



# TOWN OF YARMOUTH

SOUTH YARMOUTH

MASSACHUSETTS 02664

## BOARD OF HEALTH

### SEWAGE DISCHARGE PERMITS HEALTH REGULATION

Authority: This regulations is adopted by the Yarmouth Board of Health under the auspices of Massachusetts General Laws, Chapter 111, Section 31.

Purpose: To protect the groundwater used for drinking water purposes, lake and pond recharge areas, and coastal watersheds, from contamination which may result from concentrated sewage disposal.

Findings: The groundwater underlying this Town is the sole source of its existing and future water supply, including drinking water; The groundwater aquifer is integrally connected with and flows into, the surface waters, lakes, ponds, rivers streams and coastal estuaries which constitute significant recreational and economic resources of the Town, used for bathing and other water-related recreation, including shellfishing and fishing;

The foregoing conclusion is confirmed by findings set forth in the Town of Yarmouth, Water Resources Protection Study, (August 1988) prepared by I.E.P. Inc.

Applicability All proposed subsurface disposal systems with a design sewage flow of 2,000 gallons per day or greater.

Procedure: The applicant(s) must demonstrate by written report to the satisfaction of the Board that drinking water standards (including 5 mg/l nitrogen) will be met at the downgradient property limit; and that surface water standards will be met at downgradient lakes and ponds (0.05 mg/l phosphorus) and estuaries (0.75 mg/l/nitrogen), including but not limited to Lewis Bay, Lewis Pond, Parkers River, Swan Pond, Bass River, Chase Garden Creek, Mill Creek, Mill Pond, Short Wharf Creek, Bass Creek, Clays Creek, Dennis Pond, Little Sandy Pond, Hallets Mill Pond, and Long Pond.

The written report shall be prepared by a qualified professional who is acceptable to the Board of Health and be based upon the following scope of work:

- a. Geologic borings.
- b. Water table map (one-foot contour interval) showing ground-water flow directions.
- c. Projections of downgradient concentrations of nitrogen, using the Board of Health Nitrate-Nitrogen Loading Regulation, (or other contaminants as requested by the Board of Health). Projections of downgradient water quality will be determined utilizing two-dimensional solute transport models and input variables approved by the Board of Health. Currently approved models include:
  1. USGS Konikow and Bredehoeft (1978).
  2. Random Walk, Prickett (1981).

Currently approved input variables include:

1. Transmissivity to be determined by on-site slug or pump test.
2. Aquifer thickness to be determined by on-site boring (location of confining layers and estimated plume thickness).
3. Dispersivity = 40 feet longitudinal/30 feet transverse.
4. Hydraulic gradient as determined by site-specific water table map.
5. No retardation factor.
6. Sewage flows as determined by Title 5 design flows.

Applicants who receive permits under this regulation shall install a minimum of three(3) downgradient and one(1) upgradient multi-level wells placed on the property. Groundwater flow direction will be determined from the USGS (1987) Water Table Map and from site-specific observation wells where necessary. Wells will be constructed of two-inch threaded flush joint PVC with locking caps. Ground water samples will be obtained on a quarterly basis using standard sampling procedures. Water samples will be tested by a State-certified laboratory quarterly for nitrate-nitrogen, ammonia-nitrogen, Kjeldahl nitrogen, total phosphorus, chlorides, specific conductance and annually for volatile organic compounds ( EPA Analytical Procedure 624) for the first three years of operation. The frequency of sampling will then be re-evaluated by the Board of Health. Results are to be reported to the Yarmouth Board of Health and shall meet Massachusetts Class I ground water standards and appropriate advisory levels for organic chemicals at the downgradient property boundary. In the event that water quality standards are violated the following actions will be undertaken by the property owner(s):

- a. Report results to Yarmouth Board of Health within 48 hours
- b. Resample wells and retest within 5 days
- c. Notify downgradient property owners within 48 hours
- d. Decrease wastewater flows or increase level of treatment within 45 days
- e. Initiate remedial clean-up actions as deemed necessary by the Yarmouth Board of Health

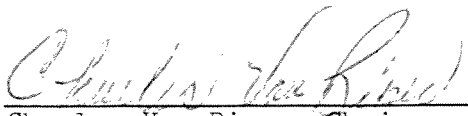
Nothing within this regulation shall prohibit approval by the Board of Health for any applications involving the maintenance and/or repair of an existing Subsurface Sewage Disposal System, providing that said application does not involve a change of use as defined by Board of Health, Planning Board, or Board of Appeals regulations. Where a change of use is involved, the applicant must demonstrate compliance with this regulation.

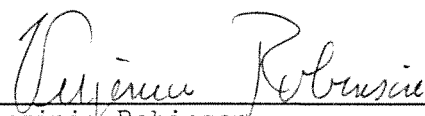
Variance: Variance from this regulation may be granted by the Board of Health only if the applicant can demonstrate to the satisfaction of the Board that: (1) enforcement thereof would do manifest injustice, and (2) the applicant must also prove to the Board of Health that the installation of an on-site subsurface sewage disposal system, or systems, will not have a significant adverse effect on public and/or private drinking water resources, lakes, ponds, rivers, streams, or any other body of water.

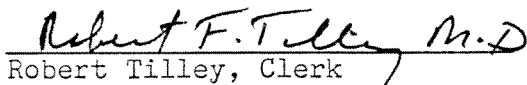
If applying for a variance, the applicant shall be required to submit, but not be limited to, the following items/data: Geohydrological Report, (as noted above); direction of the groundwater flow; depth to groundwater; population density; soil conditions; size, shape and slope of the lot; existing, and known future, water supplies; nitrate and phosphorus loading calculations, and other information deemed pertinent by the Board.

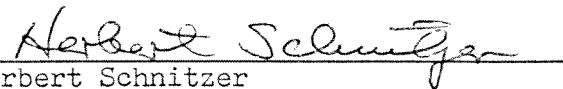
A variance review fee, may be assessed by the Board of Health, to retain the service(s) of an independent registered civil/sanitary engineer, and or environmental consultant, to conduct a review of the submitted variance. The fee will be determined by the Board, based on the complexity of the planned project and subsurface system or systems, and the time required to adequately review all plans, reports etc., along with the expected impact to ground and surface waters. The applicant will pay the fee at the time of the variance request. Any unused portion of the fee shall be refunded to the applicant after the review.

This regulation is to take effect on the date of publication of this notice, in a local newspaper. (4/7/89)

  
Charles Van Riper, Chairman

  
Virginia Robinson,  
Vice Chairman

  
Robert Tilley, Clerk

  
Herbert Schnitzer

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Barrie Cliff

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Effective Date of Regulation: April 7, 1989

Certified to D.E.Q.E. Lakeville, Date: April 11, 1989

Certification # P 631 653 930

Certified to D.E.Q.E.,/DWPC: Boston/7th Floor-Central Register/ B.O.H. Regulation,  
Date: April 11, 1989

Certification # P 631 653 931