Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Drinking Water Program

Groundwater Under the Direct Influence of Surface Water (GWUDI) Filtration Avoidance Criteria Factsheet for Public Water Systems

All public water systems (PWS) with groundwater sources that are classified as GWUDI sources must either meet the criteria for avoiding filtration or they must filter within 18 months per the requirements of the Surface Water Treatment Rule (SWTR). This deadline may be extended if an Administrative Consent Order specifying a compliance schedule is executed with the MassDEP. For additional information describing how to determine whether or not a source is classified as GWUDI, view the factsheets at: http://www.mass.gov/dep/water/drinking/systems.htm#swtrgwui

Criteria for Avoiding Filtration

All groundwater suppliers wishing to avoid filtration must meet the criteria in 310 CMR 22.20A(5)(b) and (6)(a), which includes providing disinfection contact time in accordance with tables 1.1 – 1.6, 2.1, 3.1, providing a minimum 0.2 mg/L residual entering the distribution system, and providing a detectable residual throughout the distribution system. The source must also be tested monthly for total or fecal coliform and turbidity. More than one violation (greater than 100 colonies/100 ml of total coliform, 20 colonies/100 ml of fecal coliform) in any six-month period for bacteria and 12-month period for turbidity triggers the filtration requirement. Also the supplier must practice wellhead/watershed source protection.

Wellhead Protection Requirements

All Wells - Zone I: Suppliers should own or control Zone I, but at a minimum, no septic systems or other sewerage effluent or sewer lines and no domestic animals may be located in Zone I.

Wells with an Approved Yield of 100,000 gpd or Greater – IWPA/Zone II: Suppliers must submit a Zone II delineation to the MassDEP within one year, implement land use controls meeting the criteria in 310 CMR 22.21 within two years of Zone II approval, and develop a DEP approved protection plan per criteria outlined in "Developing a Local Wellhead Protection Plan" November 2001. The plan must identify actions to address potential pathogen sources.

If a groundwater source fails the MPA testing, the MassDEP will conduct a site visit of each source to make a complete evaluation. The MassDEP may allow systems, on a case-by-case basis, to modify the construction of the source and/or the area surrounding the source in an effort to eliminate surface water contamination. Modifications that could be considered are:

- Diverting surface runoff from springs by trenching, etc.
- Redeveloping springs to capture them below a confining layer
- Covering open spring collectors
- Reconstructing wells to install sanitary seals, and/or to screen them in a confined (protected) aquifer
- Repairing cracks or beaks in any type of source collector that allows the entry of surface contaminants
- Discontinuing the use of infiltration laterals, which intercept surface water

If a source is to be modified, interim disinfection should be practiced to ensure at least 99.9% inactivation of Giardia. Also, an extended period of monitoring should follow reconstruction (two years to evaluate whether the source is still subject to surface water contamination). Monitoring would include MPA testing, temperature and turbidity. If modification is not feasible, the supplier could consider developing a deeper well or taking the source off-line and developing a new well at a different location.

Wells with an Approved Yield of Less Than 100,000 gpd: The Supplier must maintain an up-to-date Public Water Supply Annual Statistical Report, including Section F, Watershed/Groundwater Inspection Report and file it with MassDEP. This report must be updated annually and include land use inventory identifying actions to address potential pathogen sources.