

Groundwater Protection Model Health Regulation Regulatory Authority
M.G.L. c.111 s.31 and s.122

The following is a **Model Groundwater Protection Board of Health (BOH) Regulation** for water supply protection. This document was prepared by the Department of Environmental Protection in 1996, and amended in March, 1997. Because groundwater is a source of drinking water for 251 of 351 communities in the Commonwealth of Massachusetts, the state and local governments share responsibility for maintaining high quality groundwater in sufficient quantities to meet current and future need. Board of Health regulations, which are exemplified by the model regulation, are one way to protect this most important resource at the local level.

The model regulation conforms with the requirements of the Massachusetts' Drinking Water Regulations, 310 CMR 22.21(2), for source approval and with the Water Management Act and its regulatory permit program for water withdrawals, M.G.L. c.21G and 310 CMR 36.00. In sensitive water supply recharge areas not subject to the referenced regulations, the DEP, recommends that each city or town apply zoning or non-zoning controls to the Zone II area or Interim Wellhead Protection Area (IWPA) for all public water supply sources within the boundaries of the municipality. This model contains all the elements required for source approval by 310 CMR 22.21(2) except floordrain controls, for which a separate model board of health regulation is available from DEP. A model wellhead zoning bylaw covering the controls required by 310 CMR 22.21(2) is also available, as an alternative to this model BOH regulation.

Bylaws and health regulations must be reviewed and approved by DEP for wells pumping above 100,000 gallons per day for compliance with DEP's Source Approval regulations or Water Management Act permits. Although these regulations and permits require zoning and non-zoning controls within the DEP approved Zone II or IWPA, a municipality may choose to expand the protective zones beyond the Zone II.

When a health regulation is adopted that applies to a part of a water protection district, the town needs to approve a locational map, such as a zoning or assessors map, to establish clearly the boundaries of the resource protection area covered by the regulation. The map should be readily available, and a copy should be sent with the regulation to the DEP.

For further information or questions regarding this model regulation, contact DEP, Bureau of Resource Protection at 292-5770.

MODEL GROUNDWATER PROTECTION REGULATION[city/town] BOARD OF HEALTH

[date of issuance]

NOTES:

1. **This MODEL regulation has been designed to meet the requirements of the Massachusetts Department of Environmental Protection's Wellhead Protection "Source Approval" Regulations, 310 CMR 22.21(2)(a)1,2,4,5,6, and 7 and 22.21(2)(b)1,2,3,4,5, and 7 within designated Zone II areas and the regulatory permit requirements of the Water Management Act for new or increased water withdrawals of 100,000 gallons per day (gpd) or more, 310 CMR 36.00. Refer to 310 CMR 22.00 if your community is in the source approval process for a new public drinking water supply.**

1. **The Department recommends that the BOARD OF HEALTH regulation cover the Zone II or Interim Wellhead Protection Area for all of the (city/town)'s public water supply wells.**

1. **The Department recommends that all cities/towns, not just those in the Source Approval process, adopt and implement these regulations as a water resource protection tool.**

1. **Language in the MODEL may be redrafted, modified, or omitted where appropriate to clarify issues and meet the specific objectives of a city/town. Proposed regulations should be submitted for DEP/DWS review for compliance with 310 CMR 22.21.**

Section I. PURPOSE OF REGULATION

By defining a purpose for the regulation, a municipality has the opportunity to consider the unique land use issues and problems that are of concern to a city/town. The text in this section of the MODEL regulation corresponds with the land use prohibitions in 310 CMR 22.21(2)(a) and (b), and as such, may be overly broad in scope relative to the problems of a municipality enacting the controls independently of state requirements. If so, the purpose section of the regulation should be redefined in accordance with the specific needs of a city/town.

Whereas:

- siting of land uses that have the potential to release hazardous waste, petroleum products, or other contaminants significantly increases the risk of contamination; and
- poor management practices, accidental discharges, and improper maintenance of these facilities may lead the release of pollutants; and
- discharges of hazardous wastes, leachate, pathogens, and other pollutants have repeatedly threatened surface and ground water quality throughout Massachusetts; and
- surface and ground water resources in the City/Town of [city/town] contribute to the town's drinking water supplies;
- therefore, the City/Town of [city/town] adopts the following regulation, under its authority as specified in Section II, as a preventative measure for the purposes of:

- preserving and protecting the City/Town of [city/town]'s drinking water resources from discharges of pollutants; and
- minimizing the risk to public health and the environment to the City/Town due to such discharges.

Section II. SCOPE OF AUTHORITY

The City/Town of [city/town] Board of Health adopts the following regulation pursuant to authorization granted by M.G.L. c.111 s.31 and s.122. The regulation shall apply, as specified herein, to all applicable facilities within the Zone IIs and/or the Interim Wellhead Protection Areas (IWPA), (whichever is the accepted area of protection around the drinking water resources of the city/town).

These regulations supersede all inconsistent regulations adopted by the Board of Health prior to the effective date.

The effective date is the date of issuance on the front page.

Section III. DEFINITIONS

Terms used within the text of the document should be defined. The language in the definitions below is suggested; a town should modify the text where appropriate.

For the purposes of this regulation, the following words and phrases shall have the following meanings:

Commercial fertilizers: Any substance containing one or more recognized plant nutrients which is used for its plant nutrient content and which is designed for use, or claimed by its manufacturer to have value in promoting plant growth. Commercial fertilizers do not include unmanipulated animal and vegetable manures, marl, lime, limestone, wood ashes, and gypsum.

Department: The Massachusetts Department of Environmental Protection

Discharge: The accidental or intentional disposal, deposit, injection, dumping, spilling, leaking, incineration, or placing of toxic or hazardous material or waste upon or into any land or water so that such hazardous waste or any constituent thereof may enter the land or waters of the Commonwealth. Discharge includes, without limitation, leakage of such materials from failed or discarded containers or storage systems and disposal of such materials into any on-site leaching structure or sewage disposal system.

Hazardous Material: A product, waste or combination of substances which because of its quantity, concentration, or physical, chemical, toxic, radioactive, or infectious characteristics may reasonably pose a significant, actual, or potential hazard to human health, safety, welfare, or the environment when improperly treated, stored, transported, used, disposed of, or otherwise managed. Hazardous materials include, without limitation, synthetic organic chemicals, petroleum products, heavy metals, radioactive or infectious materials, and all substances defined as "toxic" or "hazardous" under

Massachusetts General Laws (M.G.L.) Chapter 21C and 21E, using the Massachusetts Oil and Hazardous Substance List (310 CMR 40.0000). The definition may also include acids and alkalis, solvents, thinners, and pesticides.

Historical High Groundwater Table Elevation: A groundwater elevation which is determined from monitoring wells and historical water table fluctuation data compiled by the United States Geological Survey.

Interim Wellhead Protection Areas (IWPA): For public supply wells or wellfields that lack a Department approved Zone II, the Department will apply an interim wellhead protection area. This interim wellhead protection area shall be a one-half mile radius measured from the well or wellfield for sources whose approved pumping rate is 100,000 gpd or greater. For wells that pump less than 100,000 gpd, the IWPA radius is proportional to the well's approved daily volume following the IWPA Chart as referenced in Division Water Supply Policy 92-01.

Landfill: A facility established (in accordance with a valid site assignment) for the purposes of disposing solid waste into or on the land, pursuant to 310 CMR 19.006.

Non-sanitary wastewater: Wastewater discharges from industrial and commercial facilities containing wastes from any activity other than collection of sanitary sewage, including, but not limited to, activities specified in the Standard Industrial Classification (SIC) Codes set forth in 310 CMR 15.004(6).

Open Dump: A facility which is operated or maintained in violation of the Resource Conservation and Recovery Act (42 U.S.C. 4004(a)(b)), or the regulations and criteria for solid waste disposal.

Septage: The liquid, solid, and semi-solid contents of privies, chemical toilets, cesspools, holding tanks, or other sewage waste receptacles. Septage does not include any material which is a hazardous waste, pursuant to 310 CMR 30.000.

Sludge: The solid, semi-solid, and liquid residue that results from a process of wastewater treatment or drinking water treatment. Sludge does not include grit, screening, or grease and oil which are removed at the headworks of a facility.

Treatment Works: Any and all devices, processes and properties, real or personal, used in the collection, pumping, transmission, storage, treatment, disposal, recycling, reclamation, or reuse of waterborne pollutants, but not including any works receiving a hazardous waste from off the site of the works for the purpose of treatment, storage, or disposal.

Use of Toxic or Hazardous Material: The handling, generation, treatment, storage, or management of toxic or hazardous materials.

Very Small Quantity Generator: Any public or private entity, other than residential, which produces less than 27 gallons (100 kilograms) a month of hazardous waste or waste oil, but not including any acutely hazardous waste as defined in 310 CMR 30.136.

Waste Oil Retention Facility: A waste oil collection facility for automobile service stations, retail outlets, and marinas which is sheltered and has adequate protection to contain a spill, seepage, or discharge of petroleum waste products in accordance with M.G.L. c. 21. s. 52A.

Section IV. PROHIBITIONS

A. Notwithstanding any land uses which are otherwise permitted by local, state, and/or other federal laws, the siting of any of the following is prohibited in the Zone II or IWPA:

1. landfills,
2. open dumps,
3. automobile graveyards and junkyards,
4. sludge and septage monofils,
5. stockpiles (disposal) of chemically treated snow and ice that have been removed from highways and roadways outside the Zone II,
6. petroleum, fuel oil and heating oil bulk stations and terminals, including, but not limited to, those listed under Standard Industrial Classification (SIC) Codes 5171 and 5983. SIC Codes are established by the U.S. Office of Management and Budget and may be determined by referring to the publication, Standard Industrial Classification Manual and any subsequent amendments .

B. Facilities for the treatment or disposal of non-sanitary wastewater are prohibited, with the following exceptions:

1. Replacement or repair of an existing system is exempt if the existing design capacity is not exceeded; and
2. Treatment works approved by the Department and designed for the treatment of contaminated ground or surface waters and operated in compliance with 314 CMR 5.05(3) or 5.05(13); and
3. Publicly owned treatment works.

The municipality should consider whether it is more appropriate to control hazardous waste facilities with a zoning bylaw. Under Chapter 40A, industrial zones are permitted and industrial facilities within an industrial zone may expand.

C. Facilities that generate, treat, store, or dispose of hazardous waste are prohibited, with the following exceptions:

1. very small quantity generators,
2. household hazardous waste collection centers or collection events,
3. waste oil retention facilities, and
4. treatment works for the restoration of contaminated ground or surface waters in compliance with M.G.L. c.21E and 310 CMR 40.000.

D. Removal of soil, loam, sand, gravel, or any other mineral substances within four feet of the historical high groundwater table elevation is prohibited with the following exceptions:

1. substances which are removed and redeposited within 45 days of removal on site to achieve a final grade greater than four feet above the historical high water mark; and
2. excavations for the construction of building foundations or the installation of utilities.

E. Land uses that result in impervious cover of more than 15% or 2500 feet of any lot, whichever is greater, are prohibited; unless a system of artificial recharge of precipitation is provided that will not result in the degradation of groundwater quality.

Section V. CONDITIONAL PROHIBITIONS

The storage of certain waste materials, chemicals, and petroleum products is prohibited except if contained in accordance with the following requirements.

1. Storage of sludge and septage is prohibited unless storage is in compliance with 310 CMR 32.00.
2. Storage of roadway de-icing chemicals (sodium chloride, chemically treated abrasives, or other chemicals) and the storage of chemical fertilizers are both prohibited, unless the storage is in a structure that prevents the generation and release of contaminants or contaminated runoff.
3. Storage of animal manure is prohibited unless covered or contained in accordance with the standards and guidelines of the Natural Resource Conservation Service.

Note that there are provisions in the Zoning Act which do not permit regulation of agriculture. While this does not apply directly to a health regulation, an argument could

be raised regarding this issue in the future. It could have an effect on this regulation and on regulation No. 5 below, which covers petroleum products.

4. Storage of liquid hazardous materials, as defined in M.G.L. c. 21E, and/or liquid petroleum products is prohibited unless the materials are stored;
 - a. above ground level, and
 - b. on an impervious surface, and
 - c. in containers (or above ground tanks) within a building, *or*, outdoors in covered containers (or above ground tanks) designed and operated to hold either 10% of the total possible storage capacity of all containers, or 110% of the largest container's storage capacity, whichever is greater.

These storage requirements shall not apply to the replacement of existing tanks or systems for the keeping, dispensing or storing of gasoline provided the replacement is performed in a manner consistent with state and local requirements.

5. Compliance with all provisions of this regulation must be accomplished in a manner consistent with Massachusetts Plumbing, Building, and Fire Code requirements.

Section VI. EFFECTIVE DATES FOR ALL FACILITIES

The effective date of this regulation is the date posted on the front page of the regulation, which shall be identical to the date of adoption of the regulation.

1. As of the effective date of the regulation, all new construction and/or applicable change of use within the City/Town of [city/town] shall comply with the provisions of this regulation.
2. Certification of conformance with the provisions of this regulation by the Board of Health shall be required prior to issuance of construction and occupancy permits.

The Building Inspector should be notified once a regulation is approved by the Board of Health.

Section VII. PENALTIES

Penalties may be used as a means to achieve compliance with the BOH regulations. Effective 1992, maximum fines for health violations increased. Under Chapter 111, Section 31 (violation of health regulation) the maximum penalty has increased from \$500 to \$1000 and Section 122 (violation of nuisance regulations) the maximum penalty has

increased from \$100 to \$1000. Public education and training may make it unnecessary to institute a significant penalty program. If sufficient attention is given to education and training of those affected by the regulation and if enough lead time is provided for program implementation, it may be possible to avoid dependency on a penalty system for compliance. Nonetheless, local enforcement is an essential component of this regulation and it is necessary for effective groundwater protection.

Failure to comply with provisions of this regulation will result in the levy of fines of not less than \$ 200.00, but no more than \$1000.00. Each day's failure to comply with the provisions of this regulation shall constitute a separate violation.

Section VIII. SEVERABILITY

The following is considered standard language for either a health regulation or bylaw.

Each provision of this regulation shall be construed as separate to the end that, if any provision, or sentence, clause or phrase thereof, shall be held invalid for any reason, the remainder of that section and all other sections shall continue in full force and effect.

Courtesy of Catherine Sarafinas - Catherine.Sarafinas@state.ma.us