

BOARD OF HEALTH-TOWN OF STOW-PRIVATE WELL REGULATIONS

1.0 Purpose and Authority

These regulations are intended to protect the public health and general welfare by ensuring that private wells are constructed in a manner which will protect the quality of the groundwater derived from private wells. These regulations are promulgated under Chapter 111, Section 31, M.G.L. and supersede all previous regulations adopted by the Board of Health pursuant to the construction of private wells.

2.0 Definitions

As used in these regulations, the following terms shall be defined and interpreted as follows:

2.1 *Abandoned water well.* A well that meets any of the following criteria:

- 1) construction was terminated prior to completion of the well,
- 2) use has been permanently discontinued,
- 3) has been out of service for at least three years,
- 4) is a potential hazard to public health or safety and the situation cannot be corrected,
- 5) is in such a state of disrepair that its continued use is impractical,
- 6) has the potential for transmitting contaminants from the land surface into an aquifer or from one aquifer to another and the situation cannot be corrected.

2.2 *Alteration.* A major change in the type of construction or configuration of a private water system, including but not limited to adding a disinfecting device, or deepening or replacing of an existing private well. Pump repair or pump replacement, or water line repair or replacement shall not be deemed a well alteration.

2.3 *Aquifer.* A water bearing geologic formation that contains water in sufficient quantities to potentially supply a well for drinking water or other purposes.

2.4 *Board or Board of Health.* The Board of Health of the Town of Stow or its authorized agent.

2.5 *Cross connection.* Any physical connection or arrangement between two otherwise separate piping systems, one of which contains potable water and the other, water of unknown or questionable safety, whereby water may flow from one system to the other, the direction of flow depending on the pressure differential between the two systems.

2.6 *Person.* An individual, corporation, company, association, trust, or partnership.

2.7 *Pitless adaptor.* A commercially manufactured device which attaches to a well casing and provides watertight subsurface connections for suction lines or pump discharge and allows vertical access to the interior of the well casing for installation or removal of the pump or pump appurtenances.

2.8 *Potable water.* Water that is tested by a state certified laboratory and satisfies state drinking water standards for culinary and domestic purposes.

2.9 *Private well.* A water supply well which will not serve either a number of service connections or a

number of individuals sufficient to qualify as a public water system as defined in 310 CMR 202

- 2.10 *Pump installer.* Any person or company who installs or repairs pumps and pumping equipment.
- 2.11 *Pump and pumping equipment.* Any equipment or materials used or intended for use in withdrawing or obtaining groundwater, including, but not limited to, seals and tanks, together with fittings and controls.
- 2.12 *Regulating agency.* The Stow Board of Health through its agent.
- 2.13. *Well (dug).* A well that is developed in surficial unconsolidated material, i.e. sand, gravel or till, not developed within bedrock.
- 2.14 *Well.* An excavation or opening into the ground made by digging, boring, drilling, driving or other methods, for the purpose of providing a water supply.
- 2.15 *Well driller and/or digger.* Any person who is licensed by the Water Resources Commission, as defined by Chapter 620 of the Acts of 1956, as amended, to construct wells.
- 2.16 *Well seal.* An approved arrangement or device used to cap a well or to establish and maintain a junction between the casing or curbing of a well and the piping or equipment installed therein, the purpose or function of which is to prevent pollutants from entering the well at the upper terminal.

3.0 Requirements for Private Wells

- 3.1 No private well constructed after the effective date of this regulation shall be deemed a source of potable water unless it is constructed in accordance with this regulation, (see section 5.8 (1)).
- 3.2 For each private well constructed after the effective date of this regulation, there shall be:
 - 1) a well permit application
 - 2) a well construction/destruction permit
 - 3) a water quality analysis, (see section 5.5)
 - 4) a certificate of construction/destruction, water quality and quantity compliance report
 - 5) the well driller's or digger's report
 - 6) private well certificate
- 3.3 For each private well destroyed or abandoned after the effective date of this regulation, there shall be:
 - 1) a well permit application
 - 2) a well construction/destruction permit
 - 3) a certificate of construction/destruction compliance report
- 3.4 The Board or its agent shall investigate violations of this regulation or of any permit issued and may take such actions it deems necessary for the protection of the public health.

4.0 Well Construction or Destruction Permits

- 4.1 No person shall engage in the business of construction or destruction of private wells within the Town under these regulations unless registered as a well driller/digger with the Water Resources Commission, pursuant to 313 CMR 3.00. A copy of the well drillers' license must accompany the application for a well permit.
- 4.2 No person shall engage in the business of installing a private well within the town until a well construction permit is issued by the Board.
- 4.3 An application for a well construction/destruction permit shall be submitted by the property owner, the well driller/digger or his agent to the Board on a form furnished by the Board.
- 4.4 A well construction/destruction permit shall be obtained from the Board prior to the construction, destruction or abandoning of any private well. The Board shall charge a fee for each well construction or destruction permit and said fee shall be paid to the Board prior to issuing the permit.
- 4.5 All permits for well construction or destruction shall expire one year from the date of issue, unless revoked for cause. Permits may be extended for one additional six month period provided that a written request is received by the Board prior to the one year expiration date. No additional fee shall be charged for a permit extension, provided there is no change in the plans for the proposed well. After a permit has expired, a new well construction application, along with the fee, must be submitted to the Board.
- 4.6 The permit shall be displayed on the well site at all times during construction or destruction.

5.0 Well Construction Permit Requirements

- 5.1 The following information shall be submitted by the property owner or the well drill/digger or their agent with the well construction permit application, prior to the issuance of a permit:
- 1) general location of the proposed well to include the location of at least one road intersection for reference,
 - 2) for new well construction, an approved engineering plan, prepared, stamped and signed by a Massachusetts Registered Professional Engineer or a Massachusetts Registered Sanitary Engineer showing the location of the proposed well, proposed septic system and any possible sources of contamination,
 - 3) a description, written on the plan, of any possible source(s) of contamination within 400 feet of the proposed new well location (see Section 5.2(1), ex: agricultural, industrial, etc.
 - 4) for repair or replacement of an existing well, a sketch of the expected construction and location of the new well, and the location of the existing well and septic system(s),
 - 5) the well driller's/digger's name and license number as it appears on the Water Resources Commission certificate,
 - 6) the pump installer's name/ address.

5.2 Well location requirements:

- 1) In establishing the location of a new well, the design engineer and/or the driller/digger shall identify in writing on the plan, (see 5.1(2)), all known sources of potential contamination (e.g. agricultural fields, animal feed lots, active or closed landfills, dry cleaning establishments, funeral homes, painting, wood preserving or furniture stripping establishments, car wash establishments, automotive service and repair shops, truck and bus terminals, fuel depots, underground storage tanks, junk and salvage yards, railroad lines or yards, metal plating, finishing, polishing or etching establishments, any known spills of hazardous substances or materials as defined in federal, state or local laws, bylaws or regulations or any other similar uses which exist or are proposed within 400 feet of the proposed well site as determined by the Board of Health or its authorized agent to potentially contaminate the ground water.

The following minimum lateral distances from potential contamination sources shall apply:

<u>Potential Source of Contamination</u>	<u>Minimum Lateral Distance (feet)</u>
leaching facility (310 CMR 15.00)	150*
existing cesspool	100
septic tank	100*
sewer line	50
property line	25
public or private way, common drive easement	25
active or closed landfill	400
hazardous waste spill site	400
any type of surface water	100
underground storage tank (outside dwelling)	200
storm drains	25
dwelling unit (including overhang)	25

* See Legal notice "Amendment to Well Regulation" adopted by the Stow BOH, July 15, 1986

- 2) The Board of Health may grant a variance to the minimum lateral distance requirement. See Section 7.0 Variances.
- 3) Where, in the opinion of a majority of the Board, adverse conditions exist, the above minimum lateral distances may be increased or special means of protection may be required. The Board may impose minimum lateral distance requirements from other potential sources of contamination not listed above. These special requirements shall be added by the Board to the well construction permit.
- 4) Whenever possible, the well shall be upgradient of sources of potential contamination. The top of the well cap or casing shall be above the ground surface and above any conditions of flooding by drainage or runoff from the surrounding land, unless otherwise adequately protected.
- 5) Each private well shall be accessible for repair, maintenance, testing and inspection.

- 1) Wells, including dug wells, shall be constructed in compliance with the recommendations of the latest edition of the Manual of Individual Water Supply, U.S. Environmental Protection Agency (U.S. EPA), Water Supply Division (exception: surface springs shall not be used for the purpose of a potable water supply)
- 2) The annular space, if any, between the protective well casing and the wall of the drilled hole or the surface casing shall be effectively sealed. The seal is to protect against contamination by surface and/or shallow, subsurface waters.
- 3) The well casing shall be covered with a sanitary well seal. Casings shall extend a minimum of 24 inches above the highest known flood levels or 18 inches above the ground surface in areas which are not subject to flooding. In addition, all non-vent openings shall be sealed to exclude the intrusion of contaminants. Vent openings shall be complete with screening.
- 4) When well screens are used, the screen length and opening size should be selected to ensure that the water supply will be free from silt, sand and other suspended solids.
- 5) Well pumps and water storage equipment shall be selected to ensure that the water supply is to be adequate. A minimum of five gallons per minute (GPM) for four hours is required.
When the pump test is performed, a representative of the Board or its agent may observe the initial startup.
- 6) Pump suction lines, if used, shall not be closer than 100 feet from the underground sewage leaching facilities or 50 feet from a septic tank (310 CMR 15.03).
- 7) Well pits to house the pumping equipment or to permit access to the top of a well shall not be permitted.
- 8) All connections to a well casing made below ground shall be protected by either a pitless adaptor or a pitless unit that complies with the most recent revision of National Sanitation Foundation Standard 56, ventilated "Pitless Well Adaptors".
- 9) Cross connections shall be prohibited. No cross connection between a private well and a public water supply shall be allowed.
- 10) The construction of injection wells for liquid waste disposal shall be prohibited.

- 1) All private wells shall be disinfected following construction, rehabilitation, and well or pump repair before the well is placed in service. The well shall be pumped to waste (not to the septic system) until the water is as clear as possible. Thereafter, the well and the pumping equipment (and plumbing, if installed) shall be disinfected with a solution containing at least fifty (50) parts per million (ppm) of chlorine. The well shall remain in contact with the chlorine solution for a minimum of 24 hours before the well is pumped to waste (not the septic system) and the water is found to be free of chlorine.

5.5 Water Sampling Procedure

- 1) Water samples shall be collected by the applicant, the pump installer, well driller, or a representative of a state certified laboratory. All water samples shall be collected in accordance with current professional standards and practices, including EPA or other approved methods so as to maintain the integrity of the sample collected. Collection of the initial sample shall occur following the well development and the disinfection process for that well (section 5.4).
- 2) An initial representative water sample for laboratory analysis shall be collected at the pump discharge or from a tap in the pump discharge line. The sample must be collected upstream of any water treatment device. A representative sample shall constitute one (1) sample collected after a minimum of fifteen (15) minutes of pumping from the well.
- 3) The initial representative sample for new well construction or well alteration (see section 2.2) shall be analyzed for the following parameters:

PARAMETERS

Ammonia	Manganese
Arsenic	Nitrate
Chlorine	Nitrite
Coliform bacteria	Odor
Color	pH
Conductivity	Potassium
Copper	Radon
EPA 524.2	Sodium
Hardness	Sulfate
Iron	Total dissolved solids
Lead	Zinc
Magnesium	

All analyses shall be performed in accordance with U.S. EPA methods for drinking water analysis. Should the test results identify a potential health problem, the Board shall notify adjacent property owners. The federal standards of maximum contaminant levels (mcl) have been adopted by the state and incorporated into the guidelines for private water supplies. A copy of these guidelines is available at the Board of Health office.

- 4) A second representative sample for laboratory analysis of potability, lead and any other parameters deemed appropriate by the Board shall be collected from a house tap prior to issuing a certificate of occupancy.
- 5) Analytical tests for pesticides, PCBs and inorganics (metals) other than those specified in 5.5(3) can be added or deleted, as public knowledge increases or at the request of the Board, when conditions may indicate the need (i.e. prior land use) for such testing.
- 6) All costs and laboratory arrangements for collection of water samples and testing are the responsibility of the applicant.
- 7) The Board recommends that testing for coliform, nitrites, nitrates and lead be conducted annually and that testing for all other compounds be done every ten years or sooner if there are compelling reasons (e.g. toxic spills or underground tank leaks).
- 8) The Board may choose to collect the water sample or may require that the sample be collected by the Board's agent or by an employee of the certified lab performing the analysis.

5.6 Water Quality

- 1) All analytical test results shall be submitted for review to the Board or its agent. An assessment of the suitability of the well for drinking water use will be made by the Board or its agent. The Board or its agent will adhere to the current and applicable drinking water standards as detailed by the U.S. EPA and the Massachusetts Department of Environmental Protection (DEP). Approval must be obtained in writing before the well shall be placed into service as a drinking water supply. Such written approval shall be the Water Supply Certificate issued by the Board.
- 2) The water sample(s) shall be analyzed by a laboratory certified by the Wall Experiment Station in Lawrence, MA. to perform drinking water analyses. A copy of the water quality results shall be sent to the Board prior to issuance of a Water Supply Certificate.
- 3) The Board may require that additional or repeated analyses be performed on the well water based on the results of the initial analyses. Any such additional requirements shall specify the constituents or chemical fraction (e.g. pesticide/PCB, extractables, chemical etc.) for analysis.
- 4) No water supply shall be approved for use if any measured contaminant level exceeds the current and applicable primary drinking water standards for a public water supply, as detailed by the U.S. EPA and/or DEP (40 CFR 141 and 310 CMR 22). Coliform results shall be colonies per 100 ml of sample or upon a positive result, followed by two (2) successive zero coliform results. Arsenic levels shall not exceed 10 ppb. Radon levels shall not exceed 100,000 pCi/L. Water with radon levels exceeding 10,000 pCi/L shall require notification through the property deed. Absorption and absorption filters such as charcoal, which would become radioactive waste as a result of their use, shall not be used for radon removal from water. Water with arsenic levels that meet or exceed 10 ppb shall require notification through the property deed. The Board may also use professional judgment when assessing the results of the water quality analysis prior to approval of that well. When the results indicate a potential health hazard (e.g. possible gasoline contamination), the Board may, at its discretion, disapprove the well for use as a water supply.

- 5) A copy of arsenic & radon level test results obtained for a private well shall be provided to the Board by the property owner within thirty (30) days for the benefit of ongoing monitoring of groundwater quality within the town.
- 6) If a water test is required by covenant with a property owner, the property owner shall forward a copy of the test results to the Board within thirty (30) days in compliance with the covenant regulation.
- 7) In the event the Board determines that a well constitutes a health hazard, such well shall immediately be removed from service. Further, this well shall be brought into compliance with provisions of this regulation before returning to service or the well shall be destroyed.

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5.7 Well Completion Requirements

- 1) Within thirty (30) days after the completion of the construction of any well, the well driller/digger shall submit to the Board a report showing the following information on a plan delineating the boundaries of the lot:
 - a) name and address of owner of the well,
 - b) date of construction of the well,
 - c) the address of the property served and/or the lot and map number assigned by the assessor's office,
 - d) the depth, size and method of construction of the well,
 - e) the static water level from the ground or top of the casing,
 - f) the yield of the well,
 - g) the well driller's/digger's log information,
 - h) the well location referenced to at least three permanent structures or landmarks.
- 2) The well driller's/digger's report shall be signed by an authorized representative of the well driller's/digger's company and shall constitute a statement of compliance with all requirements of these regulations. This will satisfy the requirement of the Certificate of Compliance.

5.8 Existing wells

- 1) No well in existence on the effective date of this regulation shall be required to conform to the provisions of Sections 3.1, 3.2, and 3.3 of this regulation adopted pursuant thereto.
- 2) Any well now or hereafter abandoned or destroyed, including any well deemed to have been abandoned as defined in this regulation shall be brought into compliance with the requirements of this regulation and any applicable rules or regulations with respect to abandonment of wells.

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5.9 Well Alterations

- 1) All well alterations as defined in Section 2.2 shall meet all the requirements included in this regulation. Pump repair or replacement and water line repair or replacement shall not be deemed a well alteration.

5.10 Private Well Certificate

The issuance of a Private Well Certificate by the Board shall certify that the private well may be used as a drinking water supply. A Private Well Certificate must be issued for the use of a private well prior to the issuance of an occupancy permit for an existing structure or prior to the issuance of a building permit for new construction which is to be served by the private well.

The following shall be submitted to the Board to obtain a Private Well Certificate:

- 1) a well construction/destruction permit,
- 2) a copy of the water well completion report as required by the Division of Water Resources (CMR 313, section 3.00),
- 3) a copy of the certificate of construction/destruction, water quality & quantity compliance report,
- 4) a copy of the water quality analytical test results

Upon receipt and review of the above documents, the Board shall make a final decision on the application for a Private Well Certificate. A final decision shall be in writing and shall comprise one of the following actions:

- 1) Issue a Private Well Certificate,
- 2) Deny the applicant a Private Well Certificate and specify the reasons for the denial,
- 3) Issue a conditional Private Well Certificate with those conditions which the Board deems necessary to ensure fitness, purity and quantity of the water derived from that private well. Said conditions may include, but not be limited to requiring treatment or additional testing of the water

6.0 Well Destruction

- 1) Abandoned wells, test holes, or borings shall be destroyed or sealed to protect the groundwater supply and to eliminate potential physical hazards. A Certificate of Destruction shall be issued and kept on file by the Board in accordance with these regulations.

6.1 Well Destruction Requirements

- 1) Abandoned wells, test holes or borings meeting the definition of 2.1 shall be either:
 - a) sealed with non-hazardous, impervious materials which shall be permanently in place with all exposed casing materials, pumping equipment, and distribution lines removed with the excavation returned to the existing grade of the surrounding land OR,
 - b) sealed with a welded cap so as to prevent surface water or contaminants from entering the well.

6.2 The following information shall be submitted with each well destruction application, prior to issuance of a well destruction permit:

- 1) the specific location of the well to be destroyed shown on a plot plan,
- 2) the design and construction of the well to be destroyed,

3) a written statement from the property owner that the well is abandoned.

6.3 Within 30 days after the destruction of any well, the well driller/digger shall submit to the Board a report containing the following:

- 1) the date of destruction of the well,
- 2) the name and address of the owner of the well,
- 3) the address of the property served,
- 4) the method of sealing including materials used,
- 5) the person or persons sealing the well.

6.4 The well driller's/digger's report shall be signed by an authorized representative of the driller/digger's firm and shall constitute a statement of compliance with all requirements of these regulations. This signed report will satisfy the requirements of the Certificate of Destruction.

7.0 Variances

7.1 The Board may grant a variance to the application of these regulations with respect to any particular case when, in its opinion, the enforcement thereof would do manifest injustice, and the applicant has proven that the degree of public health and environmental protection required under these regulations can be achieved same without strict application of a particular provision(s).

7.2 Variances for the construction of new private wells and alterations of existing private wells do not require a public hearing.

7.3 Variance requests shall be in writing to the Board and include all the information/reasons and proposed measures necessary to assure the protection of the public health and environment. The variance request will appear on the agenda of the next regularly scheduled meeting of the Board. Within fourteen (14) days of the next regularly scheduled meeting, the Board shall grant, modify, or deny a variance in writing and state the reasons for any denial.

8.0 Penalties

8.1 Any person who violates any provision of these regulations, or who fails to comply with any Order by the Board, for which a penalty is not otherwise provided in any of the General Laws shall upon conviction be fined not less than ten (\$10) nor more than five hundred (\$500.) dollars. Each day's failure to comply with an Order shall constitute a separate violation.

9.0 Disclaimer

9.1 The issuance of a Private Well Certificate shall not be construed as a guarantee by the Board or its agent that the water supply system will function satisfactorily nor that the water supply will be of sufficient quality or quantity for its intended use.

10.0 Severability

10.1 If any provision of these regulations or the application thereof is held to be invalid by a court of competent jurisdiction, the invalidity shall be limited to said provision(s) and the remainder of these regulations shall remain valid and effective. Any part of these regulations subsequently invalidated by a new state law or modification of an existing state law shall automatically be brought into conformity with the new or amended law and shall be deemed to be effective immediately

Patricia L. Tomer, Chairperson

Date

Janet L. Judge

Date

Marcia B. Rising

Date

