

ARTICLE II

Water Supply

§ 305-2.1. Permits.

- A. In order to enforce the provisions of Article II of the State Sanitary Code, Regulation 4, "Water Supply,"¹ a permit from the Board of Health shall be required for the development of a suitable source of water supply prior to the start of any construction on a building or buildings where water will be used. The state is the permitting authority for closed-loop geothermal ground source heat pump wells. No building permit shall be issued for the construction of a building which would necessitate the use of water therein, unless a suitable supply of water is available from a well located on the property where the building is to be constructed, or a connection to a semipublic or public water supply is available.
- B. Permit requirements. No private or semipublic water supply shall be installed, altered or repaired until a permit has been obtained from the Board of Health or its agent. The fee for this permit shall be set by the Board of Health from time to time. A permit so granted shall expire 24 months from the date of issue unless construction is begun.
- C. Permit application.
 - (1) For the purposes of this regulation, a complete application shall include:
 - (a) A completed well construction permit application, signed by the property owner, and the associated fee which is set by the Board of Health from time to time.
 - (b) A plan drawn to scale, indicating boundary lines of the applicant's property; the location and the number of wells, as required under §§ 305-2.6 and 305-2.7 herein; and the location of all existing and proposed structures and septic systems within 200 feet of each existing or proposed well on the applicant's property; and the location of any existing or proposed driveway, right-of-way, or traveled way, as defined in § 305-2.2.
 - (c) The location of areas subject to the jurisdiction of the Conservation Commission pursuant to the Wetlands Protection Act, MGL c. 131, § 40, and the regulations promulgated thereunder as 310 CMR 10.00; the Town of Sherborn Wetlands Bylaw (Chapter 226 of the General Bylaws), and Chapter 410, Wetlands Regulations, of the Code of the Town of Sherborn.
 - (d) Written approval from the Conservation Commission in the form of an administrative approval, negative determination of applicability, or order of conditions from the Conservation Commission for the proposed well location.
 - (e) If a new or replacement sewage disposal system is required, a complete disposal works construction permit application, as described in Article I, Sewage Disposal, § 305-1.4B, is required.
 - (2) The complete application shall be considered filed on the date upon which it is filed

1. Editor's Note: See 105 CMR 410.000.

with the Board of Health by the person who is seeking the permit or their authorized representative.

- D. Permit release requirements. No foundation or building permit shall be issued until the well is installed, completed and has been demonstrated to supply water of the quality and quantity specified herein. No occupancy of the building the well is to serve shall be permitted until an acceptable tested water sample has been obtained from a tap in the building.
- E. Well pump and storage tank permits. A well pump and storage tank permit shall be required. This shall be obtained from the Board of Health after the well has been approved by the Board for suitability both as to water quality and quantity.

§ 305-2.2. Definitions.

DRIVEWAY — A private road giving access from a public way to a building on abutting grounds, including common driveways. When a common driveway special permit application is required from the Planning Board for any project that includes water supply, the application to the Board of Health shall be filed simultaneously with the application to the Planning Board.

PRIVATE WATER SUPPLY — Any water system serving or intended to serve water on one property, business, or residence as described in § 305-2.7. The system shall be contained on the property and shall include all of the sources, treatment works and distribution lines to the point where distribution takes place within the building on the property.

RIGHT-OF-WAY — A strip of land within which is built a public road; a path or route that may lawfully be used.

SEMIPUBLIC WATER SUPPLY — Any water system serving or intending to serve water for human consumption, human contact or domestic uses, or for purposes including, but not limited to, multiple dwellings, restaurants, food processing, food preparation and/or food service, schools, institutions, campgrounds, recreational camps for children, state/town forests, parks, beaches, and agriculture. Semipublic water supplies serve more than one single-family home on a single property or one single family home and one accessory dwelling unit but have service connections and/or usage levels below the thresholds for Public Water Supplies as defined and regulated by 310 CMR 22.00 and may include one or more wells associated with a project as defined in Sherborn Board of Health Chapter 305, Article III, § 305-3.5.

TRAVELED WAY — The component of the thoroughfare between the curbs or, when there is no curb, the area between the edge of the traveled surface pavement on both sides on which vehicles normally travel.

WATER SYSTEMS — Includes structures, pipes, valves, fittings, tanks, pumps, motors, switches, controls and other apparatus and appurtenances installed or used for the purpose of storage, distribution, filtration, treatment or purification of water for any use, whether or not inside a building.

WELL — Includes any pit, pipe excavation, spring, casing, drill hole or other source of water to be used for any purpose of supplying potable water in the Town of Sherborn and shall include dug wells, driven or tubular wells, drilled wells (artesian or otherwise), springs, gravel-packed or gravel-walled wells, and gravel-developed and wash borings.

§ 305-2.3. Sanitary performance.

The well contractor shall observe sanitary measures and precautions in the performance of well development work in order to prevent pollution or contamination of the well. Use of water from streams, swamps or abandoned wells for drilling shall be prohibited.

§ 305-2.4. Well drillers.

Well drillers must be certified by the Massachusetts Department of Environmental Protection. A copy of such certification shall be available on-site for the agent's review.

§ 305-2.5. Well protection.

No well shall be drilled in standing water or "low spots" that may allow ponding of rainfall, runoff or groundwater surfacing. The casing shall be set sufficiently into bedrock and properly sealed to keep out surface water or entry of any other surface or subsurface contamination. The well cap shall be 18 inches above surface grade. A four-foot-diameter apron shall be constructed around the casing sloping away at a maximum of eight horizontal to one vertical in all directions to the finished grade. The casing shall be sealed with cement grout to six feet below grade or to bedrock, whichever is less. Wells installed downgrade of septic systems shall have the casings sealed with cement grout from the apron at surface grade to 20 feet below grade or to bedrock. When bedrock is encountered within 20 feet of surface grade, the seal shall be extended at least five feet into the impervious (bedrock) formation.

§ 305-2.6. Well location.

The distance from a well to a sewage disposal system shall be maximized.

- A. No well shall be less than 125 feet from a leaching area located downhill from such well.
- B. No well shall be less than 150 feet from a leaching area located uphill from such well.
- C. When the soil percolation rate is less than three minutes per inch, those distances shall be increased by a minimum of 25 feet.
- D. Wells shall be located no less than 55 feet from the edge of the traveled way or 50 feet from the edge of the right-of-way, whichever is greater. Wells shall be located no less than 20 feet from a driveway. When protected in a manner approved by the Board of Health, the well may be located no closer than five feet to a driveway.
- E. Private wells shall be located no less than 25 feet from any lot line, 75 feet from any adjacent well, 10 feet from any building or projection thereof, and 50 feet from any part of the subsurface sewage disposal system.
- F. If permitted by the Board per § 305-2.7, wells used for irrigation purposes shall be located no less than 25 feet from any lot line, 150 feet from any adjacent well, 10 feet from any building or projection thereof, and 50 feet from any part of the subsurface sewage disposal system.
- G. Any well(s) for a semipublic water supply shall meet the following additional requirements:

- (1) Each well to be used as a source for a semipublic water system shall be centered within a protective area whose horizontal radius is determined by whichever of the following is larger: 100 feet or the value calculated by the equation: Protective radius in feet = $(150 \times \log \text{ of pumping rate in gpd}) - 350$.
- (2) Any such protective area shall be entirely contained within the project's property.

H. The distance may be increased by the Board of Health when, in its opinion, adverse conditions exist.

§ 305-2.7. Number of wells.

- A. In recognition that groundwater is a shared resource and that well placement may impact access and use for abutting property owners, only one well per property, business or residence shall be allowed. Multiple lots associated with one owner, association, business or residence shall be considered a single property for the purposes of this requirement. Installation of an additional well(s) to supply a multidwelling project, a property zoned, assessed, and operated as commercial agricultural land, or another need not specified shall require the submittal of an application to the Board for evaluation. The application shall include justification for the additional well(s) and a plan to demonstrate no adverse impact to nearby wells or water resources. The Board may place conditions on approved additional well(s).
- B. No well shall be used to supply more than one dwelling (MGL c. 40, § 54) unless permitted as a public water supply (310 CMR 22.00) by MassDEP or as a semipublic water supply (Article II, § 305-2.2) by the Board of Health.

§ 305-2.8. Pump houses.

Pump houses and pump rooms shall be installed in accordance with the current version of USEPA's Manual of Individual and Nonpublic Water Supply Systems. Pitless adapters or pitless units shall be installed in accordance with the current version of the National Sanitation Foundation's standard for pitless well adapters.

§ 305-2.9. Pump house protection.

Pump houses, pump or pipe pits and wells shall be designed and constructed so as to prevent flooding, freezing and the entrance of sources of pollution or contamination.

§ 305-2.10. Approvals.

No person shall install or enter into a contract for installing or making additions, modifications or alterations to any private or semipublic water supply before submitting complete plans, specifications and descriptions to the Board of Health and receiving from them written approval. Private and semipublic water supply systems shall be approved by the Board of Health before occupancy is permitted.

§ 305-2.11. Well specifications.

- A. Well yield. There shall be a minimum yield of 300 gallons per bedroom per day at 20 pounds per square inch (psi) at the highest fixture serviced. System capacity for semipublic water supplies must be adequate to meet the projected needs.
- B. Storage. All demands for water shall be provided from storage in a pressure tank. Pressure tanks for individual home installations shall be of a diaphragm type and have a minimum capacity of 36 gallons. Pressure tanks may be installed in series to meet storage volume requirements.
- C. Well installation and development. Wells shall be installed and developed in accordance with Sherborn-specific regulations and MassDEP's current Private Well Guidelines.
- D. Static water level. If the static water level in a well is shallower than the depth to bedrock for the well boring once development of the well is completed, the licensed well driller shall determine the reason(s) for the level and provide a written statement to the Board of Health regarding whether the well is inappropriately drawing from overburden groundwater and requires corrective action.

§ 305-2.12. Well performance tests.

A log of the well, showing depth and type of overburden, depth of casing installed below surface grade, diameter of casing and diameter of the hole in the rock, static water level and the pumping rate which can be sustained for at least four hours, at a constant drawdown depth.

- A. A pump test shall be made with the faucet open to waste for a four-hour constant pumping period using a pump capable of producing a flow rate at least twice that specified in Subsection G below.
- B. In the event the well is exhausted during the initial four-hour pump testing period, the faucet shall be so regulated after suitable well recovery (of not more than 30 minutes) in order to allow pumping at a constant rate for an additional four hours at a constant drawdown depth to determine the yield.
- C. A sustained pumping rate of two gallons per minute for a four-hour period shall be the minimum rate.
- D. The well (after pump testing) shall recover to within 95% of the original static water level within a twenty-four-hour period.
- E. Testing and evidence to show satisfactory well yield and recovery shall be demonstrated in the presence of the agent for the Board of Health.
- F. The results of all testing shall be submitted on an approved form to the Board of Health for approval, and the well contractor shall be responsible for all data submitted.
- G. Quantity tests shall be performed by competent pump or well-drilling contractors, and a well shall produce a supply for each dwelling unit served by an on-site well as follows:

Well Drawing Depth (minimum)	Well Yield GPM: 4 Hrs.
To 100 feet	5
100 feet to 200 feet	4
200 feet to 300 feet	3
300 feet and over	2

H. Well flushing shall be performed only as necessary and only by certified well drillers or other well management professionals. Board of Health approval is required prior to flushing a well for more than 12 hours in total. The Board of Health may impose additional requirements for flushing that exceeds 12 hours in total.

§ 305-2.13. Auxiliary power.

Auxiliary power must be available to maintain a water supply for multiple dwellings.

§ 305-2.14. Grade termination.

A pitless adapter shall be provided such that the permanent watertight casing of the well shall terminate a minimum of 18 inches above the finished grade and/or the elevation of 100-year flood.

§ 305-2.15. Well abandonment/decommissioning or repair.

- A. If a well fails and an emergency replacement well is requested, the failed well shall be abandoned and properly decommissioned by a certified well driller.
- B. Abandonment procedures.
 - (1) Sand and gravel wells. Sealing materials are watertight substances that prevent water and contaminants from entering and seeping through abandoned wells. The proper procedure for the decommissioning of these wells will be the following: The casing will be cut off four feet below the surface. Fill material (clean sand, gravel or pea gravel or crushed stone) will be used to fill the casing to within 10 feet of the top of the cutoff casing. The upper 10 feet will be filled with a mixture of neat cement and 6% bentonite by weight. The plugging material shall be allowed to flow out the top and along the sides of the casing to assure that a proper seal is established. The upper four feet of soil from the top of the casing to the surface shall be properly compacted.
 - (2) Bedrock wells. Bedrock well casings will be cut off four feet below the surface. To prevent the transport of fill material into fractures, it is recommended that larger diameter fill material, such as gravel or pea gravel, be used. The well will be filled to the base of the well casing. The casing shall then be filled with a mixture of neat cement and 6% bentonite by weight. The plugging material shall be allowed to flow out and along the sides of the casing to assure that a proper seal is established. The upper four feet of soil from the top of the casing to the surface shall be properly compacted.
 - (3) Well repair procedures.

- (a) Only certified well drillers are authorized to alter or repair a well.
- (b) For wells that have undergone repair, a sample shall be tested for total coliform bacteria and other parameters deemed appropriate by the Board of Health prior to being returned to use.

§ 305-2.16. Pipes and equipment.

- A. All service pipes and connections shall be of nontoxic materials and meet the specifications the current version of NSF/ANSI 61-2021 Drinking Water System Components — Health Effects.
- B. The installation of pipes shall be such that they are protected from crushing, freezing and/or attack by animals or rodents.
- C. Dissimilar metals should be discouraged in the water system. The use of nonconductive plastic inserts between pipes and fittings or the installation of sacrificial anodes is helpful in minimizing electric corrosion problems.
- D. Electrical service grounds shall not be attached to water piping. All electrical service and controls of the well must be permitted, inspected and approved according to Town and state regulations.

§ 305-2.17. Water quality specifications.

- A. Sanitary protection. Sanitary protection shall be incorporated into the construction of the well. All newly completed wells shall be disinfected and/or decontaminated in accordance with instructions from MassDEP's current Private Well Guidelines or suitably effective methods that are less toxic or less persistent. Disinfection and/or decontamination shall be carried out only by certified well drillers or other qualified professionals. A report of the disinfection procedures used shall be provided using the Board of Health's well disinfection and decontamination record form.
- B. Sampling/quality. A minimum of two water samples shall be collected by a qualified professional and submitted to a state-approved laboratory for analysis, consistent with the requirements of the Board of Health. One sample shall be taken when the well installation is completed and one shall be taken from a tap in the dwelling before occupancy. All results shall be submitted to the Board for approval. Acceptance of water quality shall also be based on its conformance to the normal characteristics of groundwater in the area, as well as established state and federal drinking water standards.
- C. Laboratory tests.
 - (1) A chemical, physical and bacteriological analysis of water, conducted by a Massachusetts certified laboratory using EPA-approved methods for drinking water analyses, shall be required for private and semipublic water supplies. An initial noncompliant analysis result may be superseded by two subsequent and consecutive compliant results. Water that does not meet the accepted standards of agencies of the state or federal government or of the Board of Health for potable water supplies shall be grounds for the rejection of the well.

- (2) A bacteriological test to indicate a 0 per 100 ml coliform density shall be required. A total bacteria count shall also be determined at 35° C.
- (3) Chemical and physical analysis, including testing for volatile organic compounds (using EPA 524.2 and updates) and PFAs (using USEPA Method 533 or 537.1 and updates), shall be required. Analysis shall be performed at least for pH, color, odor, iron, turbidity, manganese, ammonia nitrogen, nitrite nitrogen, nitrate nitrogen, alkalinity, total hardness, sodium, chlorides, lead, arsenic, volatile organic compounds (VOCs) and per- and polyfluoroalkyl substances (PFAs).
- (4) Concentrations shall not exceed the following:

Color	15 units
Turbidity	5 std. turbidity units
Manganese	0.05 mg/l
Nitrate nitrogen	10 mg/l
Chloride	250 mg/l
Iron	0.3 mg/l
Sodium	* 20 mg/l

*

Sodium content exceeding this level shall be made known to the occupant(s) and/or owner(s) in writing and copy of such notification, signed by the occupant(s) and owner(s), submitted to the Board of Health.

- (5) Other parameters shall be evaluated on a case-by-case basis by the Board of Health to establish the water's suitability as a private or semipublic water supply.
- (6) Water quality of semipublic water supplies shall comply with all requirements of Article II. Additional requirements may be specified by the Board of Health, as appropriate to the size and other characteristics of each semipublic water supply. Such requirements may include, but not be limited to, routine, periodic sampling and laboratory testing with a frequency of no longer than every five years, with dissemination of results to all service connections and the Board, and establishment of a formal financial and operational mechanism by the water supply owner(s) to enable ongoing sampling and laboratory analyses.
- (7) If concentration(s) of volatile organic compounds or PFAs is confirmed above levels presented in Subsection C(4) above, or the sodium concentration is greater than 28 mg/l, a document shall be attached to the deed and recorded in the South Middlesex Registry of Deeds which identifies the chemicals, their concentrations, and their potential health effects. A whole-house treatment system for the removal of volatile organic compounds or PFAs shall be installed if their concentrations exceed the standards defined in

Subsection C(4).

- (8) If disinfection and/or decontamination of the well is required following installation and development, additional parameters shall be evaluated to identify whether the chemicals used in those procedures, or their by-products, are present.
- D. Water conditioning. Permanent disinfection of a polluted supply shall be prohibited. If the natural water quality does not meet the physical and chemical criteria as listed in Subsection C, water conditioning shall be required. Water softener or other treatment backwash shall not be discharged into the septic system. Treatment units shall be installed with the capability of bypassing such units during a repair event or other special action, or if the raw water no longer requires treatment.
- E. Prohibitions.
 - (1) Surface water supplies for private or semipublic water supplies shall be prohibited.
 - (2) Cisterns shall be prohibited.
 - (3) Cross connections for whatever purpose shall not be allowed without a written permit from the Massachusetts Department of Public Health and approval by the Sherborn Board of Health.
- F. Other use prohibitions. Wells used for drinking water and domestic water supply shall not be used to provide water for groundwater heat pump systems, for water-cooling or air-conditioning systems or irrigation. Any well used for such systems shall be approved by the Board of Health only after the applicant has submitted evidence to the satisfaction of the Board of Health that such use will not disrupt any quantity or quality of water from any nearby well, to satisfy the manufacturer's recommendations for proper equipment operation.

§ 305-2.18. Enforcement.

- A. The provisions of Title 1 of the State Environmental Code shall govern the enforcement of these regulations.
- B. Orders: service and content.
 - (1) The Board of Health has the authority to investigate suspected or known violations of these regulations and may take actions as it deems appropriate for the protection of public health, safety, welfare, or the environment, and to enforce any of the provisions of this regulation. If investigation reveals a violation of these regulations, the Board may order the well owner to comply with the violated provision(s) and/or take other action.
 - (2) The inspection and these regulations cannot be construed as a guarantee by the Town of Sherborn or its agents that the water system will function satisfactorily.
 - (3) The Board of Health may require a restriction to be recorded in the South Middlesex Registry of Deeds in cases that, in the opinion of the Board of Health, the water analyses show marginal compliance with the criteria of these regulations.

§ 305-2.19. Variance procedures.

A variance to the well regulations may be granted by a vote of the Board at a regularly scheduled meeting upon receipt and review of written application/request for such variance and payment of the required fee. However, variances to side lot setback and distance to an adjacent well not on the applicant's property will require a full hearing with abutter notification.