

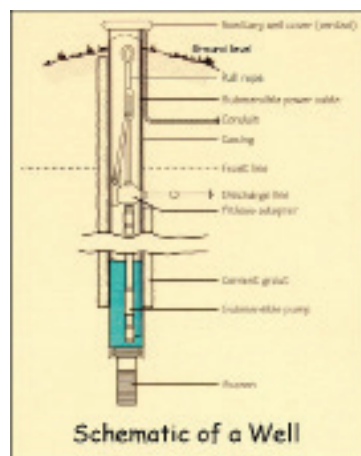
# Private Wells

## THE ISSUE – CONTAMINATION OF DRINKING WATER

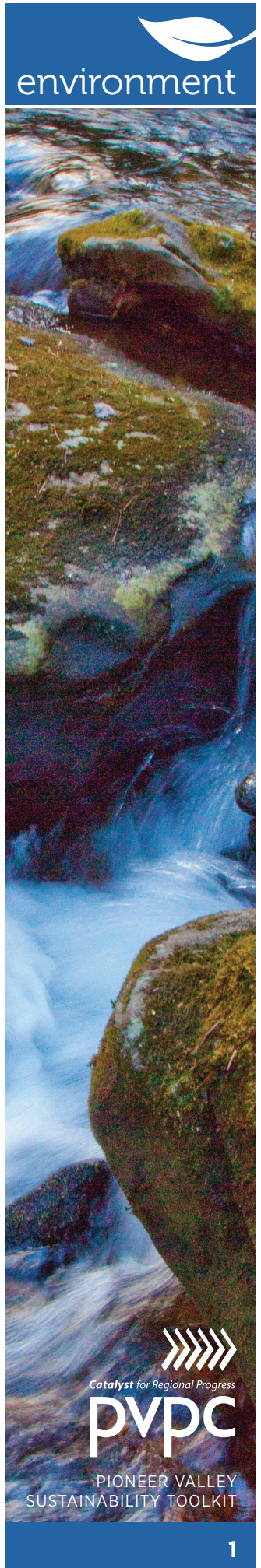
A huge number of people rely on private wells for drinking water. In Massachusetts alone over 400,000 people have private water systems for their homes and businesses. These private wells draw water from groundwater and aquifers that are susceptible to contamination from a variety of activities and sources.

Some naturally occurring contaminants include bacteria; radioactive elements such as radium, uranium and radon; and chemicals and minerals like arsenic, lead, copper, chloride, sodium, and fluoride. Other pollutants are caused by human activity. Industrial, commercial and agricultural activities can introduce hazardous substances like volatile organic compounds (VOCs), fuels, solvents, bacteria and pesticides into the groundwater through improper storage and disposal and accidental spills. Even typical residential activities such as the use of fertilizers and pesticides, fueling of lawn equipment, and improper disposal of household chemicals in an on-site septic system can contaminate groundwater.

A range of adverse outcomes can result from exposure to pollutants in drinking water, principal among them are polluted groundwater and aquifer supplies that compromise public health; others are unacceptable taste and odor and aesthetic concerns.



Schematic courtesy of University of Maryland Extension



# STRATEGIES AND REGULATIONS FOR PROTECTING DRINKING WATER

Most states do not have any statutes that specifically regulate the quality of water for private wells, so the protection of drinking water is left to local government, specifically the Boards of Health, and the individuals or businesses with the wells.

Requiring regular monitoring of drinking water from private wells can help to mitigate the adverse outcomes of contamination for residents and identify threats to public health and public water supplies in your town.

## PRIVATE WELL REGULATIONS

Regulations requiring regular water quality testing help to protect water supplies in private wells by identifying hazardous levels of drinking water contaminants that pose a health risk. Also, they identify some secondary contaminants that may present aesthetic problems affecting water quality.

Local governments in Massachusetts are responsible for regulating private wells. Local Boards of Health (BOH) may adopt bylaws requiring testing of private wells to ensure the protection of drinking water. Testing of private wells may be required when a new well is installed, when a house is sold, or at regular intervals as recommended the State. Additionally, the BOH may require set backs for wells from possible pollutions sources such as roads, septic systems, barn yards, and industrial sites. Banks usually require testing of wells on private property before providing mortgages.

Generally, states have guidelines that take into account the cost of monitoring to the homeowner, make recommendations for sampling frequency, and offer Recommended Concentration Limits for pollutants that have been identified by EPA and/or State. In Vermont and New Hampshire, state agencies recommend testing at a sampling frequency of three to five years. Massachusetts recommends initial monitoring and then testing again in 10 years if no problems are detected (See Private Well Guidelines. [www.mass.gov/dep/water/laws/policies.htm#pwg](http://www.mass.gov/dep/water/laws/policies.htm#pwg)). The exceptions to this recommended testing schedule are monitoring for nitrate/nitrite and bacteria levels, which all states recommend be done on an annual basis.

## PRIVATE WELL TESTING

A listing of laboratories that are certified for specific analyses of well water can be obtained on State websites: <http://edep.dep.mass.gov/labcert/lacert.aspx>,

It should be noted that laboratories that are certified for one type of analysis may not be certified for other types. A basic scan typically tests for coliform bacteria, fecal coliform, nitrate, nitrite, pH, alkalinity, arsenic, iron, lead, manganese, copper, sulfate, chloride, sodium, fluoride, hardness, turbidity, conductivity, T. dissolved solids and chlorine. More advanced analyses can test for volatile organic compounds (VOCs) and/or radioactive elements (such as radium, uranium and radon).





### Private well regulations require testing that can:

- » Identify hazardous levels of bacteria and inorganic compounds in drinking water from wells;
- » Detect dangerous levels of radon in drinking water;
- » Determine if VOCs resulting from spills of petroleum products are present in the water.

Owners of wells in industrial or densely developed residential areas are encouraged to conduct more frequent testing. Local Boards of Health in Massachusetts may adopt regulations that require more frequent monitoring of private wells.

## CASE STUDY: PRIVATE WELL REGULATIONS

### Town of Leverett, MA

The Town of Leverett adopted private well regulations in 1989 to “insure an adequate supply of safe water to houses with no access to public water supplies and to insure the safe destruction of abandoned private wells.” For homes that are served by private wells, owners must apply for a water supply certification certificate from the Leverett Board of Health. Application must be submitted within 30 days of the completion of the well’s construction and must include:

- » A completed and approved Application for Well Construction/Destruction Permit;
- » A copy of the Water Well Completion Report, provided by the well driller;
- » A water quality analysis performed by a state certified laboratory; and
- » A certificate of yield from the well driller that water quantity standards have been met.

No new well can be operated or building permit issued unless a water supply certificate has been issued by the Leverett Board of Health.

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### FOR MORE INFORMATION, PLEASE CONTACT

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