



Health Risks to Households on Private Wells in Minnesota

FREQUENTLY ASKED QUESTIONS

How many Minnesotans get their drinking water from a private well?

About 21 percent of Minnesotans (1.2 million people).

Why should private well users test their drinking water?

Both human-made and naturally occurring contaminants may be present in Minnesota groundwater. Consuming contaminants through water used for drinking and cooking can lead to immediate or long-term health effects. Unlike people who get their drinking water from a public water system, private well users are responsible for making sure their water is safe to drink. Because most of these contaminants cannot be seen, tasted, or smelled, testing is the only way to see if contaminants are present at an unsafe level.

What should private well users test for?

All private well users: Minnesota Department of Health (MDH) recommends all private well users test their drinking water for arsenic and lead at least once, coliform bacteria every year, and nitrate every other year.

Private well users planning to have a baby or with an infant in the home: MDH recommends these households follow the same testing recommendation as all private well users and also test for manganese at least once.

How common are these contaminants in Minnesota groundwater?

- **Arsenic** has been detected in over 40 percent of private wells constructed since 2008. About 11 percent of new wells have arsenic concentrations higher than what is allowed in public water systems.
- **Coliform bacteria** indicates that there may be harmful bacteria, viruses, or other microorganisms in the water. A Centers for Disease Control and Prevention study detected coliform bacteria in 27 percent of private wells tested in Minnesota.
- **Lead** is not naturally found at high levels in Minnesota groundwater. However, it was widely used in plumbing and well parts until very recently. Lead can leach into water from components of the well or plumbing system.
- **Manganese** is estimated to occur at concentrations above MDH's health-based guidance value in about 50 percent of Minnesota private wells.
- **Nitrate** is more likely to get into groundwater in areas with a lot of agricultural activities and sandy soils. Recent testing by the Minnesota Department of Agriculture has shown over 40 percent of private wells in some Minnesota townships have unsafe nitrate concentrations.

Can people see, taste, or smell contaminants in their water?

People will not be able to see, taste, or smell arsenic, coliform bacteria, nitrate, or lead. Testing their drinking water is the only way to know if their water is contaminated. There are other contaminants people may be able to see, taste, or smell in their water. People should have their water tested if there is a change in water quality.

What are the health effects associated with these contaminants in drinking water?

The following page has a brief overview of the health effects associated with drinking water with unsafe levels of these common contaminants. For more detailed information, go to [Water Quality/Well Testing](http://www.health.state.mn.us/wellwater) (www.health.state.mn.us/wellwater).

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- **Arsenic:** Increased risk of cancers of the bladder, lungs, liver, and other organs; diabetes; cardiovascular and respiratory disease; and reduced intelligence in children.
- **Coliform bacteria:** May indicate the presence of pathogens that can cause diarrhea, vomiting, cramps, nausea, headaches, fever, fatigue, and even death sometimes.
- **Lead:** Damage to the brain, kidneys, and nervous system. In children, it can also slow development or cause learning, behavior, and hearing problems.
- **Manganese:** Problems with memory, attention, and motor skills. Infants may develop learning and behavior problems if they drink water with too much manganese.
- **Nitrate:** Methemoglobinemia, especially in bottle-fed babies under six months old.

Why are infants at a higher risk of harm from contaminants in well water?

Infants have higher water ingestion rates on a per body weight basis than older children and adults. Infants are also more vulnerable because their metabolic pathways and organ systems are still developing and are not yet as effective at dealing with toxic substances.

How do people get their drinking water tested?

Find an accredited laboratory at [Search for Accredited Laboratories](http://www.health.state.mn.us/labsearch) (www.health.state.mn.us/labsearch). Contact an accredited laboratory to get sample containers and instructions, or ask county environmental or public health services if they provide well water testing.

How much does water testing cost?

It typically costs \$15 to \$40 to test for individual contaminants. Testing for the full suite of recommended contaminants is usually about \$90 to \$125. Some counties may provide testing at a reduced cost.

What should people do once they have their water test results?

Contact MDH Well Management Section with any questions about test results. Contact a water quality specialist in the area to discuss treatment options. Most contaminants can be effectively removed with properly maintained treatment devices.

How many private well users currently test their well water?

An MDH survey of private well owners in 2016 found that less than 20 percent of respondents had tested for any type of contaminant within the previous two years. This low testing rate indicates the need for more outreach.

What resources are available to talk about well testing?

- **Well Water and Your Baby** is a brochure for households that get their drinking water from a private well and have or will have a baby in the home. It explains what to test well water for and how to test. Available at [Well Water and Your Baby](http://www.health.state.mn.us/divs/eh/wells/waterquality/safebaby.html) (www.health.state.mn.us/divs/eh/wells/waterquality/safebaby.html).
- **Owner's Guide to Wells** is a brochure for households that get their drinking water from a private well. It explains well owners' responsibilities for testing, inspecting, protecting, and sealing their well. Available at [Owner's Guide to Wells](http://www.health.state.mn.us/divs/eh/wells/waterquality/test.html) (www.health.state.mn.us/divs/eh/wells/waterquality/test.html).

How do I order brochures?

There is an order link on each brochure's webpage.

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