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Article 16
Private or Semi-Public Well Water Supply Regulations

[Effective 5-2-1988; amended 3-24-1997; 9-9-2015]

§ 300-16.1 General requirements.

- A. Purpose. MGL c. 40, § 54 provides that no building permit shall be issued for the construction of a building which would necessitate the use of water therein, unless a supply of water is available there either from a water system operated by a city, town or district, or from a well located on the land where the building is to be constructed, or from a water corporation or company, as defined in MGL c. 165, § 1. The Town of Sharon Board of Health, in view of the fact that public water supply is not available in some sections of Town, or that individual property owners may wish to secure their own private source of drinking water, is of the opinion that, in the interest of and for the protection of public health, the following rules and regulations should be adopted.
- B. Authority: MGL c. 111, § 31 and in accordance with the authority of Regulation 2.1 of Article I of the State Sanitary Code. These regulations supersede all previous regulations adopted pursuant to water wells by the Sharon Board of Health.
- C. Definitions. As used in this section, the following terms shall have the meanings indicated:

ABANDONED WATER WELL

A well that has not been used for a period of one year or more, unless the owner declares his intention to use the well again for supplying water, within one year of the time use ceased.

AGENT

Any person designated by the Sharon Board of Health.

AQUIFER

A water-bearing geologic formation (consolidated or unconsolidated) that transmits water in sufficient quantities to supply a well.

CASING

An impervious durable pipe placed in a hole to prevent the walls from caving, and to seal off surface drainage or undesirable water, gas or other fluids and prevent their entering the well. Specific types include:

- (1) **TEMPORARY CASING**A temporary casing placed in soft, sandy or caving surface formation to prevent the hole from caving during drilling.
- (2) **PROTECTIVE CASING**The principal well casing.

COMMISSION

The Water Resources Commission established under Chapter 620 of the Acts of 1956.

DOMESTIC WELL

A well used for domestic water supply with one service and/or serving fewer than 25 people.

DRAWDOWN

The measured distance between the static water level and the pumping level.

HEAT PUMP WELLS

Consists of a source well and a discharge well which could be one and the same, provided it is a closed-loop system where nothing is added to or taken from the water except heat and no air is in contact with the return water. A heat pump delivers water by way of the source well from an aquifer through a heat exchanger, and returns it to the aquifer via the discharge well. The system utilizes the thermal energy stored in groundwater for space heating or cooling.

IRRIGATION WELL

A well used to provide water for plants, livestock, or other agricultural purposes.

LANDSCAPE IRRIGATION WELL

A well used to irrigate lawns, trees, softscape, and other live horticultural elements.

POTABLE WATER

Water that is safe for human consumption.

PRIVATE WATER SUPPLY

Any water system serving or intended to serve water for human consumption or for domestic uses or purposes on one lot. The system shall include all of the sources, treatment works, and distribution lines to the point where distribution takes place within the building.

REGULATING AUTHORITY

The Sharon Board of Health or its designee, which shall administer regulations pertaining to water well construction.

SEMI-PUBLIC WATER SUPPLY

Any water system serving or intended to serve water for human consumption or for domestic uses or purposes, including a multiple dwelling, or to restaurants, dairies, schools, institutions, motels, mobile home parks, bottling plants, campgrounds, recreational camps for children, state forests, parks, beaches.

STATIC WATER LEVEL

The distance measured from established ground surface to the water surface in a well not pumped, influenced by pumping nearby, or flowing under artesian pressure.

WATER SYSTEMS

Includes pipes, valves, fittings, tanks, pumps, motors, switches, controls 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.

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~~WELL-~~

~~WATER WELL (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 Sharon and shall include driven or tubular wells, drilled wells (artesian or otherwise) and springs, gravel packed, gravel walled in the U.S. Environmental Protection Agency Manual of Individual Water Supply Systems. New dug wells are not permitted in the Town of Sharon. A dug well is simply an excavated hole lined with rocks, bricks, or concrete pipe to prevent collapse. Because they are shallow and relatively large in diameter, these wells, especially those constructed with wooden lids and fieldstone lining, are susceptible to surface pollution and are not recommended. In addition, Irrigation Wells are included in this definition.~~

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WELL DRILLER

Any person, association, partnership, company, corporation or trust that constructs a water well, licensed by the Water Resource Commission (Subsection F).

D. General requirements.

- (1) No building permit for the facilities which the well is to serve will be issued until the well is installed, completed, and has been demonstrated to supply water of the quality and quantity specified herein.
- (2) The well contractor shall observe sanitary measures and precautions in the performance of his work in order to prevent pollution or contamination of the well.
- (3) Well drillers must be registered with the Massachusetts Water Resources Commission.
- (4) The owners of a semi-public water supply shall possess and display an unrevoked permit from the Board of Health which signifies the status of sanitary protection, maintenance, operation and improvements recommended.
- (5) Pump houses or pump rooms shall be kept in sanitary condition at all times. Also, the size of the room should be no larger than necessary to house the pumping and the electrical equipment involved in the water system. Lawnmowers, snowblowers, or other gas-driven engines shall not be stored in the pump room. Insecticides, herbicides and/or fertilizers and the like shall not be stored in the pump room.
- (6) Pump houses, pump or pipe pits and wells shall be designed and constructed so as to prevent flooding and otherwise to prevent the entrance of pollution or contaminants.
- (7) Pump houses, pump rooms and pitless adapters shall be installed in accordance with the "Individual Water System" manual.

- (8) No person shall install or enter into a contract for installing or making additions, modification, or alterations to any semi-public water supply before submitting complete plans, specifications and descriptions to the Board of Health, and receiving from it written approval. Private and semi-public water supply systems shall be approved by the Board of Health before a building permit is issued.
- (9) Any abandoned well shall be filled and sealed with clean sand or other inert material in such a manner as to prevent it from acting as a channel for pollution to the groundwater. Prior to destruction of any well, a well destruction permit must be obtained from the Board of Health. The Board of Health will require a site plan showing the well location prior to issuance of the well destruction permit. Within 30 days after completion of the destruction of any private well, the well owner or well driller, acting as agent for the well owner, shall submit to the Board of Health a report containing the following:
- (a) The name of the owner of the well;
 - (b) The geographic location of the well;
 - (c) Any preliminary cleaning or redrilling;
 - (d) Types, depths, and materials of seals used.
- (10) Every private potable well serving property which is rented or leased must have its water tested for total coliform bacteria, pH, sodium, and nitrate at a minimum of once every five years. Where water quality problems are known to exist, the Board of Health may require more frequent testing. Results of water quality tests shall be made available to all tenants of the property. In cases where the well water does not meet the water quality standards for the four water quality parameters mentioned above as outlined in § 300-14.2J, the Board of Health may require the property owner to provide an alternative approved source of drinking water for the tenant.
- (11) Prior to selling, conveying, or transferring title to real property in the Town of Sharon, the owner thereof shall have tested the water of every private potable well serving that property. A water sample from each well shall be submitted to a state-certified laboratory for testing of total coliform bacteria, pH, sodium, and nitrate. Results of the water test shall be submitted to the Board of Health prior to property transfer on a form provided by the Board of Health on which the owner will certify that the sample(s) was taken from the well(s) serving the property being transferred. In addition, the owner shall give copies of all water test results of which he has knowledge (regardless of age of results) for the private potable well in question to any buyer and/or broker identified with the transfer. In the event that there is no buyer at the time the water is tested, a copy of all water test results must be given by the owner to the buyer before the property is put under agreement. This regulation shall not apply to the conveyance or devise of a property to a surviving spouse or to any of the heirs or devisees of the property owner, and, further, shall not apply to a sale under power of sale in a bona fide mortgage affecting the property. Furthermore, in the case when a particular piece of real estate is transferred to different owners several times during a five-year period, one sampling and testing of water quality is considered valid for five years.
- (12) All wells used only for agricultural purposes are required to have a sealed system.
- E. Application to type of well. These standards shall apply to all types of wells described in Subsection C.

Before a change in existing well use is made, the new use shall comply with requirements specified herein.

- F. Registration of well drillers. No person shall engage in the business of constructing wells within the Town of Sharon unless he is registered with the Water Resources Commission, Division of Water Resources, as required by Water Well Drillers Registration Act (313 CMR; MGL c. 21, §§ 11 through 16).
- G. Installer's (driller's) report. Within 30 days after completion of any water well (productive or nonproductive), there shall be a report submitted to the Sharon Board of Health containing the name of the owner of the well, the geographic location of the well (this can be plotted on the plot plan using two-foot contour lines as required by the septic system designer), well depth, depth to bedrock or refusal, casing type, casing size and casing length, well screen type and screen length, and well screen depth set, static water level, method used to test well yield, length of time (in hours) well was pumped, drawdown, well yield, and drilling logs describing the material penetrated. Report forms may be issued by the Board of Health upon request.
- H. Special standards and well construction permits.
 - (1) Special standard. In locations where geologic or hydrologic conditions require more restrictive or additional standards than those described herein, such special standards may be required by the Board of Health and/or the Department of Environmental Quality Engineers.
 - (2) Well construction permits.
 - (a) A well permit shall be obtained from the Board of Health prior to the construction of any water well or well system (this includes major rework or repair of existing water wells). No permit shall be issued for the construction of a subsurface sewage disposal system to serve a building which necessitates the use of potable water from a well located on the land where the building is or is to be constructed, until a well has been established and the Board of Health has determined that a safe and adequate supply of water is available therefrom.
 - (b) An application for a water well permit must be submitted to the Board of Health by the property owner or his agent or well contractor on forms furnished by the Board. It is the responsibility of the well installer to see that a permit has been obtained prior to well construction.
 - (c) The location, design and operation of the well must be approved by the Board of Health or its agent prior to construction.
- I. Conforming. The well must conform to existing Massachusetts General Laws at the time of application, i.e., Title 5, Wetlands Protection Act.
- J. Permit fee: \$50.

§ 300-16.2 **Well construction.**

- A. Restriction. There shall be one well for each lot as stated in MGL c. 40, § 54. Any lot of less than 40,000 square feet in area shall be deemed too small for both water supply and sewage disposal on the

same lot.

B. Well location with respect to contaminants and pollutants.

- (1) In establishing the location of a water well, the installer shall give consideration to sources of contamination which exist on or adjacent to the site. All water supply wells shall be located an adequate horizontal distance from potential sources of contamination and pollution. Such sources of contamination and pollution may include, but are not limited to: a high-density development (more than one household septic tank per one-acre lot); sanitary landfills; auto junkyards; sewage treatment facilities with on-site disposal of primary or secondary effluent; car washes; vehicular service operations; road salt stockpiles; dry-cleaning establishments; cabinet making; electronic circuit assembly; metalplating; finishing and polishing; commercial paint, wood preserving and furniture stripping; sites where pesticides and herbicides are regularly applied, including golf courses and cranberry bogs; animal lots; photographic processing; printing; chemical and bacteriological laboratories; and any principal use involving the sale, storage, or transportation of fuel or oil.
- (2) Variable geologic and hydrologic conditions make it impossible to establish regulations to suit all conditions. The following minimum lateral distances shall apply to common sources of contamination listed:

Minimum Lateral Distances

Sources of Contamination	(feet)
Subsurface disposal facilities	125
Where soil percolation is greater than or equal to 6 minutes an inch	
Subsurface disposal fields	125
Where soil percolation is less than 6 minutes per inch	
Cesspools, seepage pits	150
Public ways	100
Leaching fields	125
Septic tank, distribution box, dosing tank	75
Underground petroleum storage tank	1,000
Sewers (watertight joints)	75
Footing drains	50
Surface water	50
Property line	50

- (3) Where, in the opinion of the Board of Health, adverse conditions exist, distances may be increased. In certain cases, special means of protection may be provided. Where possible, the well shall be up the groundwater gradient (upstream) from sources of contamination. The top of a well shall be above ground that is higher than any surface sources of contamination and above any known conditions of flooding by drainage of runoff from the surrounding land, unless located in a floodproof well-house. Wells must be constructed so as to maintain existing natural protection against pollution of the groundwater and to exclude all known sources of pollution from entering the well.

C. Casing.

- (1) Casing material. Well casing shall be sufficiently strong to perform the functions for which it is designed; i.e., to maintain the hole by preventing wall collapse, to provide a conduit for water conveyance, and to maintain the quality of water pumped. Permanent wells shall be cased with not less than Schedule 40 steel, or not less than Schedule 40 PVC plastic, concrete or other durable pipe material. The thickness of casing shall be selected in accordance with good design practice as applied to conditions encountered in the area where the well is located.
- (2) A well casing or extension thereof shall extend vertically for at least 18 inches above established ground surface, or above the floor of an approved pump pit or the elevation of one-hundred-year flood, whichever is greater. The Board of Health or its agent may approve, in writing, a casing termination two inches, or greater, above the established ground surface in paved areas if the area is not subject to flooding or contamination and the connections and openings are threaded or welded watertight.
- (3) All casing shall be placed with sufficient care to avoid damage to casing sections and joints. All casing joints above perforations or screens shall be watertight.
- (4) Water well pipe salvaged from water test holes or nonproductive holes may be used as new pipe if in good condition. Pipe intended for water well use is subject to random examination by the regulating agency, which shall reject defective pipe. Pipe that is considered defective includes, but is not limited to:
 - (a) Pipe with cracks.
 - (b) Pipe with welded patches.
- (5) Pipes and equipment.
 - (a) All service pipes and connections shall be nontoxic materials approved by the New England Water Works Association.
 - (b) The installation of pipes shall be such that they are protected from crushing, freezing and attack by 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 electrical corrosion problems.
 - (d) Electrical service grounds shall not be attached to the water piping. All electrical service and controls of the well must be permitted, inspected and approved according to Town and state regulations.
 - (e) All plumbing is to comply with the Massachusetts State Plumbing Code.
- D. Protective seal at land surface. The annular space between the protective well casing and the wall of the drilled hole or the surface casing shall be effectively sealed to protect against contamination or pollution by surface and/or shallow, subsurface waters. This shall be accomplished in accordance with guidelines set forth below:

(1) Depth of seal.

(a) Following is the minimum depth of seal below ground surface for various uses of wells:

Depth of Surface Seal

Type	(feet)
Local water supply wells	20
Domestic wells	6

(b) Exceptions are shallow wells where the water is at a depth less than 20 feet. In this instance, the depth of seal may be reduced, and special precautions shall be taken in locating the well with respect to possible sources of contamination.

(c) The annular space shall be sealed to a minimum depth of 20 feet from the surface of the ground when the well is close to individual domestic wells or to sources of contamination or pollution described under Well Construction, Subsection **B**. Local conditions, such as the existence of shallow, subsurface waters of undesirable quality, may warrant consideration of sealing the annular space around agricultural wells.

(2) Sealing conditions. Following are requirements for sealing the protective casing of a well:

(a) Wells that penetrate unconsolidated material.

[1] Driven wells or well construction by cable tool method. The temporary surface protective casings may function as the seal, provided the length of casing corresponds to the depth of seal specified in Subsection **D(1)** of this section.

[2] Rotary, auger or jetted well construction. The annular space between the hole, or surface or temporary casing and the protective casing shall be filled with sealing material to the depth specified in Subsection **D(1)** of this section.

(b) Wells that penetrate impervious formations. If a consolidated formation or an impervious unconsolidated formation is encountered within five feet of the specified depth of seal described in Subsection **D(1)** of this section, the seal should extend at least five feet into the impervious formation.

(c) Gravel-packed wells. The gravel pack of gravel-packed wells shall terminate at the base of the protective seal.

(d) Wells penetrating consolidated rock. A hole of sufficient diameter to accommodate protective casing must be constructed and the annular space between the rock and casing sealed to a depth specified in this section.

[1] Sealing material.

[a] The sealing material shall consist of neat cement, cement grout, puddled clay, or concrete. Organic polymer muds shall not be allowed. The neat cement mixture shall be composed of one bag of Portland cement (94 pounds) to five gallons to seven gallons of clean water.

[b] Quick-setting cement, retardants to setting, and other additives, including hydrated lime to make the mix more fluid (up to 10% of the volume of the cement), and Bentonite (up to 5%) to make the mix more fluid and to reduce shrinkage may be used. Concrete used shall be "class B" (six sacks to the cubic yard) or "Class B" (five sacks to the cubic yard).

* Clay in the form of a mud-laden fluid is similar to and has the advantage of neat cement and cement grout. There is a disadvantage in that clay may separate out of the fluid. A bentonite-gelatinous mud is recommended. Concrete is useful in sealing large-diameter wells, particularly where the width of annular ring is several inches or more. However, unless care is exercised during placement, the coarse aggregate may become separated from the cement.

[2] Thickness of seal. The thickness of the seal shall be at least one inch, and not less than three times the size of the largest coarse aggregate used in the sealing material.

[3] Placement of seal. The sealing material shall be installed in one continuous operation from the bottom of the interval to be sealed to the top.

[4] Sealing casing into bedrock. For all wells which terminate in bedrock, a permanent casing shall extend from six inches above the ground or floor of a pit into bedrock a minimum of 10 feet below the bedrock surface.

E. Well screens. A well installed in an unconsolidated sand and gravel aquifer commonly has a screen. Screen openings shall be properly sized, based on sieve analysis of material at the screen depth. The well shall be properly developed to produce sand-free water at the pumping rate of the permanent pump.

F. Sealing off strata. Where a well penetrates aquifers separated by confining layers and any of the aquifers contain water that would be a contaminant, contaminated strata shall be sealed to prevent entrance of the water into the well or its migration to other aquifer(s).

(1) The contaminated stratum shall be sealed by placing impermeable material in the annular space between the protective casing and the contaminated stratum. The seal shall extend into the upper and lower confining formations for a sufficient vertical distance to prevent the vertical movement of water from the producing formation. Sufficient sealing material shall be installed to fill the annular space between the casing and the wall in the drilled hole along the sealed interval and to fill the voids which might absorb sealing material. Sealing material shall be placed from the bottom to the top of the sealed interval.

(2) Sealing material shall consist of neat cement, cement grout or other suitable impermeable material. See Subsection **D(1)**.

G. Disinfection and other sanitary requirements. All local water supply, domestic and industrial wells shall be disinfected following construction, rehabilitation and well pump repair before the well is placed in service. The well shall be pumped to waste until the water is as clear as possible. Thereafter, the well and pumping equipment shall be disinfected with a solution containing at least 50 ppm of chlorine. The well shall remain in contact with chlorine solution a minimum of 24 hours before the well is pumped to waste and chlorine flushed from the distribution system. All water used in well drilling shall be disinfected.

H. Surface construction features.

- (1) Openings. Openings into the top of the well which are not to provide access shall be sealed. All access openings into the well shall be protected against entrance of surface water.
 - (a) Where the pump is installed on top of the well, a watertight seal shall be placed between the pump head and the pump base (slab).
 - (b) Where the pump is offset from the well or the well is equipped with a submersible pump, the opening between the protective casing and any distribution pipes or support electrical cables which enter the well shall have a watertight seal.
 - (c) All holes into the pump that are open to the well shall be sealed.
 - (d) All wells equipped with a pump shall have a watertight cap at all times.
 - (e) All below-ground discharge pipes shall have a watertight seal or gasket between the discharge pipe and well casing.
 - (f) Any concrete base or slab (sometimes called a "pump block" or "pump pedestal") constructed around the top of a casing shall be watertight and free from cracks for at least six inches above the pump chamber floor.
- (2) Pump blowoff. Any pump discharge blowoff or drain line shall be located so as to not be affected by flooding, backsiphonage, or backpressure, and shall not be connected to a sewer.

I. Well development.

- (1) All well development and rehabilitation shall be done with care and by methods that will not cause damage to the well, degrade groundwater purity, or alter subsurface conditions to allow vertical movement of contaminated water between aquifers. The following methods used in developing or conditioning a well, when done with care, are acceptable:
 - (a) Overpumping;
 - (b) Surging by use of a plunger or compressed air;
 - (c) Backwashing or jetting with water;
 - (d) Introduction of chemicals designed for this purpose; and
 - (e) A combination of the above.
- (2) Methods which produce an explosion are prohibited. Where chemicals have been used, the well shall be pumped until all trace of these agents has been removed.

- J. Water quality sampling. The well driller (installer) shall collect samples in the presence of a representative of the Board of Health. Water quality sampling shall be conducted in accordance with the following requirements:

- (1) Local, domestic, and potable water supply wells. The water from local, domestic, industrial, and commercial potable water supply wells shall be sampled immediately following development and disinfection. Chemical and bacteriological analysis shall be made, and approval of the Board of Health must be obtained before the well is used.
- (a) Sample tap. A representative sample for laboratory analysis shall be collected at pump discharge or from a tap in the pump discharge line, iced, picked up within 24 hours and delivered to a state-certified water quality testing laboratory.
- (2) Laboratory analysis. Required water analysis shall be performed by a laboratory certified by the Massachusetts Department of Environmental Quality Engineering. A copy of the laboratory analysis results shall be forwarded to the local Board of Health and the well owner.
- (3) Bacterial quality.
 - (a) Water samples for bacteriological analysis (presence of coliform organism) shall be collected from domestic water supplies after development and after all traces of disinfectant chemicals have been removed from the well. The results of the bacteriological analysis shall meet the standards specified in 310 CMR 22.00 (Massachusetts Drinking Water Regulations).
 - (b) Coliform count not to exceed 1/100 ml @ 35° C. Standard plate count not to exceed 100/100 ml @ 35° C.
- (4) Chemical and mineral quality.
 - (a) All groundwater produced where the water is to be used for consumption or for food processing shall be analyzed for its chemical and mineral content. The results of the chemical and mineral analysis shall meet the following standards:

Chemical and Mineral Quality

Arsenic	Not to exceed 0.05 ppm
Copper	Not to exceed 1.0 ppm
Color	Not to exceed 15.0 units
Turbidity	Not to exceed 1 turbidity unit
Odor	Not to exceed 3 threshold
**Sodium	Not to exceed 20 mg/l
pH	Between 6.5 and 8.5
Chloride	Not to exceed 250 mg/l
Total iron	Not to exceed 0.3 mg/l
Total hardness	Not to exceed 50 mg/l
Sulfate	Not to exceed 250 mg/l
Manganese	Not to exceed 0.005 mg/l
Nitrogen-nitrite	Not to exceed 1 mg/l
Nitrogen-nitrate	Not to exceed 10 mg/l
Organics	EPA method 524 - not to exceed standards

** This standard is included to inform the prospective homeowners. Failure does not constitute disapproval of the well.

- (b) Failure to meet these standards shall require treatment where applicable. Failure to meet these standards after treatment will constitute disapproval of the well.
- (c) The Board of Health strongly recommends that all wells (new and existing) be tested at a minimum of every two years for the presence of coliform bacteria, nitrates and sodium and at more frequent intervals when water quality problems are suspect or known to exist.
- (d) The Board of Health may require additional tests as local conditions warrant if, in its opinion, they are necessary to protect the public health and welfare.
- (e) A description of wells considered at high risk for contamination and the recommended frequency of testing is contained in § 300-16.3 of these regulations.
- (f) Note: Agricultural wells are exempt from the requirements of this section.

K. Yield test.

- (1) All wells shall be tested to determine yield and water level recovery. All test records and analysis of safe yield shall be submitted to the Board of Health. Test pumping shall be conducted at a rate at least equal to the pumping rate expected during normal use (usually three gallons to five gallons per minute at 40 psi for domestic wells). The pump test shall be conducted for a period of four hours and repeated after a shut down of 24 hours.
- (2) The pumping test shall be performed by a licensed pump or well installer.
- (3) Minimum yield requirements:

Well Depth

(feet)

Minimum Gallons/Minimum for 4 Hours

0 to 150	5 to 6
150 to 200	4
200 to 300	2 to 3
300 and over	1 to 2

- (a) The above applies to a single-family residence. For multiple-family dwellings, multiply above by the number of dwelling units to be served by the single well.
 - (4) The well, after pump testing, shall recover to within 85% of the original static water level within a twenty-four-hour period.
 - (5) Pressure tanks for individual home installations shall have a minimum capacity of 42 gallons.
 - (6) Auxiliary power must be available to maintain a water supply for multiple dwellings.
- L. Alignment. A well shall be plumb to allow proper installation and pump operation.

- M. Special provisions for large-diameter (ten-inch-or-larger diameter) shallow wells.
- (1) Bored wells. All bored wells shall be cased with concrete pipe or steel casing whose joints are watertight from six inches above surface to the depth specified in Subsection **D(1)**. The space between the wall of the hole and the casing shall be filled with concrete to the depth specified in Subsection **D(1)**. The minimum thickness of the surrounding concrete seal shall be three inches.
 - (2) Casing material. Either steel or concrete may be used for casing bored wells.
 - (a) Steel used in the manufacture of casing for bored wells should conform to the specifications for casing material described in Subsection **B** (Schedule 40 steel or Schedule 40 PVC plastic).
 - (b) Concrete casing.
 - [1] Concrete casing may consist of either poured-in-place or precast concrete pipe. Poured-in-place concrete shall be sufficiently strong to withstand the earth and water pressure imposed on it. It shall be properly reinforced with steel to furnish tensile strength and to resist cracking and it shall be free from honeycombing or other defects likely to impair the ability of the concrete structure to remain watertight. Aggregate small enough to ensure proper placement without "bridging" shall be used. Only "air entraining" cement shall be used in water well construction.
 - [2] Precast concrete pipe is usually composed of concrete rings from one foot to six feet in diameter and approximately three feet to eight feet long. To serve satisfactorily as casing, these rings shall be free of any blemishes that would impair their strength or serviceability. In the portion of the well that is to be sealed (see Subsections **B**, **C**, of this section), the joints shall be made watertight using a cement-based (not brick mortar) material.
 - (3) Covers. All bored wells shall be provided with a structurally sound cover to prevent injury to people or animals and to prevent the entrance of undesirable water or foreign matter.
- N. Temporary cover. Whenever there is an interruption in work on the well such as overnight shutdown, inclement weather, waiting periods for the setting up of sealing materials or concrete, tests, installation of the pump, etc., the well opening shall be closed with a cover to ensure the public safety and to prevent the introduction of undesirable material into the well. During interruptions of one week or more, a semi-permanent cover shall be installed. For a well cased with steel, a steel cover, tack-welded to the top of the casing, is adequate.
- O. Reuse of water and disposal wells. Water used for cooling parts of engines, air compressors or other equipment, or water used for air conditioning, shall not be returned to any part of a potable water system or potable aquifer unless the water was obtained from the same aquifer into which it is being discharged, and the discharge water is of equal or better mineralogical and bacteriological quality as the source.
- P. Repair or deepening of wells. All deepening or repair of wells shall meet all the requirements included in these regulations and shall be done with a permit.
- Q. Water storage reservoirs. Installation of a water storage reservoir, but not an approved water pressure tank, requires approval of and a permit from the Board of Health or its agent.

- R. Notice of pollution. An owner or occupant using a polluted water supply or a supply that represents a health hazard shall be notified of the health hazard, in writing, by the Board of Health or its agent (MGL c. 111, § 122A), when such hazard is brought to the Board's attention.
- S. Other water sources and cross-connections. Permission may be granted by the Board of Health or its agent to use springs, infiltration tile lines, or other sources as a water supply, or to install water treatment facilities. Plans and specifications for such facilities, together with operating procedures, shall be approved by the Board of Health. A physical connection is not permitted between a water supply meeting the requirements of these regulations and another water supply that does not meet such requirements without prior approval of the Board of Health.
- T. Enforcement and variance procedures.
- (1) Variances.
- (a) Variances may be granted only as follows: The Board of Health may vary the application of any of these regulations (except where expressly forbidden elsewhere in these regulations) with respect to any particular case when, in its opinion:
- [1] The enforcement thereof would do manifest injustice; and
- [2] The applicant has proved that the same degree of environmental protection required under these regulations can be achieved without strict application of the particular provisions.
- (b) Every request for a variance shall be made in writing and shall state the specific variance and the reasons therefor. Any variance granted by the Board of Health shall be in writing. Any denial of a variance shall also be in writing and shall contain a brief statement of the reason for the denial. A copy of each variance shall contain a brief statement of the reason for the denial. A copy of each variance shall be conspicuously posted for 30 days following its issuance; and shall be available to the public at all reasonable hours in the office of the Town Clerk or office of the Board of Health while it is in effect.
- (2) Variance, grant of special permission. Expiration, modification, suspension of any variance or other modification authorized to be made by these regulations may be subject to such qualification, revocation, suspension, or expiration as the Board of Health expresses in its grant. A variance or other modification authorized to be made by these regulations may otherwise be revoked, modified or suspended in whole or in part, only after the holder thereof has been notified in writing and has been given an opportunity to be heard, in conformity with the requirements of Title 1 (310 CMR 11.00) for orders and hearings.
- (3) General enforcement. The provisions of Title 1 of the Environmental Code (310 CMR 11.00) shall govern the enforcement of these regulations as supplemented by the following regulations.
- (4) Orders: service and content.
- (a) If an examination as provided for in Title 1 (310 CMR 11.00) reveals failure to comply with the provisions of these regulations, the Board of Health shall order the persons responsible to comply with the violated provision.

(b) Every order authorized by these regulations shall be in writing. Orders issued under the provisions of 310 CMR 11.00 shall be served on all persons responsible for the violated regulations. All orders shall be served on the designated person:

- [1] Personally, by any person authorized to serve civil process; or
 - [2] By any person authorized to serve civil process by leaving a copy of the order at his last place of abode; or
 - [3] By sending him a copy of the order by registered or certified mail, return receipt requested, if he is within the commonwealth; or
 - [4] If his last and usual place of abode is unknown or outside the commonwealth, by posting a copy of the order in a conspicuous place on or about the premises and by advertising it for at least three out of five consecutive days in one or more newspapers of general circulation within the municipality wherein the building or premises affected is situated.
- (5) Appeals. Any person aggrieved by the final decision of the Board of Health may seek relief therefrom within 30 days in any court of competent jurisdiction, as provided by the laws of this commonwealth.

(6) Penalties.

- (a) Any person who shall violate any provision of these regulations for which a penalty is not otherwise provided in any of the General Laws or in any other provision of these regulations or Title 1 (310 CMR 11.00) shall, upon conviction, be fined not less than \$50 nor more than \$500.
- (b) Any person who shall fail to comply with any order issued pursuant to the provisions of these regulations shall, upon conviction, be fined not less than \$50 nor more than \$500. Each day's failure to comply with an order shall constitute a separate violation.

U. Severability: So far as the Board of Health may provide, each section of these rules and regulations shall be construed as separate, and if any section, item, sentence, clause or phrase shall be held invalid for any reason, the remainder of these rules and regulations shall continue in full force and effect.

§ 300-16.3 **Wells considered at high risk for contamination; frequency of testing.**

- A. The attached well water standards will apply to all new wells drilled after the adoption of these regulations. The Board of Health would like to point out that the wells drilled prior to January 1988 may not meet these standards and may be at high risk for contamination if:
- (1) They are not located an adequate horizontal distance from potential sources of contamination and pollution as outlined in § **300-16.2B**;
 - (2) Environmental conditions surrounding the well have been adversely impacted as described in § **300-16.2B** since the last test of water quality; and
 - (3) They are dug wells which are shallow, relatively large in diameter and thus susceptible to surface pollution.

B. Therefore, in order to better ensure water quality, the Board of Health recommends more frequent testing of water quality in some cases.

- (1) Dug wells shall be tested for nitrates/nitrites and coliform bacteria annually.
- (2) Wells located within a high-density development (more than one household septic tank per one-acre lot) shall be tested for nitrates/nitrites and coliform bacteria annually.
- (3) Wells located less than 100 feet from a public way shall be tested for nitrates/nitrites and sodium annually.
- (4) Wells located closer than permitted in these regulations to potential sources of contamination or located in high-risk areas should test their water for nitrates/nitrites and bacteria as soon as it is noted that members of the household have become ill from chronic diarrhea, dysentery, hepatitis or other suspect ailments or if they notice a change in the color, taste, or odor of the water.

§ 300-16.4 Landscape Irrigation Wells.

A. Landscape Irrigation Wells must comply with all requirements for Water Wells to the maximum extent feasible. However, the Board of Health may waive provisions of this regulation should the applicant comply with the following conditions:

(1) An irrigation cap is installed on the well, clearly demonstrating its function as an irrigation well, or a sign at the access cap of the well is installed, conspicuously labeled "Irrigation Well – Not For Potable Use.";

(2) A deed restriction is placed upon the property denoting the well as an irrigation well not to be used for potable use;

(3) Any other requirement as deemed necessary by the Board of Health.

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