZW	102	433839	0711455	Haeger, M.	03-25-88	600	--	39.0	--	X	BrW
TZW	104	434044	0711604	Rudolph, G.	07-13-88	580	--	93.0	--	X	BrW
TZW	107	433918	0711647	Berry, S.	07-25-88	580	--	20.0	--	X	BrW
TZW	108	433924	0711523	North Country Vil	06-02-88	590	--	41.0	--	X	BrW
TZW	109	433924	0711521	North Country Vil	05-26-88	590	--	46.0	--	X	BrW
TZW	111	434208	0711803	Berry, C.	09-10-88	580	--	35.0	--	S	--
TZW	114	434018	0711524	& K. DuBrino, F.	11-17-87	650	--	80.0	--	X	BrW
TZW	116	433910	0711701	Cravotta, T.	09-14-88	510	--	40.0	--	X	BrW
TZW	128	434204	0711353	Stockman, G.	05-30-89	800	--	80.0	--	X	BrW
TZW	130	434236	0711719	Gribbell, J.	04-04-89	670	--	123	--	X	BrW
TZW	132	434153	0711802	Hersey, H.	06-14-89	560	--	60.0	--	X	BrW
TZW	133	434137	0711831	Beldings	04-29-89	570	--	123	--	X	BrW
TZW	137	433951	0711703	Feeley, J.	09-09-89	510	--	141	--	X	BrW
TZW	139	433923	0711518	North County Village	05-04-88	600	--	45.0	--	X	BrW
TZW	142	434055	0711731	Bob Baker Ent	05-25-88	510	--	70.0	--	X	BrW
TZW	144	434050	0711634	O. T. Patrol Shed, D.	05-01-89	580	--	120	--	X	BrW
TZW	145	434119	0711907	Mazerka, E.	10-31-89	520	--	137	--	X	BrW
TZW	148	433939	0711718	Onufrak, M.	11-30-89	510	--	59.0	--	X	BrW
TZW	158	433759	0711430	Meehan, M.	07-09-90	580	--	89.0	--	X	BrW
TZW	163	433904	0711638	Hughes, S.	10-26-90	520	--	79.0	--	X	BrW
TZW	167	434015	0711550	Bill Stockman	10-13-92	585	2	17.5	P	S	Bor
TZW	168	434015	0711551	Bill Stockman	--	583	--	--	--	C	Dug
				Wolfeboro							
WRA	1	433627	0711119	Albee Constr.	10-26-90	600	--	--	--	--	Bor
WRA	3	433826	0710924	State Rte. 28	--	630	--	--	--	--	TH
WRS	1	433748	0711356	--	--	650	--	--	--	--	Sp
WRW	1	433657	0710957	Fernald Sta.	10-21-90	550	2	17.5	P	S	Bor
WRW	2	433444	0710824	DeVylder, Denis	--	590	--	--	--	W	Dug
WRW	3	433718	0710903	Jewell	02-22-84	580	--	37.0	--	X	BrW
WRW	4	433726	0711047	Diprizio, T.	04-02-84	680	--	37.0	--	X	BrW
WRW	6	433646	0711032	Wolfeboro Full Gospel	07-24-84	570	--	44.0	--	X	BrW
WRW	11	433642	0710904	Bickford	08-11-84	540	--	40.0	--	X	BrW
WRW	12	433635	0711129	Hersey, R.	11-27-84	600	--	99.0	--	X	BrW

Local site number	Water level Depth (feet)	Water level Date (mm-dd-yy)	Top of screen (feet)	Bottom of screen (feet)	Use of water	Yield (gal/min)	Drawdown (feet)	Specific capacity	Pumping period (hours)	Driller or NHWRD number
					CARROLL COUNTY					
					Tuftonboro–*Continued*					
TZW 8	17	07-24-91	17	20	U	--	--	--	--	USGS
TZW 9	3	07-25-91	24	27	U	--	--	--	--	USGS
TZW 11	20.0	04-20-84	--	--	H	2.00	--	--	.5	NHWRD 22
TZW 16	50.0	12-20-84	--	--	H	20.0	--	--	.5	NHWRD 22
TZW 18	20.0	11-27-84	--	--	H	3.00	--	--	1.0	NHWRD 397
TZW 26	--	--	--	--	H	.50	--	--	1.8	NHWRD 406
TZW 27	--	--	--	--	H	40.0	--	--	1.0	NHWRD 3
TZW 29	15.0	11-02-85	--	--	H	10.0	--	--	.5	NHWRD 22
TZW 35	--	--	--	--	H	6.50	--	--	.5	NHWRD 20
TZW 39	50.0	05-10-86	--	--	H	3.00	--	--	.5	NHWRD 22
TZW 43	10.0	04-30-86	--	--	P	10.0	--	--	1.0	NHWRD 3
TZW 44	--	--	--	--	H	3.50	--	--	1.0	NHWRD 3
TZW 47	--	--	--	--	H	3.00	--	--	2.0	NHWRD 406
TZW 48	18.0	06-12-86	--	--	H	4.00	--	--	.5	NHWRD 22
TZW 63	20.0	12-18-86	--	--	P	10.0	--	--	1.0	NHWRD 3
TZW 71	--	--	--	--	H	2.00	--	--	1.0	NHWRD 406
TZW 88	9.0	12-07-87	--	--	H	2.00	--	--	1.0	NHWRD 123
TZW 95	25.0	09-16-87	--	--	H	8.00	--	--	.5	NHWRD 22
TZW 99	30.0	04-11-88	--	--	H	1.50	--	--	1.0	NHWRD 22
TZW 102	--	--	--	--	H	20.0	--	--	1.0	NHWRD 3
TZW 104	25.0	07-14-88	--	--	H	8.00	--	--	.5	NHWRD 22
TZW 107	9.0	07-26-88	--	--	H	4.50	--	--	1.0	NHWRD 534
TZW 108	--	--	--	--	H	25.0	--	--	--	NHWRD 177
TZW 109	--	--	--	--	H	30.0	--	--	--	NHWRD 177
TZW 111	16.0	09-10-88	--	--	H	15.0	--	--	1.0	NHWRD 371
TZW 114	20.0	11-18-87	--	--	H	4.00	--	--	.5	NHWRD 20
TZW 116	4.0	09-16-88	--	--	H	4.50	--	--	.5	NHWRD 22
TZW 128	40.0	06-02-89	--	--	H	4.00	--	--	.5	NHWRD 22
TZW 130	--	--	--	--	H	5.00	--	--	1.0	NHWRD 3
TZW 132	--	--	--	--	H	15.0	--	--	1.0	NHWRD 3
TZW 133	--	--	--	--	H	50.0	--	--	.8	NHWRD 406
TZW 137	--	--	--	--	H	1.00	--	--	--	NHWRD 457
TZW 139	--	--	--	--	H	1.00	--	--	1.0	NHWRD 90
TZW 142	--	--	--	--	H	5.00	--	--	1.0	NHWRD 90
TZW 144	--	--	--	--	P	5.00	--	--	.5	NHWRD 140
TZW 145	--	--	--	--	H	12.0	--	--	1.5	NHWRD 90
					Tuftonboro–*Continued*					
TZW 148	10.0	12-01-89	--	--	H	5.00	--	--	1.0	NHWRD 3
TZW 158	--	--	--	--	H	6.00	--	--	.3	NHWRD 247
TZW 163	--	--	--	--	H	4.00	--	--	.5	NHWRD 247
TZW 167	12	10-13-92	17.5	20.0	U	--	--	--	--	USGS
TZW 168	--	--	--	--	I	--	--	--	--	B. Stockman
					Wolfeboro					
WRA 1	--	--	--	--	--	--	--	--	--	USGS
WRA 3	--	--	--	--	--	--	--	--	--	--
WRS 1	--	--	--	--	U	--	--	--	--	--
WRW 1	6.28	07-02-91	17.5	20	U	--	--	--	--	USGS
WRW 2	8.78	06-17-91	--	--	U	--	--	--	--	--
WRW 3	8.0	02-22-84	--	--	H	20.0	--	--	48.0	NHWRD 2
WRW 4	--	--	--	--	H	12.0	--	--	.5	NHWRD 3
WRW 6	25.0	07-24-84	--	--	H	2.00	--	--	.5	NHWRD 22
WRW 11	--	--	--	--	H	10.0	--	--	--	NHWRD 3
WRW 12	--	--	--	--	H	.25	--	--	--	NHWRD 319

Table A-1. Description of selected wells, borings, and springs in the Winnipesaukee River Basin, central New Hampshire

Local site number	Lat-itude	Long-itude	Owner or user	Date of con-struction	Ele-vat-tion (feet)	Diameter of casing (inches)	Depth to bottom of casing (feet)	Casing mater-ial	Type of fin-ish	Type of site
			CARROLL COUNTY							
			Wolfeboro—*Continued*							
WRW 19	433630	0711137	Runnals, C.	07-22-85	600	--	100	--	X	BrW
WRW 20	433615	0711100	Gamero	06-27-85	540	--	60.0	--	X	BrW
WRW 29	433618	0711038	McKechnie, W.	02-25-86	540	--	39.0	--	X	BrW
WRW 32	433720	0710907	Moran, L.	04-19-86	590	--	31.0	--	X	BrW
WRW 33	433700	0710942	Ort, F.	05-14-86	540	--	21.0	--	X	BrW
WRW 34	433626	0711137	Matte, T.	02-27-86	600	--	80.0	--	X	BrW
WRW 37	433650	0711011	Pfeifer, W.	06-21-86	540	--	104	--	X	BrW
WRW 43	433641	0710828	Griffin, B.	05-06-87	540	--	62.0	--	X	BrW
WRW 44	433640	0710827	Clark, D.	08-21-86	540	--	41.0	--	X	BrW
WRW 45	433619	0710753	Giroux, E.	08-19-86	580	--	86.0	--	X	BrW
WRW 59	433736	0711208	Sullivan, R.	05-18-87	730	--	41.0	--	X	BrW
WRW 71	433623	0710753	Mtn View Ter Partnership	09-19-87	580	--	102	--	X	BrW
WRW 72	433624	0710752	Mtn View Ter Partnership	08-20-87	580	--	108	--	X	BrW
WRW 73	433624	0710752	Mtn View Ter Partnership	09-21-87	590	--	102	--	X	BrW
WRW 74	433624	0710751	Mtn View Ter Partnership	09-22-87	590	--	94.0	--	X	BrW
WRW 75	433623	0710750	Mtn View Ter Partnership	09-23-87	590	--	102	--	X	BrW
WRW 76	433623	0710749	Mtn View Ter Partnership	09-25-87	590	--	102	--	X	BrW
WRW 78	433816	0710909	Foss, D.	10-12-87	700	--	39.0	--	X	BrW
WRW 80	433734	0711102	Papps, P.	06-29-87	700	--	41.0	--	X	BrW
WRW 81	433735	0711106	Quimby, K.	06-20-87	700	--	41.0	--	X	BrW
WRW 82	433656	0711030	Your Xtra Room Inc	01-06-86	580	--	40.0	--	X	BrW
WRW 87	433645	0711019	Wichroski	10-01-87	540	--	42.0	--	X	BrW
WRW 89	433516	0711441	Bunting, D.	05-06-88	540	--	39.0	--	X	BrW
WRW 92	433430	0710827	Buckingham, E.	05-26-88	620	--	39.0	--	X	BrW
WRW 94	433637	0710635	Bean, B.	02-01-88	660	--	42.0	--	X	BrW
WRW 102	433446	0710836	Baehrend, J.	08-05-88	590	--	93.0	--	X	BrW
WRW 104	433821	0710901	Crowther, B.	01-06-87	750	--	60.0	--	X	BrW
WRW 108	433431	0710829	Calligandes Const	11-07-88	620	--	59.0	--	X	BrW
WRW 110	433618	0710751	Hertling, M.	01-11-89	580	--	79.0	--	X	BrW
WRW 111	433510	0711433	Hess, G.	11-01-88	530	--	40.0	--	X	BrW
WRW 115	433642	0711025	Fernald, C.	05-19-89	540	--	40.0	--	X	BrW
WRW 116	433634	0711222	Streeter, E.	06-26-89	620	--	29.0	--	X	BrW
WRW 123	433624	0710804	Baldwin, H.	08-21-89	570	--	79.0	--	X	BrW
WRW 125	433435	0710834	Garnsey, F.	10-19-89	620	--	59.0	--	X	BrW
WRW 129	433631	0711141	Warren Devel Corp	11-19-90	600	--	86.0	--	X	BrW
WRW 130	433759	0710925	Bartlett, K.	05-09-90	620	--	42.0	--	X	BrW
WRW 132	433643	0710918	Hill, C.	04-17-90	540	--	31.0	--	X	BrW
WRW 138	433634	0711316	Spencer Hughes Const Deve	11-01-89	620	--	49.0	--	X	BrW
WRW 143	433732	0711059	Lin-Ho	06-27-90	680	--	40.0	--	X	BrW
WRW 145	433444	0710825	Devylder, D.	06-18-90	590	--	80.0	--	X	BrW
WRW 146	433813	0710927	Armour, C.	07-24-90	620	--	49.0	--	X	BrW
WRW 149	433647	0711008	Baldwin, P.	11-17-90	540	--	32.0	--	X	BrW
WRW 152	433512	0711435	&. M. Fischer, W.	12-03-90	520	--	37.0	--	X	BrW
WRW 154	433618	0710747	Stocton, R.	03-18-91	600	--	104	--	X	BrW
			MERRIMACK COUNTY							
			Franklin							
FKW 7	432648	0713742	Dillon, B.	04- -62	460	--	85	--	--	BrW
FKW 78	432638	0713722	--	--	408	--	--	--	--	Bor
FKW 79	432637	0713856	Cumberland Farms No. 20	02-06-90	300	2	.9	P	S	Bor
FKW 80	432637	0713856	Cumberland Farms No. 20	02-06-90	301	2	--	P	S	Bor
FKW 81	432635	0713856	Cumberland Farms No. 20	02-06-90	299	2	1.9	P	S	Bor

Local site number	Water level Depth (feet)	Water level Date (mm-dd-yy)	Top of screen (feet)	Bottom of screen (feet)	Use of water	Yield (gal/min)	Drawdown (feet)	Specific capacity	Pumping period (hours)	Driller or NHWRD number
					CARROLL COUNTY					
					Wolfeboro–*Continued*					
WRW 19	--	--	--	--	H	12.0	--	--	1.0	NHWRD 3
WRW 20	15.0	06-27-85	--	--	H	5.00	--	--	.5	NHWRD 22
WRW 29	6.0	02-26-86	--	--	H	2.00	--	--	1.0	NHWRD 3
WRW 32	3.0	04-20-86	--	--	H	12.0	--	--	1.0	NHWRD 3
WRW 33	--	--	--	--	H	3.00	--	--	1.5	NHWRD 406
WRW 34	45.0	02-28-86	--	--	H	3.50	--	--	.5	NHWRD 22
WRW 37	--	--	--	--	H	.25	--	--	1.5	NHWRD 406
WRW 43	--	--	--	--	H	.75	--	--	1.0	NHWRD 406
WRW 44	--	--	--	--	H	9.00	--	--	.8	NHWRD 406
WRW 45	15.0	08-19-86	--	--	H	2.00	--	--	1.0	NHWRD 3
WRW 59	5.0	05-19-87	--	--	H	4.50	--	--	.5	NHWRD 22
WRW 71	21.0	09-19-87	--	--	H	1.00	--	--	1.0	NHWRD 123
WRW 72	20.0	09-22-87	--	--	H	1.00	--	--	1.0	NHWRD 123
WRW 73	--	--	--	--	H	.75	--	--	1.0	NHWRD 123
WRW 74	--	--	--	--	H	.50	--	--	1.0	NHWRD 123
WRW 75	--	--	--	--	H	.75	--	--	1.0	NHWRD 123
WRW 76	22.0	09-25-87	--	--	H	.75	--	--	1.0	NHWRD 123
WRW 78	30.0	10-13-87	--	--	H	15.0	--	--	1.0	NHWRD 3
WRW 80	--	--	--	--	H	1.00	--	--	1.0	NHWRD 644
WRW 81	--	--	--	--	H	2.50	--	--	1.0	NHWRD 644
WRW 82	--	--	--	--	C	4.50	--	--	.5	NHWRD 20
WRW 87	60.0	10-01-87	--	--	H	2.0	--	--	1.0	NHWRD 22
WRW 89	--	--	--	--	H	12.0	--	--	1.0	NHWRD 3
WRW 92	10.0	05-31-88	--	--	H	1.50	--	--	.5	NHWRD 138
WRW 94	--	--	--	--	H	18.0	--	--	36.0	NHWRD 158
WRW 102	40.0	08-05-88	--	--	H	4.50	--	--	1.0	NHWRD 3
WRW 104	20.0	01-07-87	--	--	H	2.00	--	--	.5	NHWRD 20
WRW 108	--	--	--	--	H	.50	--	--	2.0	NHWRD 644
WRW 110	--	--	--	--	H	.50	--	--	1.0	NHWRD 143
WRW 111	--	--	--	--	H	15.0	--	--	1.0	NHWRD 457
WRW 115	2.0	06-01-89	--	--	H	2.75	--	--	.5	NHWRD 22
WRW 116	--	--	--	--	H	2.00	--	--	.3	NHWRD 247
WRW 123	18.0	08-22-89	--	--	H	1.00	--	--	1.0	NHWRD 123
WRW 125	25.0	10-19-89	--	--	H	12.0	--	--	1.0	NHWRD 277
WRW 129	--	--	--	--	H	1.50	--	--	.8	NHWRD 406
WRW 130	--	--	--	--	H	3.00	--	--	1.0	NHWRD 534
WRW 132	8.0	04-19-90	--	--	H	1.50	--	--	1.0	NHWRD 534
WRW 138	--	--	--	--	H	5.00	--	--	.3	NHWRD 247
WRW 143	--	--	--	--	H	5.00	--	--	1.0	NHWRD 3
WRW 145	--	--	--	--	H	100	--	--	.5	NHWRD 22
WRW 146	--	--	--	--	H	17.0	--	--	.3	NHWRD 406
WRW 149	14.0	11-17-90	--	--	H	2.00	--	--	1.0	NHWRD 277
WRW 152	10.0	12-03-90	--	--	--	15.0	--	--	36.0	NHWRD 158
WRW 154	60.0	03-25-91	--	--	H	.33	--	--	1.0	NHWRD 22
					MERRIMACK COUNTY					
					Franklin					
FKW 7	--	--	--	--	--	--	--	--	--	Thomas, B.
FKW 78	--	--	--	--	--	--	--	--	--	NHDOT
FKW 79	5.15	02-06-90	.9	10.9	U	--	--	--	--	Capital Env
FKW 80	5.74	02-06-90	4	14	U	--	--	--	--	CAPITAL ENV
FKW 81	5.34	02-06-90	1.9	11.9	U	--	--	--	--	Capital Env

Table A-1. Description of selected wells, borings, and springs in the Winnipesaukee River Basin, central New Hampshire

Local site number	Lat-itude	Long-itude	Owner or user	Date of con-struction	Ele-vat-tion (feet)	Diameter of casing (inches)	Depth to bottom of casing (feet)	Casing mater-ial	Type of fin-ish	Type of site
			MERRIMACK COUNTY							
			Franklin-*Continued*							
FKW 82	432637	0713856	Cumberland Farms No. 20	02-07-90	301	2	3.3	P	S	Bor
FKW 83	432637	0713856	Cumberland Farms No. 20	02-07-90	303	2	3.9	P	S	Bor
FKW 84	432637	0713856	Cumberland Farms No. 20	03-26-90	302	2	3.3	P	S	Bor
FKW 85	432637	0713856	Cumberland Farms No. 20	03-26-90	300	2	3.5	P	S	Bor
FKW 86	432637	0713856	Cumberland Farms No. 20	03-26-90	300	2	1	P	S	Bor
FKW 87	432635	0713856	Cumberland Farms No. 20	03-26-90	300	2	2.8	P	S	Bor
FKW 88	432635	0713856	Cumberland Farms No. 20	03-26-90	299	2	3.4	P	S	Bor
FKW 89	432632	0713857	Cumberland Farms No. 20	07-17-90	297	2	3.3	P	S	Bor
FKW 90	432633	0713856	Cumberland Farms No. 20	07-17-90	298	2	4.1	P	S	Bor
FKW 91	432634	0713856	Cumberland Farms No. 20	07-17-90	297	2	4.5	P	S	Bor
FKW 92	432634	0713856	Cumberland Farms No. 20	07-17-90	299	2	2.9	P	S	Bor
FKW 93	432635	0713856	Cumberland Farms No. 20	07-17-90	300	2	2.5	P	S	Bor
FKW 94	432635	0713858	Cumberland Farms No. 20	07-17-90	297	2	2.2	P	S	Bor
FKW 95	432631	0713856	Cumberland Farms No. 20	09-27-90	296	2	7.6	P	S	Bor
FKW 96	432633	0713856	Cumberland Farms No. 20	09-27-90	299	2	9.5	P	S	Bor
FKW 97	432635	0713856	Cumberland Farms No. 20	09-27-90	301	2	4.6	P	S	Bor
FKW 98	432634	0713856	Cumberland Farms No. 20	09-27-90	299	2	8.5	P	S	Bor
FKW 99	432632	0713857	Cumberland Farms No. 20	09-27-90	299	2	8.0	P	S	Bor
FKW 100	432634	0713856	Cumberland Farms No. 20	09-27-90	300	2	7	P	S	Bor
FKW 101	432634	0713858	Cumberland Farms No. 20	09-28-90	298	2	5.9	P	S	Bor
FKW 102	432634	0713858	Cumberland Farms No. 20	09-28-90	297	2	6.8	P	S	Bor
FKW 103	432634	0713856	Cumberland Farms No. 20	09-28-90	300	2	5.2	P	S	Bor
			Northfield							
NRB 1	432645	0713214	--	--	469	--	--	--	--	Bor
NRB 26	432635	0713721	--	--	405	--	--	--	--	Bor
NRB 27	432548	0713519	--	--	449	--	--	--	--	TH
NRB 28	432548	0713522	--	--	433	--	--	--	--	Bor
NRB 29	432515	0713535	--	--	435	--	--	--	--	Bor
NRB 30	432516	0713531	--	--	449	--	--	--	--	Bor
NRB 31	432707	0713414	--	--	456	--	--	--	--	Bor
NRB 32	432707	0713412	--	--	454	--	--	--	--	Bor
NRW 51	432603	0713556	Tilton-Northfield Aqu.	08-14-68	420	--	--	--	--	--
NRW 52	432602	0713531	Tilton-Northfield Aqu.	08-14-68	441	--	--	--	--	Bor
NRW 53	432556	0713542	Tilton-Northfield Aqu.	--	420	--	--	--	--	Bor
NRW 54	432613	0713554	Tilton-Northfield Aqu.	12-11-68	415	--	--	--	--	Bor
NRW 55	432713	0713321	--	05-22-85	468	2	54	P	S	Bor
NRW 56	432714	0713336	--	05-29-85	470	1.5	69	P	S	Bor
NRW 57	432710	0713335	--	05-30-85	480	1.5	38	P	S	Bor
NRW 58	432709	0713325	--	06-03-85	500	1.5	82	P	S	Bor
NRW 59	432555	0713529	Northfield, Town of	09-10-90	435	2	57.5	P	S	Bor
NRW 60	432555	0713529	Northfield, Town of	09-10-90	435	2	20.0	P	S	Bor
NRW 61	432614	0713624	Partridge, Ken	06-24-91	410	2	37.7	P	S	Bor
NRW 62	432613	0713508	Jenks, Joanne	--	480	--	--	--	W	Dug
NRW 89	432534	0713539	Brown, B.	09-19-85	440	--	89.0	--	X	BrW
NRW 118	432634	0713442	Dunlop, R.	09-22-87	510	--	--	--	--	Dug
NRW 119	432554	0713605	Simpson, H.	10-31-87	420	--	--	--	--	Dug
NRW 142	432531	0713541	Curtis, J.	10-21-87	420	--	49.0	--	X	BrW
NRW 146	432654	0713334	Gilbert, R.	05-31-88	500	--	150	--	X	BrW
NRW 171	432556	0713613	--	--	440	--	74.0	--	X	BrW
NRW 172	432700	0713314	Beede Electric	10-11-88	480	--	139.0	--	X	BrW
NRW 174	432553	0713620	Durand, L.	12-16-88	560	--	89.0	--	X	BrW
NRW 197	432655	0713239	Tilton-Northfield Aqu.	11-30-94	480	2.5	20.0	S	S	Bor
NRW 198	432653	0713237	Tilton-Northfield Aqu.	12-01-94	480	2.5	20.0	S	S	Bor

Local site number	Water level Depth (feet)	Water level Date (mm-dd-yy)	Top of screen (feet)	Bottom of screen (feet)	Use of water	Yield (gal/min)	Drawdown (feet)	Specific capacity	Pumping period (hours)	Driller or NHWRD number
					CARROLL COUNTY					
					Franklin–*Continued*					
FKW 82	5.52	02-07-90	3.3	13.3	U	--	--	--	--	Capital Env
FKW 83	7.57	02-07-90	3.9	13.9	U	--	--	--	--	Capital Env
FKW 84	6.80	03-28-90	3.3	13.3	U	--	--	--	--	Env Drilling
FKW 85	5.53	03-28-90	3.5	13.5	U	--	--	--	--	Env Drilling
FKW 86	5.08	03-28-90	1	11	U	--	--	--	--	Env Drilling
FKW 87	6.38	03-28-90	2.8	12.8	U	--	--	--	--	Env Drilling
FKW 88	7.03	03-28-90	3.4	13.4	U	--	--	--	--	Env Drilling
FKW 89	7.03	08-14-90	3.3	8.3	U	--	--	--	--	Env Drilling
FKW 90	8.71	07-17-90	4.1	14.1	U	--	--	--	--	Env Drilling
FKW 91	8.08	07-17-90	4.5	14.5	U	--	--	--	--	Env Drilling
FKW 92	8.09	07-17-90	2.9	12.9	U	--	--	--	--	Env Drilling
FKW 93	7.58	07-17-90	2.5	12.5	U	--	--	--	--	Env Drilling
FKW 94	3.08	07-17-90	2.2	7.2	U	--	--	--	--	Env Drilling
FKW 95	8.70	10-01-90	7.6	17.6	U	--	--	--	--	Env Drilling
FKW 96	7.9	10-01-90	9.5	19.5	U	--	--	--	--	Env Drilling
FKW 97	7.35	10-01-90	4.6	14.6	U	--	--	--	--	Env Drilling
FKW 98	8.43	10-01-90	8.5	18.5	U	--	--	--	--	Env Drilling
FKW 99	9	10-01-90	8	18.0	U	--	--	--	--	Env Drilling
FKW 100	9.85	10-01-90	7	17	U	--	--	--	--	Env Drilling
FKW 101	9.79	10-01-90	5.9	15.9	U	--	--	--	--	Env Drilling
FKW 102	11.5	10-01-90	6.8	16.8	U	--	--	--	--	Env Drilling
FKW 103	10.1	10-01-90	5.2	15.2	U	--	--	--	--	Env Drilling
					Northfield					
NRB 1	--	--	--	--	--	--	--	--	--	NHDOT
NRB 26	--	--	--	--	--	--	--	--	--	NHDOT
NRB 27	--	--	--	--	--	--	--	--	--	--
NRB 28	--	--	--	--	--	--	--	--	--	NHDOT
NRB 29	--	--	--	--	--	--	--	--	--	NHDOT
NRB 30	--	--	--	--	--	--	--	--	--	NHDOT
NRB 31	--	--	--	--	--	--	--	--	--	NHDOT
NRB 32	--	--	--	--	--	--	--	--	--	NHDOT
NRW 51	14	08-14-68	--	--	--	--	--	--	--	Layne
NRW 52	--	--	--	--	--	--	--	--	--	Layne
NRW 53	12.1	08-15-68	--	--	--	--	--	--	--	Layne
NRW 54	11.4	12-11-68	--	--	--	--	--	--	--	Layne
NRW 55	10.2	05-22-85	54	59	U	--	--	--	--	Con-Tec, Inc
NRW 56	10.5	05-29-85	69	73	U	--	--	--	--	Con-Tec, Inc
NRW 57	19.8	05-30-85	38	43	U	--	--	--	--	Con-Tec, Inc
NRW 58	28.8	06-03-85	82	85	U	--	--	--	--	Con-Tec, Inc
NRW 59	.39	07-02-91	57.5	80	U	--	--	--	--	USGS
NRW 60	5.2	07-02-91	20	30	--	--	--	--	--	USGS
NRW 61	5.47	07-02-91	37.5	40	U	--	--	--	--	USGS
NRW 62	20.8	06-13-91	--	--	U	--	--	--	--	--
NRW 89	--	--	--	--	H	--	--	--	--	NHWRD 382
NRW 118	8.0	09-24-87	--	--	H	--	--	--	--	NHWRD 536
NRW 119	6.0	11-02-87	--	--	H	--	--	--	--	NHWRD 536
NRW 142	--	--	--	--	H	15.0	--	--	.3	NHWRD 247
NRW 146	25.0	06-01-88	--	--	H	2.00	--	--	.5	NHWRD 382
NRW 171	--	--	--	--	H	--	--	--	--	NHWRD 239
NRW 172	--	--	--	--	H	20.0	--	--	1.0	NHWRD 192
NRW 174	--	--	--	--	H	25.0	--	--	.3	NHWRD 274
NRW 197	16	11-30-94	38	44	U	--	--	--	--	D.L. Maher
NRW 198	7.3	12-01-94	20	26	U	--	--	--	--	D.L.Maher

Table A-1. Description of selected wells, borings, and springs in the Winnipesaukee River Basin, central New Hampshire

MERRIMACK COUNTY

Northfield—*Continued*

Local site number	Lat-itude	Long-itude	Owner or user	Date of con-struction	Ele-vat-tion (feet)	Diameter of casing (inches)	Depth to bottom of casing (feet)	Casing mater-ial	Type of fin-ish	Type of site
NRW 199	432641	0713218	Tilton-Northfield Aqu.	12-02-94	500	2.5	61.0	S	S	Bor
NRW 200	432637	0713212	Tilton-Northfield Aqu.	12-05-94	480	2.5	68.0	S	S	Bor
NRW 201	432641	0713219	Tilton-Northfield Aqu.	12-09-94	500	2.5	62.0	S	--	Bor
NRW 202	432637	0713212	--	12-16-94	480	--	--	--	S	Bor
NRW 203	432637	0713214	Tilton-Northfield Aqu.	12-15-94	480	2.5	61.0	S	S	Bor
NRW 204	432641	0713218	Tilton-Northfield Aqu.	01-23-96	500	--	--	--	S	Bor
NRW 205	432637	0713212	--	02-23-96	480	1.5	54.0	S	S	Bor

STRAFFORD COUNTY

Middleton

Local site number	Lat-itude	Long-itude	Owner or user	Date of con-struction	Ele-vat-tion (feet)	Diameter of casing (inches)	Depth to bottom of casing (feet)	Casing mater-ial	Type of fin-ish	Type of site
MLW 11	432955	0710636	Libby, G.	08-12-85	900	--	20.0	--	X	BrW

New Durham

Local site number	Lat-itude	Long-itude	Owner or user	Date of con-struction	Ele-vat-tion (feet)	Diameter of casing (inches)	Depth to bottom of casing (feet)	Casing mater-ial	Type of fin-ish	Type of site
NFA 1	432556	0711006	New Hampshire, State of	08-15-86	510	--	--	--	--	Bor
NFA 2	432601	0711015	--	--	520	--	--	--	--	TH
NFB 3	431001	0711014	--	--	521.5	--	--	--	--	TH
NFB 26	432601	0711014	--	--	521	--	--	--	--	Bor
NFB 27	432732	0711039	--	--	--	--	--	--	--	Bor
NFW 1	432557	0710958	Larrabee, Erwin H.	00-00-73	530	--	--	--	--	Cbl
NFW 2	432552	0710952	Parsons, Frank	00-00-80	524	36	14.0	R	--	--
NFW 3	432542	0710956	Swett, Fred	--	522	36	6.5	T	--	Dug
NFW 4	432540	0710957	Swett, Fred	--	525	--	--	--	--	--
NFW 5	432539	0710953	Hersam, Richard	--	522	30	11.4	T	--	Dug
NFW 6	432544	0710954	Rollins, Doris	--	535	36	12.2	T	--	Dug
NFW 7	432534	0710955	Hockady, Frank	--	528	--	--	--	T	Dvn
NFW 8	432530	0710954	Barnes, Leonard	00-00-74	517	36	7.7	T	--	Dug
NFW 16	432559	0710941	Hunter, Virginia	--	546	48	11.9	R	--	Dug
NFW 19	432527	0710958	Clarke, Robert	00-00-78	540	--	--	--	--	Dvn
NFW 21	432531	0710855	Coleman, Sandy	00-00-78	535	36	5.0	T	T	Dug
NFW 21	432531	0710855	new well inside 36-inch well	--		2	15.0	S	--	--
NFW 27	432556	0710941	Gault, John	--	545	--	--	--	T	Dvn
NFW 28	432559	0710946	School, New Durham	00-00-66	547	--	--	--	X	--
NFW 29	432601	0710945	Lapointe, Richard	--	546	24	13.9	T	X	Dug
NFW 30	432602	0710949	Dadura, Edward	--	547	36	13.2	R	X	Dug
NFW 53	432536	0710955	--	08-13-86	545	--	--	--	P	Bor
NFW 54	432604	0710950	Stuart	08-14-86	542	2	18.0	P	P	Bor
NFW 55	432551	0710959	New Hampshire, State of	08-15-86	537	2	41.0	P	P	--
NFW 56	432546	0710951	New Durham, Town of,	09-25-86	538	2	18.0	P	P	Bor
NFW 59	432941	0710740	Peterson	08-08-84	650	--	11.0	--	--	BrW
NFW 61	432943	0710740	Morine, R.	12-10-84	650	--	19.0	--	--	BrW
NFW 62	432724	0711007	Arsenault, B.	09-19-84	640	--	100	--	--	BrW
NFW 63	432453	0710953	Ellison, S.	04-11-84	660	--	47.0	--	X	BrW
NFW 67	432854	0710935	Silva, W.	09-25-85	700	--	82.0	--	--	BrW
NFW 69	432458	0710954	Crothers, M.	09-17-85	660	--	49.0	--	--	BrW
NFW 71	432746	0711023	Parsons, F.	11-05-85	660	--	25.0	--	--	BrW
NFW 72	433023	0710706	Crosby, C.	11-08-85	860	--	62.0	--	--	BrW
NFW 76	432956	0710910	DeOrio, W.	11-19-85	640	--	25.0	--	--	BrW
NFW 77	432626	0711025	Mohr, D.	04-21-86	540	--	20.0	--	--	BrW
NFW 80	432612	0710952	Cornellisen, R.	03-28-86	540	--	39.0	--	--	BrW
NFW 81	432616	0710947	Heoer, S.	03-28-86	540	--	32.0	--	--	BrW
NFW 86	432615	0711010	Bickford, David	-- -90	545	--	--	--	W	Dug
NFW 87	432603	0710953	US Post Office, New Durham	--	545	--	--	--	W	Dug

–Continued

Local site number	Water level Depth (feet)	Water level Date (mm-dd-yy)	Top of screen (feet)	Bottom of screen (feet)	Use of water	Yield (gal/min)	Drawdown (feet)	Specific capacity	Pumping period (hours)	Driller or NHWRD number
					MERRIMACK COUNTY					
					Northfield–*Continued*					
NRW 199	2.0	12-02-94	61	67	U	--	--	--	--	D.L. Maher
NRW 200	6.9	12-05-94	70	76	U	--	--	--	--	D.L. Maher
NRW 201	11	12-09-94	60	69	U	70	1.44	49	2	D.L. Maher
NRW 202	4.6	12-16-94	62	68	U	75	.93	81	3	D.L. Maher
NRW 203	10.2	12-15-94	61	67	U	65	2.0	32.5	2	D.L. Maher
NRW 204	7.31	01-23-96	52	69	P	800	16.4	48.8	--	D.L. Maher
NRW 205	13.4	02-23-96	54	69	P	500	18.6	26.8	--	D.L. Maher
					STRAFFORD COUNTY					
					Middleton					
MLW 11	--	--	--	--	H	10.0	--	--	--	#177
					New Durham					
NFA 1	--	--	--	--	U	--	--	--	--	USGS
NFA 2	--	--	--	--	U	--	--	--	--	--
NFB 3	--	--	--	--	U	--	--	--	--	--
NFB 26	--	--	--	--	--	--	--	--	--	NHDOT
NFB 27	--	--	--	--	--	--	--	--	--	NHDOT
NFW 1	15	00-00-73	--	--	H	40	--	--	--	Bob Carr
NFW 2	11.6	12-30-80	--	--	H	--	--	--	--	--
NFW 3	2.9	12-30-80	--	--	H	--	--	--	--	--
NFW 4	12.8	12-30-80	--	--	U	--	--	--	--	--
NFW 5	8.05	12-30-80	--	--	H	--	--	--	--	--
NFW 6	7.75	12-30-80	--	--	H	--	--	--	--	--
NFW 7	--	--	--	--	H	--	--	--	--	--
NFW 8	5.2	01-02-81	--	--	H	--	--	--	--	W Hayes
NFW 16	10.1	01-07-81	--	--	H	--	--	--	--	--
NFW 19	--	--	--	--	H	--	--	--	--	Smith
NFW 21	--	--	12	15	H	--	--	--	--	Owner's Roomate
NFW 21	--	--	--	--		--	--	--	--	--
NFW 27	--	--	--	--	H	--	--	--	--	--
NFW 28	--	--	--	--	H	--	--	--	--	Bob Carr
NFW 29	10.5	01-07-81	--	--	H	--	--	--	--	--
NFW 30	10.5	01-07-81	--	--	H	--	--	--	--	--
NFW 53	19.7	12-02-86	57.5	60.0	U	--	--	--	--	USGS
NFW 54	7.95	12-02-86	18	23	U	--	--	--	--	USGS
NFW 55	10.4	12-02-86	41	46	U	--	--	--	--	USGS
NFW 56	10.5	12-02-86	18	23	U	--	--	--	--	USGS
NFW 59	--	--	--	--	H	--	--	--	--	NHWRD 406
NFW 61	30	12-12-84	--	--	H	30.0	--	--	1.0	NHWRD 90
NFW 62	45	09-19-84	--	--	H	15.0	--	--	.5	NHWRD 22
NFW 63	--	--	--	--	H	15.0	--	--	.5	NHWRD 3
NFW 67	--	--	--	--	H	3.0	--	--	2.0	NHWRD 406
NFW 69	--	--	--	--	H	4.00	--	--	--	NHWRD 177
NFW 71	15	11-05-85	--	--	H	4.00	--	--	1.0	NHWRD 158
NFW 72	--	--	--	--	H	7.50	--	--	1.2	NHWRD 406
NFW 76	--	--	--	--	H	10.0	--	--	--	NHWRD 177
NFW 77	--	--	--	--	H	3.00	--	--	.7	NHWRD 406
NFW 80	--	--	--	--	H	3.00	--	--	.5	NHWRD 319
NFW 81	20	--	--	--	H	11.0	--	--	2.0	NHWRD 158
NFW 86	15.4	06-17-91	--	--	H	--	--	--	--	--
NFW 87	6.27	06-17-91	--	--	H	--	--	--	--	--

– PAGE 93 FOLLOWS –

APPENDIX B. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire

— PAGE 95 FOLLOWS —

Table B-1. Stratigraphic Logs of Selected Wells and Borings in the Winnipesaukee River Basin, central New Hampshire

Local Site Number: First two characters are U.S. Geological Survey town code. Third-character codes are the following: **A**, auger hole; **B**, highway bridge boring; **W**, well. The numbers are sequential numbers for each town.

Depth of well: Depth of well, in feet below land-surface datum.

Depth to refusal: Depth to refusal on bedrock, in till, or on large boulders.

Depth to top: Depth to top of unit, in feet below land-surface datum.

Primary aquifer code: Primary aquifer code of well or boring; codes for geologic ages and materials are listed below.

110SDMN	Quaternary sediment, undifferentiated
111ALVM	Holocene alluvium
111SWMP	Holocene swamp deposits
111FILL	Holocene fill (artificial fill)
112OTSH	Pleistocene outwash
112LCSR	Pleistocene lacustrine deposits
112SRFD	Pleistocene stratified drift
112TILL	Pleistocene till
BEDROCK	bedrock

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
BELKNAP COUNTY						
Alton						
AHA 52	10.0	--	--	0	112SRFD	SAND Sand, fine
				10.0	112SRFD	SAND End of hole
AHA 53	25.0	--	--	0	112SRFD	SAND Sand, fine
				25.0	112SRFD	SAND End of hole
AHA 54	14.0	--	--	0	112SRFD	GRVL Gravel
				2.0	112SRFD	SAND Sand, fine
				14.0	112SRFD	SAND End of hole
AHA 55	10.0	--	--	0	112SRFD	GRVL Gravel
				2.0	112SRFD	SAND Sand, medium to coarse
				10.0	112SRFD	SAND End of hole
AHA 56	10.0	--	--	0	112SRFD	GRVL Gravel
				5.0	112SRFD	SAND Sand, fine
				10.0	112SRFD	SAND End of hole
AHA 57	10.0	--	--	0	112SRFD	SAND Sand, medium
				10.0	112SRFD	SAND End of hole
AHA 58	14.0	--	--	0	112SRFD	GRVL Gravel
				5.0	112SRFD	SAND Sand, fine
				14.0	112SRFD	SAND End of hole
AHA 59	10.0	--	--	0	112SRFD	SDGL Gravel
				4.0	112SRFD	SAND Sand, fine
				10.0	112SRFD	SAND End of hole
AHA 60	10.0	--	--	0	112SRFD	SDGL Sand and gravel
				4.0	112SRFD	GRVL Gravel
				8.0	112SRFD	SAND Sand, medium, wet
				10.0	112SRFD	SAND End of hole
AHA 61	10.0	--	--	0	112SRFD	SDGL Sand and gravel
				4.0	112SRFD	SAND Sand, fine
				10.0	112SRFD	SAND End of hole
AHA 62	10.0	--	--	0	112SRFD	GRVL Gravel
				5.0	112SRFD	SAND Sand, fine
				10.0	112SRFD	SAND End of hole
AHA 63	20.0	--	--	0	112SRFD	SAND Sand, coarse
				4.0	112SRFD	SDGL Gravel
				10.0	112SRFD	SAND Sand, fine
				20.0	112SRFD	SAND End of hole
AHA 64	7.0	--	--	0	112TILL	TILL Till, gravelly
				7.0	BEDROCK	ROCK Bedrock
AHA 65	6.0	--	--	0	112TILL	TILL Till
				6.0	BEDROCK	ROCK Bedrock
AHA 66	4.0	--	--	0	112TILL	TILL Till, gravelly
				4.0	BEDROCK	ROCK Bedrock

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
						BELKNAP COUNTY
						Alton-*Continued*
AHA 67	10.0	--	--	0	112SRFD	SDGL Sand, gravelly
				10.0	112SRFD	SDGL End of hole
AHA 68	10.0	--	--	0	112SRFD	SAND Sand, fine
				10.0	112SRFD	SAND End of hole
AHA 69	10.0	--	--	0	112SRFD	SDGL Sand, gravelly
				10.0	112SRFD	SDGL End of hole
AHA 71	8.0	--	--	0	112SRFD	GRVL Gravel
				2.0	112SRFD	SAND Sand, fine
				8.0	BEDROCK	ROCK Bedrock
AHA 72	15.0	--	--	0	112SRFD	GRVL Gravel
				3.0	112SRFD	SAND Sand, fine
				12.0	112TILL	TILL Till, sandy
				15.0	BEDROCK	ROCK Bedrock
AHA 73	20.0	--	--	0	112SRFD	SAND Sand, fine
				20.0	112SRFD	SAND End of hole
AHA 74	11.0	--	--	0	112SRFD	GRVL Gravel
				3.0	112SRFD	SAND Sand, fine
				7.0	112TILL	TILL Till
				11.0	BEDROCK	ROCK Bedrock
AHA 75	10.0	--	--	0	111FILL	GRVL Fill, gravel
				6.0	112SRFD	SAND Sand, fine
				10.0	112SRFD	SAND End of hole
AHA 76	5.0	--	--	0	112TILL	TILL Till, gravelly
				5.0	BEDROCK	ROCK Bedrock
AHA 77	30.0	--	--	0	112SRFD	SAND Sand, fine
				30.0	112SRFD	SAND End of hole
AHA 78	24.0	--	24.0	0	110SDMN	SAND Sand, medium
				10.0	110SDMN	SAND Sand, medium to fine
				24.0	BEDROCK	ROCK Refusal (3 times, probably rock)
AHA 79	52.0	--	52.0	0	110SDMN	SDST Sand, very fine, some silt
				45.0	110SDMN	CLSD Clay, varved; thin medium sand layer
				50.0	112TILL	TILL Till
				52.0	112TILL	TILL Refusal; till or rock
AHA 80	15.0	--	15.0	0	110SDMN	SDGL Sand, very coarse, with pebbles and cobbles
				15.0	110SDMN	ROCK End of hole; refusal; boulders
AHA 81	45.0	--	45.0	0	110SDMN	SAND Sand, medium to coarse, well sorted; some fine with coarse layers
				19.0	110SDMN	SDGL Sand, coarse to very coarse and gravel, fine to coarse; well sorted
				24.0	110SDMN	SAND Sand, medium, with coarse and fine sand layers; iron stained
				34.0	112TILL	TILL Till with rock
				45.0	112TILL	TILL Refusal; rock/till

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number		Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
							BELKNAP COUNTY
							Alton-*Continued*
AHB	1	18.0	--	--	0	110SOIL	SOIL Topsoil
					1.0	110SDMN	SAND Sand, fine
					4.0	110SDMN	SDGL Gravel, sandy
					14.0	112TILL	TILL Till, silty
					18.0	112TILL	TILL End of hole
AHB	2	55.0	--	--	0	110SDMN	SAND Sand, coarse
					15.0	110SDMN	SAND Sand, coarse
					27.0	110SDMN	SDGL Gravel and sand, coarse
					38.0	110SDMN	SAND Sand, coarse
					52.0	110SDMN	SDGL Gravel and sand, coarse
					55.0	110SDMN	SAND End of hole at 55 feet
AHB	3	26.0	--	26.0	0	111SWMP	MUCK Muck
					7.5	112SRFD	SAND
					17.5	112TILL	TILL Till, sandy; refusal at 26 feet
AHW	3	36.0	36.0	--	0	110SDMN	GRVL Gravel
					18.0	110SDMN	SDCL Sand, fine, and clay
					27.0	110SDMN	GRVL Gravel
					36.0	400CRSL	ROCK Refusal, ledge; End of hole
AHW	4	--	31.0	--	0	110SDMN	SDCL Sand, brown, fine; and clay
					6.0	110SDMN	SDGL Sand, fine; some gravel
					20.0	110SDMN	SDGL Sand, fine to medium; and gravel
					26.0	110SDMN	BLSD Sand, brown; tight, boulders
					32.0	110SDMN	End of hole
AHW	51	8.0	8.0	--	0	112TILL	TILL Till, boulders
					8.0	112TILL	TILL End of hole
					10.0	112SRFD	SAND End of hole
AHW	52	8.0	8.0	--	0	112SRFD	SAND Sand, gravelly
					8.0	112SRFD	SAND End of hole
AHW	54	8.0	8.0	--	0	112SRFD	SDGL Sand and gravel
					3.0	112SRFD	SDST Sand and silt
					8.0	112SRFD	SDST End of hole
AHW	55	8.0	8.0	--	0	112SRFD	SDGL Sand and gravel
					4.0	112SRFD	SDST Sand and silt
					8.0	112SRFD	SDST End of hole
AHW	56	8.0	8.0	--	0	112SRFD	SDGL Sand and gravel
					8.0	112SRFD	SDGL End of hole
AHW	57	7.0	7.0	--	0	112SRFD	SAND Sand and boulders
					7.0	BEDROCK	ROCK Bedrock
AHW	59	8.0	8.0	--	0	112SRFD	SDGL Sand and gravel
					8.0	112SRFD	SDGL End of hole
AHW	60	6.0	6.0	--	0	112TILL	TILL Till, silty
					6.0	BEDROCK	ROCK Bedrock
AHW	61	4.0	4.0	--	0	112TILL	TILL Till, sandy
					4.0	BEDROCK	ROCK Bedrock

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
			BELKNAP COUNTY			
			Alton-*Continued*			
AHW 63	41.5	20.5	41.5	0	112SRFD	SAND Sand, fine to medium
				10.0	112SRFD	SDGL Sand, very coarse to fine gravel
				35.0	112TILL	TILL Till
				41.5	BEDROCK	ROCK Bedrock
AHW 64	45.0	39.0	45.0	0	112SRFD	SDGL Sand, coarse, variable coarse and finer layers
				43.0	112TILL	TILL Till
				45.0	BEDROCK	ROCK Refusal; bedrock
AHW 65	69.0	30.0	69.0	0	112SRFD	SDGL Sand, very coarse; and medium sand to pebbles
				25.0	112SRFD	SAND Sand, very fine; range very fine to fine
				48.0	112TILL	TILL Till, sandy
				69.0	BEDROCK	ROCK Refusal; bedrock
AHW 66	41.0	30.0	41.0	0	112SRFD	SDGL Sand, fine; some coarser grains
				30.0	112SRFD	SDGL Sand, fine to coarse, dirty
				37.0	112TILL	TILL Till
				41.0	BEDROCK	ROCK Refusal; bedrock
AHW 68	--	12.5	--	0		
AHW 69	--	9.9	--	0		
AHW 70	--	86.0	--	0	110SDMN	SAND
				11.0	BEDROCK	ROCK
AHW 72	--	705.0	--	0	112TILL	TILL
				--	BEDROCK	ROCK
AHW 76	--	250.0	--	0	110SDMN	SDGL
				63.0	BEDROCK	ROCK
AHW 77	--	135.0	--	0	110SDMN	SAND
				10.0	110SDMN	SDGL
				35.0	BEDROCK	ROCK
AHW 78	--	205.0	--	0	110SDMN	SDGL
				30.0	BEDROCK	ROCK
AHW 79	--	421.0	--	0	112TILL	TILL Sand, hardpan
				45.0	BEDROCK	ROCK
AHW 83	--	300.0	--	0	110SDMN	SAND
				33.0	BEDROCK	ROCK
AHW 92	--	150.0	--	0	112TILL	TILL
				60.0	BEDROCK	ROCK
AHW 94	--	175.0	--	0	112TILL	TILL Gravel, hardpan
				10.0	BEDROCK	ROCK
AHW 97	--	156.0	--	0	112TILL	TILL
				15.0	BEDROCK	ROCK
AHW 99	--	145.0	--	0	110SDMN	CLAY
				9.0	BEDROCK	ROCK

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
					BELKNAP COUNTY	
					Alton-*Continued*	
AHW 100	--	160.0	--	0	110SDMN	SAND
				--	110SDMN	CLAY
				125.0	BEDROCK	ROCK
AHW 101	--	63.0	--	0	110SDMN	OTHR
AHW 107	--	244.0	--	0		
AHW 119	--	10.0	--	0	110SDMN	SDCL
AHW 123	--	130.0	--	0	110SDMN	SAND
				53.0	BEDROCK	ROCK
AHW 126	--	138.0	--	1.0	BEDROCK	ROCK
AHW 131	--	210.0	--	0	112TILL	TILL
				40.0	BEDROCK	ROCK
AHW 142	--	145.0	--	0	112TILL	TILL
				10.0	110SDMN	SAND
				78.0	BEDROCK	ROCK
AHW 144	--	400.0	--	0	112TILL	TILL
				20.0	BEDROCK	ROCK
AHW 175	--	174.0	--	0	112TILL	TILL
				24.0	BEDROCK	ROCK
AHW 189	--	275.0	--	0	110SDMN	SDGL
				35.0	BEDROCK	ROCK
AHW 190	--	105.0	--	0	110SDMN	SDGL
				30.0	BEDROCK	ROCK
AHW 196	--	310.0	--	0	112TILL	TILL
				9.0	BEDROCK	ROCK
AHW 206	--	200.0	--	0	110SDMN	SDGL
				19.0	BEDROCK	ROCK
AHW 211	--	222.0	--	0	110SDMN	SDCL
				60.0	BEDROCK	ROCK
AHW 213	--	460.0	--	0	112TILL	TILL
				58.0	BEDROCK	ROCK
AHW 228	--	205.0	--	0		
AHW 243	--	100.0	--	0	112TILL	TILL
				25.0	BEDROCK	ROCK
AHW 244	--	130.0	--	0	110SDMN	SAND
				29.0	BEDROCK	ROCK
AHW 245	--	304.0	--	0	112TILL	TILL
				12.0	BEDROCK	ROCK

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
			BELKNAP COUNTY			
			Alton-*Continued*			
AHW 254	--	600.0	--	0	110SDMN	SGVC
				47.0	BEDROCK	ROCK
AHW 262	--	162.0	--	0	110SDMN	CLAY
				80.0	BEDROCK	ROCK
AHW 264	--	82.0	--	0	110SDMN	SAND
				42.0	110SDMN	SDGL
				50.0	BEDROCK	ROCK
AHW 265	--	125.0	--	0	112TILL	TILL
				16.0	BEDROCK	ROCK
AHW 266	--	421.0	--	0	112TILL	TILL
				55.0	BEDROCK	ROCK
AHW 277	--	664.0	--	0	110SDMN	SAND
				10.0	BEDROCK	ROCK
AHW 281	--	220.0	--	0	110SDMN	SDGL
				76.0	BEDROCK	ROCK
AHW 282	--	200.0	--	0	110SDMN	SAND Sand
				20.0	110SDMN	SDGL Sand and gravel
				55.0	BEDROCK	ROCK
AHW 283	--	100.0	--	0	110SDMN	SAND
				35.0	110SDMN	SDGL
				55.0	BEDROCK	ROCK
AHW 284	--	200.0	--	0	110SDMN	SDGL
				81.0	BEDROCK	ROCK
AHW 291	--	180.0	--	0	110SDMN	SAND
				25.0	BEDROCK	ROCK
AHW 292	--	240.0	--	0	110SDMN	SAND
				29.0	BEDROCK	ROCK
AHW 293	--	200.0	--	0	110SDMN	SAND
				17.0	BEDROCK	ROCK
AHW 294	--	400.0	--	0	110SDMN	SDCL
				28.0	BEDROCK	ROCK
AHW 295	--	130.0	--	0	110SDMN	SAND
				32.0	110SDMN	SDGL
				51.0	110SDMN	CLAY
				60.0	BEDROCK	ROCK
AHW 297	--	160.0	--	0	110SDMN	SAND
				60.0	BEDROCK	ROCK
AHW 306	--	133.0	--	0	110SDMN	SAND
				20.0	BEDROCK	ROCK

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
			BELKNAP COUNTY			
			Alton-*Continued*			
AHW 309	--	260.0	--	0	110SDMN	SAND
				26.0	BEDROCK	ROCK
AHW 311	--	136.0	--	0	112TILL	TILL Gravel, hardpan
				10.0	BEDROCK	ROCK
AHW 313	--	400.0	--	0	110SDMN	SDGL
				24.0	BEDROCK	ROCK
AHW 321	--	87.0	--	0	112TILL	TILL
				38.0	BEDROCK	ROCK
AHW 327	--	250.0	--	0	110SDMN	SDGL
				69.0	BEDROCK	ROCK
AHW 334	--	250.0	--	0	112TILL	TILL
				35.0	BEDROCK	ROCK
AHW 340	--	310.0	--	0	112TILL	TILL
				8.0	BEDROCK	ROCK
AHW 350	--	185.0	--	0	110SDMN	SDGL
				12.0	112TILL	TILL
				38.0	BEDROCK	ROCK
AHW 357	--	160.0	--	0	112TILL	TILL
				8.0	BEDROCK	ROCK
AHW 361	--	780.0	--	0	110SDMN	SAND
				12.0	110SDMN	CLAY
				26.0	BEDROCK	ROCK
AHW 362	--	220.0	--	0	110SDMN	SAND
				15.0	110SDMN	CLAY
				35.0	BEDROCK	ROCK
AHW 364	--	166.0	--	0	112TILL	TILL Sand, hardpan
				124.0	BEDROCK	ROCK
AHW 369	38.0	35.0	38.0	0	110SDMN	SAND Sand, coarse to very coarse and pebbles; light brown
				12.0	110SDMN	SAND Sand, very coarse to coarse; some silt
				24.0	110SDMN	SAND Sand, coarse, ranges from medium to very coarse; some pebbles and cobbles; clean
				29.0	110SDMN	SAND Sand, very coarse, well sorted, clean
				34.0	112TILL	TILL Till, with silt, pebbles and cobbles
				38.0	BEDROCK	ROCK Refusal; bedrock
AHW 370	83.0	40.0	83.0	0	110SDMN	SAND Sand, medium, tan; interlayered with fine, coarse, and very coarse sand
				34.0	110SDMN	SAND Sand, coarse, tan; some fine gravel, well sorted
				43.0	110SDMN	SAND Sand, fine; some medium, with zones of coarse to very coarse
				49.0	110SDMN	SAND Sand, medium to coarse, iron stained, poorly sorted; some medium to fine

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number		Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
							BELKNAP COUNTY
							Alton-*Continued*
AHW	370-*Continued*						
					54.0	110SDMN	SAND Sand, fine grading to very fine; some silt; thinly bedded, gray
					80.0	112TILL	TILL Till
					83.0	BEDROCK	ROCK Refusal; bedrock
							Belmont
BLA	26	31.0	31.0	--	0	112SRFD	SAND Sand, fine to medium, trace coarse
					31.0	112SRFD	SAND End of hole
BLA	27	21.0	21.0	--	0	112SRFD	SAND Sand and silt
					7.0	112SRFD	SAND Sand, fine to medium
					21.0	112SRFD	SAND End of hole
BLA	28	36.0	36.0	--	0	112SRFD	SAND Sand, fine to medium, little coarse
					36.0	112SRFD	SAND End of hole
BLA	29	14.0	--	--	0	111FILL	OTHR Fill
					14.0	111FILL	ROCK End of hole; refusal; boulder
BLA	30	16.0	--	16.0	0	110SDMN	GRVL Gravel, very silty (till?)
					5.0	110SDMN	SAND Sand, fine to medium, tan; with rounded cobbles
					16.0	BEDROCK	ROCK Refusal, very weathered schist
BLA	31	9.0	--	9.0	0	112SRFD	GRVL Gravel, poorly sorted, dirty
					9.0	112TILL	TILL Refusal; till
BLA	32	22.0	--	22.0	0	110SDMN	SDGL Sand, very coarse, and gravel; tan
					17.0	112TILL	TILL Till, very sandy
					22.0	BEDROCK	ROCK Refusal; bedrock
BLB	26	16.0	--	--	0	110SDMN	SAND Sand, medium to coarse
					2.0	112TILL	TILL Till, silty
					16.0	112TILL	TILL End of hole at 16 feet
BLB	27	8.0	--	--	0	110SDMN	SDGL Sand, coarse and gravel
					8.0	BEDROCK	ROCK Bedrock
BLB	28	100.0	--	100.0	0	112LCSR	SAND Sand, fine
					34.0	112SRFD	SAND Sand, medium-coarse
					90.0	112SRFD	GRVL Gravel
					100.0	BEDROCK	ROCK Refusal; on boulders or bedrock
BLW	13	--	67.5	--	0	110SDMN	
BLW	28	68.0	52.7	--	0	111FILL	OTHR Fill
					7.0	110SDMN	PEAT Peat
					10.0	110SDMN	SDGL Sand, fine to coarse; gravel; stones; grits
					50.0	110SDMN	SDGL Sand, medium to coarse; gravel; stones; grits
					65.0	110SDMN	SDGL Sand, very fine to coarse; gravel; stones, boulders
					68.0	110SDMN	SDGL End of hole
BLW	29	75.0	63.0	--	0	110SDMN	SAND Sand, fine, medium
					10.0	110SDMN	SDGL Sand, medium; and gravel; with boulders
					45.0	110SDMN	SDGL Sand, medium, coarse; and gravel; with boulders
					75.0	110SDMN	SDGL End of hole

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
					BELKNAP COUNTY	
					Belmont-*Continued*	
BLW 30	46.0	42.0	--	0	110SDMN	SOIL Topsoil
				8.0	110SDMN	SAND Sand, light brown, fine
				35.0	110SDMN	SAND Sand, brown, fine to medium, with fine gravel
				46.0	110SDMN	SAND End of hole
BLW 31	50.0	--	--	0	110SDMN	SOIL Topsoil
				5.0	110SDMN	SAND Sand, light brown, fine, silty, with clay
				37.0	110SDMN	SDGL Sand and gravel, reddish brown, fine to medium, with silt
				50.0	110SDMN	SDGL End of hole
BLW 76	73.5	73.5	--	0	112SRFD	SAND Sand, medium to coarse, brown
				28.0	112SRFD	GRVL Gravel, fine, with medium to coarse sand
				32.0	112SRFD	SAND Sand, fine, brown, trace silt
				60.5	110SDMN	SDST Sand, silty with boulders
				67.2	BEDROCK	ROCK End of hole at 73 feet in bedrock
BLW 77	40.0	40.0	--	0	110SDMN	PEAT Peat
				15.0	112SRFD	SILT Silt, brown
				25.0	110SDMN	SAND Sand, medium to fine, silty
				27.0	112SRFD	SAND Sand, medium to coarse
				29.0	112SRFD	SDGL Sand and gravel
				35.0	BEDROCK	ROCK End of hole at 40 feet
BLW 78	35.0	35.0	--	0	110SDMN	PEAT Peat
				9.0	112SRFD	SAND Sand, fine to coarse
				11.0	112SRFD	SAND Sand, fine to medium, gray
				16.0	112SRFD	GRVL Gravel, fine to coarse, trace silt
				30.0	BEDROCK	ROCK End of hole at 35 feet
BLW 79	52.5	52.5	--	0	110SDMN	PEAT Peat
				15.5	112SRFD	SILT Silt, brown
				16.4	112SRFD	SAND Sand, medium to coarse, trace fine gravel
				37.0	112SRFD	SAND Sand, fine to coarse with gravel, gray
				42.5	112SRFD	SILT Silt, sandy with gravel, gray
				48.0	BEDROCK	ROCK End of hole at 52.5 feet in bedrock
BLW 80	90.0	82.5	90.0	0	110SDMN	SAND Sand, medium, tan
				20.0	110SDMN	STCL Silt and clay
				60.0	110SDMN	SAND Sand, medium
				89.0	112TILL	TILL Till
				90.0	BEDROCK	ROCK Bedrock
BLW 81	93.0	79.0	93.0	0	110SDMN	SAND Sand, fine, tan
				30.0	110SDMN	SAND Sand, coarse, intervals of medium to fine sand
				89.0	112TILL	TILL Till
				93.0	112TILL	TILL Refusal; till
BLW 82	68.0	27.0	68.0	0	112SRFD	SAND Sand, fine
				10.0	112SRFD	SAND Sand, coarse
				30.0	112SRFD	SAND Sand, fine
				68.0	BEDROCK	ROCK Refusal; bedrock
BLW 83	114.0	80.0	114.0	0	112SRFD	SDGL Sand, coarse and gravel, fine; tan
				5.0	112SRFD	SAND Sand, very fine, variable; gray
				55.0	112SRFD	SAND Sand, medium; gray
				80.0	112SRFD	SAND Sand, very fine, uniform

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
						BELKNAP COUNTY
						Belmont-*Continued*
BLW 83-*Continued*						
				110.0	112TILL	TILL Till
				114.0	BEDROCK	ROCK Bedrock
BLW 84	78.0	60.0	78.0	0	112SRFD	SAND Sand, coarse to fine gravel
				25.0	112SRFD	SDGL Sand, coarse to fine gravel
				40.0	112SRFD	SAND Sand, medium
				50.0	112SRFD	SAND Sand, coarse
				65.0	112TILL	TILL Till
				78.0	BEDROCK	ROCK Refusal; bedrock
BLW 85	58.0	50.0	58.0	0	112SRFD	SAND Sand, very fine to medium
				38.0	112SRFD	SAND Sand, coarse
				52.0	112TILL	TILL Till
				58.0	112TILL	TILL Refusal in till at 58 feet
BLW 86	82.0	57.5	82.0	0	110SDMN	SAND Sand, coarse; and gravel
				17.0	110SDMN	SDST Sand, coarse; and silt/clay; alternating 2-inch layers
				19.0	110SDMN	SAND Sand, coarse
				49.0	110SDMN	SAND Sand, fine with some medium and coarse
				69.0	110SDMN	SAND Sand, fine to coarse alternating layers
				78.0	112TILL	TILL Till
				82.0	BEDROCK	ROCK Refusal; bedrock
BLW 87	19.5	18.9	--	0	111FILL	OTHR Fill
				10.0	110SDMN	PEAT Peat
				10.5	110SDMN	SAND Sand, medium to fine, poorly graded; trace silt, orange-brown, some oxidation
				19.5	110SDMN	SAND End of hole
BLW 88	22.0	21.2	--	0	111FILL	OTHR Fill
				15.0	110SDMN	PEAT Peat
				15.3	110SDMN	SAND Sand, medium to fine, poorly graded; trace silt, brown
				22.0	110SDMN	SAND End of hole
BLW 89	26.5	25.6	--	0	110SDMN	SAND Sand, medium to fine, poorly graded; trace silt, brown
				18.0	110SDMN	SAND Sand, fine to coarse, well graded; trace silt, brown
				26.5	110SDMN	SAND End of hole
BLW 90	26.5	25.9	--	0	111FILL	OTHR Fill
				10.0	110SDMN	SAND Sand, medium to fine, poorly graded; some silt
				18.0	110SDMN	SAND Sand, fine to coarse, mod. graded; some silt, brown, oxidation
				26.5	110SDMN	SAND End of hole
BLW 91	--	--	--	0	112SRFD	--
BLW 92	--	--	--	0	112SRFD	--
BLW 93	49.0	40.0	49.0	0	110SDMN	SAND Sand, fine, tan
				7.0	110SDMN	SAND Sand, medium coarse, orange-brown
				17.0	110SDMN	SAND Sand, fine, orange-brown

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
						BELKNAP COUNTY
						Belmont-*Continued*
BLW 93-*Continued*						
				18.0	110SDMN	SAND Sand, coarse, orange-brown
				29.0	110SDMN	SAND Sand, medium coarse, orange-brown
				38.0	112TILL	TILL Till
				39.0	112TILL	ROCK Rotten rock
				49.0	BEDROCK	ROCK Refusal; bedrock
BLW 94	--	310.0	--	0	110SDMN	SDGL
				60.0	BEDROCK	ROCK
BLW 95	--	350.0	--	0	112TILL	TILL Clay, hardpan
				135.0	BEDROCK	ROCK
BLW 96	--	245.0	--	0	110SDMN	SDGL
				10.0	110SDMN	SAND
				45.0	112TILL	TILL
				63.0	BEDROCK	ROCK
BLW 99	--	224.0	--	0	112TILL	TILL
				85.0	BEDROCK	ROCK
BLW 100	--	117.0	--	0	110SDMN	SAND
				6.0	112TILL	TILL
				22.0	BEDROCK	ROCK
BLW 103	--	530.0	--	0	110SDMN	SDGL
				40.0	BEDROCK	ROCK
BLW 104	--	300.0	--	0	110SDMN	SAND
				40.0	BEDROCK	ROCK
BLW 105	--	310.0	--	0	110SDMN	SDGL
				80.0	BEDROCK	ROCK
BLW 106	--	400.0	--	0	110SDMN	SDGL
				50.0	BEDROCK	ROCK
BLW 107	--	350.0	--	0	112TILL	TILL
				5.0	BEDROCK	ROCK
BLW 110	--	290.0	--	0	110SDMN	SDGL
				80.0	BEDROCK	ROCK
BLW 112	--	325.0	--	25.0	BEDROCK	ROCK
BLW 113	--	210.0	--	0	112TILL	TILL
				2.0	BEDROCK	ROCK
BLW 114	--	145.0	--	0	112TILL	TILL Clay, hardpan
				40.0	BEDROCK	ROCK
BLW 116	--	310.0	--	0	112TILL	TILL
				40.0	BEDROCK	ROCK
BLW 120	--	310.0	--	0	112TILL	TILL
				7.0	BEDROCK	ROCK

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
					BELKNAP COUNTY	
					Belmont—*Continued*	
BLW 122	--	515.0	--	0	110SDMN	SDGL
				20.0	BEDROCK	ROCK
BLW 123	--	310.0	--	0	110SDMN	SDGL
				60.0	BEDROCK	ROCK
BLW 124	--	305.0	--	0	110SDMN	SDGL
				52.0	BEDROCK	ROCK
BLW 125	--	280.0	--	0	110SDMN	CLAY
				109.0	BEDROCK	ROCK
BLW 126	--	605.0	--	0	110SDMN	CLAY
				128.0	BEDROCK	ROCK
BLW 130	--	180.0	--	0	110SDMN	SDGL
				17.0	BEDROCK	ROCK
BLW 131	--	220.0	--	0	110SDMN	SDGL
				70.0	BEDROCK	ROCK
BLW 132	--	310.0	--	0	110SDMN	SDGL
				80.0	BEDROCK	ROCK
BLW 135	--	450.0	--	0	112TILL	TILL
				3.0	BEDROCK	ROCK
BLW 138	--	178.0	--	0	110SDMN	SDGL
				4.0	112TILL	TILL
				21.0	BEDROCK	ROCK
BLW 139	--	90.0	--	0	112TILL	TILL
				7.0	BEDROCK	ROCK
BLW 140	--	112.0	--	0	110SDMN	OTHR
				5.0	112TILL	TILL
				24.0	BEDROCK	ROCK
BLW 141	--	142.0	--	0	110SDMN	SDGL
				11.0	BEDROCK	ROCK
BLW 146	--	120.0	--	0	110SDMN	SGVC
				14.0	BEDROCK	ROCK
BLW 147	--	135.0	--	0	110SDMN	SAND
				3.0	112TILL	TILL Clay, hardpan
				112.0	BEDROCK	ROCK
BLW 150	--	300.0	--	0	110SDMN	SDGL
				40.0	BEDROCK	ROCK
BLW 151	--	300.0	--	0	110SDMN	SDGL
				50.0	BEDROCK	ROCK
BLW 157	--	350.0	--	0	112TILL	TILL
				15.0	BEDROCK	ROCK

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
						BELKNAP COUNTY
						Belmont—*Continued*
BLW 158	--	250.0	--	0	110SDMN	SDGL
				12.0	BEDROCK	ROCK
BLW 159	--	450.0	--	0	112TILL	TILL
				90.0	BEDROCK	ROCK
BLW 160	--	105.0	--	0	110SDMN	SDGL
BLW 161	--	95.0	--	0	110SDMN	SDGL
BLW 162	--	90.0	--	0	110SDMN	SDGL
BLW 165	--	550.0	--	0	112TILL	TILL
				28.0	BEDROCK	ROCK
BLW 167	--	16.0	--	0	110SDMN	SAND
				18.0	110SDMN	CLAY
BLW 168	--	140.0	--	0	110SDMN	SDGL
				25.0	112TILL	TILL
				42.0	110SDMN	CLAY
				55.0	110SDMN	SAND
				58.0	BEDROCK	ROCK
BLW 170	--	260.0	--	0	110SDMN	SDGL
				33.0	BEDROCK	ROCK
BLW 171	--	202.0	--	0	110SDMN	SAND
				17.0	BEDROCK	ROCK
BLW 172	--	550.0	--	0	110SDMN	SAND
				70.0	BEDROCK	ROCK
BLW 173	--	230.0	--	0	110SDMN	SAND
				70.0	BEDROCK	ROCK
BLW 174	--	550.0	--	0	110SDMN	SAND
				70.0	BEDROCK	ROCK
BLW 176	--	310.0	--	0	110SDMN	SAND
				90.0	BEDROCK	ROCK
BLW 179	--	107.0	--	0	110SDMN	OTHR
				18.0	BEDROCK	ROCK
BLW 181	--	310.0	--	0	112TILL	TILL
				15.0	BEDROCK	ROCK
BLW 183	--	145.0	--	0	112TILL	TILL
				4.0	BEDROCK	ROCK
BLW 184	--	310.0	--	0	112TILL	TILL Gravel, hardpan
				30.0	BEDROCK	ROCK
BLW 185	--	390.0	--	0	112TILL	TILL
				16.0	BEDROCK	ROCK

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
					BELKNAP COUNTY	
					Belmont—*Continued*	
BLW 186	--	370.0	--	0	110SDMN	SDGL
				22.0	BEDROCK	ROCK
BLW 188	--	300.0	--	0	110SDMN	SDGL
				70.0	BEDROCK	ROCK
BLW 189	--	300.0	--	0	110SDMN	SDGL
				15.0	BEDROCK	ROCK
BLW 190	--	280.0	--	0	110SDMN	SDGL
				10.0	BEDROCK	ROCK
BLW 191	--	160.0	--	0	110SDMN	SDGL
BLW 198	--	433.0	--	0	112TILL	TILL
				62.0	BEDROCK	ROCK
BLW 199	--	230.0	--	0	112TILL	TILL Sand, gravel, hardpan
				20.0	BEDROCK	ROCK
BLW 200	--	272.0	--	0	112TILL	TILL
				103.0	BEDROCK	ROCK
BLW 201	--	300.0	--	8.0	BEDROCK	ROCK
BLW 202	--	200.0	--	0	110SDMN	SDGL
				69.0	BEDROCK	ROCK
BLW 206	--	325.0	--	0	110SDMN	OTHR
				50.0	BEDROCK	ROCK
BLW 207	--	265.0	--	0	110SDMN	OTHR
				65.0	BEDROCK	ROCK
BLW 209	--	430.0	--	0	112TILL	TILL
				8.0	BEDROCK	ROCK
BLW 210	--	145.0	--	0	112TILL	TILL
				12.0	BEDROCK	ROCK
BLW 211	--	590.0	--	0	112TILL	TILL
				8.0	BEDROCK	ROCK
BLW 212	--	125.0	--	0	110SDMN	SDGL
				30.0	BEDROCK	ROCK
BLW 213	--	270.0	--	0	112TILL	TILL
				40.0	BEDROCK	ROCK
BLW 215	--	220.0	--	0	112TILL	TILL
				70.0	BEDROCK	ROCK
BLW 216	--	280.0	--	0	112TILL	TILL
				85.0	BEDROCK	ROCK

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
					BELKNAP COUNTY	
					Belmont–*Continued*	
BLW 217	--	250.0	--	0	110SDMN	SDGL
				21.0	BEDROCK	ROCK
BLW 219	--	70.0	--	0	110SDMN	SDGL
				70.0	BEDROCK	ROCK
BLW 220	--	290.0	--	0	110SDMN	SAND
				50.0	BEDROCK	ROCK
BLW 221	--	310.0	--	0	112TILL	TILL
				6.0	BEDROCK	ROCK
BLW 222	--	560.0	--	0	110SDMN	SDGL
				10.0	BEDROCK	ROCK
BLW 224	--	125.0	--	0	112TILL	TILL
				8.0	BEDROCK	ROCK
BLW 226	--	510.0	--	0	110SDMN	SAND
				60.0	112TILL	TILL
				112.0	BEDROCK	ROCK
BLW 227	--	140.0	--	0	112TILL	TILL
				15.0	110SDMN	CLAY
				24.0	BEDROCK	ROCK
BLW 230	--	75.0	--	0	110SDMN	SAND
				10.0	BEDROCK	ROCK
BLW 231	--	300.0	--	0	110SDMN	SDGL
				26.0	BEDROCK	ROCK
BLW 234	--	300.0	--	0	110SDMN	SDGL
				56.0	BEDROCK	ROCK
BLW 235	--	305.0	--	0	112TILL	TILL Gravel, hardpan
				14.0	BEDROCK	ROCK
BLW 238	--	305.0	--	0		
BLW 240	--	305.0	--	0		
BLW 243	--	385.0	--	0		
BLW 244	--	230.0	--	0	112TILL	TILL
				14.0	BEDROCK	ROCK
BLW 248	--	310.0	--	0	110SDMN	SAND
				5.0	BEDROCK	ROCK
BLW 253	--	226.0	--	0	112TILL	TILL
				10.0	BEDROCK	ROCK
BLW 255	--	325.0	--	0	110SDMN	SDGL
				30.0	BEDROCK	ROCK

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
					BELKNAP COUNTY	
					Belmont-*Continued*	
BLW 257	--	300.0	--	0	110SDMN	OTHR
				131.0	BEDROCK	ROCK
BLW 258	--	119.0	--	0	110SDMN	SDGL
				10.0	BEDROCK	ROCK
BLW 262	--	255.0	--	0	110SDMN	SDCL
				24.0	BEDROCK	ROCK
BLW 263	--	255.0	--	0	112TILL	TILL
				11.0	BEDROCK	ROCK
BLW 264	--	325.0	--	40.0	BEDROCK	ROCK
BLW 271	--	210.0	--	0	112TILL	TILL
				8.0	BEDROCK	ROCK
BLW 275	--	120.0	--	0	110SDMN	CLAY
				10.0	BEDROCK	ROCK
BLW 276	--	300.0	--	0	110SDMN	SAND
				4.0	BEDROCK	ROCK
BLW 277	--	340.0	--	0	110SDMN	SAND
				4.0	BEDROCK	ROCK
BLW 278	--	640.0	--	0	110SDMN	CLAY
				6.0	BEDROCK	ROCK
BLW 286	--	170.0	--	0	112TILL	TILL
				7.0	BEDROCK	ROCK
BLW 287	--	365.0	--	0	112TILL	TILL Gravel, hardpan
				65.0	BEDROCK	ROCK
BLW 288	--	428.0	--	0	110SDMN	SDGL
				9.0	BEDROCK	ROCK
BLW 290	--	405.0	--	0	112TILL	TILL Gravel, hardpan
				30.0	BEDROCK	ROCK
BLW 291	--	452.0	--	0	112TILL	TILL Gravel, hardpan
				30.0	BEDROCK	ROCK
BLW 292	--	270.0	--	0	110SDMN	SAND
				80.0	BEDROCK	ROCK
BLW 293	--	270.0	--	0	110SDMN	SAND
				90.0	BEDROCK	ROCK
BLW 294	--	450.0	--	0	110SDMN	SGVC
				82.0	BEDROCK	ROCK
BLW 296	--	405.0	--	0	112TILL	TILL Sand, gravel, hardpan
				10.0	BEDROCK	ROCK

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
			BELKNAP COUNTY			
			Belmont—*Continued*			
BLW 297	--	430.0	--	0	110SDMN	SGVC
				140.0	BEDROCK	ROCK
BLW 303	--	220.0	--	0	110SDMN	CLAY
				40.0	BEDROCK	ROCK
BLW 306	--	300.0	--	0	110SDMN	CLAY
				112.0	BEDROCK	ROCK
BLW 308	--	400.0	--	0	110SDMN	SGVC
				97.0	BEDROCK	ROCK
BLW 309	--	220.0	--	0	112TILL	TILL Clay, hardpan
				35.0	BEDROCK	ROCK
BLW 315	--	430.0	--	0	110SDMN	SDGL
				14.0	BEDROCK	ROCK
BLW 316	--	230.0	--	0	112TILL	TILL Sand, hardpan
				33.0	BEDROCK	ROCK
BLW 318	--	210.0	--	0	110SDMN	SAND
				60.0	BEDROCK	ROCK
BLW 321	--	165.0	--	0	110SDMN	SAND
				20.0	110SDMN	CLAY
				80.0	BEDROCK	ROCK
BLW 322	--	155.0	--	0	110SDMN	SAND
				80.0	110SDMN	CLAY
				117.0	BEDROCK	ROCK
BLW 323	--	475.0	--	0	110SDMN	SDCL
				119.0	BEDROCK	ROCK
BLW 325	--	175.0	--	0	112TILL	TILL
				30.0	BEDROCK	ROCK
BLW 327	--	300.0	--	0	110SDMN	SAND
				47.0	BEDROCK	ROCK
BLW 329	--	325.0	--	0	112TILL	TILL
				5.0	BEDROCK	ROCK
BLW 331	--	245.0	--	0	110SDMN	SDGL
				10.0	BEDROCK	ROCK
BLW 332	--	220.0	--	0	110SDMN	SAND
				65.0	BEDROCK	ROCK
BLW 334	--	290.0	--	0	112TILL	TILL Clay, hardpan
				40.0	BEDROCK	ROCK
BLW 335	--	250.0	--	0	110SDMN	SAND
				50.0	BEDROCK	ROCK

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
					BELKNAP COUNTY	
					Belmont-*Continued*	
BLW 336	--	360.0	--	0	110SDMN	SAND
				78.0	BEDROCK	ROCK
BLW 341	--	190.0	--	0	110SDMN	SAND
				12.0	BEDROCK	ROCK
BLW 342	--	100.0	--	0	110SDMN	SDGL
				10.0	BEDROCK	ROCK
BLW 346	--	305.0	--	0	110SDMN	SAND
				25.0	BEDROCK	ROCK
BLW 347	--	160.0	--	0	112TILL	TILL
				10.0	BEDROCK	ROCK
BLW 349	--	310.0	--	0	110SDMN	SAND
				128.0	BEDROCK	ROCK
BLW 350	--	100.0	--	0	110SDMN	SDGL
				3.0	112TILL	TILL
				10.0	110SDMN	CLAY
				19.5	BEDROCK	ROCK
BLW 353	13.0	13.0	--	0	112SRFD	SDGL Sand, fine to coarse; gravel
				10.0	112TILL	TILL Till, loose; sandy
				11.0	112TILL	TILL Till; medium-dense; sandy; yellow
				12.0	112TILL	TILL Till, loose; sandy; orange
				13.0	112TILL	TILL End of hole at 13 feet
BLW 354	121	26	--	0.0	112SRFD	SDGL Sand,fine to coarse; some gravel, silt
				10.0	112SRFD	STCL Clay, gray
				45.0	112SRFD	SDCL Sand, fine, gray; clay
				52.0	112SRFD	SAND Sand, fine, gray
				121.0	112SRFD	SAND Refusal at 121 feet
BLW 355	90	--	--	0	112SRFD	SDGL Sand, fine to coarse; gravel; some silt
				5.0	112SRFD	SAND Sand, fine; trace silt
				30.0	112SRFD	SDCL Sand and clay
				48.0	112SRFD	SDCL Sand, fine with clay
				52.0	112SRFD	CLAY Clay, gray
				65.0	112SRFD	SAND Sand, fine; trace silt
					Center Harbor	
CHW 1	--	380.0	--	0	110SDMN	SDGL
				20.0	112TILL	TILL
				--	112TILL	TILL
				37.0	BEDROCK	ROCK
CHW 2	--	130.0	--	0	110SDMN	SDGL
				15.0	BEDROCK	ROCK
CHW 3	--	305.0	--	0	112TILL	TILL
				7.0	BEDROCK	ROCK
CHW 5	--	605.0	--	90.0	BEDROCK	ROCK

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
						BELKNAP COUNTY
						Center Harbor—*Continued*
CHW 6	--	280.0	--	0	112TILL	TILL
				12.0	BEDROCK	ROCK
CHW 7	--	705.0	--	0	110SDMN	SDGL
				64.0	BEDROCK	ROCK
CHW 11	--	212.0	--	0	110SDMN	CLAY
				8.0	BEDROCK	ROCK
CHW 14	--	355.0	--	0	110SDMN	SAND
				39.0	BEDROCK	ROCK
CHW 23	--	1220.0	--	0	112TILL	TILL
				3.0	BEDROCK	ROCK
CHW 25	--	412.0	--	0	112TILL	TILL
				5.0	BEDROCK	ROCK
CHW 29	155.0	155.0	--	0	112SRFD	GRVL Gravel with silt and clay (may be till)
				38.0	BEDROCK	ROCK
				155.0	BEDROCK	ROCK End of hole at 155 feet
						Gilford
GFA 1	30.0	--	30.0	0	112SRFD	SAND Medium sand, with some coarser layers, thin
				25.0	112TILL	TILL Till
				30.0	BEDROCK	ROCK Refusal; bedrock
GFA 2	65.5	--	62.5	0	110SDMN	SDST Sand, very fine, tan; and silt
				57.0	BEDROCK	ROCK Refusal; probably bedrock
GFA 3	12.5	--	12.5	0	111FILL	OTHR Fill
				5.0	110SDMN	SAND Sand, medium, tan; many coarse layers
				10.0	112TILL	TILL Till
				12.5	112TILL	TILL End of hole, till and rock
GFB 1	60.0	--	--	0	110SDMN	SAND Fill
				11.0	110SDMN	SAND Sand, fine, silty
				13.0	110SDMN	SAND Sand, fine to coarse, trace gravel
				26.0	110SDMN	SAND Sand, fine to coarse, silty
				40.0	110SDMN	SAND Sand, silty, fine to coarse
				60.0	110SDMN	SAND End of hole
GFB 2	24.0	--	--	0	110SDMN	GRVL Gravel, sandy, trace silt, boulders
				24.0	110SDMN	GRVL End of hole
GFB 3	26.0	--	--	0	110SDMN	MUCK Muck
				14.0	110SDMN	MUCK Muck
				16.0	110SDMN	SAND Sand, fine to medium
				18.0	110SDMN	STCL Silt and clay, varved
				21.0	110SDMN	SDST Sand and silt
				22.0	112TILL	TILL Till, dense, gray
				26.0	112TILL	TILL End of hole

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
						BELKNAP COUNTY
						Gilford—*Continued*
GFB 4	11.0	10.0	11.0	0	111FILL	OTHR Asphalt
				0.1	110SDMN	SAND Sand, red brown, fine to medium, few fine to coarse gravel
				0.5	110SDMN	SAND Sand, gray brown, fine to medium, few fine to coarse gravel
				3.0	110SDMN	SAND Sand, light brown, fine to medium, few fine gravel
				11.0	110SDMN	SAND Refusal
GFB 5	12.0	10.0	--	0	110SDMN	SAND Sand, brown, fine to medium, few fine gravel and cobbles
				7.0	110SDMN	SAND Sand, light gray-black, fine to medium
				12.0	110SDMN	SAND End of hole
GFB 6	60.5	48.4	--	0	110SDMN	SILT Silt, light brown, little fine sand, trace of fine to medium gravel, trace rubble fill
				4.0	110SDMN	SAND Sand, light brown, fine, trace of silt
				9.0	110SDMN	SDGL Sand and gravel, light brown-gray, fine to coarse, trace of silt
				25.0	110SDMN	SDGL Sand and gravel, gray, fine to coarse, trace of silt
				34.5	110SDMN	SILT Silt, light gray, little fine sand
				40.0	110SDMN	SAND Sand, light brown-gray, fine to medium, little embedded fine to coarse gravel, trace of silt
				48.0	400CRSL	ROCK Weathered rock
				55.0	400CRSL	SCST Schist, gray biotite mica
				60.5	400CRSL	SCST End of hole
GFB 7	61.5	53.5	--	0	110SDMN	SAND Sand, gray, fine to medium, trace of fine gravel
				1.0	110SDMN	SAND Sand, light gray, fine to coarse, some fine to medium gravel
				6.0	110SDMN	SDGL Sand and gravel, fine to medium, trace of silt
				9.0	110SDMN	SDGL Sand, light orange-brown, fine to medium, and gravel, fine to coarse, trace of silt
				19.0	110SDMN	SDGL Sand, light brown, fine to medium, and embedded fine to coarse gravel, little silt
				25.0	110SDMN	SAND Sand, orange-brown, fine to medium, little fine to medium gravel, trace silt
				29.0	110SDMN	SAND Sand, light brown, fine to coarse, some fine to coarse gravel
				31.0	110SDMN	SAND Sand, orange-brown, fine to medium, trace of silt
				34.0	110SDMN	SDGL Sand, light brown, fine to medium, and embedded fine or coarse gravel, little to some silt
				51.8	400CRSL	GNSS Gneiss, quartrz biotite
				61.5	400CRSL	GNSS End of hole
GFB 8	57.0	41.7	--	0	110SDMN	SAND Sand, brown, fine to medium, some fine to coarse gravel trace of silt, trace of wood
				3.5	110SDMN	SAND Sand, light brown, fine to medium, some silt, trace of fine gravel, trace of roots
				6.0	110SDMN	SAND Sand, gray, fine to coarse, little fine to coarse gravel, trace of silt
				9.0	110SDMN	SAND Sand, light brown-gray, fine to medium, trace of fine to medium gravel

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
						BELKNAP COUNTY
						Gilford--*Continued*
GFB 8--*Continued*						
				13.5	110SDMN	SAND Sand, light brown, fine, trace of silt
				24.0	110SDMN	SAND Sand, light brown, fine to medium, little fine to medium gravel, trace of silt
				28.0	110SDMN	SDGL Sand, light brown-gray and orange, fine to coarse, and fine to coarse gravel, trace to little silt
				44.0	110SDMN	SDGL Gravel, gray-brown, fine to coarse and fine to medium sand
				47.0	400CRSL	GRGN Granite gneiss, fine grained, light gray
				57.0	400CRSL	GRGN End of hole
GFB 9	42.0	37.0	--	0	110SDMN	SAND Sand, gray, fine, little silt
				19.0	110SDMN	SAND Sand, gray, fine, little silt, trace of fine gravel
				28.0	110SDMN	SDST Sand and silt, light brown-gray, fine to medium, some embedded fine to coarse gravel
				33.0	400CRSL	GNSS Gneiss, gray, quartz biotite
				42.0	400CRSL	GNSS End of hole
GFB 10	39.0	37.0	39.0	0	110SDMN	SDST Sand and silt, light brown, fine, trace of roots
				3.0	110SDMN	SAND Sand, gray-brown, fine, trace of silt
				9.0	110SDMN	SAND Sand, light brown, fine to medium, trace of fine gravel
				20.0	110SDMN	SAND Sand, light gray-brown, fine, little silt
				23.0	110SDMN	SILT Silt, light gray-brown, little fine sand
				28.0	110SDMN	SAND Sand, light brown, fine, little silt, trace of fine gravel
				31.5	110SDMN	SILT Silt, light brown, some fine to medium sand, some embedded fine to coarse gravel
				33.0	110SDMN	SILT Silt, light brown, trace of embedded fine to coarse gravel
				39.0	110SDMN	SILT Auger refusal
GFB 11	30.0	30.0	30.0	0	110SDMN	SAND Sand, light brown, fine to medium, little to trace of silt
				8.0	110SDMN	SAND Sand, light brown, fine to medium
				18.0	110SDMN	SAND Sand, light brown, fine to medium, trace of fine gravel
				21.0	110SDMN	SAND Sand, light brown, fine to coarse, some fine to coarse gravel, trace to little silt
				30.0	110SDMN	SAND Auger refusal
GFB 12	12.0	--	--	0	110SDMN	SAND Sand, dark brown, fine to medium, few fine to coarse gravel and cobbles
				10.0	110SDMN	SAND Sand, light gray, fine to medium
				12.0	110SDMN	SAND End of hole
GFB 13	20.0	20.0	--	0	111FILL	OTHR Asphalt
				0.2	110SDMN	SAND Sand, light brown, fine to medium, little fine to medium gravel
				2.5	110SDMN	SAND Sand, grayish-brown, fine to medium, some fine to medium gravel
				3.5	110SDMN	SAND Sand, light brown, fine to medium, little coarse, few fine gravel
				5.0	110SDMN	SAND Sand, fine, red and gray mottling, varved at bottom with medium to coarse sand
				7.0	110SDMN	SAND Sand, light brown, fine, few coarse, few fine gravel

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
					BELKNAP COUNTY	
					Gilford—*Continued*	
GFB 13--*Contiued*						
				13.0	110SDMN	COBB Auger grinding on cobbles
				15.0	110SDMN	SAND Sand, light gray-brown, fine
				17.0	110SDMN	SAND End of hole
GFW 7	30.0	15.0	--	0	110SDMN	SILT Silt, black organic, with peat, trace medium to fine sand, trace of gravel
				2.5	110SDMN	SDGL Gravel, brown, fine to coarse to medium, and medium to coarse sand, occasional cobbles
				6.5	110SDMN	SDGL Sand, tan, medium to coarse, and fine to medium gravel
				10.0	110SDMN	SAND Sand, tan, medium to coarse, some fine to medium gravel
				12.0	110SDMN	SAND Sand, tan, fine, trace of orange medium sand in occasoinal layers
				30.0	110SDMN	SAND End of hole
GFW 9	16.5	14.5	--	0	110SDMN	SAND Sand, brown, medium to coarse, some gravel, little fine sand
				3.0	110SDMN	SAND Sand, gray, medium to coarse, some gravel, little fine sand
				5.0	110SDMN	SAND Sand, gray, fine to medium, little coarse, little gravel (fill, petroleum odor)
				10.0	110SDMN	SAND Sand, gray, graded very coarse to medium, little gravel
				11.0	110SDMN	SDST Sand and silt, gray, fine, laminated
				12.5	110SDMN	SAND Sand, brown, medium to coarse, little fine, trace of gravel
				16.5	110SDMN	SAND End of hole
GFW 11	67.0	53.0	67.0	0	112SRFD	SAND Sand, coarse
				15.0	112SRFD	SAND Sand, medium
				55.0	112SRFD	SAND Sand, coarse
				66.0	112TILL	TILL Refusal; till
GFW 12	90.0	80.0	90.0	0	112SRFD	SAND Sand, fine; some coarser thin layers
				75.0	112SRFD	SDGL Sand, very coarse
				85.0	112TILL	TILL Till
				90.0	112TILL	TILL Refusal in till at 90 feet
GFW 13	49.0	35.0	49.0	0	112SRFD	SAND Sand, coarse; some thin finer layers
				38.0	112SRFD	SAND Sand, very fine; silt
				41.0	112TILL	TILL Till
				49.0	112TILL	TILL Refusal in till at 49 feet
GFW 14	75.0	70.5	75.0	0	110SDMN	SAND Sand, coarse, gray; some pebbles
				37.0	110SDMN	SDST Sand, fine; some silt layers
				57.0	110SDMN	SAND Sand, fine to medium
				67.0	110SDMN	SDST Sand, medium; some very fine, and silt
				75.0	BEDROCK	ROCK Refusal; probably bedrock
GFW 15	44.0	42.0	44.0	0	110SDMN	SAND Sand, very fine, tan; some silt and medium sand
				37.0	110SDMN	SAND Sand, medium
				43.0	112TILL	TILL Till
				44.0	BEDROCK	ROCK Refusal; probably bedrock

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
					BELKNAP COUNTY	
					Gilford—*Continued*	
GFW 16	--	14.4	--	0	112SRFD	--
GFW 17	--	450.0	--	0	110SDMN	SDGL
				125.0	110SDMN	CLAY
				150.0	BEDROCK	ROCK
GFW 18	--	305.0	--	0	112TILL	TILL Sand, hardpan
				31.0	BEDROCK	ROCK
GFW 19	--	265.0	--	0	112TILL	TILL Gravel, hardpan
				101.0	BEDROCK	ROCK
GFW 21	--	185.0	--	0	110SDMN	SAND
				50.0	BEDROCK	ROCK
GFW 22	--	165.0	--	0	110SDMN	SGVC
				10.0	BEDROCK	ROCK
GFW 23	--	145.0	--	0	112TILL	TILL Gravel, hardpan
				28.0	BEDROCK	ROCK
GFW 24	--	550.0	--	0	110SDMN	SDGL
				132.0	BEDROCK	ROCK
GFW 31	--	385.0	--	80.0	BEDROCK	ROCK
GFW 32	--	205.0	--	15.0	BEDROCK	ROCK
GFW 33	--	24.5	--	0	110SDMN	SDGL
				30.0	112TILL	TILL
GFW 35	--	300.0	--	0	110SDMN	SAND
				130.0	BEDROCK	ROCK
GFW 37	--	444.0	--	0	110SDMN	SDCL
				63.0	110SDMN	SDGL
				85.0	BEDROCK	ROCK
GFW 38	--	19.5	--	0	110SDMN	SDGL
				20.0	110SDMN	SAND
GFW 39	--	535.0	--	0	112TILL	TILL
				90.0	BEDROCK	ROCK
GFW 40	--	250.0	--	0	112TILL	TILL
				100.0	BEDROCK	ROCK
GFW 43	--	182.0	--	0	112TILL	TILL
				75.0	BEDROCK	ROCK
GFW 44	--	139.0	--	0	110SDMN	SDGL
				116.0	BEDROCK	ROCK
GFW 52	--	310.0	--	0	110SDMN	SAND
				75.0	BEDROCK	ROCK

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
					BELKNAP COUNTY	
					Gilford—*Continued*	
GFW 58	--	290.0	--	0	110SDMN	SAND
				105.0	BEDROCK	ROCK
GFW 63	--	300.0	--	0	110SDMN	SDGL
				105.0	BEDROCK	ROCK
GFW 66	--	375.0	--	0	110SDMN	SAND
				70.0	BEDROCK	ROCK
GFW 67	--	400.0	--	0	110SDMN	OTHR
				95.0	BEDROCK	ROCK
GFW 70	--	325.0	--	0	110SDMN	SDGL
				90.0	BEDROCK	ROCK
GFW 74	--	310.0	--	0	110SDMN	SDGL
				45.0	BEDROCK	ROCK
GFW 75	--	195.0	--	0	112TILL	TILL
				3.0	BEDROCK	ROCK
GFW 78	--	225.0	--	0	112TILL	TILL
				90.0	BEDROCK	ROCK
GFW 81	--	180.0	--	0	110SDMN	SAND
				80.0	BEDROCK	ROCK
GFW 82	--	430.0	--	0	112TILL	TILL
				12.0	BEDROCK	ROCK
GFW 88	--	305.0	--	0	110SDMN	CLAY
				60.0	BEDROCK	ROCK
GFW 89	--	75.0	--	0	112TILL	TILL
				16.0	BEDROCK	ROCK
GFW 91	--	390.0	--	0	112TILL	TILL Gravel, hardpan
				30.0	BEDROCK	ROCK
GFW 92	--	560.0	--	0	112TILL	TILL
				100.0	BEDROCK	ROCK
GFW 98	--	310.0	--	0	110SDMN	SAND
				80.0	BEDROCK	ROCK
GFW 100	--	650.0	--	0	112TILL	TILL
				50.0	BEDROCK	ROCK
GFW 101	--	277.0	--	0	112TILL	TILL Clay, hardpan
				75.0	BEDROCK	ROCK
GFW 112	--	265.0	--	0	110SDMN	OTHR
				100.0	BEDROCK	ROCK
GFW 114	--	310.0	--	0	110SDMN	CLAY
				150.0	BEDROCK	ROCK

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
BELKNAP COUNTY						
Gilford—*Continued*						
GFW 118	--	200.0	--	0	112TILL	TILL
				80.0	BEDROCK	ROCK
GFW 120	--	230.0	--	0	110SDMN	CLAY
				120.0	BEDROCK	ROCK
GFW 121	--	300.0	--	0	110SDMN	SDGL
				30.0	BEDROCK	ROCK
GFW 123	--	300.0	--	0	110SDMN	SDGL
				87.0	BEDROCK	ROCK
GFW 124	--	325.0	--	0	110SDMN	SAND
				50.0	BEDROCK	ROCK
GFW 126	--	225.0	--	0	110SDMN	SAND
				63.0	BEDROCK	ROCK
GFW 134	--	295.0	--	0	112TILL	TILL Gravel, hardpan
				27.0	BEDROCK	ROCK
GFW 136	--	375.0	--	83.0	BEDROCK	ROCK
GFW 139	--	300.0	--	0	110SDMN	SAND
				100.0	110SDMN	SDGL
				120.0	BEDROCK	ROCK
GFW 147	--	475.0	--	0	110SDMN	SGVC
				91.0	BEDROCK	ROCK
GFW 148	--	700.0	--	0	110SDMN	SDGL
				10.0	110SDMN	CLAY
				58.0	BEDROCK	ROCK
GFW 151	--	900.0	--	0	110SDMN	SDGL
				70.0	BEDROCK	ROCK
GFW 159	--	325.0	--	0	112TILL	TILL Sand, gravel, hardpan
				47.0	BEDROCK	ROCK
GFW 162	--	230.0	--	0	112TILL	TILL Gravel, clay, hardpan
				102.0	BEDROCK	ROCK
GFW 167	--	510.0	--	0	112TILL	TILL
				33.0	BEDROCK	ROCK
GFW 169	--	325.0	--	170.0	BEDROCK	ROCK
GFW 178	--	150.0	--	0	110SDMN	SDGL
				29.0	BEDROCK	ROCK
GFW 182	--	460.0	--	0	110SDMN	SDGL
				95.0	BEDROCK	ROCK
GFW 183	--	15.0	--	0	110SDMN	SAND

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
					BELKNAP COUNTY	
					Gilford—*Continued*	
GFW 187	--	350.0	--	0	110SDMN	SAND
				80.0	BEDROCK	ROCK
GFW 188	--	225.0	--	0	110SDMN	OTHR
				83.0	BEDROCK	ROCK
GFW 190	--	310.0	--	0	112TILL	TILL
				3.5	BEDROCK	ROCK
GFW 194	--	186.0	--	0	110SDMN	SGVC
				102.0	BEDROCK	ROCK
GFW 200	--	200.0	--	0	110SDMN	CLAY
				40.0	110SDMN	SDGL
				70.0	BEDROCK	ROCK
GFW 204	--	470.0	--	0	110SDMN	SDGL
				120.0	BEDROCK	ROCK
GFW 205	--	300.0	--	0	110SDMN	SAND
				75.0	BEDROCK	ROCK
GFW 213	--	225.0	--	0	112TILL	TILL Sand, gravel, hardpan
				113.0	BEDROCK	ROCK
GFW 219	--	245.0	--	90.0	BEDROCK	ROCK
GFW 223	--	300.0	--	0	112TILL	TILL Clay, hardpan
				86.0	BEDROCK	ROCK
GFW 224	--	375.0	--	0	110SDMN	SDGL
				111.0	BEDROCK	ROCK
GFW 225	--	540.0	--	0	110SDMN	SDGL
				65.0	BEDROCK	ROCK
GFW 227	--	540.0	--	0	110SDMN	SAND
				70.0	BEDROCK	ROCK
GFW 234	--	350.0	--	0	110SDMN	SGVC
				95.0	BEDROCK	ROCK
GFW 235	--	250.0	--	0	110SDMN	SGVC
				60.0	BEDROCK	ROCK
GFW 237	--	325.0	--	0	110SDMN	SDGL
				78.0	BEDROCK	ROCK
GFW 243	--	210.0	--	0	110SDMN	SAND
				70.0	BEDROCK	ROCK
GFW 244	--	310.0	--	0	112TILL	TILL
				16.0	BEDROCK	ROCK
GFW 245	--	425.0	--	0	110SDMN	SDCL
				27.0	BEDROCK	ROCK

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
						BELKNAP COUNTY
						Gilford–*Continued*
GFW 246	--	300.0	--	0	110SDMN	SGVC
				88.0	BEDROCK	ROCK
GFW 252	55.3	55.3	--	0	112LCSR	SAND Sand, fine, tan; small gravel; and clay
				43.0	112LCSR	SAND Sand, fine, gray; gravel, large, sharp; and clay; End of hole at 55.33 feet
GFW 253	53.9	53.9	--	0	112LCSR	SAND Sand, fine, gray; and clay
				41.0	112LCSR	SAND Sand, fine to medium, gray; gravel, large, broken; specks of clay; refusal at 53.91 feet
GFW 254	52.2	--	52.2	0	112SRFD	SDGL Sand, fine to medium, large broken gravel
				21.0	112SRFD	SAND Fine brown sand and some gravel
				36.0	112SRFD	SAND Sand, fine to medium, brown, trace of clay
GFW 255	42.5	--	42.5	0	112LCSR	SAND Sand, fine to medium, specks of clay, tight
				23.0	112LCSR	SAND Sand, fine, gray, tight, some clay; refusal at 42.5 feet
GFW 256	58.7	49.0	58.7	0	112LCSR	SAND Sand and gravel, fine to medium
				33.0	112LCSR	SAND Sand, fine to medium, brown
				38.0	112LCSR	SAND Sand, fine to medium, brown-gray, some gravel
				49.0	112LCSR	SAND Sand, fine to medium, gray; some gravel; specks of clay
GFW 257	61.6	61.6	61.6	0	112LCSR	SAND Sand and gravel, fine to medium; specks of clay
				27.0	112LCSR	SAND Sand and gravel, fine; specks of clay
				33.0	112LCSR	SDCL Sand, fine and clay; tight
				53.0	112LCSR	SAND Sand, fine; brown and gray
						Laconia
LAA 1	5.0	--	--	0	112SRFD	SAND Sand, medium, brown
				5.0	110SDMN	SAND Refusal
LAB 1	37.5	--	37.5	0	110SDMN	SDGL Sand and gravel
				5.0	110SDMN	SAND Sand, coarse
				10.0	110SDMN	SILT Silt
				15.0	110SDMN	CLAY Clay
				28.0	110SDMN	SAND Sand, silty
				31.0	110SDMN	SAND Sand, silty with stones
				37.5	BEDROCK	ROCK Refusal; bedrock or boulders
LAB 2	60.0	--	--	0	110SDMN	SAND Sand, fine to coarse
				9.0	110SDMN	MUCK Muck, fibrous
				15.0	110SDMN	SAND Sand, fine, silty
				22.0	110SDMN	SILT Silt, varved, little fine sand
				30.0	110SDMN	SAND Sand, silty
				50.0	112TILL	TILL Till, dense, silty
				60.0	112TILL	TILL End of hole
LAB 3	75.0	--	--	0	110SDMN	SAND Sand and muck
				6.0	110SDMN	SAND Sand, fine, trace of silt
				62.0	112TILL	TILL Till, sandy with boulders
				75.0	112TILL	TILL End of hole

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number		Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
							BELKNAP COUNTY
							Laconia—*Continued*
LAB	4	57.0	--	57.0	0	110SDMN	SAND Sand, coarse, some fill
					15.0	110SDMN	SAND Sand, fine
					40.0	110SDMN	GRVL Gravel
					45.0	112TILL	TILL Till
					57.0	112TILL	TILL Refusal; till
LAB	5	30.0	--	--	0	110SDMN	SAND Sand fill
					6.0	110SDMN	SDST Sand and silt
					11.0	110SDMN	SAND Sand, fine
					24.0	112TILL	TILL Till, silty
					30.0	112TILL	TILL End of hole
LAB	6	20.0	--	--	0	111FILL	SAND Fill
					8.0	110SDMN	SDST Sand and silt
					10.0	110SDMN	SAND Sand, coarse
					12.0	110SDMN	GRVL Gravel
					18.0	112TILL	TILL Till, silty
					20.0	112TILL	TILL End of hole
LAW	1	15.6	15.0	--	0	110SDMN	SAND Sand, fine to medium, trace of coarse sand, trace of silt
					3.0	110SDMN	SAND Sand, coarse
					9.0	110SDMN	SAND Sand, medium, silty
					15.6	110SDMN	SAND End of hole
LAW	5	--	6.7	--	0	112SRFD	--
LAW	7	--	250.0	--	0	112TILL	TILL Gravel, hardpan
					80.0	BEDROCK	ROCK
LAW	9	--	200.0	--	0	112TILL	TILL
					5.0	BEDROCK	ROCK
LAW	12	--	370.0	--	0	112TILL	TILL
					60.0	110SDMN	CLAY
					85.0	BEDROCK	ROCK
LAW	16	--	305.0	--	0	110SDMN	SDGL
					18.0	BEDROCK	ROCK
LAW	17	--	265.0	--	15.0	BEDROCK	ROCK
LAW	41	--	370.0	--	0	110SDMN	SAND
					150.0	BEDROCK	ROCK
LAW	43	--	502.0	--	0	112TILL	TILL
					45.0	BEDROCK	ROCK
LAW	47	--	190.0	--	0	110SDMN	CLAY
					60.0	BEDROCK	ROCK
LAW	54	--	433.0	--	0	110SDMN	CLAY
					32.0	BEDROCK	ROCK
LAW	59	--	15.0	--	0	110SDMN	SAND

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
						BELKNAP COUNTY
						Laconia-*Continued*
LAW 70	--	145.0	--	0	112TILL	TILL
				70.0	BEDROCK	ROCK
LAW 71	--	20.0	--	0	110SDMN	SAND
				8.0	110SDMN	SDCL
LAW 75	--	400.0	--	0	110SDMN	SDGL
				6.0	BEDROCK	ROCK
						Meredith
MHB 1	9.0	--	9.0	0	110SDMN	CLAY Clay
				4.0	112TILL	TILL Till
				9.0	BEDROCK	ROCK Bedrock
MHB 2	35.0	--	--	0	110SDMN	SDST Sand, fine and silty
				14.0	110SDMN	SILT Silt, varved, gray
				22.0	110SDMN	SAND Sand, fine
				27.0	112TILL	TILL Till, dense and sandy
				35.0	112TILL	TILL End of hole
MHB 3	28.0	--	28.0	0	110SDMN	SAND Sand, medium; brown, fine
				10.0	110SDMN	SAND Sand, fine, clay boulders
				20.0	110SDMN	SDCL Sand, silty, fine, and clay
				25.0	110SDMN	OTHR Silt and hardpan
				28.0	110SDMN	OTHR Refusal
MHB 4	27.0	--	27.0	0	110SDMN	SAND Sand, medium; brown, fine
				10.0	110SDMN	SAND Sand, fine, silty, boulders
				20.0	110SDMN	SAND Sand, fine, silty
				24.0	110SDMN	HRDP Hardpan
				27.0	110SDMN	HRDP Refusal
MHB 6	25.0	--	25.0	0	110SDMN	SAND Sand, brown, fine
				5.0	110SDMN	SAND Sand, brown, medium, trace of clay
				10.0	110SDMN	SAND Sand, dark brown
				20.0	110SDMN	SAND Sand, brown, fine, trace of clay
				24.0	110SDMN	HRDP Hardpan
				25.0	110SDMN	HRDP Refusal
MHB 7	29.0	--	29.0	0	110SDMN	SAND Sand, brown, fine
				5.0	110SDMN	SAND Sand, brown, medium
				10.0	110SDMN	SAND Sand, brown, medium, trace of clay
				15.0	110SDMN	SAND Sand, brown, medium, clay
				20.0	110SDMN	SAND Sand, brown, fine, clay
				25.0	110SDMN	HRDP Hardpan
				29.0	110SDMN	HRDP Refusal
MHB 8	51.0	--	51.0	0	110SDMN	SAND Sand, brown, medium
				5.0	110SDMN	CLAY Clay, sandy
				35.0	110SDMN	SDCL Sand, fine, and clay
				45.0	110SDMN	SDST Silt, fine, and sand
				51.0	110SDMN	SDST Refusal

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number		Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
							BELKNAP COUNTY
							Meredith—*Continued*
MHB	9	48.0	--	48.0	0	110SDMN	SAND Sand, brown, fine
					10.0	110SDMN	SAND Sand, fine to medium, trace of clay
					15.0	110SDMN	SDCL Sand, fine to medium, and clay
					20.0	110SDMN	SDCL Sand, medium, and clay
					25.0	110SDMN	CLAY Clay, sandy, medium
					40.0	110SDMN	SDST Silt and sand, fine
					48.0	110SDMN	SDST Refusal
MHB	10	40.0	--	40.0	0	110SDMN	SAND Sand, fine
					5.0	110SDMN	SAND Sand, medium
					10.0	110SDMN	SDCL Sand, brown, medium and clay
					15.0	110SDMN	CLAY Clay, gray
					25.0	110SDMN	SDCL Sand, fine and gray clay
					30.0	110SDMN	SDST Silt, and sand, fine
					40.0	110SDMN	SDST Refusal
MHB	11	47.0	--	47.0	0	110SDMN	SAND Sand, brown, medium to coarse
					10.0	110SDMN	SAND Sand, fine, silty
					20.0	110SDMN	SAND Sand, fine, silty, trace of clay
					25.0	110SDMN	SDCL Sand, fine silty, and clay
					40.0	110SDMN	SDCL Sand, silty, and clay
					47.0	110SDMN	SDCL Refusal
MHB	12	45.4	45.0	45.5	0	110SDMN	SAND Sand, brown, fine
					5.0	110SDMN	SAND Sand, brown, medium to coarse
					20.0	110SDMN	SAND Sand, brown, medium, trace of clay
					25.0	110SDMN	SAND Sand, medium to coarse
					35.0	110SDMN	SAND Sand, medium, little silt
					40.0	110SDMN	SAND Sand, brown, medium to coarse
					45.4	110SDMN	SAND Refusal
MHB	13	55.0	--	55.0	0	110SDMN	SAND Sand, brown, fine
					5.0	110SDMN	SAND Sand, brown, fine to medium
					10.0	110SDMN	SAND Sand, brown, medium, trace of silt
					20.0	110SDMN	STCL Silt and clay
					45.0	110SDMN	SDCL Sand, fine, silty, and clay
					55.0	110SDMN	SDCL Refusal
MHB	14	25.0	--	25.0	0	110SDMN	SAND Sand, medium; brown, fine
					5.0	110SDMN	SAND Sand, fine, trace of clay
					10.0	110SDMN	SDCL Sand, fine, and clay
					20.0	110SDMN	SDCL Sand, silty and clay
					23.0	110SDMN	HRDP Hardpan
					25.0	110SDMN	HRDP Refusal
MHW	1	91.0	35.0	91.0	0	112SRFD	SAND Sand, fine
					25.0	112SRFD	SAND Sand, medium
					30.0	112SRFD	SAND Sand, coarse
					40.0	112SRFD	SAND Sand, very fine to fine
					75.0	112SRFD	SAND Sand, medium
					80.0	112TILL	TILL Clay till
					91.0	112TILL	TILL Till, close to refusal

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
					BELKNAP COUNTY	
					Meredith—*Continued*	
MHW 2	69.0	55.0	69.0	0	112SRFD	SAND Sand, fine to medium
				30.0	112SRFD	SAND Sand, medium
				35.0	112SRFD	SAND Sand, very fine
				50.0	112SRFD	SAND Sand, very coarse
				57.0	112TILL	TILL Till
				69.0	112TILL	TILL End of hole, till
MHW 13	--	280.0	--	0	110SDMN	SDGL
				12.0	BEDROCK	ROCK
MHW 24	--	180.0	--	0	110SDMN	SDGL
				70.0	BEDROCK	ROCK
MHW 28	--	205.0	--	0	110SDMN	SDGL
				26.0	BEDROCK	ROCK
MHW 33	--	730.0	--	0	110SDMN	SDGL
				48.0	112TILL	TILL Clay, hardpan
				65.0	BEDROCK	ROCK
MHW 58	--	673.0	--	0	112TILL	TILL
				12.0	BEDROCK	ROCK
MHW 85	--	425.0	--	10.0	BEDROCK	ROCK
MHW 90	--	225.0	--	0	110SDMN	SDGL
				19.0	BEDROCK	ROCK
MHW 91	--	300.0	--	0	110SDMN	SDGL
				41.0	BEDROCK	ROCK
MHW 95	--	520.0	--	0	110SDMN	SDGL
				25.0	BEDROCK	ROCK
MHW 101	--	408.0	--	0	112TILL	TILL
				20.0	BEDROCK	ROCK
MHW 111	--	125.0	--	2.0	BEDROCK	ROCK
MHW 136	--	465.0	--	1.0	BEDROCK	ROCK
MHW 143	--	233.0	--	0	112TILL	TILL
				10.0	BEDROCK	ROCK
MHW 147	--	835.0	--	0	110SDMN	SAND
				44.0	BEDROCK	ROCK
MHW 162	--	310.0	--	0	112TILL	TILL
				12.0	BEDROCK	ROCK
MHW 164	--	533.0	--	0	112TILL	TILL
				5.0	BEDROCK	ROCK
MHW 167	--	270.0	--	0	112TILL	TILL
				42.0	BEDROCK	ROCK

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
					BELKNAP COUNTY	
					Meredith—*Continued*	
MHW 185	--	300.0	--	0	110SDMN	CLAY
				43.0	BEDROCK	ROCK
MHW 203	--	277.0	--	0	110SDMN	SDCL
				44.0	BEDROCK	ROCK
MHW 212	--	205.0	--	0	112TILL	TILL Gravel, hardpan
				9.0	BEDROCK	ROCK
MHW 216	--	305.0	--	0	110SDMN	CLAY
				10.0	BEDROCK	ROCK
MHW 223	--	805.0	--	0	110SDMN	OTHR
				67.0	BEDROCK	ROCK
MHW 236	--	255.0	--	0	110SDMN	CLAY
				10.0	BEDROCK	ROCK
MHW 237	--	280.0	--	0	110SDMN	CLAY
				10.0	BEDROCK	ROCK
MHW 242	--	400.0	--	0	110SDMN	SAND
				12.0	BEDROCK	ROCK
MHW 258	--	210.0	--	0	112TILL	TILL
				30.0	BEDROCK	ROCK
MHW 262	--	250.0	--	0	110SDMN	SDGL
				47.0	BEDROCK	ROCK
					New Hampton	
NHW 33	275.0	275.0	--	0	112SRFD	SAND
				40.0	BEDROCK	ROCK End of hole at 275 feet
NHW 34	252.0	252.0	--	0	112SRFD	SAND Sand
				15.0	BEDROCK	ROCK End of hole at 252 feet
					Sanbornton	
SCB 3	119.0	--	119.0	0	112LCSR	SAND Sand, fine
				86.0	112SRFD	GRVL Gravel
				119.0	BEDROCK	ROCK Refusal; boulders or bedrock
SCW 45	--	140.0	--	60.0	BEDROCK	
SCW 49	--	200.0	--	30.0	BEDROCK	
SCW 69	--	225.0	--	25.0	BEDROCK	ROCK
SCW 81	--	250.0	--	0	112TILL	TILL
				10.0	BEDROCK	ROCK
SCW 88	--	135.0	--	0	112TILL	TILL
				17.0	110SDMN	CLAY
				56.0	BEDROCK	ROCK

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
						BELKNAP COUNTY
						Sanbornton—*Continued*
SCW 94	--	105.0	--	40.0	BEDROCK	ROCK
SCW 97	--	190.0	--	6.0	BEDROCK	ROCK
SCW 110	--	505.0	--	70.0	BEDROCK	ROCK
SCW 130	83.8	80.0	83.8	0	110SDMN	SAND Sand, brown, medium to fine, trace of gravel;fill
				3.0	110SDMN	SAND Sand, brown, fine, some medium sand, trace of coarse sand, trace of silt
				10.0	110SDMN	SAND Sand, gray-brown, fine, occasional laminae of slightly silty fine sand
				30.0	110SDMN	SAND Sand, brown, fine, little silt, 0.125 inch silt and clay layer at 30.5 feet
				35.0	110SDMN	SAND Sand, silty, fine, 20 to 30 percent nonplastic fines
				40.0	110SDMN	SAND Sand, brown, fine, little silt, 20 to 30 percent slightly plastic silt
				45.0	110SDMN	SAND Sand, fine to medium, trace of silt, some red-brown fine sand laminae
				55.0	110SDMN	SAND Sand, brown, fine, some medium, trace of silt
				60.0	110SDMN	SAND Sand, brown, medium to fine, trace of silt
				65.0	110SDMN	SAND Sand, brown, fine, little silt, some medium to fine sand laminae
				75.0	110SDMN	SAND Sand, gray, fine to medium
				83.8	400CRSL	ROCK Refusal
SCW 131	87.0	83.0	--	0	111FILL	SAND Sand, brown, medium to fine; fill
				1.0	111FILL	SAND Sand, light brown, fine, trace of silt; fill
				4.0	111FILL	SAND Sand, grayish brown, medium to coarse, some fine, some brown gravel, trace of silt; fill
				6.0	110SDMN	SAND Sand, grayish brown, fine, trace of silt
				25.0	110SDMN	SAND Sand, brown, fine, some silt
				32.0	110SDMN	SAND Sand, fine, silty, 20 to 30 percent slightly plastic fines
				40.0	110SDMN	SAND Sand, brown, fine, little silt
				50.0	110SDMN	SAND Sand, gray, fine, some medium, trace of silt
				65.0	110SDMN	SAND Sand, brown, medium, some fine (note disturbed sample)
				70.0	110SDMN	SAND Sand, brown, fine, trace of silt
				80.0	110SDMN	SAND Sand, gray, fine, trace silt, 0.5-inch layer medium to coarse sand and silt
				84.7	112TILL	TILL Sand, gray, medium to fine, gravelly, silty, some gravel, 20 percent plastic fines
				87.0	112TILL	TILL End of hole
SCW 132	97.3	91.0	97.3	0	110SDMN	SOIL Topsoil, sandy, brown, medium to fine
				0.8	111FILL	SAND Sand, brown, medium to fine, trace of coarse sand, trace of fine gravel; fill
				7.0	110SDMN	SAND Sand, brown, fine, trace of silt
				25.0	110SDMN	SAND Sand, brown, fine, silty, about 40 to 50 percent slightly plastic fines
				32.0	110SDMN	SAND Sand, brown, fine, silty, about 20 percent nonplastic fines
				40.0	110SDMN	SAND Sand, brown, fine, little silt
				45.0	110SDMN	SILT Silt, slightly plastic, some fine sand

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
						BELKNAP COUNTY
						Sanbornton-*Continued*
SCW 132--*Continued*						
				50.0	110SDMN	SAND Sand, brown to grayish brown, fine, trace to little sil
				55.0	110SDMN	SAND Sand, gray, fine, trace of medium, little silt, occasional laminae of silty fine sand
				60.0	110SDMN	SAND Sand, gray, fine, trace of silt
				85.0	110SDMN	SAND Sand, gray, fine to medium, small lenses of medium to coarse sand, trace of gravel
				93.7	400CRSL	ROCK Refusal
SCW 133	20.5	19.8	--	0	110SDMN	SAND Sand, brown-red, fine, to medium, little gravel
				19.8	110SDMN	SAND Sand, gray, fine, with lenses of silt and clay
				20.0	110SDMN	SAND End of hole
SCW 134	21.5	20.0	--	0	110SDMN	SAND Sand, brown, fine, trace medium to coarse, trace of silt
				5.0	110SDMN	SAND Sand, brown, fine to medium, little coarse sand, trace of gravel
				9.5	110SDMN	SAND Sand, gray, fine, little silt
				15.5	110SDMN	SAND Sand, red-mottled, fine to medium
				16.5	110SDMN	SAND Sand, gray, fine, with lenses of silt and clay
				21.5	110SDMN	SAND End of hole
						Tilton
TSB 1	30.0	--	--	0	110SDMN	GRVL Gravel
				12.0	112TILL	TILL Till, sandy
				19.0	112TILL	TILL Till, silty
				30.0	112TILL	TILL End of hole
TSB 3	41.0	--	--	0	110SDMN	GRVL Gravel, little silt, brown
				12.0	112TILL	TILL Till, dense and sandy
				28.0	112TILL	TILL Till, dense and silty
				41.0	112TILL	TILL End of hole
TSB 4	21.0	20.0	21.0	0	110SDMN	MUCK Muck
				4.0	110SDMN	SAND Sand, brown, fine to medium, little fine gravel
				13.0	110SDMN	SAND Sand, brown to gray, fine to medium, silty, little dark brown silt, trace of fine gravel
				14.0	110SDMN	SAND Sand, brown to gray, fine to medium, little fine gravel
				20.0	110SDMN	SAND Sand, fine to medium, trace of coarse gravel, trace of light gray silt
				21.0	110SDMN	SAND Refusal
TSB 5	27.0	--	27.0	0	110SDMN	MUCK Muck
				3.0	110SDMN	SAND Sand, reddish-brown, fine to medium, little fine gravel
				13.0	110SDMN	SAND Sand, fine to medium, trace of fine gravel, trace of reddish-brown to gray silt
				15.0	110SDMN	SAND Sand, reddish-brown to brown, gravelly, fine to medium, trace of fine to coarse gravel
				20.0	110SDMN	SAND Sand, fine, little fine to coarse gravel, trace of gray silt
				22.0	112TILL	TILL Till, gravelly sand, fine to medium, some fine to coarse gravel, chunks of gray silt
				27.0	112TILL	TILL Refusal

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
						BELKNAP COUNTY
						Tilton—*Continued*
TSW 1	55.5	55.5	--	0	112SRFD	SDGL Sand and gravel, silty
				22.0	112SRFD	STCL Silt and clay
				55.5	112SRFD	STCL End of hole
TSW 2	32.0	32.0	--	0	110SDMN	SDCL Sand and clay, alternating
				10.0	112SRFD	SDST Sand, very fine, silt and clay
				32.0	112SRFD	SDST End of hole
TSW 4	52.0	24.5	--	0.8	110SDMN	SAND Sand, light brown, fine
				5.2	110SDMN	SDGL Sand, fine to coarse, and gravel, fine to medium
				5.7	110SDMN	SAND Sand, light brown, fine
				14.0	110SDMN	SAND Sand, light brown, fine to medium
				24.0	110SDMN	SAND Sand, light brown, fine to medium, trace of silt
				33.0	110SDMN	SAND Sand, light brown, fine
				40.0	110SDMN	SAND Sand, light brown, fine, occasional 0.1-0.2 foot oxidized layers
				48.0	110SDMN	SAND Sand, light gray, fine to medium
				52.0	110SDMN	SAND End of hole
TSW 5	52.0	50.0	--	0	110SDMN	SDGL Sand, light brown, fine to medium, and gravel, fine to coarse, trace of cobbles
				9.0	110SDMN	SAND Sand, light brown, fine to medium to coarse, trace of fine gravel
				16.0	110SDMN	SAND sand, light brown, fine to medium
				24.0	110SDMN	SAND Sand, light gray, fine to medium
				30.0	110SDMN	SAND Sand, light gray, fine to medium to coarse, trace of grave
				40.0	110SDMN	SAND Sand, light brown and gray, fine to medium, trace of thin silt layers
				52.0	110SDMN	SAND End of hole
TSW 6	52.0	26.0	--	0	110SDMN	SDGL Sand, light brown, fine to medium to coarse, and gravel fine to medium
				6.5	110SDMN	OTHR Sludge, light gray-dark brown, intermixed with fine to medium sand
				10.5	110SDMN	SDST Sand and silt, light brown, fine to medium
				12.0	110SDMN	GRVL Gravel, orange, fine to medium to coarse
				12.5	110SDMN	SAND Sand, light brown, fine to medium to coarse, trace of fine gravel, oxidized layer at 15.3-15.4 feet
				26.0	110SDMN	SAND Sand, light brown to gray, fine
				40.5	110SDMN	SAND Sand, light brown, fine to medium to coarse, trace of fine gravel, occasional 0.1-feet oxidized layers
				52.0	110SDMN	SAND End of hole
TSW 7	52.0	47.0	--	0	110SDMN	SOIL Topsoil
				1.5	110SDMN	SAND Sand, orange-brown fine to medium
				2.5	110SDMN	SAND Sand, tan, fine
				3.0	110SDMN	SAND Sand, tan, fine to medium to coarse
				13.0	110SDMN	SDST Sand and silt, tan, fine, occasional gray clay-silt layers
				19.0	110SDMN	SAND Sand, brown, fine to medium
				29.0	110SDMN	SAND Sand, brown, fine to medium to coarse
				37.0	110SDMN	SDST Sand and silt, brown, fine, embedded gravel, fine to coarse, trace of clay

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
						BELKNAP COUNTY
						Tilton—*Continued*
TSW 7--*Continued*						
				41.0	110SDMN	GRVL Gravel, fine to coarse, poorly sorted, trace of fine sand
				52.0	110SDMN	GRVL End of hole
TSW 8	52.0	30.0	--	0	110SDMN	SOIL Topsoil
				0.8	110SDMN	SAND Sand, brown, medium to coarse
				5.0	110SDMN	SAND Sand, light brown, fine to medium, with brown mottling
				15.0	110SDMN	SAND Sand, light brown, fine, occasional micaceous laminae
				20.0	110SDMN	SAND Sand, brown, fine, trace of silt, some clay pockets 0.125-inch thick
				25.0	110SDMN	SAND Sand, brown-tan, fine, occasional orange mottles
				34.0	110SDMN	SILT Silt, gray, clayey, trace of fine sand
				42.0	110SDMN	CLAY Clay, gray
				52.0	110SDMN	CLAY End of hole
TSW 9	52.0	31.0	--	0	110SDMN	SOIL Topsoil
				0.8	110SDMN	SAND Sand, brown, medium to coarse, trace of fine gravel
				10.0	110SDMN	SAND Sand, tan, fine to coarse
				11.0	110SDMN	SAND Sand, tan, fine
				15.0	110SDMN	SAND Sand, brown, fine to medium
				20.0	110SDMN	SAND Sand, tan, fine
				25.0	110SDMN	SAND Sand, tan, fine, frequent micaceous laminae interbedded
				30.0	110SDMN	SAND Sand, brown, fine, little silt, frequent micaceous laminae interbedded
				32.0	110SDMN	SAND Sand, brown, fine, trace of silt, occasional 0.125-inch clay lenses
				35.0	110SDMN	CLAY Clay, gray, silty, layered
				45.0	110SDMN	SILT Silt, gray, clayey, frequent pockets of silty clay
				50.0	110SDMN	SILT Silt, gray, trace of fine sand
				52.0	110SDMN	SILT End of hole
TSW 10	49.0	13.0	--	0	110SDMN	SOIL Topsoil
				0.8	110SDMN	SDGL Sand, light brown, fine to medium to coarse, and gravel, fine to medium
				3.0	110SDMN	SAND Sand, light brown, medium to coarse, trace of fine gravel
				8.5	110SDMN	SAND Sand, orange-brown, fine to medium
				14.0	110SDMN	SDST Sand, light brown, fine, and silt, with occasional 0.0625-inch oxidized layers
				19.0	110SDMN	SILT Silt, light brown, little fine sand, occasional 0.25-inch clay layers
				26.0	110SDMN	SDST Sand, gray, fine, and silt
				28.5	110SDMN	SAND Sand, gray-purple, fine to medium, trace of fine to medium gravel, with little to some silt
				38.0	110SDMN	SAND Sand, light gray, fine to medium, little embedded fine to coarse gravel, trace of silt
				45.0	110SDMN	SILT Silt, gray, little fine sand, little embedded gravel, fine to medium, trace of clay
				49.0	110SDMN	SILT End of hole

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
					BELKNAP COUNTY	
					Tilton—*Continued*	
TSW 11	28.0	26.0	--	0	110SDMN	SDGL Sand and gravel, brown, fine to coarse
				5.0	110SDMN	SAND Sand, brown, medium to coarse, some gravel
				8.0	110SDMN	SAND Sand, brown, medium
				20.0	110SDMN	SAND Sand, dark brown, medium, trace of fine sand
				25.0	110SDMN	SAND Sand, brown to gray, medium
				28.0	110SDMN	SAND End of hole
TSW 12	31.5	30.0	--	0	110SDMN	SDGL Sand and gravel, brown, fine to coarse
				10.0	110SDMN	SDGL Sand and gravel, brown, medium to coarse
				14.0	110SDMN	SAND Sand, brown, fine to coarse
				20.0	110SDMN	SAND Sand, tan to brown, fine to coarse
				31.5	110SDMN	SAND End of hole
TSW 13	81.5	75.0	--	0	110SDMN	SDGL Sand and gravel, brown, fine to coarse, trace of silt
				3.5	110SDMN	SAND Sand, brown, medium
				10.0	110SDMN	SAND Sand, brown, medium, trace of gravel
				15.0	110SDMN	SAND Sand, brown, medium to coarse, trace of gravel
				20.0	110SDMN	SAND Sand, brown, fine to medium
				25.0	110SDMN	SAND Sand, brown-gray, fine to medium
				40.0	110SDMN	SAND Sand, brown-gray, fine, trace of medium
				45.0	110SDMN	SAND Sand, brown to brown-gray, fine to medium
				55.0	110SDMN	SAND Sand, brown-gray to gray, fine
				65.0	110SDMN	SAND Sand, gray, fine to very fine
				75.0	110SDMN	SILT Silt, gray, trace of fine sand
				81.5	110SDMN	SILT End of hole
TSW 14	32.0	30.5	--	0	110SDMN	SDGL Sand and gravel, brown, fine to coarse, trace of silt
				3.5	110SDMN	SAND Sand, brown, medium
				15.0	110SDMN	SAND Sand, brown, medium, trace of gravel
				20.0	110SDMN	SAND Sand, brown, medium
				30.0	110SDMN	SAND Sand, brown-gray, fine
				32.0	110SDMN	SAND End of hole
TSW 15	16.5	14.5	--	0	110SDMN	SAND Sand, yellow-brown, fine to medium, trace of silt
				9.5	110SDMN	SAND Sand, brown-red, fine to coarse, trace of gravel
				14.5	110SDMN	SAND Sand, gray, fine, little silt
				16.5	110SDMN	SAND End of hole
TSW 16	16.5	15.0	--	0	110SDMN	SAND Sand, fine to medium, brown, well graded; some fine gravel
				5.0	110SDMN	SDGL Sand, fine to medium, brown, well graded; some fine gravel
				10.0	110SDMN	SAND Sand, fine to coarse, brown, well graded; some fine gravel
				16.5	110SDMN	SAND End of hole
TSW 17	16.5	15.0	--	0	110SDMN	SAND Sand, fine to coarse, red brown, well graded; little fine gravel
				5.0	110SDMN	SAND Sand, fine to medium, brown; some fine gravel
				10.0	110SDMN	CLAY Clay, black, organic; some silt; trace of fine sand
				14.0	110SDMN	SAND Sand, fine to medium,well graded; little fine gravel; trace of silt, gray
				16.5	110SDMN	SAND End of hole

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
						BELKNAP COUNTY
						Tilton–*Continued*
TSW 18	16.5	15.0	--	0	110SDMN	SAND Sand, fine to coarse, red brown, well graded
				5.0	110SDMN	SAND Sand, fine to coarse, red brown; some fine to coarse gravel
				13.0	110SDMN	SAND Sand, fine, poorly graded; trace of silt
				16.5	110SDMN	SAND End of hole
TSW 19	16.5	15.0	--	0	110SDMN	SAND Sand, fine; some dark brown silt
				5.0	110SDMN	SILT Silt, dark brown; some fine sand
				10.0	110SDMN	CLAY Clay, black, organic; little silt; trace of fine sand
				16.5	110SDMN	CLAY End of hole
TSW 20	16.5	15.0	--	0	110SDMN	SAND Sand, fine to coarse, brown, well graded; some fine to medium gravel
				10.0	110SDMN	GRVL Gravel, fine to coarse; little coarse brown sand
				14.0	110SDMN	SAND Sand, medium to coarse, red brown; little fine to medium gravel
				16.5	110SDMN	SAND End of hole
TSW 21	16.5	15.0	--	0	110SDMN	SAND Sand, fine to coarse, brown, well graded; little fine gravel
				5.0	110SDMN	SAND Sand, fine to coarse, brown, well graded;some fine to coarse gravel
				10.0	110SDMN	SAND Sand, fine to coarse, well graded; some silt; some fine to medium gravel
				14.0	110SDMN	SAND Sand, fine, poorly graded; little silt
				16.5	110SDMN	SAND End of hole
TSW 22	16.5	15.0	--	0	110SDMN	SAND Sand, fine to coarse, brown, well graded; some fine to medium gravel
				5.0	110SDMN	SDGL Sand, medium to coarse; and fine to coarse gravel
				10.0	110SDMN	SAND Sand, fine, brown, poorly graded; some silt
				15.0	110SDMN	SAND Sand, fine, red brown, poorly graded; some silt
				16.5	110SDMN	SAND End of hole
TSW 23	16.5	15.0	--	0	110SDMN	SAND Sand, fine to medium, brown, poorly graded; little silt trace fine gravel
				5.0	110SDMN	SAND Sand, fine to coarse, brown, well graded; trace of silt; trace of fine gravel
				10.0	110SDMN	SAND Sand, fine to medium; some silt; little fine to medium gravel
				15.0	110SDMN	SAND Sand, fine to medium, well graded; some silt, black organic; little fine to coarse gravel
				16.5	110SDMN	SAND End of hole
TSW 24	--	10.9	--	0	112SRFD	--
TSW 25	--	600.0	--	0	112TILL	TILL Sand, gravel, hardpan
				50.0	BEDROCK	ROCK
TSW 26	--	400.0	--	0	110SDMN	SDGL
				10.0	110SDMN	SDGL
				15.0	112TILL	TILL Clay, hardpan
				140.0	BEDROCK	ROCK

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
			BELKNAP COUNTY			
			Tilton—*Continued*			
TSW 28	--	280.0	--	0	112TILL	TILL
				136.0	BEDROCK	ROCK
TSW 33	--	16.0	--	0	110SDMN	SAND
				5.0	110SDMN	SDGL
				10.0	110SDMN	CLAY
TSW 34	--	310.0	--	0	110SDMN	SAND
				85.0	BEDROCK	ROCK
TSW 35	--	280.0	--	0	110SDMN	SAND
				40.0	BEDROCK	ROCK
TSW 36	--	310.0	--	0	110SDMN	SAND
				72.0	BEDROCK	ROCK
TSW 40	--	300.0	--	0	112TILL	TILL Gravel, clay, hardpan
				67.0	BEDROCK	ROCK
TSW 41	--	230.0	--	0	110SDMN	SAND
				80.0	BEDROCK	ROCK
TSW 42	--	430.0	--	0	110SDMN	SAND
				90.0	BEDROCK	ROCK
TSW 43	--	400.0	--	132.0	BEDROCK	ROCK
TSW 44	--	410.0	--	0	110SDMN	SAND
				80.0	BEDROCK	ROCK
TSW 45	--	310.0	--	0	110SDMN	SAND
				80.0	BEDROCK	ROCK
TSW 49	--	725.0	--	90.0	BEDROCK	ROCK
TSW 50	--	365.0	--	140.0	BEDROCK	ROCK
TSW 52	--	305.0	--	130.0	BEDROCK	ROCK
TSW 55	--	202.0	--	0	110SDMN	SDGL
				111.0	BEDROCK	ROCK
TSW 57	--	555.0	--	0	110SDMN	SGVC
				37.0	110SDMN	SGVC
				88.0	110SDMN	SGVC
				93.0	110SDMN	SGVC
				104.0	BEDROCK	ROCK
TSW 58	--	605.0	--	0	110SDMN	SGVC
				39.0	110SDMN	SDGL
				91.0	110SDMN	CLAY
				100.0	BEDROCK	ROCK
TSW 59	--	355.0	--	0	110SDMN	SGVC
				37.0	110SDMN	SGVC
				84.0	110SDMN	CLAY
				90.0	BEDROCK	ROCK

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
						BELKNAP COUNTY
						Tilton—*Continued*
TSW 60	--	405.0	--	0	110SDMN	SGVC
				39.0	110SDMN	SGVC
				81.0	110SDMN	CLAY
				93.0	BEDROCK	ROCK
TSW 61	--	57.0	--	0	110SDMN	SGVC
				49.0	110SDMN	SDGL
TSW 65	--	303.0	--	0	110SDMN	SDCL
				135.0	BEDROCK	ROCK
TSW 67	--	280.0	--	0	112TILL	TILL Clay, hardpan
				135.0	BEDROCK	ROCK
TSW 69	--	77.0	--	0	112TILL	TILL
				60.2	BEDROCK	ROCK
TSW 80	340.0	340.0	--	0	112SRFD	GRVL Gravel
				15.0	112LCSR	SDCL Sand, very fine, silt and clay
				112.0	BEDROCK	ROCK Bedrock
						CARROLL COUNTY
						Moultonborough
MWA 1	5.0	--	5.0	0	110SDMN	SAND Sand, fine, tan, dry; very fine to medium; a few pebbles and fine gravel
				5.0	110SDMN	ROCK Refusal; boulder or bedrock
MWA 2	35.0	--	35.0	0	110SDMN	SAND Sand, fine to medium
				2.0	110SDMN	SAND Sand, very coarse, to fine gravel, tan, clean; a few pebbles, some medium sand.
				17.0	110SDMN	STCL Silt and clay, gray/tan, some very fine sand layers
				22.0	112TILL	TILL Till, very sandy, tan, dry
				35.0	112TILL	TILL Refusal; till
MWW 1	--	210.0	--	0	112TILL	TILL
				10.0	BEDROCK	ROCK
MWW 2	--	290.0	--	0	112TILL	TILL
				11.0	BEDROCK	ROCK
MWW 3	--	200.0	--	0	112TILL	TILL
				8.0	BEDROCK	ROCK
MWW 4	--	202.0	--	90.0	BEDROCK	ROCK
MWW 5	--	515.0	--	0	112TILL	TILL
				6.0	BEDROCK	ROCK
MWW 6	--	280.0	--	0	110SDMN	SAND
				3.0	BEDROCK	ROCK

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
			CARROLL COUNTY			
			Moultonborough-*Continued*			
MWW 7	--	383.0	--	0	110SDMN	SDGL
				6.0	BEDROCK	ROCK
MWW 9	--	400.0	--	55.0	BEDROCK	ROCK
MWW 10	--	312.0	--	0	112TILL	TILL
				60.0	BEDROCK	ROCK
MWW 11	--	212.0	--	0	110SDMN	SDGL
				20.0	110SDMN	CLAY
				44.0	BEDROCK	ROCK
MWW 12	--	252.0	--	0	112TILL	TILL
				5.0	BEDROCK	ROCK
MWW 15	--	653.0	--	0	110SDMN	SDGL
				35.0	112TILL	TILL Clay, hardpan
				125.0	BEDROCK	ROCK
MWW 16	--	752.0	--	0	112TILL	TILL
				20.0	BEDROCK	ROCK
MWW 18	--	440.0	--	0	110SDMN	CLAY
				8.0	BEDROCK	ROCK
MWW 19	36.0	32.0	36.0	0	112SRFD	SAND Sand, fine, some thin coarser layers
				30.0	112SRFD	SAND Sand, coarse
				36.0	BEDROCK	ROCK Refusal; bedrock
MWW 20	48.5	30.0	48.5	0	112SRFD	SAND Medium sand
				25.0	112SRFD	SAND Coarse sand
				30.0	112SRFD	SAND Medium sand
				47.0	112TILL	TILL Till
				48.5	BEDROCK	ROCK Refusal; bedrock
MWW 21	--	20.0	--	0	112SRFD	--
MWW 23	--	320.0	--	0	112TILL	TILL
				33.0	BEDROCK	ROCK
MWW 30	--	305.0	--	0	110SDMN	SAND
				15.0	BEDROCK	ROCK
MWW 31	--	305.0	--	0	110SDMN	SDGL
				48.0	BEDROCK	ROCK
MWW 33	--	427.0	--	0	112TILL	TILL
				98.0	BEDROCK	ROCK
MWW 35	--	705.0	--	0	110SDMN	SDGL
				55.0	BEDROCK	ROCK
MWW 36	--	560.0	--	0	110SDMN	SAND
				10.0	110SDMN	CLAY
				39.0	BEDROCK	ROCK

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
CARROLL COUNTY						
Moultonborough—*Continued*						
MWW 52	--	455.0	--	0	110SDMN	SDGL
				30.0	BEDROCK	ROCK
MWW 53	--	230.0	--	0	110SDMN	SDGL
				12.0	112TILL	TILL Clay, hardpan
				28.0	BEDROCK	ROCK
MWW 54	--	106.0	--	0	112TILL	TILL
				7.0	110SDMN	CLAY
				23.0	BEDROCK	ROCK
MWW 55	--	450.0	--	0	110SDMN	SDGL
				65.0	BEDROCK	ROCK
MWW 64	--	330.0	--	0	110SDMN	SDGL
				30.0	BEDROCK	ROCK
MWW 66	--	410.0	--	0	112TILL	TILL
				6.0	BEDROCK	ROCK
MWW 68	--	253.0	--	0	112TILL	TILL
				10.0	BEDROCK	ROCK
MWW 70	--	330.0	--	0	110SDMN	SAND
				10.0	BEDROCK	ROCK
MWW 71	--	172.0	--	0	110SDMN	SAND
				7.0	BEDROCK	ROCK
MWW 72	--	550.0	--	0	110SDMN	SDGL
				120.0	BEDROCK	ROCK
MWW 81	--	233.0	--	0	112TILL	TILL
				5.0	BEDROCK	ROCK
MWW 84	--	713.0	--	0	112TILL	TILL
				3.0	BEDROCK	ROCK
MWW 88	--	565.0	--	0	112TILL	TILL
				70.0	BEDROCK	ROCK
MWW 96	--	290.0	--	0	112TILL	TILL
				6.0	BEDROCK	ROCK
MWW 101	--	400.0	--	0	112TILL	TILL Clay, hardpan
				60.0	BEDROCK	ROCK
MWW 103	--	275.0	--	0	110SDMN	SAND
				18.0	BEDROCK	ROCK
MWW 106	--	550.0	--	0	110SDMN	SAND
				11.0	BEDROCK	ROCK
MWW 111	--	325.0	--	0	110SDMN	SDGL
				50.0	BEDROCK	ROCK

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
CARROLL COUNTY						
Moultonborough—*Continued*						
MWW 114	--	140.0	--	0	112TILL	TILL
				11.0	BEDROCK	ROCK
MWW 116	--	210.0	--	0	110SDMN	SAND
				4.0	BEDROCK	ROCK
MWW 120	--	270.0	--	0	112TILL	TILL
				18.0	BEDROCK	ROCK
MWW 132	--	272.0	--	0	112TILL	TILL
				5.0	BEDROCK	ROCK
MWW 153	--	522.0	--	0	112TILL	TILL Clay, hardpan
				60.0	BEDROCK	ROCK
MWW 155	--	330.0	--	0	112TILL	TILL
				6.0	BEDROCK	ROCK
MWW 165	--	623.0	--	0	112TILL	TILL
				50.0	110SDMN	CLAY
				90.0	BEDROCK	ROCK
MWW 171	--	462.0	--	0	110SDMN	CLAY
				28.0	BEDROCK	ROCK
MWW 177	--	273.0	--	0	112TILL	TILL
				15.0	BEDROCK	ROCK
MWW 179	--	353.0	--	0	112TILL	TILL Clay, hardpan
				82.0	BEDROCK	ROCK
MWW 180	--	277.0	--	0	110SDMN	SDCL
				20.0	BEDROCK	ROCK
MWW 181	--	333.0	--	0	110SDMN	SAND
				15.0	BEDROCK	ROCK
MWW 183	--	272.0	--	0	110SDMN	SDGL
				79.0	BEDROCK	ROCK
MWW 187	--	550.0	--	0	110SDMN	SDCL
				25.0	BEDROCK	ROCK
MWW 194	--	874.0	--	0	112TILL	TILL Gravel, hardpan
				22.0	BEDROCK	ROCK
MWW 197	--	1600.0	--	0	112TILL	TILL Gravel, hardpan
				40.0	BEDROCK	ROCK
MWW 198	--	613.0	--	0	112TILL	TILL
				6.0	BEDROCK	ROCK
MWW 199	--	1110.0	--	0	112TILL	TILL
				15.0	BEDROCK	ROCK
MWW 201	--	350.0	--	0	110SDMN	SAND
				12.0	BEDROCK	ROCK

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
CARROLL COUNTY						
Moultonborough—*Continued*						
MWW 203	--	453.0	--	0	112TILL	TILL
				12.0	BEDROCK	ROCK
MWW 206	--	600.0	--	0	110SDMN	SAND
				42.0	BEDROCK	ROCK
MWW 207	--	250.0	--	0	112TILL	TILL
				20.0	BEDROCK	ROCK
MWW 210	--	350.0	--	0	112TILL	TILL
				50.0	BEDROCK	ROCK
MWW 214	--	360.0	--	0	112TILL	TILL
				6.0	BEDROCK	ROCK
MWW 217	--	980.0	--	0	110SDMN	SAND
				9.0	BEDROCK	ROCK
MWW 218	--	760.0	--	0	110SDMN	SAND
				9.0	BEDROCK	ROCK
MWW 219	--	980.0	--	0	110SDMN	SAND
				6.0	BEDROCK	ROCK
MWW 220	--	855.0	--	0	110SDMN	OTHR
				150.0	BEDROCK	ROCK
MWW 221	--	305.0	--	0	110SDMN	SAND
				14.0	BEDROCK	ROCK
MWW 222	--	305.0	--	0	112TILL	TILL Sand, hardpan
				85.0	BEDROCK	ROCK
MWW 225	--	730.0	--	0	110SDMN	SDGL
				20.0	112TILL	TILL Clay, hardpan
				70.0	BEDROCK	ROCK
MWW 227	--	428.0	--	0	110SDMN	CLAY
				16.0	BEDROCK	ROCK
MWW 228	--	578.0	--	0	110SDMN	SAND
				43.0	BEDROCK	ROCK
MWW 232	--	118.0	--	0	110SDMN	SAND
				5.0	BEDROCK	ROCK
MWW 234	--	464.0	--	0	112TILL	TILL
				25.0	BEDROCK	ROCK
MWW 238	--	305.0	--	0	110SDMN	SDCL
				10.0	BEDROCK	ROCK
MWW 257	--	680.0	--	0	112TILL	TILL Sand, gravel, hardpan
				20.0	BEDROCK	ROCK
MWW 258	--	155.0	--	0	110SDMN	SDCL
				6.0	BEDROCK	ROCK

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
CARROLL COUNTY						
Moultonborough-*Continued*						
MWW 265	--	130.0	--	0	110SDMN	SDGL
				10.0	BEDROCK	ROCK
MWW 275	--	782.0	--	0	110SDMN	SAND
				67.0	BEDROCK	ROCK
MWW 287	--	815.0	--	0	110SDMN	SDGL
				27.0	BEDROCK	ROCK
MWW 295	--	680.0	--	0	110SDMN	SAND
				22.0	BEDROCK	ROCK
MWW 301	--	200.0	--	0	112TILL	TILL
				8.0	BEDROCK	ROCK
MWW 303	--	540.0	--	0	110SDMN	SDCL
				15.0	BEDROCK	ROCK
MWW 304	--	18.0	--	0	110SDMN	SDGL
				6.0	110SDMN	CLAY
				8.0	110SDMN	SDGL
MWW 307	--	420.0	--	15.0	112TILL	TILL
				17.0	BEDROCK	ROCK
MWW 309	--	640.0	--	0	110SDMN	SDCL
				13.0	BEDROCK	ROCK
MWW 310	--	420.0	--	0	110SDMN	SGVC
				60.0	BEDROCK	ROCK
MWW 316	--	205.0	--	0	112TILL	TILL Sand, gravel, hardpan
				10.0	BEDROCK	ROCK
MWW 321	--	310.0	--	0	112TILL	TILL
				12.0	BEDROCK	ROCK
MWW 324	--	661.0	--	0	110SDMN	SDGL
				25.0	BEDROCK	ROCK
MWW 326	--	230.0	--	0	112TILL	TILL
				22.0	BEDROCK	ROCK
MWW 330	--	255.0	--	4.0	BEDROCK	ROCK
MWW 331	--	430.0	--	0	110SDMN	CLAY
				20.0	BEDROCK	ROCK
MWW 332	--	655.0	--	0	110SDMN	CLAY
				4.0	BEDROCK	ROCK
MWW 334	--	530.0	--	0	112TILL	TILL Sand, hardpan
				86.0	BEDROCK	ROCK
MWW 335	--	405.0	--	0	112TILL	TILL
				20.0	BEDROCK	ROCK

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
						CARROLL COUNTY
						Moultonborough-*Continued*
MWW 339	--	405.0	--	0	112TILL	TILL Clay, hardpan
				60.0	BEDROCK	ROCK
MWW 340	--	355.0	--	0	110SDMN	SDGL
				38.0	BEDROCK	ROCK
MWW 343	--	805.0	--	0	110SDMN	SAND
				16.0	BEDROCK	ROCK
MWW 355	--	750.0	--	0	112TILL	TILL
				20.0	BEDROCK	ROCK
						Sandwich
SEW 10	--	475.0	--	0	110SDMN	SDGL
				11.0	BEDROCK	ROCK
SEW 15	--	300.0	--	31.0	BEDROCK	ROCK
SEW 21	--	225.0	--	0	112TILL	TILL
				25.0	BEDROCK	ROCK
SEW 31	--	18.0	--	0	110SDMN	SDGL
				3.0	112TILL	TILL Gravel, hardpan
SEW 49	--	242.0	--	0	112TILL	TILL
				8.0	BEDROCK	ROCK
SEW 50	--	230.0	--	0	112TILL	TILL
				60.0	BEDROCK	ROCK
SEW 53	--	363.0	--	0	110SDMN	SDGL
				2.0	112TILL	TILL
				5.0	BEDROCK	ROCK
SEW 60	--	593.0	--	0	112TILL	TILL
				21.0	BEDROCK	ROCK
SEW 61	--	333.0	--	0	112TILL	TILL
				20.0	BEDROCK	ROCK
SEW 105	--	320.0	--	0	112TILL	TILL
				23.0	BEDROCK	ROCK
SEW 108	--	977.0	--	0	112TILL	TILL
				15.0	BEDROCK	ROCK
SEW 150	--	100.0	--	0	110SDMN	SAND
				5.0	112TILL	TILL
				23.0	BEDROCK	ROCK
SEW 151	--	205.0	--	0	110SDMN	CLAY
				130.0	BEDROCK	ROCK

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
					CARROLL COUNTY	
					Sandwich—*Continued*	
TZA 1	50.0	--	--	0	110SDMN	SAND Sand, fine to medium
				20.0	110SDMN	SAND Sand, fine, silty
				25.0	110SDMN	SAND Sand, fine
				33.0	110SDMN	STCL Silt and clay
				40.0	110SDMN	SAND Sand, fine
				50.0	110SDMN	SAND End of hole
TZA 2	50.0	--	--	0	110SDMN	SAND Sand, coarse
				9.0	110SDMN	SDST Sand, fine, and silt
				16.0	110SDMN	SAND Sand, fine
				37.0	110SDMN	SAND Sand, coarse
				50.0	110SDMN	SAND End of hole
TZA 3	40.0	--	--	0	110SDMN	SAND Sand, silty
				12.0	110SDMN	SAND Sand, fine
				40.0	110SDMN	SAND End of hole
TZA 4	40.0	--	--	0	110SDMN	SAND Sand, fine
				25.0	110SDMN	SAND Sand, gravely
				34.0	112TILL	TILL Till, sandy
				40.0	112TILL	TILL End of hole
TZA 5	40.0	--	--	0	110SDMN	GRVL Gravel, sandy
				6.0	110SDMN	SAND Sand, fine
				31.0	110SDMN	GRVL Gravel, sandy
				40.0	110SDMN	GRVL End of hole
TZA 6	50.0	--	--	0	110SDMN	SAND Sand, fine
				41.0	110SDMN	SDST Sand and silt, fine
				50.0	110SDMN	SDST End of hole
TZA 7	28.5	--	28.5	0	112SRFD	SAND Sand, medium to fine
				25.0	112TILL	TILL Till
				28.5	112TILL	TILL Refusal, close to till
TZA 8	31.0	--	31.0	0	112SRFD	SAND Sand, fine
				25.0	112TILL	TILL Till
				31.0	BEDROCK	ROCK Refusal; bedrock
TZA 9	74.0	--	74.0	0	112SRFD	SAND Sand, medium, tan
				15.0	112SRFD	SAND Sand, very fine; silt
				55.0	112SRFD	SAND Sand, coarse
				60.0	112TILL	TILL Till
				74.0	112TILL	TILL Refusal in till at 74 feet
TZA 10	67.0	--	--	0	110SDMN	SAND Sand, coarse to medium, tan
				17.0	110SDMN	SDST Sand, very fine, gray; and silt
				57.0	110SDMN	SAND Sand, coarse, gray; with pebbles and cobbles
				67.0	112TILL	TILL End of hole, till
TZA 12	42.0	--	42.0	0	111SOIL	SOIL Topsoil
				1.0	110SDMN	SAND Sand, fine to coarse, brown; gravel, fine
				18.0	110SDMN	SDCL Sand, silty, brown; and clay; some gravel
				34.5	110SDMN	SAND Sand, fine to coarse, brown; gravel; trace of silt
				42.0	110SDMN	SAND End of hole, refusal

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
						CARROLL COUNTY
						Sandwich—*Continued*
TZA 13	23.0	--	23.0	0	110SDMN	SDGL Sand, fine to coarse, brown; gravel, fine
				16.0	110SDMN	SAND Sand, brown; and clay, gray; some gravel
				23.0	110SDMN	SAND End of hole, refusal
						Tuftonboro
TZA 14	54.0	--	54.0	0	111SOIL	SOIL Topsoil
				1.0	110SDMN	SAND Sand, fine to medium, red-brown; some coarse sand; some gravel
				11.0	110SDMN	SAND Sand, fine, gray; some coarse sand
				23.0	110SDMN	SDCL Sand, silty, brown; and clay
				35.0	110SDMN	SAND Sand, fine, brown; some medium to coarse sand; silt
				50.0	110SDMN	SAND Sand, fine to coarse; gravel; silt
				54.0	110SDMN	SAND End of hole, refusal
TZA 15	39.0	--	39.0	0	110SDMN	SAND Sand, fine, light tan
				17.0	110SDMN	SAND Sand, fine; with 3-inch coarse layer and 5-inch medium layer
				19.0	112TILL	TILL Till, clay/silt, blue-gray to tan
				29.0	112TILL	TILL Till coarse, sandy, with pebbles
				39.0	112TILL	TILL Refusal; till
TZA 16	89.0	--	--	0	110SDMN	SAND Sand, medium to coarse, light brown
				17.0	110SDMN	SAND Sand, fine to coarse, gray-tan
				29.0	110SDMN	SDST Sand, fine; some 0.25-inch silt layers throughout
				39.0	110SDMN	SAND Sand, fine to med; some 0.125-inch lenses biotite and very fine sand
				49.0	110SDMN	SAND Sand, very fine to fine, light gray-tan, compact
				59.0	110SDMN	SDST Sand, very fine to med; some 0.25-inch silt layers
				69.0	110SDMN	SAND Sand, medium
				89.0	110SDMN	SAND End of hole, drill rig broken
TZA 17	37.0	--	37.0	0	110SDMN	SAND Sand, medium, finer with depth
				20.0	112TILL	TILL Till, very sandy
				37.0	BEDROCK	ROCK Bedrock
TZA 18	19.0	--	19.0	0	112SRFD	SAND Sand, medium to fine, some silt
				16.0	112TILL	TILL Till, refusal at 19 feet
				19.0	BEDROCK	ROCK
TZW 1	101.0	100.0	--	0	110SDMN	SDGL Sand, brown, and gravel, fine to medium, trace of cobbles
				8.0	110SDMN	SAND Sand, light brown-white, medium coarse, trace of fine gravel
				20.0	110SDMN	SAND Sand, light brown-white, fine to medium, trace of fine to medium gravel
				40.0	110SDMN	SAND Sand, light brown-white, fine to medium
				70.0	110SDMN	SAND Sand, light brown-white, fine to medium, trace of fine gravel
				101.0	110SDMN	SAND End of hole
TZW 2	35.0	23.0	35.0	0	110SDMN	SAND Sand, coarse to very coarse, fine sand layer at 30 feet

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
						CARROLL COUNTY
						Tuftonboro—*Continued*
TZW 2--*Continued*						
				34.0	112TILL	TILL Till
				35.0	BEDROCK	ROCK Bedrock
TZW 3	108.0	51.0	108.0	0	110SDMN	SAND Sand, medium, tan; some fine and coarse
				37.0	110SDMN	SAND Sand, coarse; some medium and very coarse
				67.0	110SDMN	SAND Sand, medium to fine
				77.0	110SDMN	SAND Sand, coarse
				87.0	110SDMN	SAND Sand, fine to medium
				108.0	110SDMN	SAND Refusal
TZW 8	23.0	20.0	23.0	0	110SDMN	SAND Sand, medium to fine, tan; some pebbles
				17.0	110SDMN	SAND Sand, coarse, brown
				23.0	BEDROCK	ROCK Refusal; boulder or bedrock
TZW 9	35.0	27.0	35.0	0	110SDMN	SAND Sand, fine, dark brown
				17.0	110SDMN	SAND Sand, very fine, grading into cobbles with coarse sand, top 1/2 inch: gray silty clay
				18.0	110SDMN	SAND Sand, very coarse; some pebbles; some coarse sand
				28.0	110SDMN	CLAY Clay, silty, tan-gray
				28.5	112TILL	TILL Till, sandy, with silt and clay, very compact
				35.0	112TILL	ROCK Refusal; bedrock or boulder
TZW 11	--	378.0	--	0	110SDMN	SAND
				34.0	BEDROCK	ROCK
				--	110SDMN	SAND
				34.0	BEDROCK	ROCK
TZW 16	--	227.0	--	0	110SDMN	SDCL
				170.0	BEDROCK	ROCK
TZW 18	--	220.0	--	0	110SDMN	SAND
				10.0	112TILL	TILL
				35.0	110SDMN	SAND
				50.0	BEDROCK	ROCK
TZW 26	--	300.0	--	0	110SDMN	SDGL
				32.0	BEDROCK	ROCK
TZW 27	--	224.0	--	0	110SDMN	SAND
				40.0	110SDMN	SDGL
				70.0	BEDROCK	ROCK
TZW 29	--	302.0	--	0	112TILL	TILL
				34.0	BEDROCK	ROCK
TZW 35	--	330.0	--	0	110SDMN	SDGL
				100.0	BEDROCK	ROCK
TZW 39	--	602.0	--	0	112TILL	TILL Clay, hardpan
				232.0	BEDROCK	ROCK
TZW 43	--	656.0	--	0	110SDMN	SAND
				25.0	BEDROCK	ROCK

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
					CARROLL COUNTY	
					Tuftonboro—*Continued*	
TZW 44	--	517.0	--	0	112TILL	TILL
				5.0	BEDROCK	ROCK
TZW 47	--	282.0	--	0	112TILL	TILL
				16.0	BEDROCK	ROCK
TZW 48	--	302.0	--	0	110SDMN	SDCL
				85.0	BEDROCK	ROCK
TZW 63	--	561.0	--	0	110SDMN	SAND
				15.0	BEDROCK	ROCK
TZW 71	--	482.0	--	0	112TILL	TILL
				65.0	BEDROCK	ROCK
TZW 88	--	305.0	--	0	110SDMN	SDGL
				18.0	BEDROCK	ROCK
TZW 95	--	202.0	--	0	110SDMN	SDCL
				60.0	BEDROCK	ROCK
TZW 99	--	552.0	--	0	110SDMN	CLAY
				180.0	BEDROCK	ROCK
TZW 102	--	242.0	--	0	112TILL	TILL
				20.0	BEDROCK	ROCK
TZW 104	--	162.0	--	0	110SDMN	CLAY
				77.0	BEDROCK	ROCK
TZW 107	--	206.0	--	0	112TILL	TILL
				18.0	BEDROCK	ROCK
TZW 108	--	650.0	--	0	110SDMN	SDGL
				20.0	BEDROCK	ROCK
TZW 109	--	600.0	--	0	110SDMN	SAND
				20.0	BEDROCK	ROCK
TZW 111	--	39.0	--	0	110SDMN	SDGL
				12.0	110SDMN	SAND
TZW 114	--	293.0	--	0	112TILL	TILL Sand, hardpan
				60.0	BEDROCK	ROCK
TZW 116	--	482.0	--	0	110SDMN	CLAY
				8.0	BEDROCK	ROCK
TZW 128	--	302.0	--	0	112TILL	TILL Clay, hardpan
				35.0	110SDMN	CLAY
				63.0	BEDROCK	ROCK
TZW 130	--	423.0	--	0	112TILL	TILL
				50.0	BEDROCK	ROCK

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
						CARROLL COUNTY
						Tuftonboro—*Continued*
TZW 132	--	502.0	--	0	110SDMN	CLAY
				40.0	BEDROCK	ROCK
TZW 133	--	142.0	--	0	110SDMN	SDGL
				113.0	BEDROCK	ROCK
TZW 137	--	550.0	--	0	110SDMN	OTHR
				130.0	BEDROCK	ROCK
TZW 139	--	1230.0	--	0	110SDMN	SAND
				25.0	110SDMN	CLAY
				26.0	BEDROCK	ROCK
TZW 142	--	255.0	--	0	112TILL	TILL Sand, clay, hardpan
				63.0	BEDROCK	ROCK
TZW 144	--	450.0	--	0	110SDMN	SAND
				100.0	BEDROCK	ROCK
TZW 145	--	205.0	--	0	112TILL	TILL Gravel, hardpan
				128.0	BEDROCK	ROCK
TZW 148	--	525.0	--	40.0	BEDROCK	ROCK
TZW 158	--	365.0	--	0	110SDMN	SDGL
				75.0	BEDROCK	ROCK
TZW 163	--	325.0	--	0	110SDMN	SAND
				65.0	BEDROCK	ROCK
TZW 167	46.0	20.0	46.0	0	112SRFD	SAND Sand, fine to medium
				15.0	112SRFD	SDGL Sand, very coarse to gravel, fine; moderately sorted
				28.0	112SRFD	SAND Sand, very fine with silt; some thin coarse layers
				45.0	112TILL	TILL Till, End of hole at 46 feet
TZW 168	10.0	10.0	--	0	112SRFD	SAND Sand, coarse, clean
						Wolfeboro
WRA 1	41.0	--	41.0	0	110SDMN	SAND Sand, fine to medium
				15.0	110SDMN	SAND Sand, coarse
				20.0	110SDMN	SAND Sand, very fine
				25.0	110SDMN	SAND Sand, medium
				30.0	110SDMN	SAND Sand, very fine
				35.0	112TILL	TILL Till, and rotten rock
				41.0	BEDROCK	ROCK Refusal; till or rotten rock
WRA 3	24.0	--	--	0	110SDMN	SAND Sand, fine to medium
				15.0	112TILL	TILL Till, End of hole at 24 feet
WRW 1	27.5	20.0	27.5	0	110SDMN	SAND Sand, medium to coarse
				20.0	110SDMN	SAND Sand, fine to very fine
				26.0	112TILL	TILL Till and rotten rock
				27.0	BEDROCK	ROCK Bedrock

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
			CARROLL COUNTY			
			Wolfeboro—*Continued*			
WRW 3	--	115.0	--	0	112TILL	TILL
				15.0	BEDROCK	ROCK
WRW 4	--	125.0	--	0	112TILL	TILL
				5.0	BEDROCK	ROCK
WRW 6	--	503.0	--	0	110SDMN	SGVC
				35.0	BEDROCK	ROCK
WRW 11	--	421.0	--	0	110SDMN	SDCL
				20.0	BEDROCK	ROCK
WRW 12	--	500.0	--	0	110SDMN	SAND
				80.0	BEDROCK	ROCK
WRW 19	--	363.0	--	0	110SDMN	SAND
				90.0	BEDROCK	ROCK
WRW 20	--	203.0	--	0	110SDMN	SDCL
				31.0	BEDROCK	ROCK
WRW 29	--	547.0	--	0	112TILL	TILL
				20.0	BEDROCK	ROCK
WRW 32	--	283.0	--	0	112TILL	TILL
				20.0	BEDROCK	ROCK
WRW 33	--	260.0	--	0	110SDMN	SDGL
				12.0	BEDROCK	ROCK
WRW 34	--	302.0	--	0	110SDMN	SDCL
				60.0	BEDROCK	ROCK
WRW 37	--	402.0	--	0	110SDMN	SDGL
				95.0	BEDROCK	ROCK
WRW 43	--	482.0	--	0	112TILL	TILL Sand, gravel, hardpan
				15.0	BEDROCK	ROCK
WRW 44	--	162.0	--	0	110SDMN	SDGL
				37.0	BEDROCK	ROCK
WRW 45	--	363.0	--	0	112TILL	TILL
				75.0	BEDROCK	ROCK
WRW 59	--	1000.0	--	10.0	BEDROCK	ROCK
WRW 71	--	400.0	--	0	110SDMN	SAND
				6.0	112TILL	TILL Clay, hardpan
				90.0	BEDROCK	ROCK
WRW 72	--	500.0	--	0	110SDMN	SAND
				6.0	112TILL	TILL Clay, hardpan
				95.0	BEDROCK	ROCK

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
CARROLL COUNTY						
Wolfeboro–*Continued*						
WRW 73	--	425.0	--	0	110SDMN	SAND
				6.0	112TILL	TILL Gravel, clay, hardpan
				90.0	BEDROCK	ROCK
WRW 74	--	500.0	--	0	110SDMN	SAND
				6.0	112TILL	TILL Clay, hardpan
				85.0	BEDROCK	ROCK
WRW 75	--	400.0	--	0	110SDMN	SAND
				6.0	112TILL	TILL Clay, hardpan
				90.0	BEDROCK	ROCK
WRW 76	--	600.0	--	0	110SDMN	SAND
				6.0	112TILL	TILL Clay, hardpan
				92.0	BEDROCK	ROCK
WRW 78	--	423.0	--	0	112TILL	TILL
				20.0	BEDROCK	ROCK
WRW 80	--	610.0	--	0	110SDMN	SAND
				8.0	BEDROCK	ROCK
WRW 81	--	300.0	--	0	110SDMN	SAND
				15.0	BEDROCK	ROCK
WRW 82	--	350.0	--	0	112TILL	TILL Sand, hardpan
				24.0	BEDROCK	ROCK
WRW 87	--	1500.0	--	0	110SDMN	SDGL
				23.0	BEDROCK	ROCK
WRW 89	--	343.0	--	0	110SDMN	SAND
				15.0	BEDROCK	ROCK
WRW 92	--	500.0	--	0	110SDMN	SAND
				25.0	BEDROCK	ROCK
WRW 94	--	151.0	--	0	112TILL	TILL
				13.0	BEDROCK	ROCK
WRW 102	--	625.0	--	0	112TILL	TILL Clay, hardpan
				70.0	BEDROCK	ROCK
WRW 104	--	413.0	--	0	110SDMN	SDCL
				42.0	BEDROCK	ROCK
WRW 108	--	645.0	--	0	110SDMN	CLAY
				40.0	BEDROCK	ROCK
WRW 110	--	740.0	--	0	110SDMN	SDCL
				68.0	BEDROCK	ROCK
WRW 111	--	300.0	--	0	110SDMN	SGVC
				26.0	BEDROCK	ROCK

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
CARROLL COUNTY						
Wolfeboro—*Continued*						
WRW 115	--	462.0	--	0	110SDMN	CLAY
				25.0	BEDROCK	ROCK
WRW 116	--	650.0	--	0	110SDMN	SDGL
				20.0	BEDROCK	ROCK
WRW 123	--	505.0	--	0	110SDMN	SAND
				12.0	110SDMN	CLAY
				70.0	BEDROCK	ROCK
WRW 125	--	160.0	--	0	110SDMN	SAND
				48.0	BEDROCK	ROCK
WRW 129	--	502.0	--	0	110SDMN	SAND
				60.0	BEDROCK	ROCK
WRW 130	--	242.0	--	0	110SDMN	SDGL
				32.0	BEDROCK	ROCK
WRW 132	--	324.0	--	0	110SDMN	SDGL
				18.0	BEDROCK	ROCK
WRW 138	--	345.0	--	0	110SDMN	CLAY
				40.0	BEDROCK	ROCK
WRW 143	--	522.0	--	0	112TILL	TILL
				12.0	BEDROCK	ROCK
WRW 145	--	886.0	--	0	110SDMN	CLAY
				61.0	BEDROCK	ROCK
WRW 146	--	142.0	--	0	110SDMN	CLAY
				35.0	BEDROCK	ROCK
WRW 149	--	400.0	--	0	112TILL	TILL
				13.0	BEDROCK	ROCK
WRW 152	--	138.0	--	0	112TILL	TILL
				13.0	BEDROCK	ROCK
WRW 154	--	1000.0	--	0	112TILL	TILL Gravel, clay, harpan
				85.0	BEDROCK	ROCK
MERRIMACK COUNTY						
Franklin						
FKW 7	--	131.0	--	75.0	BEDROCK	
FKW 78	38.0	--	38.0	0	110SDMN	SDMN Muck
				2.0	110SDMN	SDST Sand, fine, silty
				5.0	112TILL	TILL Till
				38.0	BEDROCK	ROCK Bedrock

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
						MERRIMACK COUNTY
						Franklin—*Continued*
FKW 79	15.0	10.9	--	0	112SRFD	SAND Sand, fine to coarse, brown, and gravel; trace of silt
				5.0	112SRFD	SAND Sand, fine to coarse, brown; some gravel; trace of silt
				10.0	112SRFD	SAND Sand, fine to medium; little silt; trace of gravel; End of hole at 15 feet
FKW 80	17.0	13.9	--	0	112SRFD	SAND Sand, fine to coarse, brown; little gravel; trace of silt
				4.0	112SRFD	SAND Sand, fine, brown; trace of gravel; trace of silt
				10.0	112SRFD	SAND Sand, fine, brown
FKW 82	17	13.3	--	0	112SRFD	Sand, more coarse than fine, brown ; little gravel; trace silt
			--	5.0	112SRFD	Sand, more coarse than fine, brown; some gravel,more fine than medium; trace silt
			--	10.0	112SRFD	Sand, more coarse than medium, brown; some gravel; trace silt
			--	15.0	112SRFD	Sand, fine to medium, brown; little silt; trace gravel End of hole at 17 feet
FKW 83	17	13.9	--	0	112SRFD	Sand, fine to medium, brown; little gravel; trace silt
			--	5.0	112SRFD	Sand, more fine than coarse,brown;some gravel;trace silt
			--	10.0	112SRFD	Sand, more fine than coarse, dark brown; little gravel; little silt
			--	15.0	112SRFD	Sand, fine, brown; some silt; trace gravel; End of hole at 17 feet
FKW 84	13.5	13.3	--	0	111FILL	Sand fill
			--	0	112SRFD	Sand, fine, brown; little silt; End of hole at 13.5 feet
FKW 85	13.5	13.3	--	0	111FILL	Fill made up of sand, fine to course, brown; little silt; gravel
			--	4.5	112SRFD	Sand, fine, brown; trace silt; some gravel at 7 feet
			--	9.5	112SRFD	Sand, fine, brown; little silt; End of hole at 13.5 feet
FKW 86	13	11	--	0	112SRFD	Sand, fine to coarse, brown; and gravel; no split spoon samples taken; End of hole at 13 feet
FKW 87	12.8	12.8	--	0	111FILL	Sand, fine to coarse, brown; and gravel; trace silt
			--	4.5	112SRFD	Sand, fine to coarse, brown; and gravel; little cobbles; trace silt
			--	9.5	112SRFD	Sand, fine, brown; trace cobbles; trace silt
			--	12.8	BEDROCK	Refusal on bedrock
FKW 88	13.4	13.4	--	0	112SRFD	Sand, fine to coarse, black; little gravel; trace silt
			--	4.5	112SRFD	Sand, fine to coarse, brown; little gravel; trace silt
			--	9.5	112SRFD	Sand, fine, brown; little silt; End of hole at 13.4 feet
FKW 89	8.50	8.34	--	0	112SRFD	Sand, fine to medium, brown; and gravel; trace silt
			--	4.5	112SRFD	SAND, fine to medium, brown; trace gravel; trace silt; End of hole at 8.5 feet

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
					MERRIMACK COUNTY	
					Franklin—*Continued*	
FKW 90	15.5	14.1	--	0	111FILL	Sand, fine to coarse, brown; trace gravel; trace silt
			--	3.5	112SRFD	Sand, fine to coarse, brown; and gravel; trace silt
			--	9.5	112SRFD	Sand, more fine than medium, brown; little silt; trace gravel
			--	14.5	112SRFD	Sand, fine to coarse, brown; little silty clay; trace gravel; refusal at 15.5 feet
FKW 91	16.5	14.5	--	0	111FILL	Fill made up of sand, fine to coarse, brown; gravel, fine to coarse; little pebbles to cobbles; trace silt
			--	9.5	112SRFD	Sand, fine;, gray; trace gravel; trace silt
			--	16	112SRFD	Sand, more fine than medium, brown; little gravel; trace silt; End of hole at 16.5 feet
FKW 97	16.5	14.6	--	0	111FILL	Sand fill
			--	4.5	112SRFD	Sand, fine, brown; trace gravel; trace silt
			--	9.5	112TILL	Sandy till, compactness increases with depth; End of hole at 16.5 feet
FKW 98	18.5	18.5	--	0	111FILL	Sandy fill
			--	9.5	112SRFD	Sand, fine to coarse, gray; some gravel; little silt
			--	14.5	112SRFD	Sand, fine, orange brown; trace silt; End of hole at 18.5 feet
FKW 99	18	18	--	0	110SDMN	No samples taken; End of hole at 18 feet
FKW 100	17	17	--	0	111FILL	Sandy fill
			--	9.5	112SRFD	Sand, fine, gray; trace silt
			--	14.5	112SRFD	Sand, fine to coarse, orange; and gravel; trace silt; End of hole at 17 feet
FKW 101	17	15.8	--	0	111FILL	Sandy fill; including ash slag
			--	9.5	112SRFD	Sand, fine to coarse, brown; some gravel; trace silt
			--	14.5	112TILL	Sand, fine to gravel, trace silt; End of hole at 17 feet
FKW 102	18.8	16.7	--	0	111FILL	Sandy fill
			--	--	110SDMN	No sample taken between 2 feet and 9.5 feet
			--	9.5	112SRFD	Sand, fine to coarse, brown; some gravel; trace silt
			--	14.5	112SRFD	Sand, medium, brown; little gravel; trace silt
			--	15.5	112SRFD	Sand, fine, brown; End of hole at 18.8 feet
FKW 103	16	15.1	--	--	--	--
					Northfield	
NRB 1	50	--	--	0	110SDMN	Sand and silt
			--	4.0	110SDMN	Sand, coarse
			--	28.0	110SDMN	Sand, fine and silt
			--	41.0	110SDMN	Sand, fine
			--	50.0	110SDMN	End of hole
NRB 26	36	--	--	0	110SDMN	Sand, fine to coarse
			--	9.0	112TILL	Till, silty
			--	36.0	112TILL	End of hole
NRB 27	49	--	--	0	110SDMN	Sand, gravelly
			--	11.0	110SDMN	Sand, silty
			--	20.0	110SDMN	Silt and clay

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number		Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
							MERRIMACK COUNTY
							Northfield
NRB	27--*Continued*						
				--	37.0	110SDMN	Sand and gravel
				--	49.0	110SDMN	End of hole
NRB	28	62	--	--	0	110SDMN	Sand, fine to coarse, gravel
				--	6.0	110SDMN	Silt, sandy
				--	14.0	110SDMN	Silt, clayey
				--	32.0	110SDMN	Silt, sandy
				--	35.0	110SDMN	Sand, silty, gravelly
				--	62.0	110SDMN	End of hole
NRB	29	12	--	--	0	110SDMN	Sand, fine and silt
				--	8.0	110SDMN	Silt and clay
				--	12.0	110SDMN	End of hole
NRB	30	38	--	38	0	110SDMN	Sand, fine
				--	4.0	110SDMN	Sand and silt
				--	14.0	110SDMN	Sand, medium to coarse
				--	32.0	112TILL	Till, sandy
				--	38.0	BEDROCK	Bedrock
NRB	31	37	--	--	6.0	112TILL	Hardpan, silty gravelly sand
				--	32.0	112TILL	Hardpan, very silty gravelly sand
				--	37.0	112TILL	End of hole
NRB	32	29	--	--	8.0	112TILL	Hardpan
				--	21.0	112TILL	Hardpan
				--	29.0	112TILL	End of hole
NRW	51	44.8	44.8	--	--	112SRFD	Sand, fine to medium, some gravel
				--	16.0	112SRFD	Silt and clay
				--	44.8	112SRFD	End of hole
NRW	52	39	39	--	0	112SRFD	Sand, brown and silt
				--	22.0	112SRFD	Sand, silt and some clay
				--	27.0	112SRFD	Sand, silt, some clay, trace gravel
				--	39.0	112SRFD	End of hole
NRW	53	75	75	--	0	110SDMN	Sand, fine to medium
				--	22.0	112SRFD	Silt, fine and clay
				--	75.0	112SRFD	End of hole
NRW	54	82	82	--	0	110SDMN	Sand, fine to medium, some gravel
				--	21.0	112SRFD	Sand, very fine and silt
				--	82.0	112SRFD	End of hole
NRW	55	60	54	--	0	110SDMN	Sand, light brown, fine to medium, some fine to medium travel, occasional cobbles
				--	5.0	110SDMN	Sand, light brown, fine, trace of silt
				--	60.0	110SDMN	End of hole
NRW	56	73.8	73.8	73.8	0	110SDMN	No samples taken
				--	28.0	110SDMN	Sand, light brown, fine, trace of silt
				--	32.0	110SDMN	Sand and silt, gray, fine
				--	37.0	110SDMN	Sand, light brown, fine, trace of silt
				--	57.0	110SDMN	Sand, light brown, fine, little silt, trace medium to fine gravel

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
						MERRIMACK COUNTY
						Northfield—*Continued*
NRW 56--*Continued*						
			--	61.0	110SDMN	Sand, light brown, fine to medium, some fine to medium gravel
			--	66.0	110SDMN	Sand, gray, fine, some silt, some fine to medium gravel
			--	73.8	110SDMN	Refusal with roller bit, end of hole
NRW 57	43	43	--	0	110SDMN	No samples taken
NRW 58	85	85	--	0	110SDMN	No samples taken
NRW 59	87	80	87	0	112SRFD	Sand, very fine
			--	30.0	112SRFD	Sand, fine to medium
			--	50.0	112SRFD	Sand, fine; with medium sand lenses
			--	75.0	112TILL	Very fine sandy till
			--	87.0	112TILL	End of hole, till
NRW 60	30	30	--	--	--	--
NRW 61	51	40	51	0	110SDMN	Sand, medium to fine; some very fine,with silt
			--	20.0	110SDMN	Sand, fine, some medium
			--	37.0	110SDMN	Sand, very fine to coarse with pebbles in the coarse sand
			--	47.0	110SDMN	Sand, coarse with till
			--	51.0	BEDROCK	Refusal, bedrock probably
NRW 62	--	--	--	--	--	--
NRW 89	--	280	--	90.0	BEDROCK	--
NRW 118	--	20.0	--	--	--	--
NRW 119	--	20.0	--	--	110SDMN	--
NRW 142	--	225	--	--	--	--
NRW 146	--	405	--	143.0	BEDROCK	--
NRW 171	--	--	--	0	112TILL	--
			--	25.0	110SDMN	--
			--	45.0	112TILL	--
			--	60.0	BEDROCK	--
NRW 172	--	400	--	131.0	BEDROCK	--
NRW 174	--	185	--	--	112TILL	--
			--	80.0	BEDROCK	--
NRW 197	50	44	--	0	112SRFD	SDGL Sand, fine to coarse, some gravel, trace silt
				26.0	112SRFD	SAND Sand, fine, trace silt
				38.0	112SRFD	SAND Sand, fine to coarse, broken gravel, silt
				46.0	112TILL	TILL gray, silty till
				50.0	112TILL	TILL Till, End of hole at 50 feet
NRW 198	28	26	--	0	112SRFD	SDGL Sand, fine to coarse, some gravel
				11.0	112SRFD	SAND Sand, fine, brown
				19.0	112SRFD	SAND Sand, fine to coarse, broken gravel, trace silt
				26.0	112SRFD	SILT gray silt

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
MERRIMACK COUNTY						
Northfield-*Continued*						
NRW 199	70	67	--	0	112SRFD	SAND Sand, medium to coarse
				20.0	112SRFD	SAND Sand, fine to medium
				40.0	112SRFD	SAND Sand, fine to medium, some coarse
				44.0	112SRFD	SDGL Sand, fine to coarse, some gravel
				67.0	112SRFD	SILT Silt
NRW 200	76	76	--	0	112SRFD	SAND Sand, fine, some medium, trace silt
				24.0	112SRFD	SAND Sand, fine to medium
				31.0	112SRFD	SAND Sand, fine to coarse; some gravel
				40.0	112SRFD	SAND Sand, fine to coarse
				51.0	112SRFD	SDGL Sand, fine to coarse; some gravel
				58.0	112SRFD	--
				60.0	112SRFD	SDGL Sand, medium to coarse; some broken gravel
				76.0	112SRFD	SDGL Sand, fine to coarse, some gravel; silt
NRW 201	77	69	--	0	112SRFD	SAND Sand, fine to medium, some coarse
				16.0	112SRFD	SAND Sand, fine to medium, trace silt
				27.0	112SRFD	SDST Sand, fine, silt
				36.0	112SRFD	CLAY Clay, gray
				38.0	112SRFD	SAND Sand, fine, some medium
				43.0	112SRFD	SDGL Sand, fine to coarse; gravel
				69.0	112SRFD	SAND Sand, fine to coarse; some gravel, silt
NRW 202	77	68	--	0	112SRFD	SDGL Sand, fine to coarse; gravel
				20.0	112SRFD	SAND Sand, fine to medium; some coarse
				46.0	112SRFD	SDGL Sand, fine;some medium to coarse; broken gravel
				75.0	112SRFD	SAND Sand, fine; some medium to coarse; gravel silt
NRW 203	67	63	--	0	112SRFD	SDGL Sand, fine to coarse; gravel
				30.0	112SRFD	SAND Sand, fine to medium, some coarse
				38.0	112SRFD	SDGL Sand, fine to coarse; gravel
				44.0	112SRFD	SAND Sand, fine to coarse
				54.0	112SRFD	SDGL Sand, fine to coarse, gravel, silt
NRW 204	69	69	--	0	112SRFD	SAND Sand, fine to medium
				20.0	112SRFD	SDGL Sand, fine to mdium; gravel, medium to coarse
				30.0	112SRFD	SAND Sand, fine to medium, with mica
				50.0	112SRFD	SAND Sand, fine to Coarse
				55.0	112SRFD	SAND Sand, fine to medium
				60.0	112SRFD	SDGL Sand, fine to medium; gravel, cobbles
NRW 205	69	69	--	0	112SRFD	SAND Sand, fine to coarse
				30.0	112SRFD	SAND Sand, fine; trace silt and clay
				44.0	112SRFD	SDGL Sand, gravel, cobbles
				55.0	112SRFD	SDGL Sand and gravel, fine to coarse
				60.0	112SRFD	SAND Sand, fine to coarse
				66.0	112SRFD	SAND Sand, fine to coarse, with mica
				67.0	112SRFD	SDGL Sand, fine to coarse; gravel, cobbles
STRAFFORD COUNTY						
Middleton						
MLW 11	100	--	--	--	110SDMN	--
			--	9.0	BEDROCK	BEDROCK

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number		Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
STRAFFORD COUNTY							
New Durham							
NFA	1	20	--	20	0	112SRFD	Sand, medium to coarse, refusal at 20 feet
NFA	2	16.5	--	16.5	0	111ALVM	Muck
				--	7.0	112SRFD	Sand,trace silt, some gravel
				--	15.0	112TILL	Till
NFB	3	15.9	--	15.9	0	120SDMS	--
				--	8.0	112ICCC	Sand, Medium to coarse; Gravel
				--	14.9	112TILL	Refusal at 15.9 feet
NFB	26	17	--	--	0	110SDMN	Muck
				--	7.0	110SDMN	Sand, medium to coarse
				--	15.0	112TILL	Hardpan, sandy
				--	17.0	112TILL	End of hole
NFB	27	13	--	13	0	110SDMN	Sand, fine to medium
				--	7.0	110SDMN	Sand and gravel
				--	13.0	BEDROCK	Bedrock
NFW	1	158	158	--	0	112SRFD	--
				--	96.0	BEDROCK	Drilled into rock
NFW	2	14	14	--	--	112OTSH	--
NFW	3	6.5	6.5	--	--	1122OCL	--
NFW	4	17.1	17.1	--	--	112OTSH	--
NFW	5	11.4	11.4	--	1.0	112OTSH	--
NFW	6	12.2	12.2	--	--	112OTSH	--
NFW	7	30	30	--	--	112OTSH	--
NFW	8	7.7	7.7	--	--	112OTSH	--
NFW	16	11.9	11.9	--	--	112OTSH	--
NFW	19	23.5	23.5	--	--	112OTSH	--
NFW	21	15	15	--	0	112OTSH	--
				--	3.0	112OTSH	--
NFW	27	22	22	--	--	112OTSH	--
NFW	28	--	--	--	--	--	--
NFW	29	13.9	13.9	--	--	112OTSH	--
NFW	30	13.2	13.2	--	--	112OTSH	--
NFW	53	68	60	68	0	112SRFD	Sand, coarse to gravel, cobbles
				--	12.0	112SRFD	Sand, coarse, little gravel
				--	32.0	112SRFD	Sand, coarse
				--	42.0	112SRFD	Sand, fine to medium, mostly medium
				--	47.0	112SRFD	Sand, fine to fine gravel, mostly coarse
				--	57.0	112SRFD	Sand, fine to coarse, refusal at 68.0 feet

Table B-1. Stratigraphic logs of selected wells and borings in the Winnipesaukee River Basin, central New Hampshire—*Continued*

Local site number	Depth drilled (feet)	Depth of well (feet)	Depth to refusal (feet)	Depth to top (feet)	Aquifer code	Lithologic description of material
						STRAFFORD COUNTY
						New Durham-*Continued*
NFW 54	81	23	81	0	112SRFD	Sand, medium, some coarse Sand
			--	27.0	112SRFD	Sand, medium
			--	33.0	112SRFD	Sand, fine, some coarse Sand
			--	44.0	112SRFD	Sand, very fine, some silt
			--	81.0	BEDROCK	Schist and other rock, refusal at 81.0 feet
NFW 55	49	46	--	0	112SRFD	Sand, very fine to medium, mostly medium
			--	17.0	112MRIN	Sand, very fine to fine, end of hole at 49 feet
NFW 56	66	23	--	0	112SRFD	Sand, very fine to fine, mostly fine
			--	21.0	112SRFD	Sand, very fine to medium, mostly fine
			--	36.0	112SRFD	Sand, very fine to fine,mostly very fine
			--	58.0	112SRFD	Sand, very fine, some silt, end of hole at 66.0 feet
NFW 59	50	--	--	--	--	--
NFW 61	105	--	--	--	110SDMN	Sand and gravel
			--	10.0	BEDROCK	Bedrock
NFW 62	353	--	--	--	110SDMN	Sand, gravel, and Clay
			--	87.0	BEDROCK	Bedrock
NFW 63	265	--	--	--	112TILL	Till
			--	35.0	BEDROCK	Bedrock
NFW 67	162	--	--	--	110SDMN	Sand and gravel
			--	73.0	BEDROCK	Bedrock
NFW 69	200	--	--	--	110SDMN	Sand and gravel
			--	42.0	BEDROCK	Bedrock
NFW 71	99	--	--	--	112TILL	Till
			--	12.0	BEDROCK	Bedrock
NFW 72	150	--	--	--	110SDMN	Sand and gravel
			--	53.0	BEDROCK	Bedrock
NFW 76	140	--	--	--	110SDMN	Sand and gravel
			--	15.0	BEDROCK	Bedrock
NFW 77	262	--	--	--	110SDMN	Sand and gravel
			--	11.0	BEDROCK	Bedrock
NFW 80	230	--	--	--	110SDMN	Sand
			--	22.0	BEDROCK	Bedrock
NFW 81	186	--	--	--	112TILL	Till
			--	18.0	BEDROCK	Bedrock
NFW 86	--	15.5	--	--	--	--
NFW 87	--	10.2	--	--	--	--

APPENDIX C. Geohydrologic sections interpreted from seismic-refraction data, central New Hampshire

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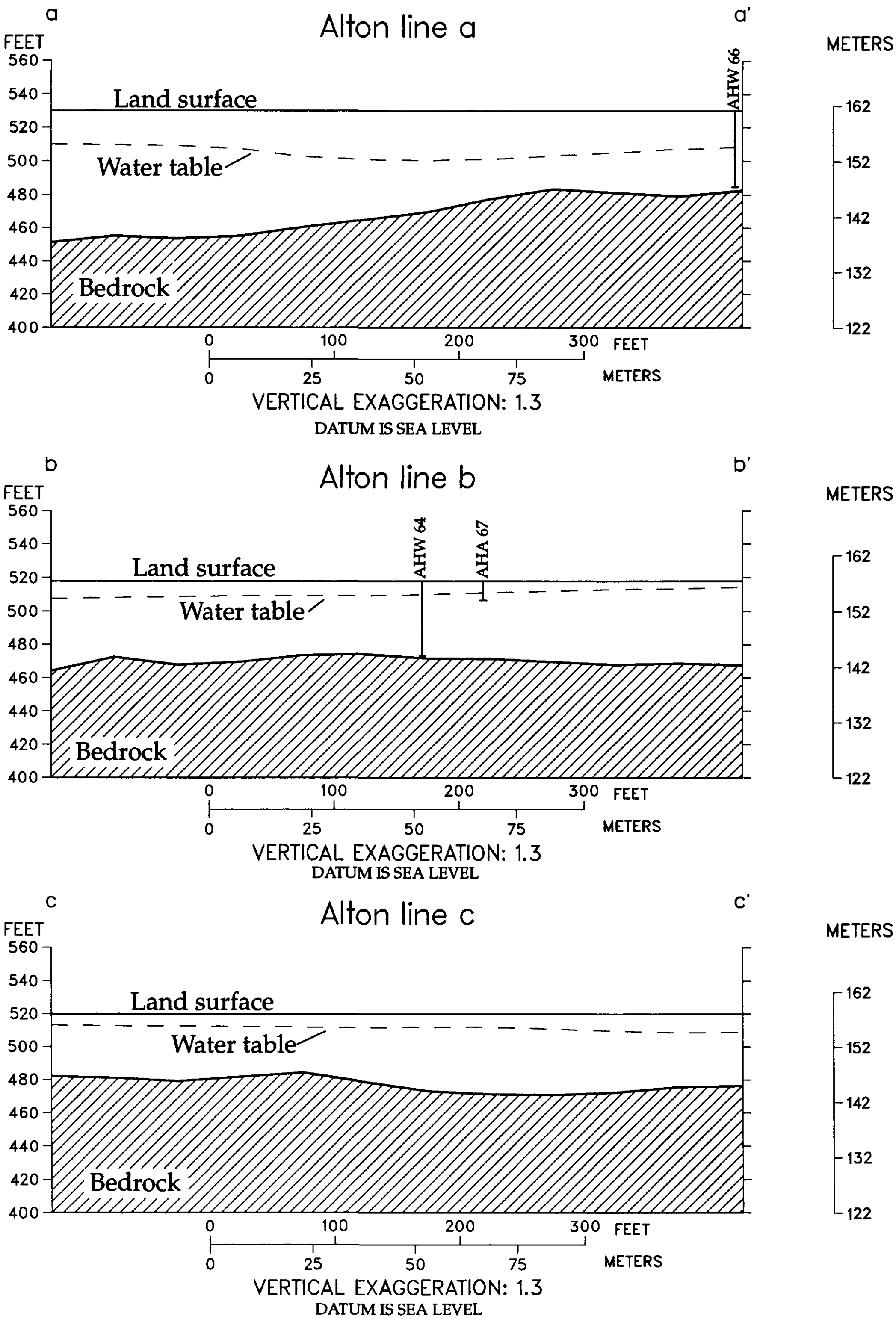


Figure C1. Geohydrologic sections interpreted from seismic-refraction data for Alton lines a-a', b-b', and c-c' (locations shown on plate 2).

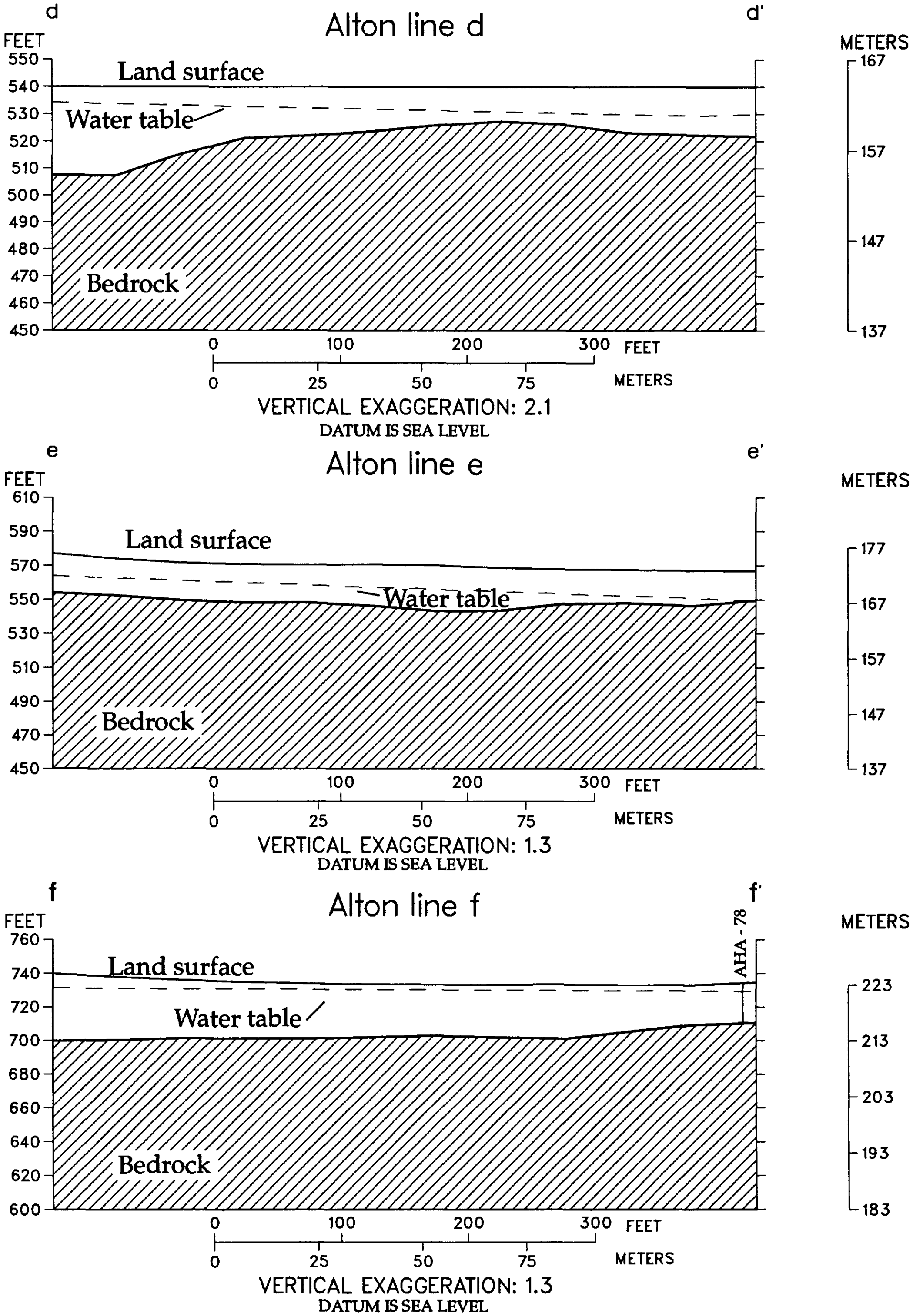


Figure C2. Geohydrologic sections interpreted from seismic-refraction data for Alton lines d-d', e-e', and f-f' (locations shown on plate 2).

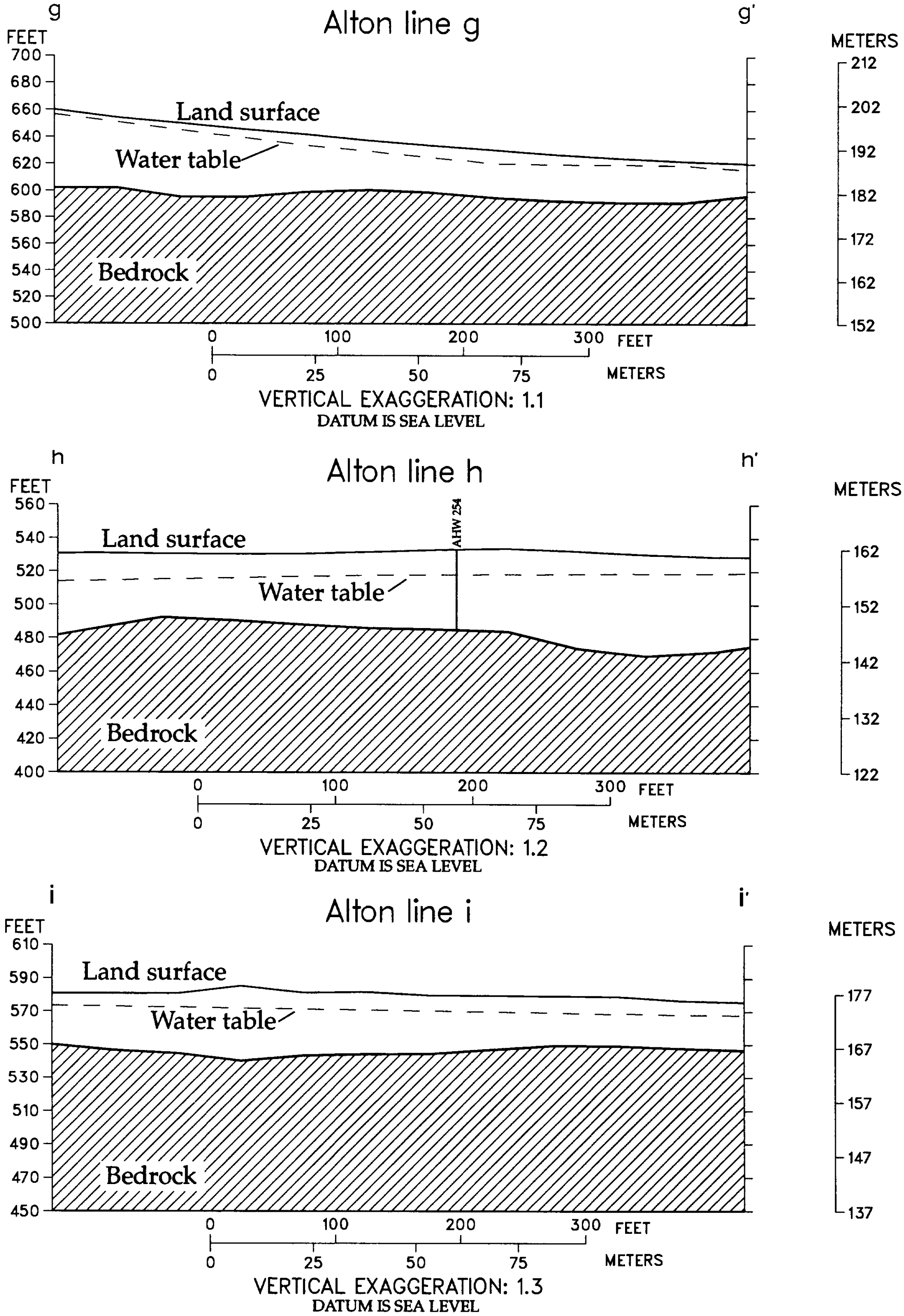


Figure C3. Geohydrologic sections interpreted from seismic-refraction data for Alton lines g-g', h-h', and i-i' (locations shown on plate 2).

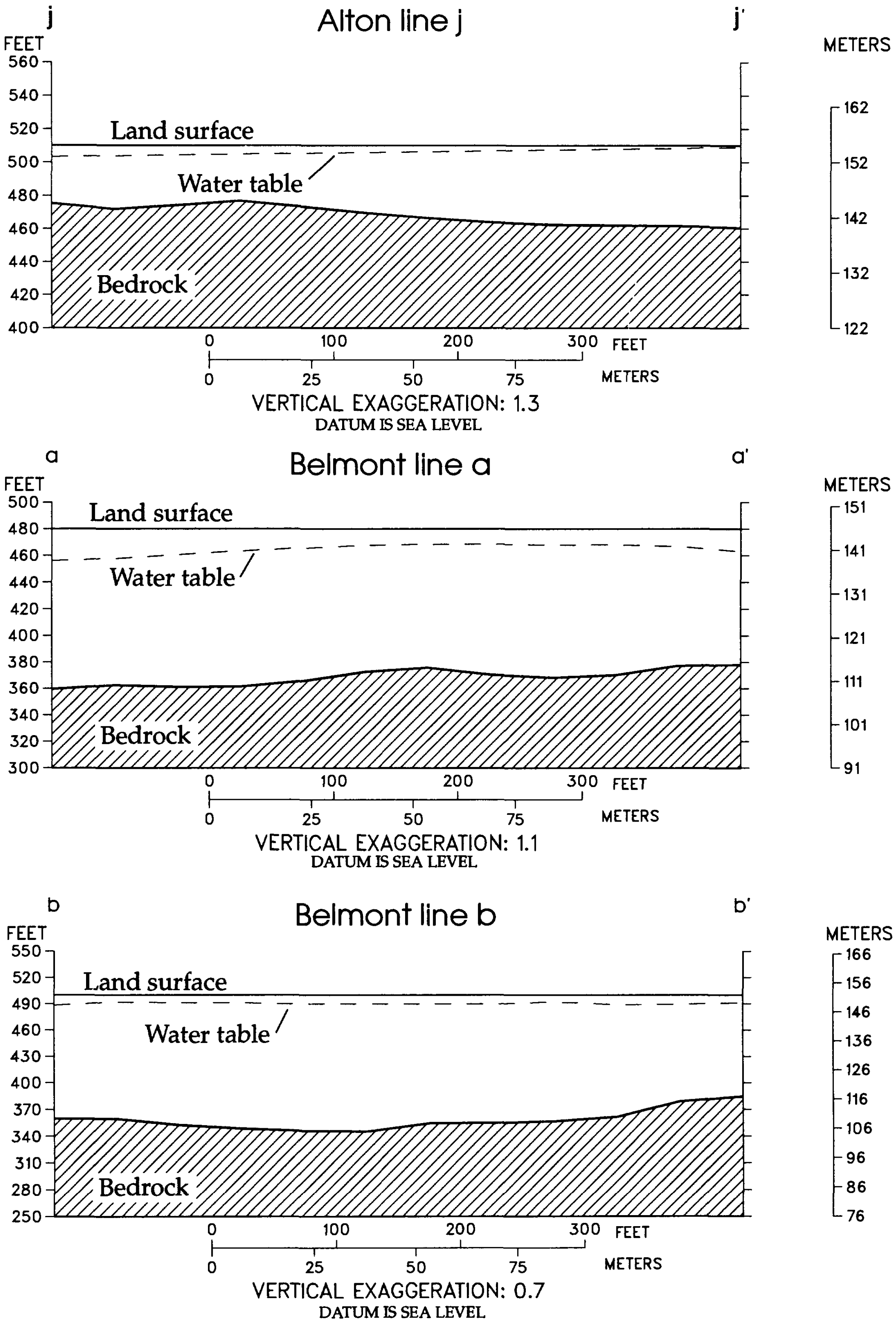


Figure C4. Geohydrologic sections interpreted from seismic-refraction data for Alton lines j-j', (location shown on plate 2) and Belmont lines a-a' and b-b' (locations shown on plate 1).

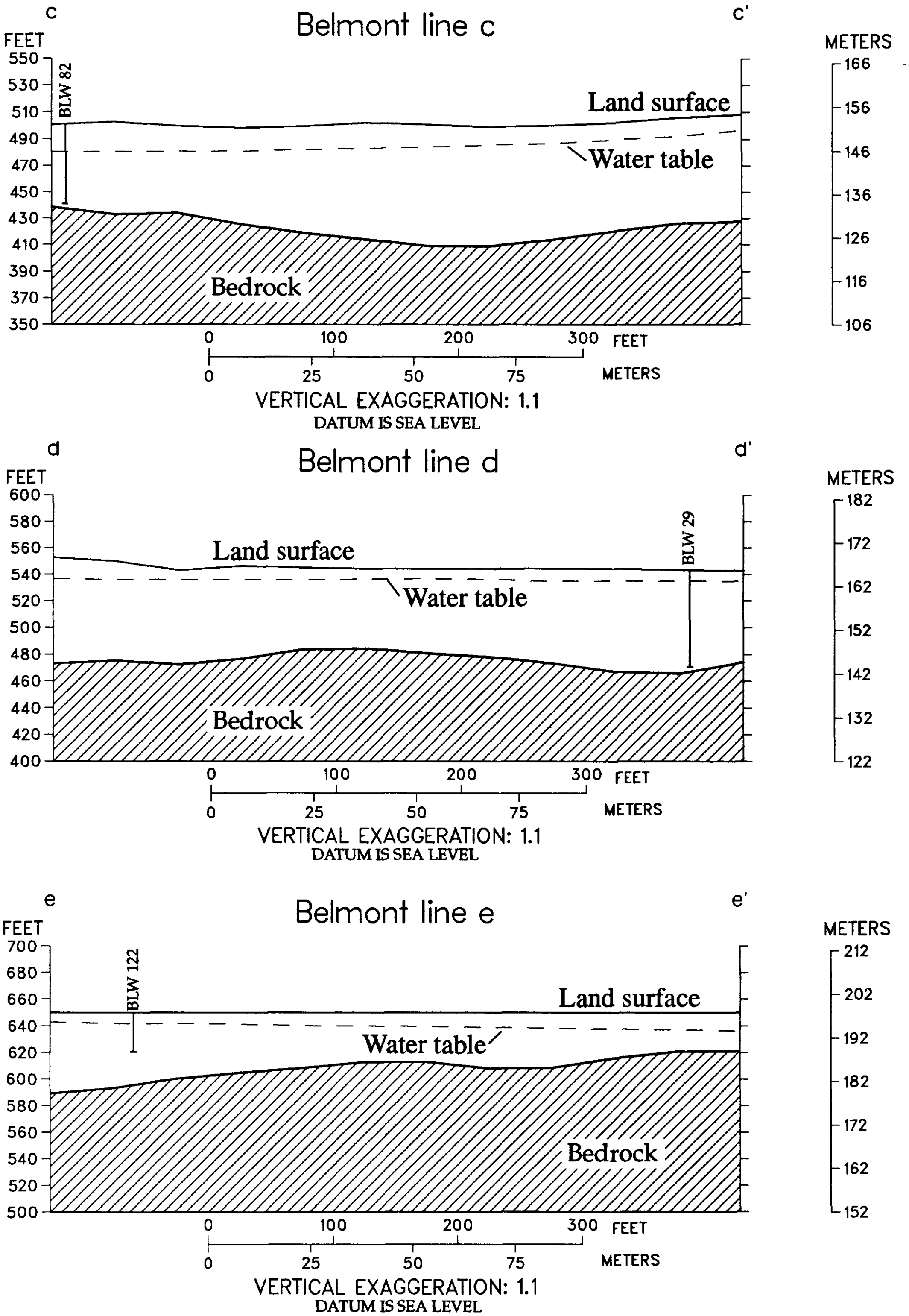


Figure C5. Geohydrologic sections interpreted from seismic-refraction data for Belmont lines c-c′, d-d′, and e-e′ (locations shown on plate 1).

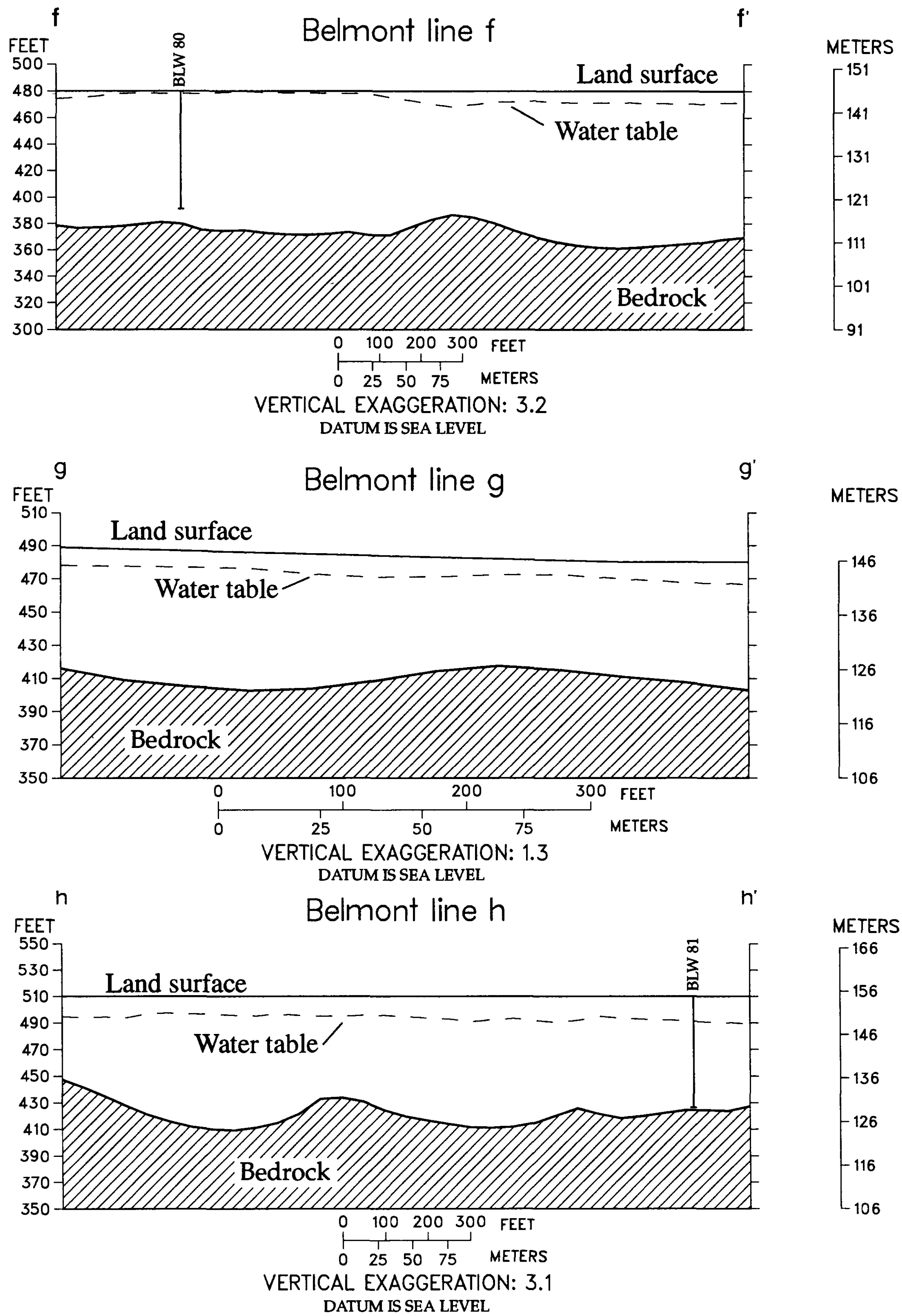


Figure C6. Geohydrologic sections interpreted from seismic-refraction data for Belmont lines f-f′, g-g′, and h-h′ (locations shown on plate 1)

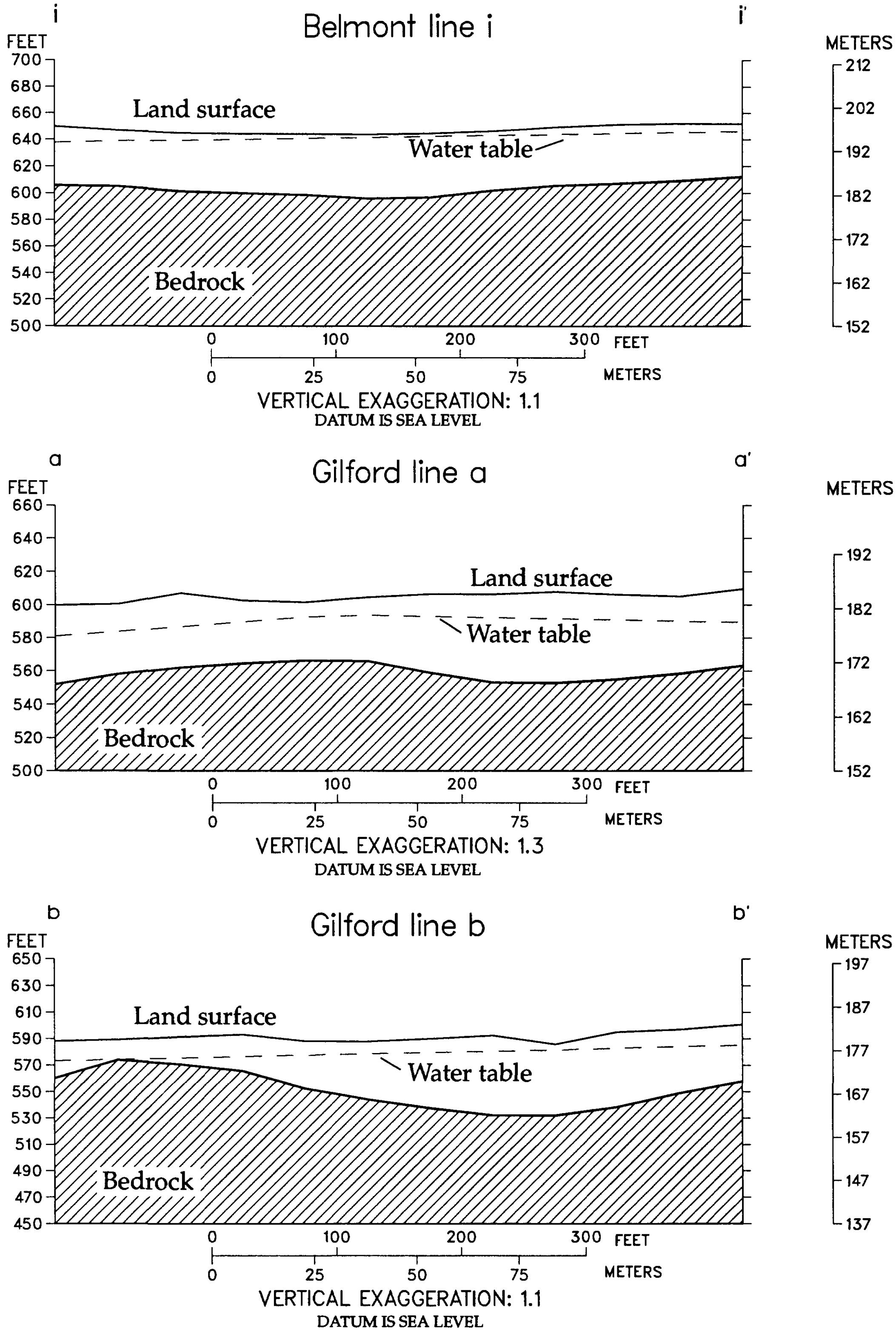


Figure C7. Geohydrologic sections interpreted from seismic-refraction data for Belmont line i-i′ (locations shown on plate 1) and Gilford lines a-a′ and b-b′ (locations shown on plate 1).

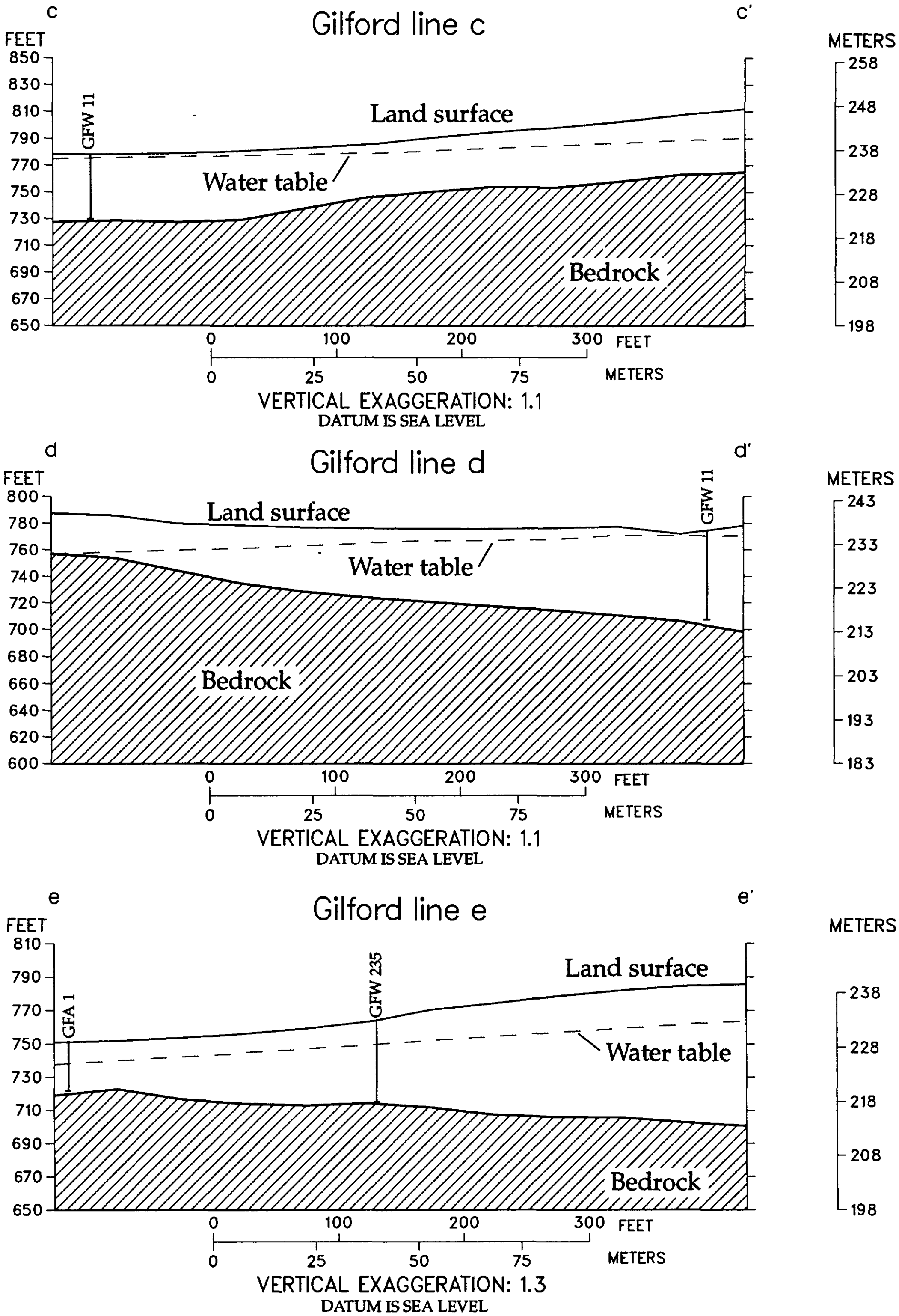


Figure C8. Geohydrologic sections interpeted from seismic-refraction data for Gilford lines c-c′, d-d′, and e-e′ (locations shown on plate 1).

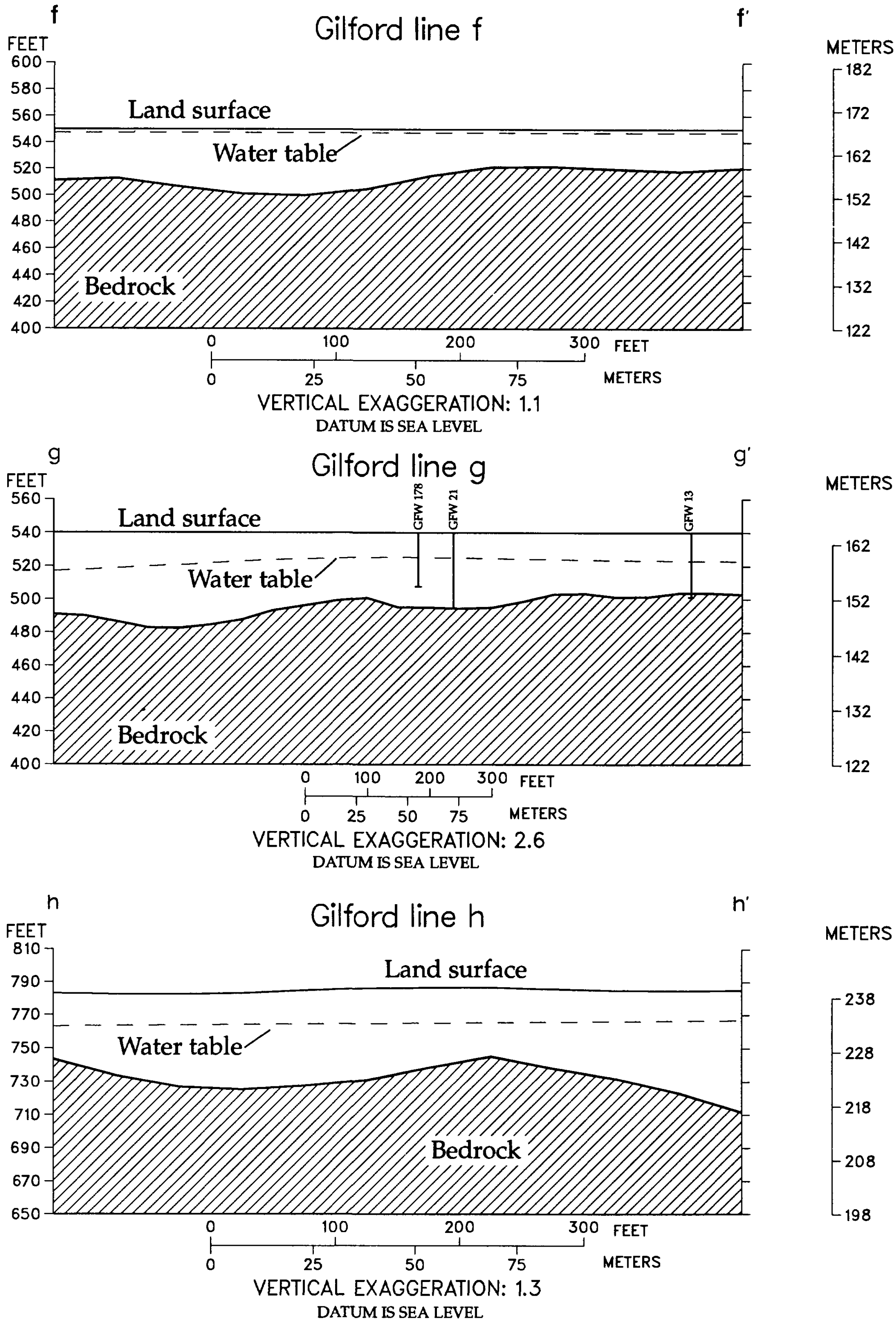


Figure C9. Geohydrologic sections interpreted from seismic-refraction data for Gilford lines f-f′ (plate 3), g-g′, h-h′ (locations shown on plate 1).

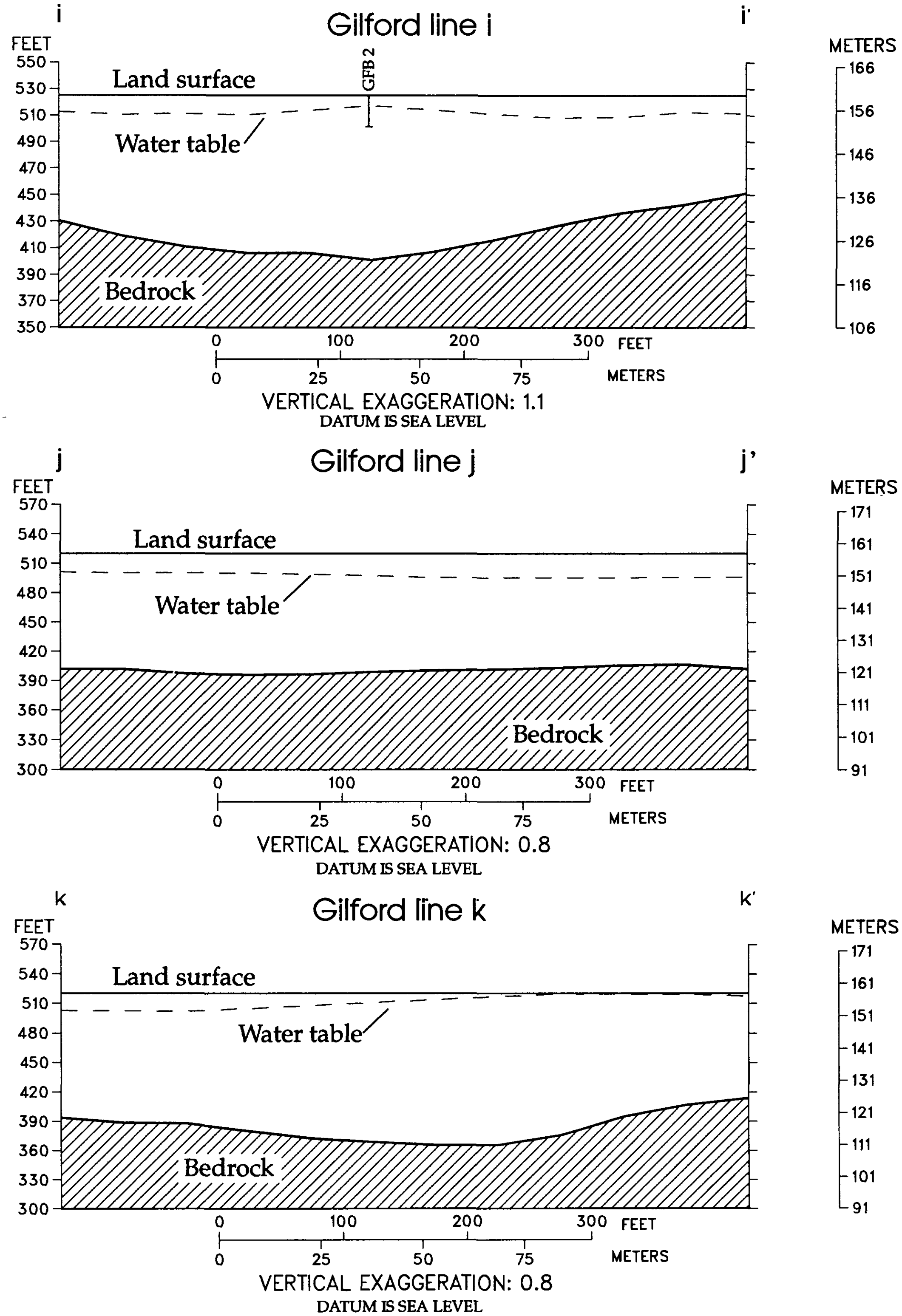


Figure C10. Geohydrologic sections interpreted from seismic-refraction data for Gilford lines i-i'(plate 2), j-j', and k-k' (locations on plate 1).

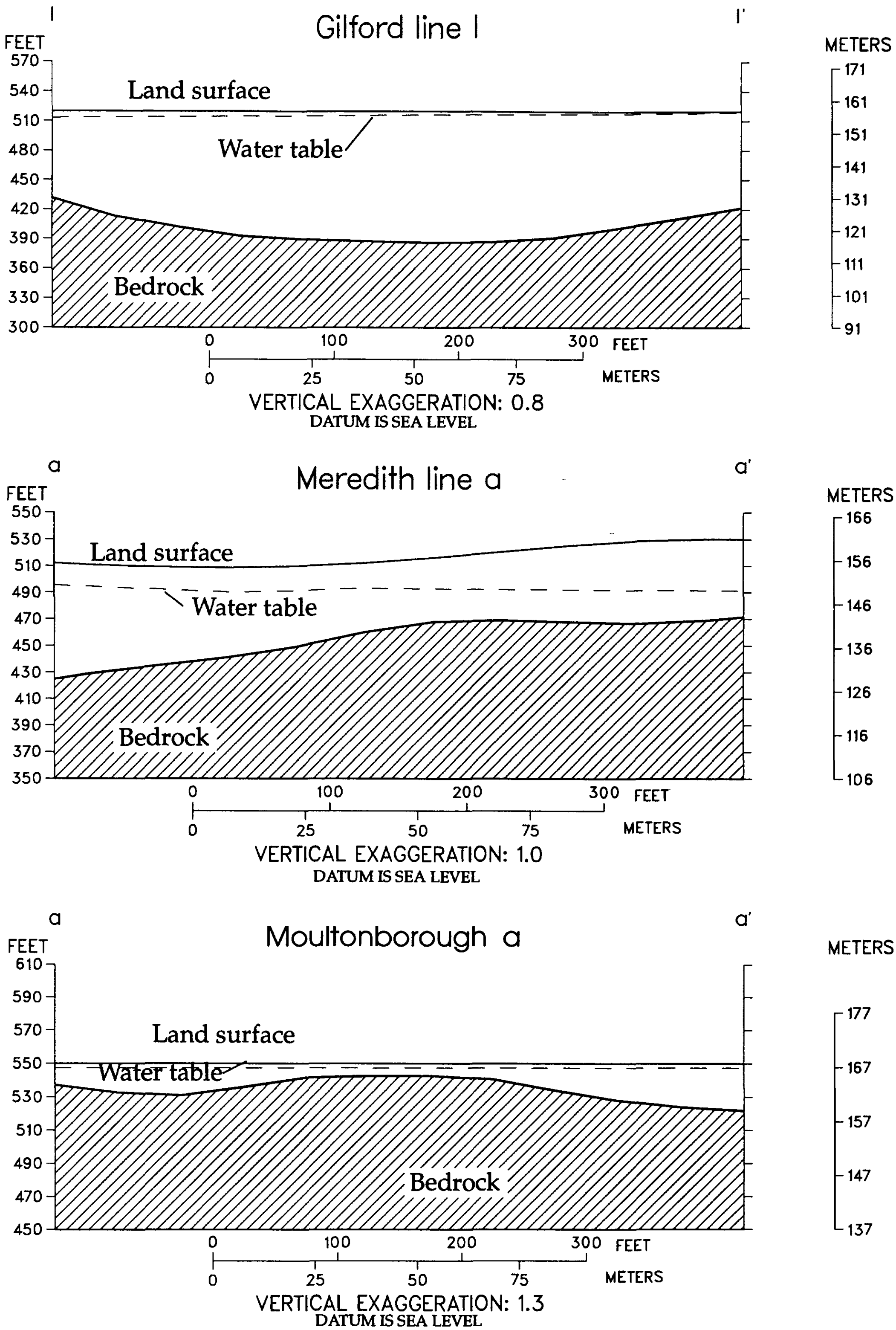


Figure C11. Geohydrologic sections interpreted from seismic-refraction for Gilford line I-I' (location shown on plate 1); Meredith line a-a' (location shown on plate 3), and Moultonborough line a-a' (location shown on plate 3).

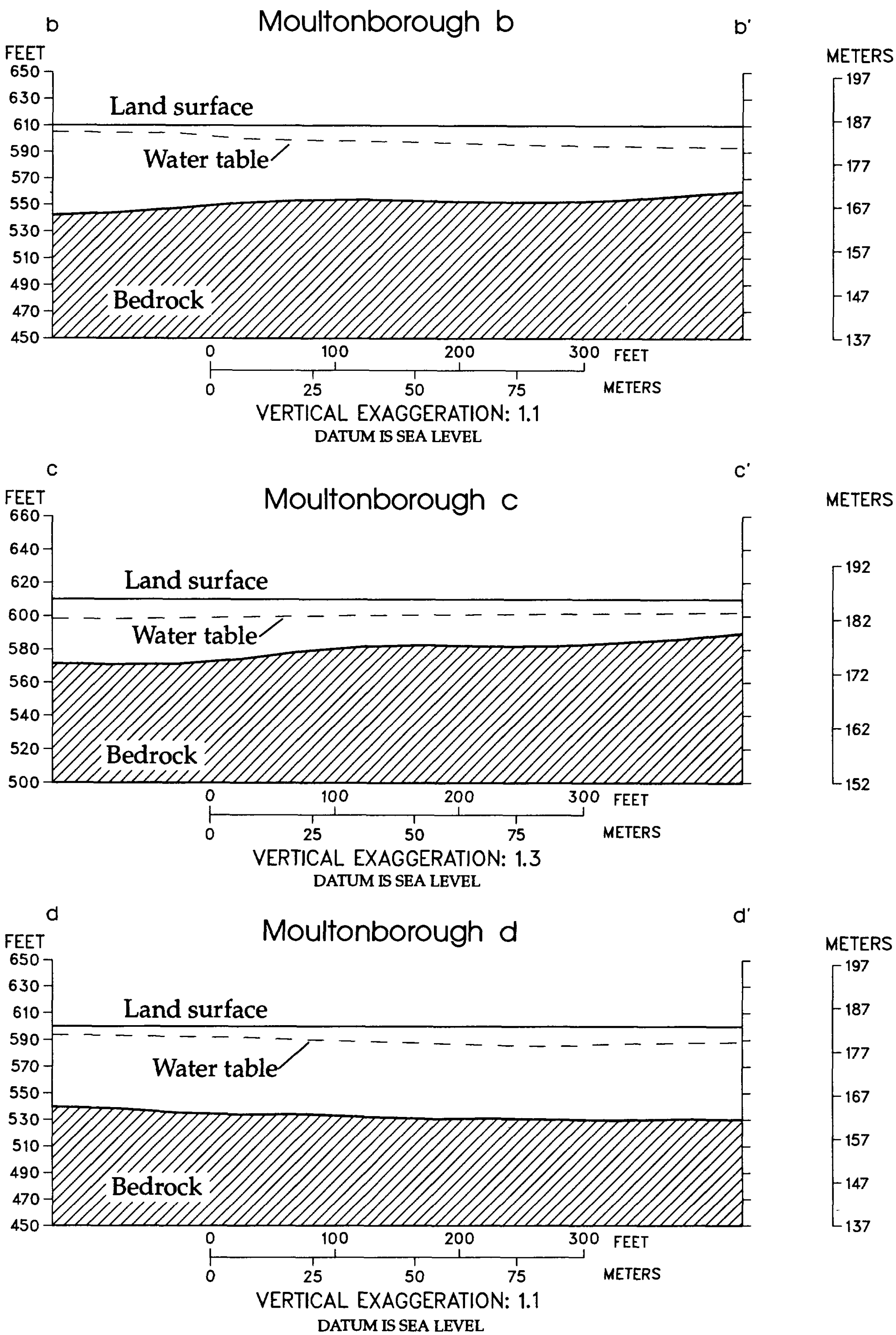


Figure C12. Geohydrologic sections interpreted from seismic-refraction data for Moultonborough lines b-b′, c-c′, and d-d′ (locations shown on plate 4).

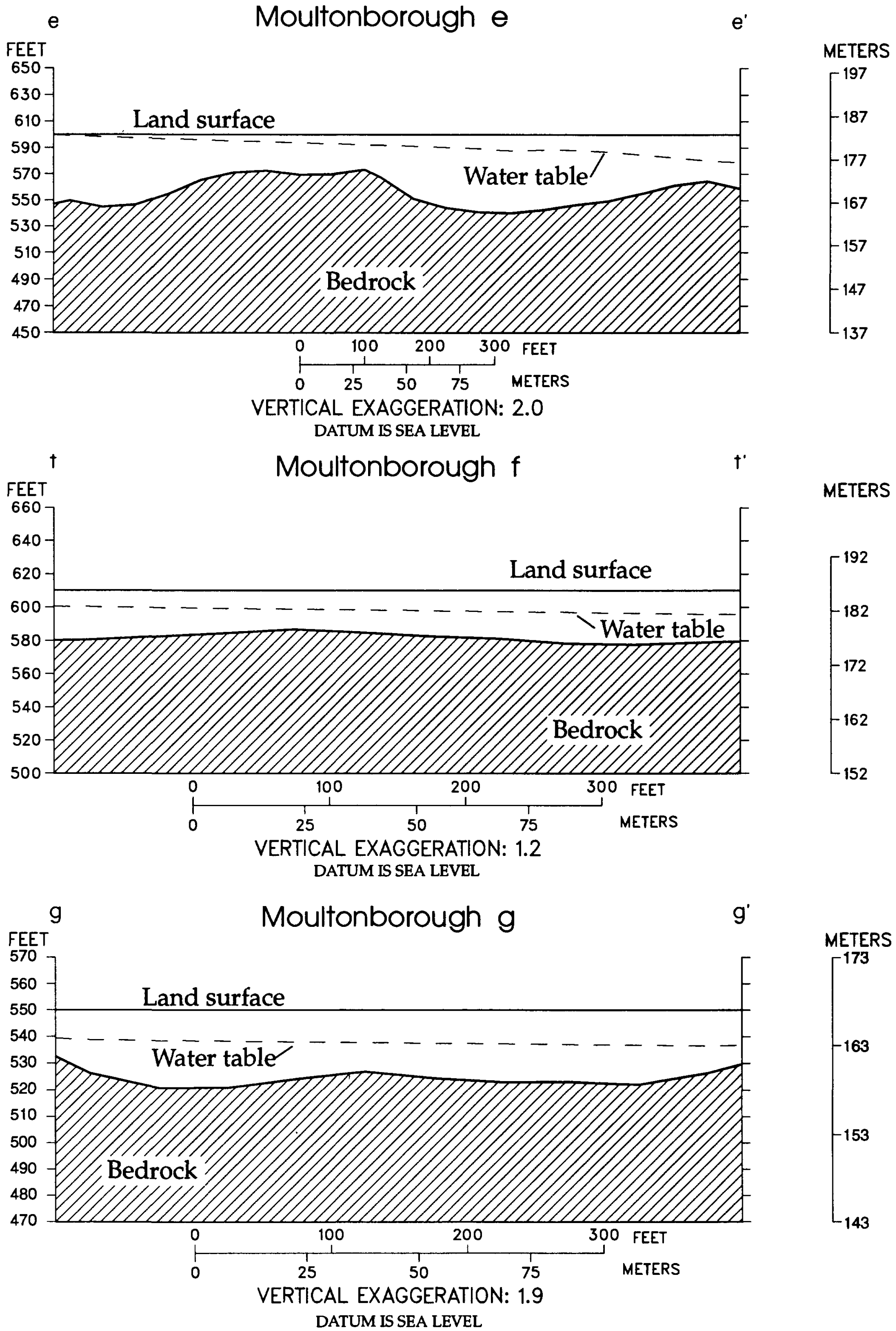
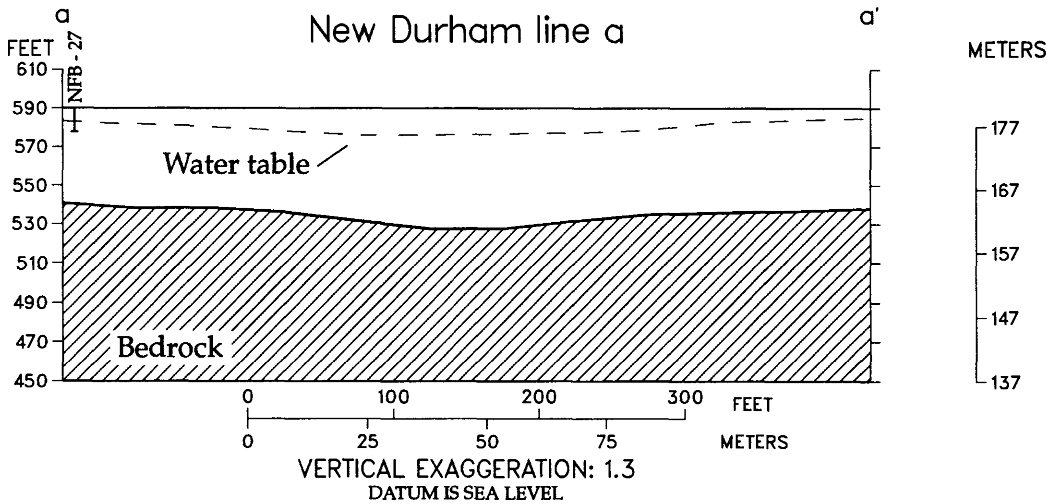
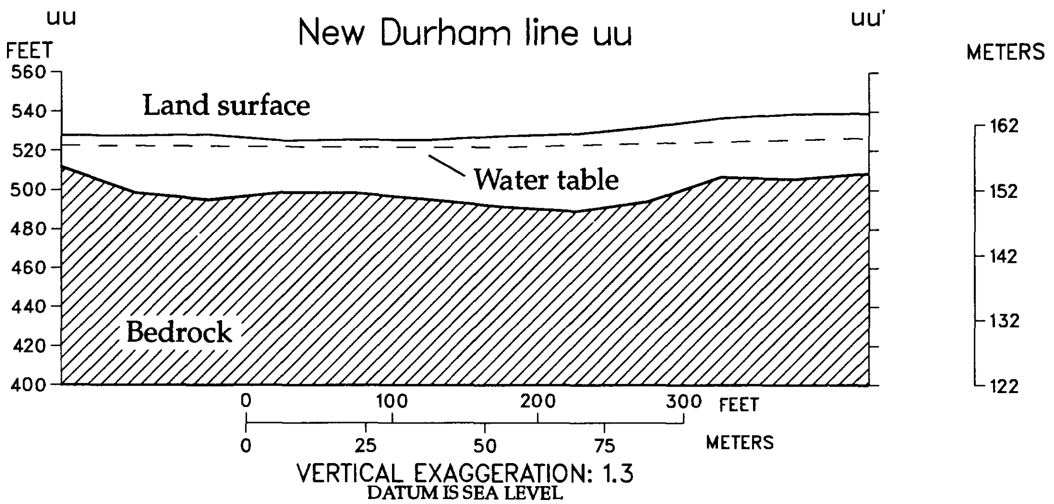


Figure C13. Geohydrologic sections interpreted from seismic-refraction data for Moultonborough lines e-e′, f-f′, and g-g′ (locations shown on plate 3).





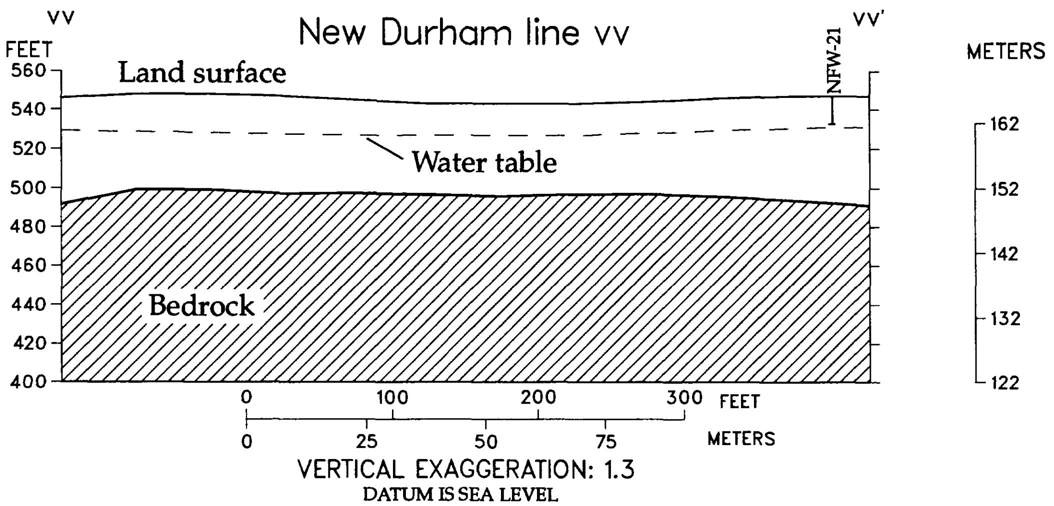


Figure C14. Geohydrologic sections interpreted from seismic-refraction data for New Durham lines a-a', uu-uu', and vv-vv' (modified from Mack and Lawlor, 1992; locations shown on plate 2).

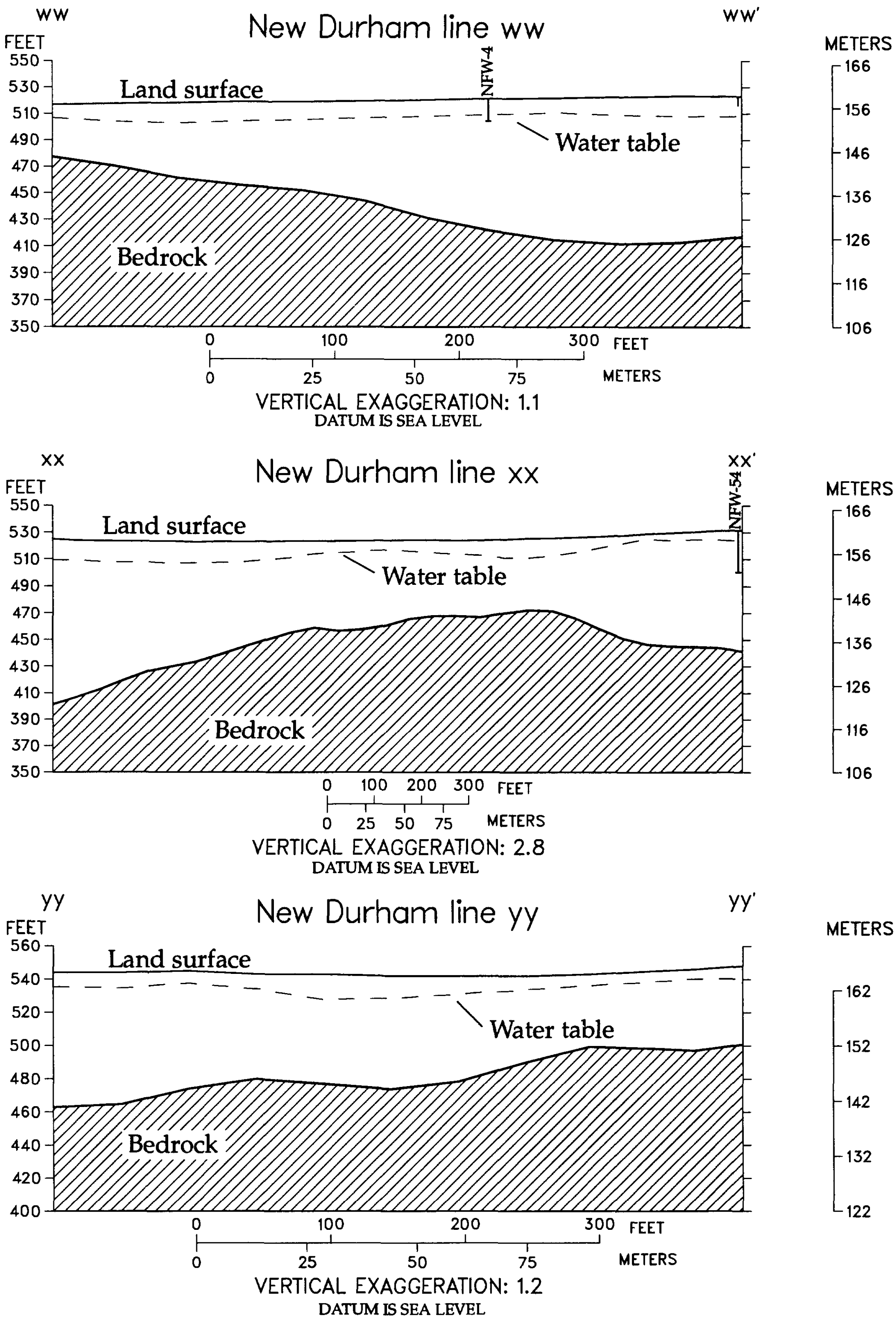


Figure C15. Geohydrologic sections interpreted from seismic-refraction data for New Durham lines ww-ww', xx-xx', and yy-yy' (modified from Mack and Lawlor, 1992; locations shown on plate 2).

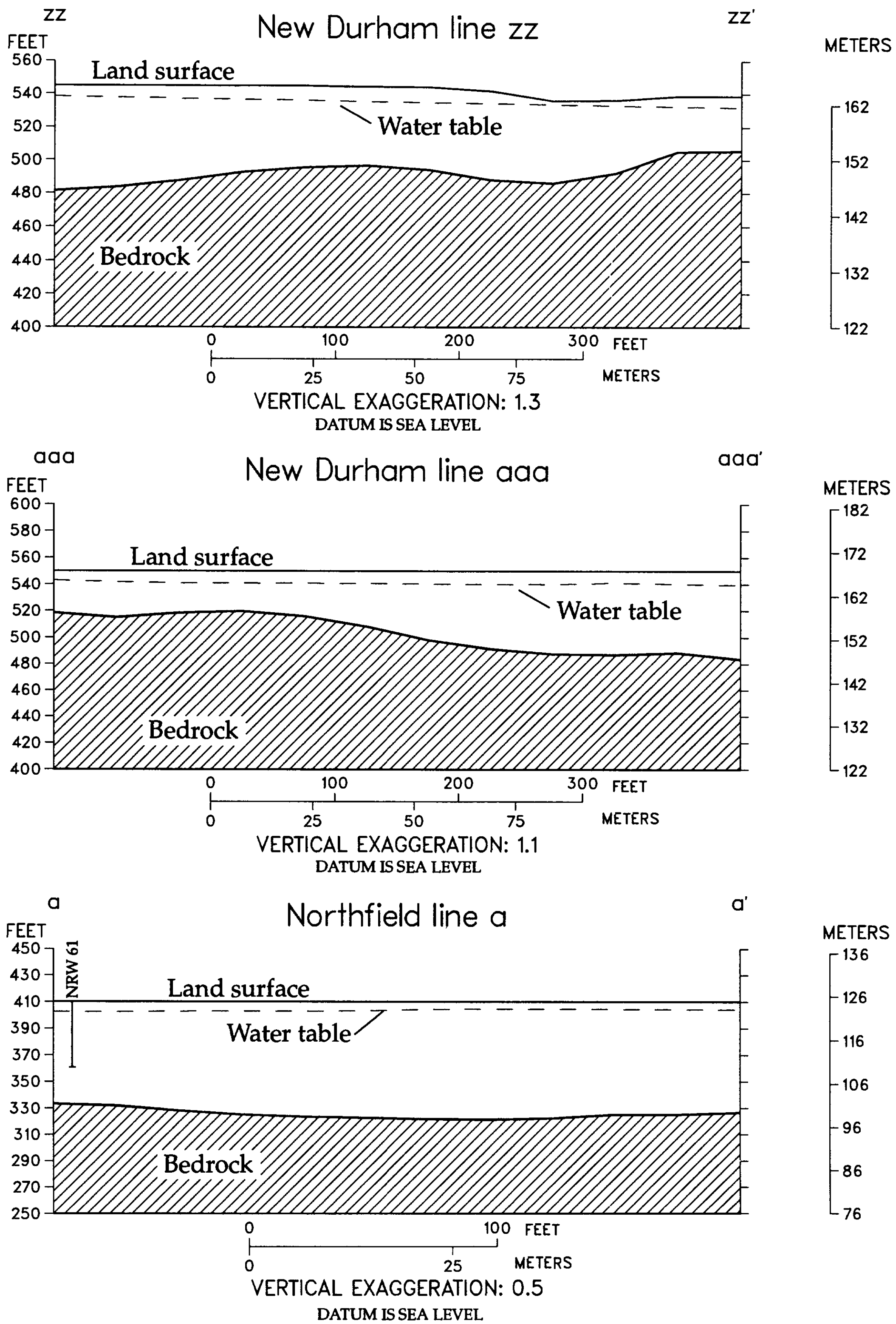


Figure C16. Geohydrologic sections interpreted from seismic-refraction data for New Durham lines zz-zz′ and aaa-aaa′ (modified from Mack and Lawlor, 1992; locations shown on plate 2), and Northfield line a-a′ (location shown on plate 1).

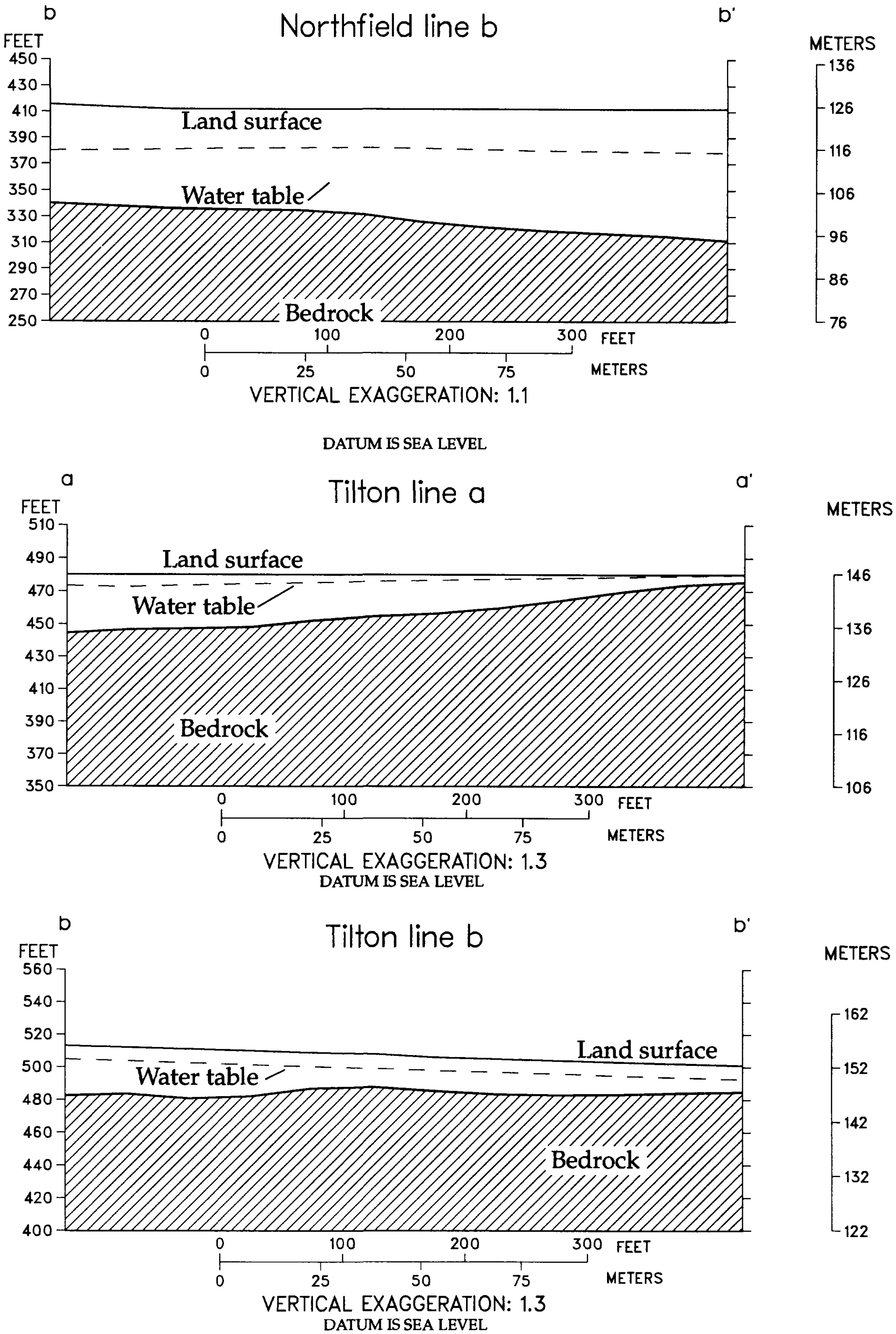


Figure C17. Geohydrologic sections interpreted from seismic-refraction data for Northfield line b-b', and Tilton lines a-a' and b-b' (locations shown on plate 1).

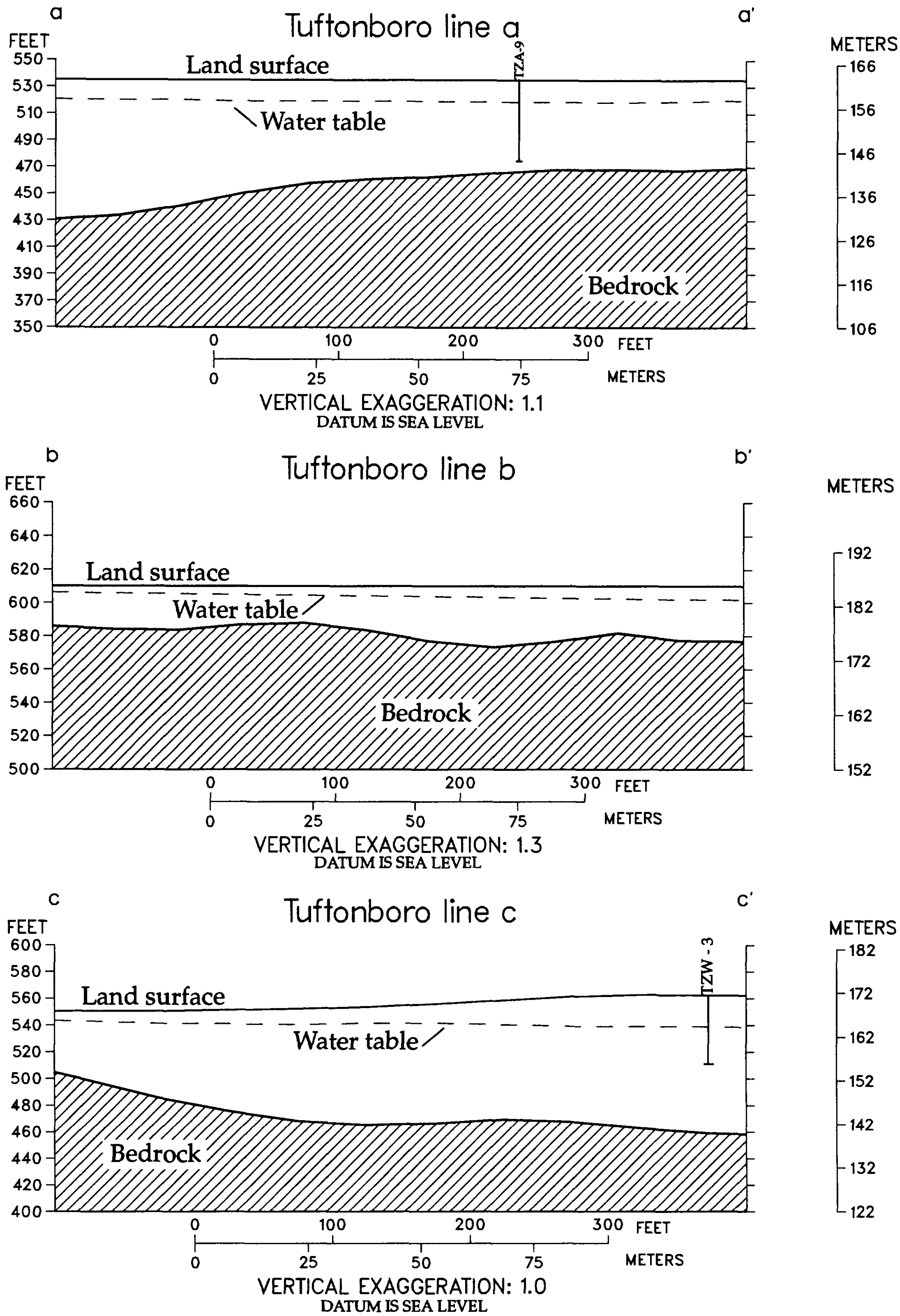


Figure C18. Geohydrologic sections interpreted from seismic-refraction data for Tuftonboro lines a-a′, b-b′, and c-c′ (locations shown on plate 4).

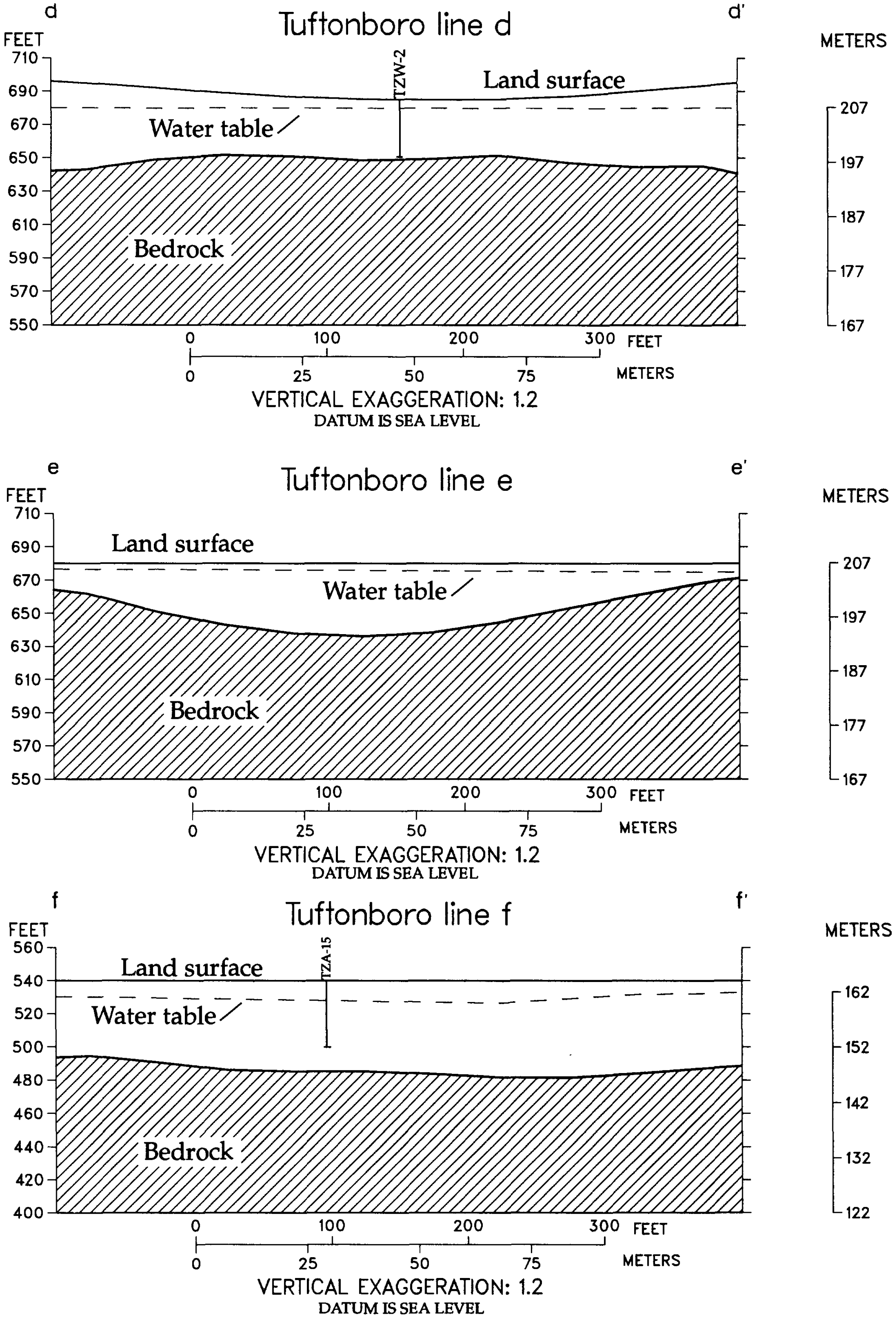


Figure C19. Geohydrologic sections interpreted from seismic-refraction data for Tuftonboro lines d-d', e-e', and f-f' (locations shown on plate 4).

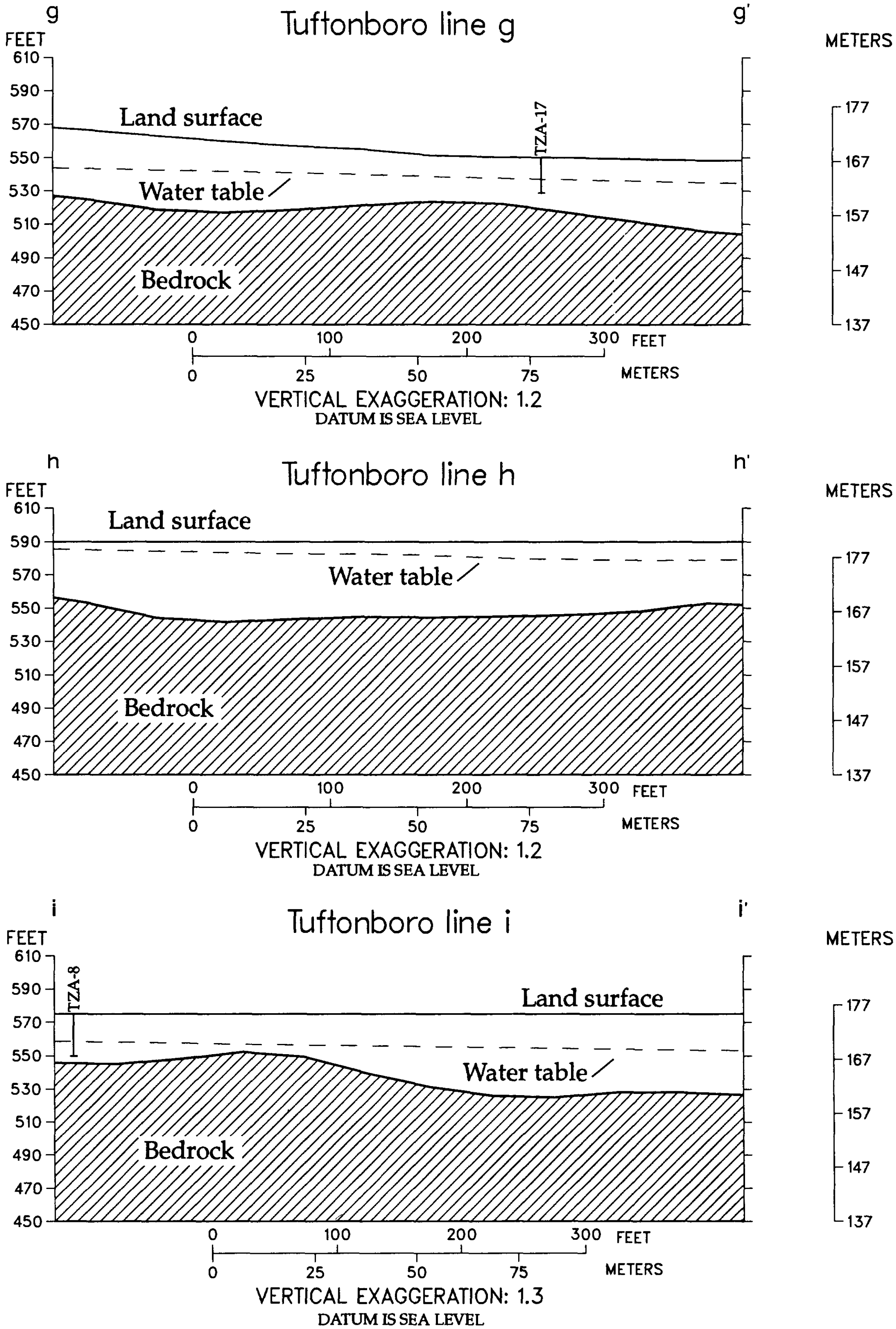


Figure C20. Geohydrologic sections interpreted from seismic-refraction data for Tuftonboro lines g-g', h-h', and i-i' (locations shown on plate 4).

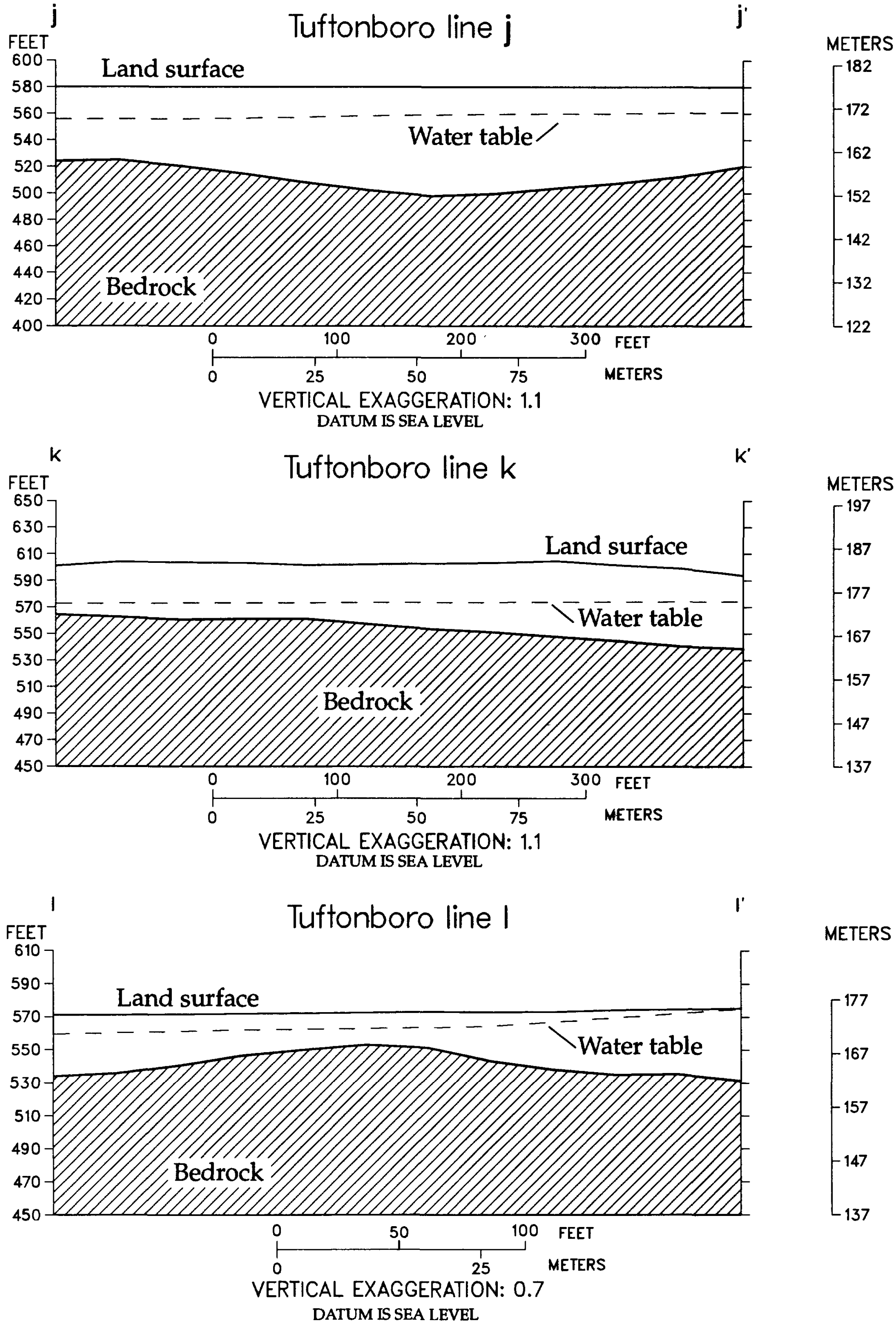


Figure C21. Geohydrologic sections interpreted from seismic-refraction data for Tuftonboro lines j-j', k-k', and l-l' (locations shown on plate 4).

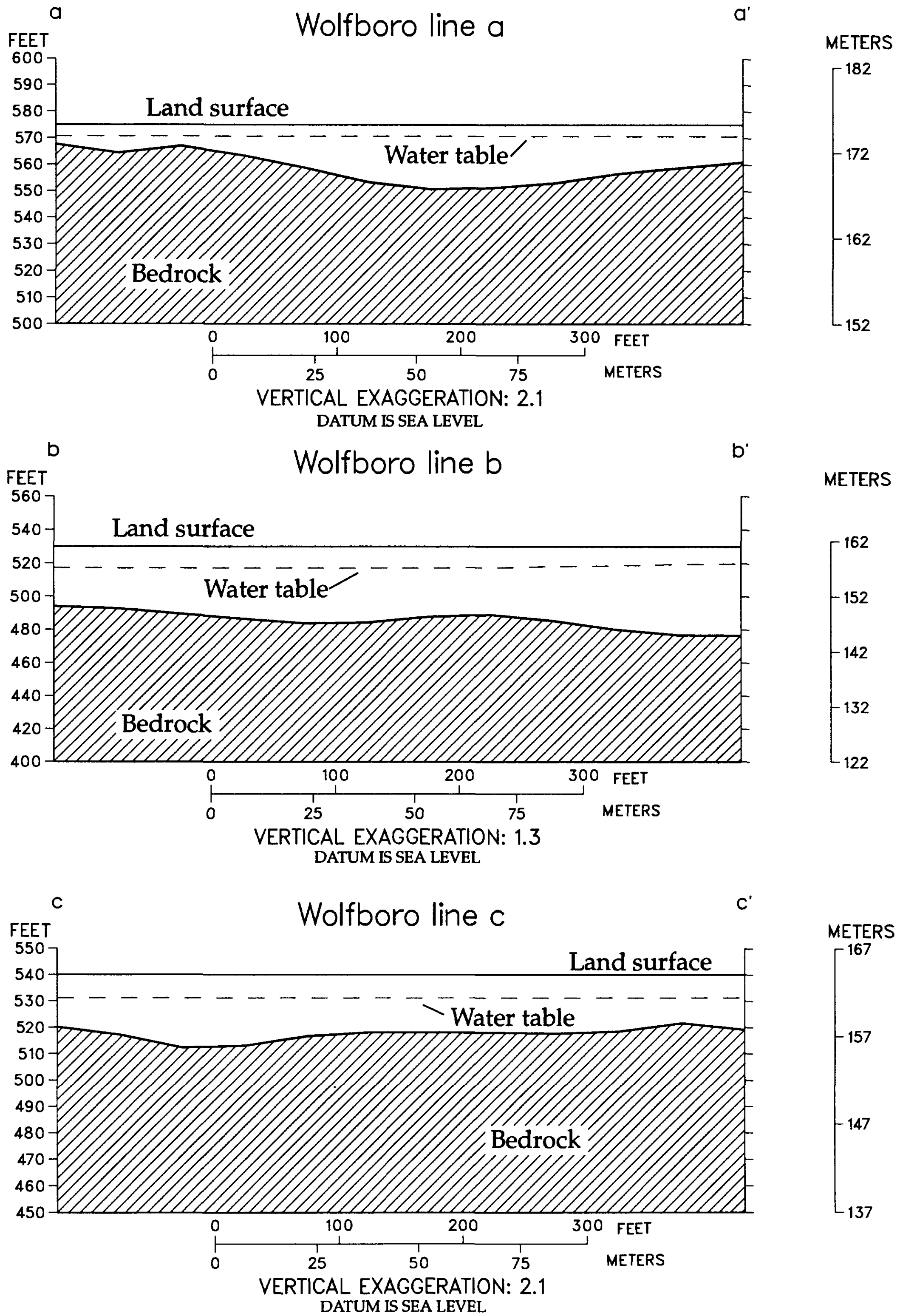


Figure C22. Geohydrologic sections interpreted from seismic-refraction data for Wolfeboro lines a-a′, b-b′, and c-c′ (locations shown on plate 4).

APPENDIX D. Low streamflow measurements at miscellaneous sites in central New Hampshire

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Table D-1. Low streamflow measurements at miscellaneous sites in central New Hampshire

[mi², square mile; ft³/s, cubic foot per second; lat, latitude; long, longitude; ft, foot]

Mea-sure-ment number	Stream	Tributary to	Location	Drainage area (mi²)	Measurements	
					Date	Dis-charge (ft³/s)
			MERRIMACK RIVER BASIN			
1	Merrimeeting River	Lake Winni-pesaukee	Lat 43°26'15", long 71°10'21", Belknap County, Hydrologic Unit 01070002, 200 ft downstream from dam on Main Street in New Durham, 150 ft upstream of main branch.	17.4	7-3-91	8.6
2	Coffin Brook	Merrimeeting River	Lat 43°25'01", long 71°13'03", Belknap County, Hydrologic Unit 01070002, 3,500 ft west of Stockbridge Corners off Route 28, 50 ft upstream at old mill site.	6.06	7-3-91	.35
3	Unnamed Tributary	Merrimeeting River	Lat 43°25'15", long 71°10'33", Belknap County, Hydrologic Unit 01070002, upstream side of culvert at Stockbridge Road 8,000 ft east of Stockbridge Road on Route 11 in New Durham.	.54	7-3-91	0
4	Unnamed Tributary	Merrimeeting River	Lat 43°27'23", long 71°12'58", Belknap County, Hydrologic Unit 01070002, 1,200 ft from Alton at culvert under Route 28, 6,000 ft south of Alton Bay.	.32	7-3-91	0
5	Unnamed Tributary	Merrimeeting River	Lat 43°27'34", long 71°13'10", Belknap County, Hydrologic Unit 01070002, at culvert under Route 28, upstream side, 2,000 ft from Alton and 4,600 ft from Alton Bay.	.31	7-3-91	0
6	Unnamed Tributary	Merrimeeting River	Lat 43°27'11", long 71°13'48", Belknap County, Hydrologic Unit 01070002, at culvert, down-stream side of Route 140, 3,000 ft west from Alton and 6,000 ft south of Alton Bay.	1.02	7-3-91	.06
7	Nineteen Mile Brook	Lake Winni-pesaukee	Lat 43°38'00", long 71°14'42", Carroll County, Hydrologic Unit 01070002, downstream side of culvert under Route 109A, 7,500 ft from Center Tuftonboro.	2.09	7-3-91	.54
8	Whitten Brook	Nineteen Mile Brook	Lat 43°38'17", long 71°14'43", Carroll County, Hydrologic Unit 01070002, 50 ft downstream from culvert under Route 109A 5,500 ft from Center Tuftonboro.	1.71	7-3-91	.28
9	Melvin River	Lake Winni-pesaukee	Lat 43°42'40", long 71°17'34", Carroll County, Hydrologic Unit 01070002, 10 ft downstream from bridge at Route 171, 9,000 ft north of Melvin Village.	2.05	7-3-91	.24
10	Melvin River	Lake Winni-pesaukee	Lat 43°41'50", long 71°17'54", Carroll County, Hydrologic Unit 01070002, at downstream side of bridge on New Road, 4,000 ft north of Melvin Village.	10.9	7-3-91	1.4

Table D-1. Low streamflow measurements at miscellaneous sites in central New Hampshire—Continued

Measurement number	Stream	Tributary to	Location	Drainage area (mi^2)	Measurements: Date	Measurements: Discharge (ft^3/s)
			MERRIMACK RIVER BASIN			
11	Melvin River	Lake Winnipesaukee	Lat 43°41'44", long 71°17'07", Carroll County, Hydrologic Unit 01070002, 50 ft downstream from bridge on Sodom Road, 6,000 ft east of Melvin Village.	11.5	7-3-91	1.0
12	Melvin River	Lake Winnipesaukee	Lat 43°41'37", long 71°18'26", Carroll County, Hydrologic Unit 01070002, 2,000 ft from Melvin Village, 50 ft upstream from bridge of Country Road, 2,500 ft from intersection with Route 109.	13.8	7-3-91	1.9
13	Shannon Brook	Lake Winnipesaukee	Lat 43°43'14", long 71°19'21", Carroll County, Hydrologic Unit 01070002, at upstream side of bridge at Route 171, 1,300 ft from Melvin Village, 500 ft from intersection with Route 109.	3.39	7-3-91	.58
14	Shannon Brook	Lake Winnipesaukee	Lat 43°43'01", long 71°19'28", Carroll County, Hydrologic Unit 01070002, 1,100 ft north of Melvin Village, 3 ft down-stream from culvert on Severence Road.	.16	7-3-91	.01
15	Shannon Brook	Lake Winnipesaukee	Lat 43°43'49", long 71°21'29", Carroll County, Hydrologic Unit 01070002, 5 ft downstream from bridge at Route 109, 4,000 ft south of intersection with Route 171, 5,000 ft from outlet into Lake Winnipesaukee.	3.62	7-3-91	.32
16	Halfway Brook	Lake Winnipesaukee	Lat 43°45'30", long 71°21'47", Carroll County, Hydrologic Unit 01070002, 20 ft downstream from wooden bridge, 4,000 ft from Route 109, 3,000 ft from inter-section of Routes 109 and 25.	1.39	7-3-91	.47
17	Halfway Brook	Lake Winnipesaukee	Lat 43°45'18", long 71°22'34", Belknap County, Hydrologic Unit 01070002, 25 ft upstream from culvert under Route 109, 4,000 ft from intersection of Route 109 and 25, 3,000 ft from Moultonboro Center.	1.49	7-3-91	.30
18	Halfway Brook	Lake Winnipesaukee	Lat 43°44'30", long 71°23'13", Carroll County, Hydrologic Unit 01070002, 30 ft down-stream from culvert under Lees Mill Road, 2,800 ft from Route 109, 5,000 ft from intersection of Routes 109 and 125.	5.28	7-3-91	.22
19	Gunstock Brook	Lake Winnipesaukee	Lat 43°31'45", long 71°24'16", Belknap County, Hydrologic Unit 01070002, 30 ft below bridge at downstream side of Hoyt Road, 6,500 ft from Gilford Village and 2,500 ft from Belknap Mountain Road.	3.83	7-3-91	.78

Table D-1. Low streamflow measurements at miscellaneous sites in central New Hampshire--Continued

Measurement number	Stream	Tributary to	Location	Drainage area (mi^2)	Measurements: Date	Measurements: Discharge (ft^3/s)
			MERRIMACK RIVER BASIN			
20	Gunstock Brook	Lake Winnipesaukee	Lat 43°33'00", long 71°24'15", Belknap County, Hydrologic Unit 01070002, 1,200 ft from intersection of Belknap Mountain Road and Route 11B.	5.84	7-3-91	0.94
21	Gunstock Brook	Lake Winnipesaukee	Lat 43°33'58", long 71°23'58", Belknap County, Hydrologic Unit 01070002, 60 ft upstream from bridge at Henderson Road, 500 ft west of Route 11B.	8.26	7-3-91	1.26
22	Gunstock Brook	Lake Winnipesaukee	Lat 43°34'28", long 71°24'10", Belknap County, Hydrologic Unit 01070002, 40 ft down-stream from bridge at Old Lake-shore Road, 300 ft from intersection of Route 11B, 1,000 ft from Gilford Village.	8.74	7-3-91	1.13
23	Hawkins Brook	Lake Winnipesaukee	Lat 43°40'09", long 71°30'16", Belknap County, Hydrologic Unit 01070002, downstream side of culvert, on Transfer Station Road, 4,500 ft north of Meredith.	2.20	7-3-91	.14
24	Hawkins Brook	Lake Winnipesaukee	Lat 43°39'56", long 71°29'54", Belknap County, Hydrologic Unit 01070002, 40 ft upstream from culvert under road to Town Highway Department, through Town Park, 1,000 ft east of Route 3, 3,000 ft north of Meredith.	2.54	7-3-91	.51
25	Jewett Brook	Lake Winnisquam	Lat 43°31'54", long 71°27'37", Belknap County, Hydrologic Unit 01070002, 25 ft downstream from bridge at High St., 5,000 ft from intersection with Route 11A, 4,500 ft from intersection with Route 11 bypass.	5.26	7-3-91	.49
26	Durkee Brook	Lake Winnisquam	Lat 43°30'56", long 71°27'34", Belknap County, Hydrologic Unit 01070002, 20 ft upstream from bridge on connector between Routes 106 and 107, 1,300 ft from Route 11 bypass, 4,500 ft from Laconia.	1.96	7-3-91	.80
27	Wickwas Outlet	Lake Winnipesaukee	Lat 43°36'50", long 71°32'01", Belknap County, Hydrologic Unit 01070002, 40 ft upstream from bridge on Meredith Center Road, 6,000 ft from intersection of Route 104, 1,000 ft west of Meredith Center.	12.0	7-3-91	.29
28	Durgin Brook	Lake Winnisquam	Lat 43°29'29", long 71°30'09", Belknap County, Hydrologic Unit 01070002, 300 ft upstream from bridge at Bean Hill Road, 500 ft from intersection with Route 3, 2,000 ft north of bridge over Winnisquam Lake.	3.84	7-2-91	0

Table D-1. Low streamflow measurements at miscellaneous sites in central New Hampshire--Continued

Measurement number	Stream	Tributary to	Location	Drainage area (mi²)	Measurements: Date	Measurements: Discharge (ft³/s)
			MERRIMACK RIVER BASIN			
29	Unnamed Tributary	Lake Winnisquam	Lat 43°28'25", long 71°30'48", Belknap County, Hydrologic Unit 01070002, downstream side of culvert at Union Road, 6,500 ft east of Lochmere.	.39	7-2-91	0.04
30	Windy Hill Brook	Silver Lake	Lat 43°28'26", long 71°32'38", Belknap County, Hydrologic Unit 01070002, at upstream side of culvert at Route 11 in Lochmere, 2,500 ft from East Tilton, 1,000 ft from intersection of Route 11 and I-93.	1.87	7-3-91	0
31	Tioga River	Winnipesaukee River	Lat 43°27'04", long 71°28'13", Belknap County, Hydrologic Unit 01070002, 4,500 ft from Belmont, 300 ft downstream from Badger Pond, 100 ft upstream from Route 106.	14.7	7-3-91	1.1
32	Pumping Station	Tioga River	Lat 43°25'47", long 71°28'43", Belknap County, Hydrologic Unit 01070002, 300 ft downstream from culverts at Wareing Road, 5,000 ft south of Belmont.	2.35	7-3-91	.80
33	Unnamed Tributary	Tioga River	Lat 43°26'36", long 71°29'43", Belknap County, Hydrologic Unit 01070002, 3,500 ft west of Belmont at confluence with Tioga River.	1.03	7-3-91	0
34	Tioga River	Winnipesaukee River	Lat 43°26'40", long 71°29'46", Belknap County, Hydrologic Unit 01070002, 3,500 ft from Belmont downstream from confluence with Unnamed Tributary.	18.7	7-3-91	3.9
35	Tioga River	Winnipesaukee River	Lat 43°26'33", long 71°31' 06", Belknap County, Hydrologic Unit 01070002, at downstream edge of bridge abutment on South Road, 9,000 ft from Belmont, 1,200 ft from intersection with Route 140.	26.85	7-3-91	5.58
36	Gulf Brook	Winnipesaukee River	Lat 43°27'19", long 71°33'51", Belknap County, Hydrologic Unit 01070002, 10 ft upstream from old railroad trestle bridge on Pike Industries property, 500 ft downstream from Route 11, 1,500 ft from intersection with I-93.	5.52	7-2-91	.28
37	Williams Brook	Winnipesaukee River	Lat 43°25'58", long 71°36'05", Belknap County, Hydrologic Unit 01070002, 10 ft downstream from bridge at Sargent Road, 4,000 ft from Northfield, 2,500 ft from intersection with Route 132.	7.62	7-3-91	.66

APPENDIX E. Monthly water levels at selected wells, central New Hampshire

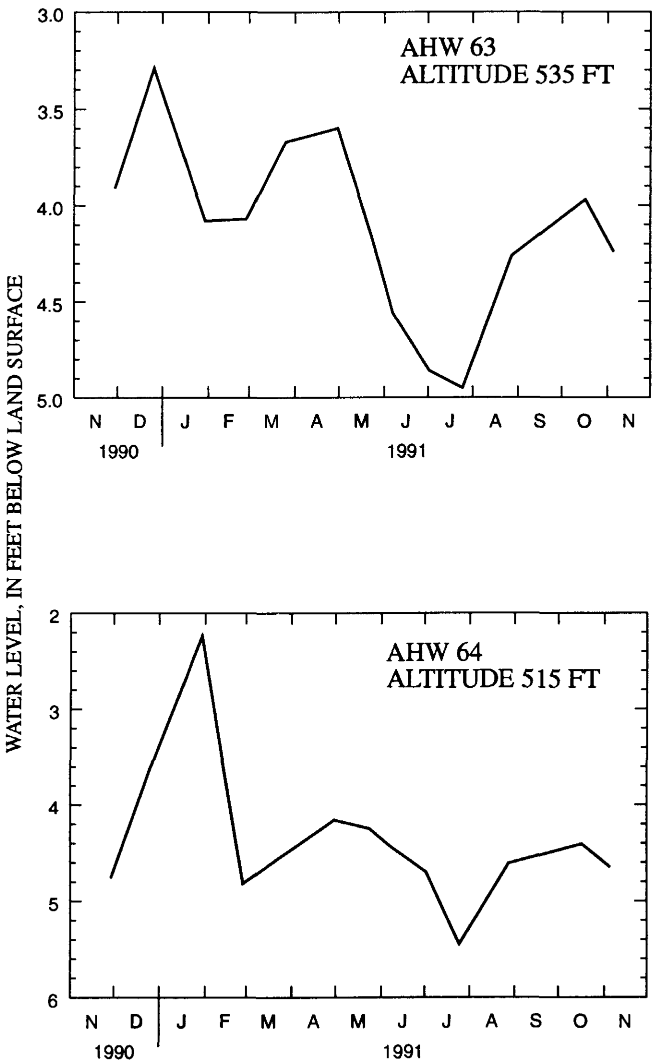

Figure E1. Monthly water levels at wells AHW 63 and AHW 64, central New Hampshire, (located on plate 2).

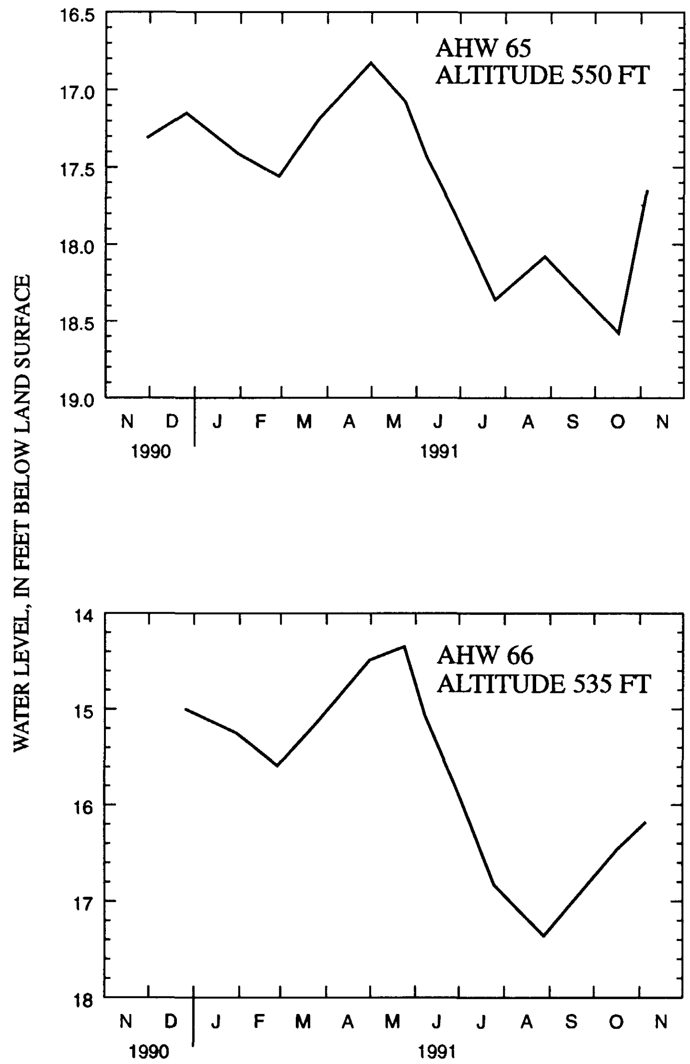

Figure E2. Monthly water levels at wells AHW 65 and AHW 66, central New Hampshire, (located on plate 2).

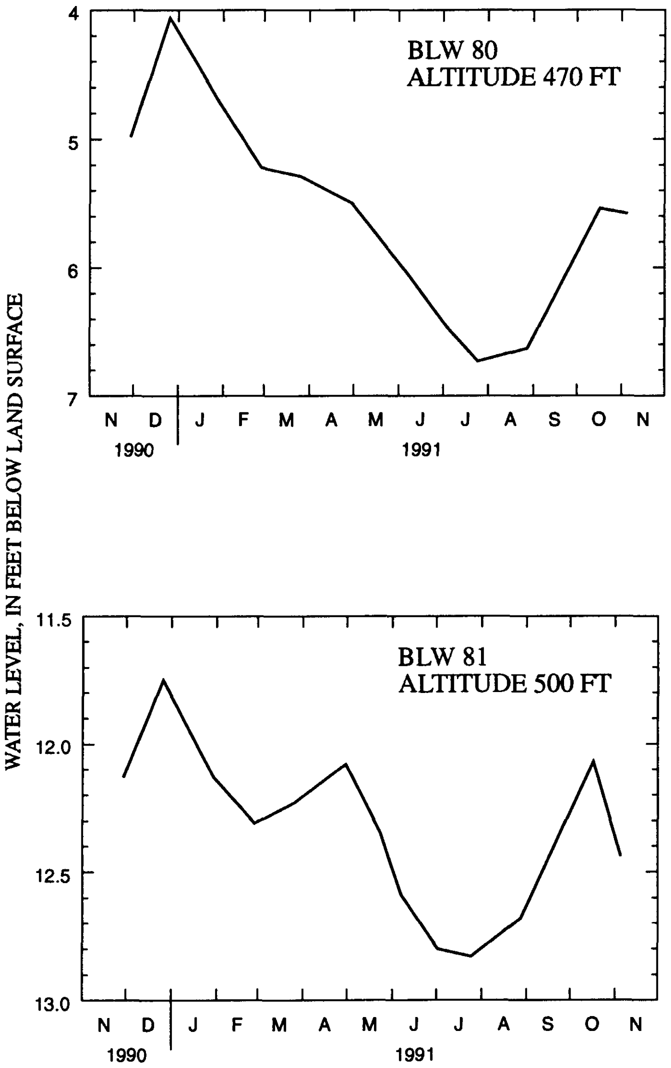

Figure E3. Monthly water levels at wells BLW 80 and BLW 81, central New Hampshire, (located on plate 1).

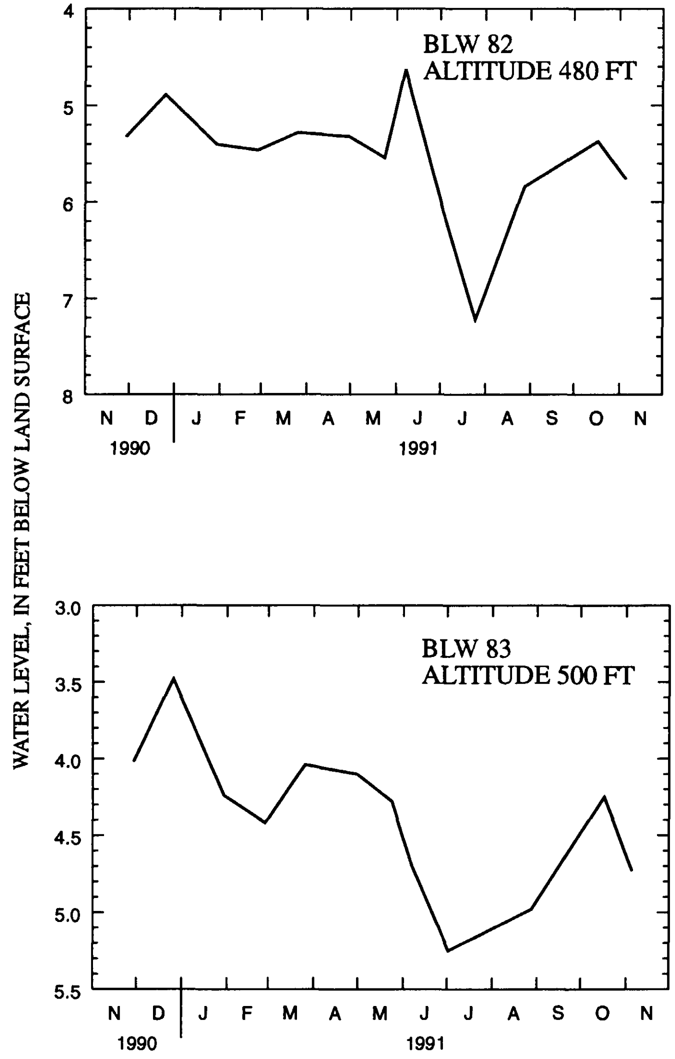

Figure E4. Monthly water levels at wells BLW 82 and BLW 83, central New Hampshire, (located on plate 1).

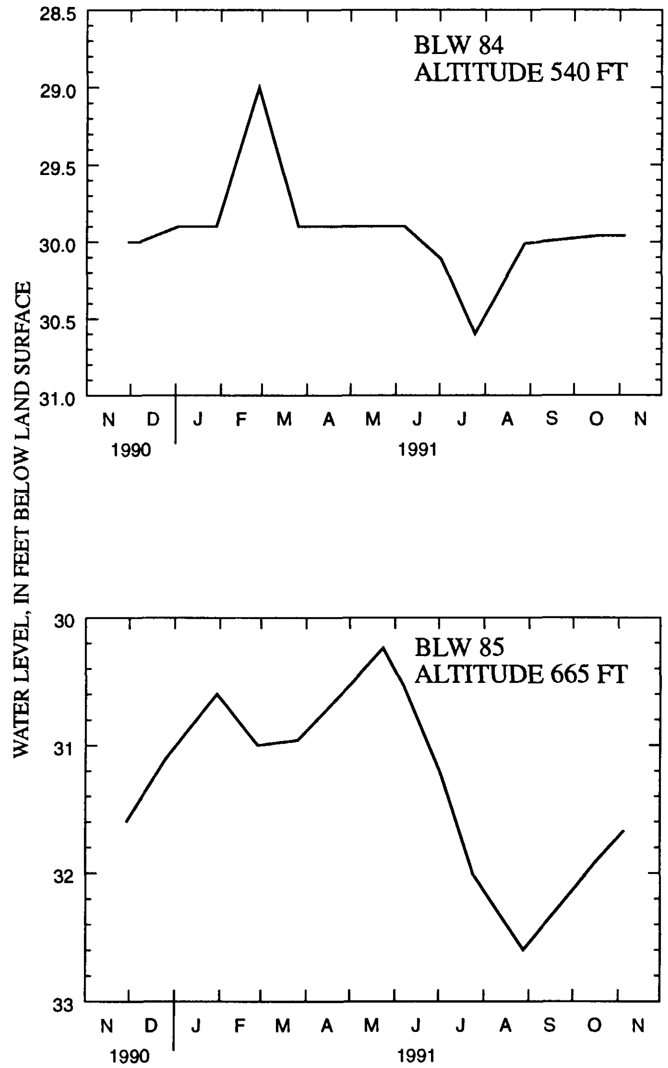

Figure E5. Monthly water levels at wells BLW 84 and BLW 85, central New Hampshire, (located on plate 1).

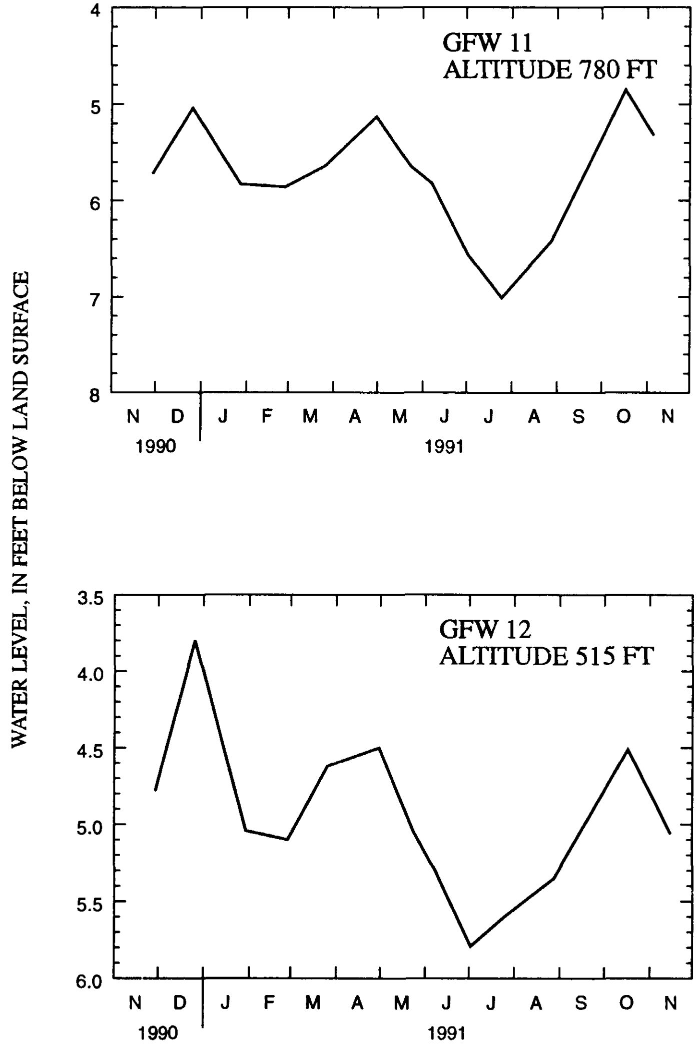

Figure E6. Monthly water levels at wells GFW 11 and GFW 12, central New Hampshire, located on plates 1 and 3).

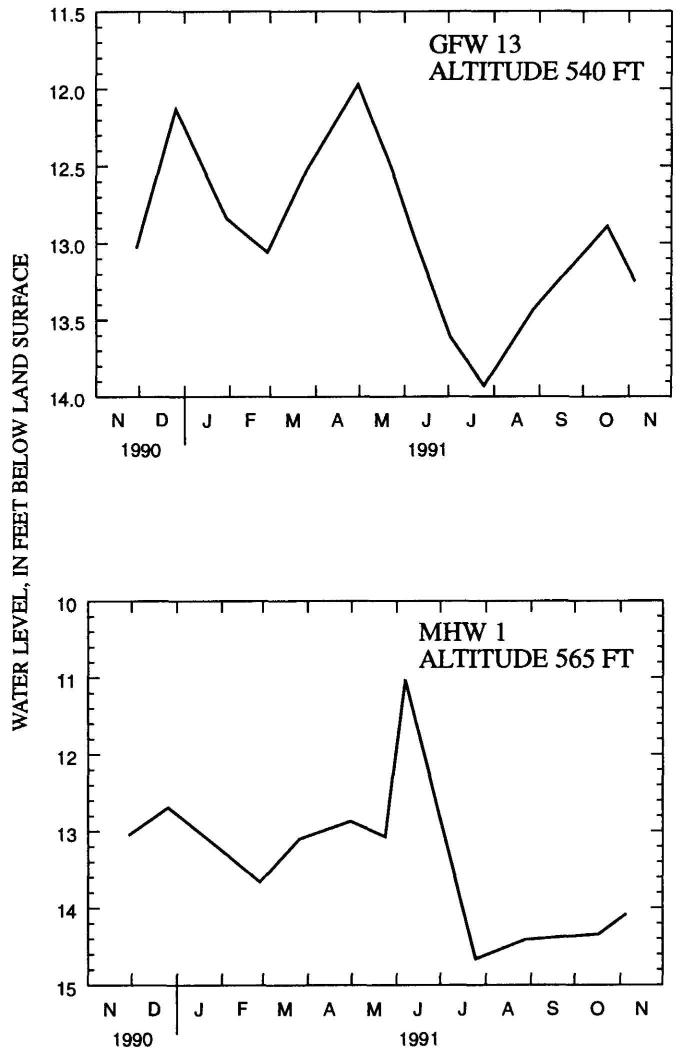

Figure E7. Monthly water levels at wells GFW 13 and MHW 1, central New Hampshire, (located on plates 1 and 3).

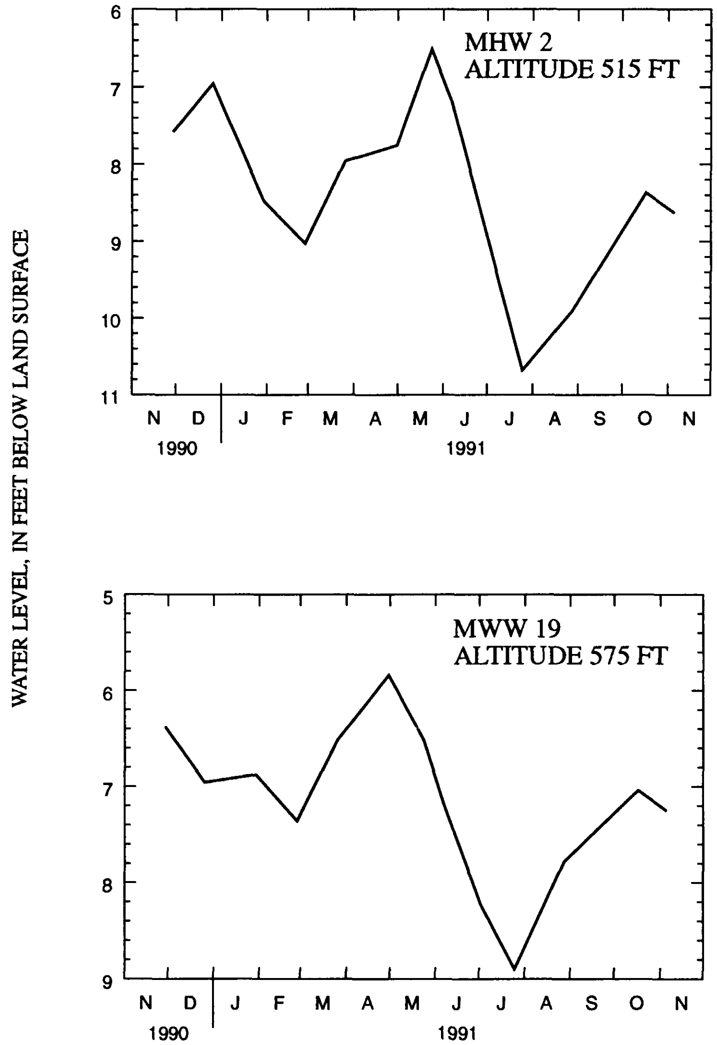

Figure E8. Monthly water levels at wells MHW 2 and MWW 19, central New Hampshire, (located on plate 3).