

Water Quality Testing for Private Wells



Private Wells

If you have a private well, then water quality testing should be important to you and your family. Some contaminants in drinking water have been linked to cancer and toxicity, posing a risk to human health. Many contaminants often have no taste, odor, or color. Their presence can only be determined by laboratory testing.

While there is no state requirement to have your well water tested (although there may be from your mortgage lender or town), the New Hampshire Department of Environmental Services (DES) recommends that all homeowners with private wells do so.

Contamination of Wells

Well water originates as rain and snow that then filters into the ground. As it soaks through the soil, the water can dissolve materials that are present on or in the ground, becoming contaminated.

Some contaminants are naturally occurring from features found in the rocks and soils of New Hampshire. These include substances like bacteria, radon, arsenic, uranium, and other minerals.

Other contaminants find their way onto the land from human activities. On a large scale, industrial/commercial activities, improper waste disposal, road salting, and fuel spills can introduce hazardous substances to the ground. However, even typical residential activities, such as the use of fertilizers and pesticides, fueling of lawn equipment, and disposal of household chemicals can contaminate the ground when done improperly. That is why taking measures to protect your well from contamination is so important.

Recommended Tests

The following tests identify common contaminants found in our state's well water. Although more tests could be added, this list provides a cost-effective, reasonable overview of a well's water quality. Contact a certified laboratory for availability and pricing. *It is not necessary to do all of the tests at one time.*

Standard Analysis

This basic analysis covers the most common contaminants (see list below). Some of these contaminants pose health-related concerns, while others only affect aesthetics (taste and odor).

Radiological Analysis

New Hampshire's geology contains naturally occurring radioactive elements that dissolve easily in well water. A basic radiological analysis will test for uranium, analytical gross alpha, and radon gas.

Radon is a common well water problem in New Hampshire and testing for it may be required by your lender or your municipality. Presently, there are no federal or state standards for radon in drinking water, only suggested action levels. DES estimates that approximately one-third of private wells in New Hampshire exceed this level, so radiological testing is encouraged.

Volatile Organic Compounds (VOCs)

The most common VOCs come from gasoline compounds (such as MtBE and benzene) and industrial solvents. MtBE can be found in well water even in remote areas.

Additional Tests

Circumstances relative to your well may require additional testing not described here. For instance, DES does not recommend routine testing for things like pesticides, herbicides, or synthetic organic compounds, mainly because of the high cost. However, such testing might be warranted if your water has elevated nitrite/nitrate concentrations or significant amounts of pesticide have been applied near the well.

These less-routine tests may not be performed at all laboratories.

When To Test

DES recommends that prospective homebuyers test the water in a home with a private well before purchase.

Water quality in wells is generally stable, and if a change is going to occur, it occurs slowly. Thus the interval between water quality tests, once you've purchased the home, can generally be in terms of years (see chart) if a well is properly constructed and located in a safe area.

However, the following conditions would prompt more frequent testing:

- Heavily developed areas with land uses that handle hazardous chemicals.
- Recent well construction activities or repairs. DES recommends taking a bacterial test after any well repair or pump or plumbing modification, but only after substantial flushing of the water system.
- Contaminant concentrations above state or federal standards found in earlier testing.
- Noticeable variations in quality like a water quality change after a heavy rain or an unexplained change in a previously trouble-free well (i.e. funny taste, cloudy appearance, etc.).

When taking any sample, DES recommends that it be taken after a heavy rainstorm. These events tend to highlight conditions of improper well construction or poor soil filtration.

What the Tests Tell You

Contaminants & Testing Frequency

Standard Analysis

Arsenic
Bacteria
Chloride
Copper
Fluoride
Hardness
Iron
Lead
Manganese
Nitrate/Nitrite
pH
Sodium

Testing Frequency

Every
3-5 yrs
(except for
bacteria
and nitrate
which are
yearly)

Radiological Analysis

Radon
Uranium
Analytical Gross Alpha

Every 3-5 yrs

VOCs

Every 5-10 yrs

Results will reveal the level at which any of the tested substances were found in your water sample. The mere presence of these contaminants in well water does not necessarily imply that there is a problem. However, when levels exceed state or federal health standards, you should take steps to correct the situation. Several methods are available from commercial contractors to treat contaminated water. DES has informational documents on the web concerning all common water quality problems and their solutions.

For More Information

For more information about water quality testing for private wells, including information about contacting certified laboratories in New Hampshire or about preventing well contamination, contact the DES Water Supply Engineering Bureau.

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