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## Well Testing, Results, and Options

As a private well owner, you are responsible for regularly testing the water you use for cooking and drinking to make sure it is safe. The Minnesota Department of Health (MDH) recommends that you test water from a faucet that you use for cooking and drinking and that you test for the contaminants in the table below. If you treat your water, test the water after it goes through treatment. Testing for all of the contaminants below is especially important if babies or young children drink the water (see [Safe Drinking Water for your Baby \[PDF\]](#) ([www.health.state.mn.us/communities/environment/water/docs/wells/waterquality/safebaby.pdf](http://www.health.state.mn.us/communities/environment/water/docs/wells/waterquality/safebaby.pdf))).

### What to test your well water for

Contaminant	How Often a Well Should be Tested	Health Impacts
Coliform Bacteria	Every year	Coliform bacteria can indicate that other infectious bacteria, viruses, or parasites may be in your water. These can cause diarrhea, vomiting, cramps, nausea, headaches, fever, and fatigue.
Nitrate	Every year	Consuming too much nitrate can affect how blood carries oxygen and can cause blue baby syndrome. Bottle-fed babies under six months old are at the highest risk of being affected by nitrate. Blue baby syndrome can result in serious illness or death.
Arsenic	At least once	Consuming water with even low levels of arsenic over a long time is associated with diabetes and increased risk of cancers of the bladder, lungs, liver, and other organs. Ingesting arsenic can also contribute to cardiovascular and respiratory disease; reduced intelligence in children; and skin problems such as lesions, discoloration, and the development of corns. Health impacts of arsenic may take many years to develop.

Contaminant	How Often a Well Should be Tested	Health Impacts
Lead	At least once	Lead can damage the brain, kidneys, and nervous system. Lead can also slow development or cause learning, behavior, and hearing problems. While lead can affect everyone, babies, children under six years old, and pregnant women are at the highest health risks from lead.
Manganese	At least once before a baby drinks the water	Manganese can cause problems with memory, attention, and motor skills. It can also cause learning and behavior problems in infants and children.

Both natural sources and human activities can contaminate well water and cause short-term or long-term health effects. Testing your well water is the only way to detect most of the common contaminants in Minnesota groundwater; you cannot taste, see, or smell most contaminants.

You may also want to test for other contaminants if you have other water quality concerns or live in an area of known groundwater contamination. Learn more about private well water quality topics at [Water Quality and Testing \(www.health.state.mn.us/wellwater\)](http://www.health.state.mn.us/wellwater).

## Learn More About the Contaminants Mentioned Above

### Coliform Bacteria

([www.health.state.mn.us/communities/environment/water/wells/waterquality/bacteria.html](http://www.health.state.mn.us/communities/environment/water/wells/waterquality/bacteria.html))

### Nitrate

([www.health.state.mn.us/communities/environment/water/contaminants/nitrate.html](http://www.health.state.mn.us/communities/environment/water/contaminants/nitrate.html))

### Arsenic

([www.health.state.mn.us/communities/environment/water/wells/waterquality/arsenic.html](http://www.health.state.mn.us/communities/environment/water/wells/waterquality/arsenic.html))

### Lead

([www.health.state.mn.us/communities/environment/water/wells/waterquality/lead.html](http://www.health.state.mn.us/communities/environment/water/wells/waterquality/lead.html))

### Manganese

([www.health.state.mn.us/communities/environment/water/contaminants/manganese.html](http://www.health.state.mn.us/communities/environment/water/contaminants/manganese.html))

## How to test your well water

Contact an accredited laboratory to get sample containers and instructions or ask your county environmental or public health services if they provide well water testing services. After the laboratory analyzes your water sample, the laboratory will send you a report with the test results.

## Find an Accredited Water Testing Laboratory

MDH accredits laboratories to ensure they use methods and standards that will give you accurate information about your water quality. Below are two tools to find an accredited laboratory. MDH recommends contacting a few laboratories to compare costs.

- [Accredited Labs in Minnesota Accepting Samples from Private Well Owners \[PDF\]](http://www.health.state.mn.us/communities/environment/water/docs/wells/waterquality/labmap.pdf) (www.health.state.mn.us/communities/environment/water/docs/wells/waterquality/labmap.pdf): This map and table show MDH accredited laboratories in Minnesota that accept samples from private well owners and are certified to test for arsenic, coliform bacteria, lead, manganese, and/or nitrate.
- [Search for Accredited Laboratories](https://eldo.web.health.state.mn.us/public/accreditedlabs/labsearch.seam) (https://eldo.web.health.state.mn.us/public/accreditedlabs/labsearch.seam): You can search for all MDH-accredited laboratories in the United States.
  1. Select the **Customized Searches** tab; for “Program” select **Safe Drinking Water Program**; then select the analyte (contaminant) to be tested.
  2. At the bottom of the page check the box that says **Accepts samples from private homeowners** and click on **Search**.
  3. The resulting list are labs that are certified to test for that contaminant.

## What your test results mean and next steps

Each laboratory may report your test results differently. The table below lists the main contaminants MDH recommends you test for, the level that can be harmful in your drinking water, and what you can do to protect your household's health. Please contact the laboratory or MDH with questions about your results.

Contaminant	Drinking Water can be Harmful if:	What to do if There is an Unsafe Level of a Contaminant
Coliform Bacteria	Any coliform bacteria are detected	<ol style="list-style-type: none"> <li>1. In the short term, if nitrate is <b>not</b> detected, you can bring your water to a rolling boil for 1 minute before using it for drinking or cooking. Or get your water from a safe alternative source (like bottled water).</li> <li>2. Disinfect your well and water system with a chlorine solution (see <a href="http://www.health.state.mn.us/communities/environment/water/wells/waterquality/disinfection.html">Well Disinfection [www.health.state.mn.us/communities/environment/water/wells/waterquality/disinfection.html]</a> instructions or hire a licensed well contractor to disinfect your well).</li> <li>3. Test your water again after disinfecting the well and water system.</li> </ol>
Nitrate	The level is above 10 mg/L*	<ol style="list-style-type: none"> <li>1. Get your water from a safe alternative source (like bottled water) until you address the problem. Do <b>NOT</b> boil the water—boiling will increase the nitrate concentration.</li> <li>2. Do not give the water to infants under six months old.</li> <li>3. Have a licensed well contractor inspect and repair your well.</li> <li>4. Remove potential sources of nitrate near your well.</li> <li>5. Consider home water treatment if steps 3 and 4 do not resolve the problem and no infants drink the water.</li> <li>6. Test your water again after installing treatment.</li> </ol>
Arsenic	Any level of arsenic may be harmful. MDH highly recommends taking protective action if the level of arsenic in	<ol style="list-style-type: none"> <li>1. Consider home water treatment or use a different drinking water source. Before pursuing home water treatment, it may be good to re-check the arsenic level.</li> <li>2. Test your water again after installing treatment.</li> </ol>

Contaminant	Drinking Water can be Harmful if:	What to do if There is an Unsafe Level of a Contaminant
	your drinking water is above 10 µg/L**	
Lead	Any level of lead is harmful.	<ol style="list-style-type: none"> <li>1. Let the water run for at least 1 minute before using it for cooking or drinking.</li> <li>2. Use cold water for drinking and cooking.</li> <li>3. Hire a plumber to find the source of lead in your plumbing system and consider replacing that part of the system.</li> <li>4. Consider getting a pitcher filter or home water treatment certified to remove lead if you cannot find the source of lead and letting the water runs does not reduce lead levels.</li> <li>5. Test your water again after installing treatment.</li> </ol>
Manganese	<p>For babies one year old: The level of manganese is above 100µg/L**</p> <p>For everyone else: The level of manganese is above 300 µg/L**</p>	<ol style="list-style-type: none"> <li>1. Use an alternative water source when using water to make formula or juice for a baby.</li> <li>2. Consider getting a pitcher filter or home water treatment.</li> <li>3. Test your water again after installing treatment.</li> </ol>

\*mg/L=milligrams per liter and is the same as parts per million (ppm)

\*\*µg/L=micrograms per liter and is the same as parts per billion (ppb)

## Learn more about water treatment options

- Home Water Treatment  
([www.health.state.mn.us/communities/environment/water/factsheet/hometreatment.html](http://www.health.state.mn.us/communities/environment/water/factsheet/hometreatment.html)): General treatment options.
- Water Treatment Units for Arsenic Reduction [PDF]  
(<https://www.health.state.mn.us/communities/environment/water/docs/wells/waterquality/arsenictreat.pdf>)
- Financial Assistance for Home Water Treatment and Well Construction, Repair, and Sealing  
([www.health.state.mn.us/communities/environment/water/wells/sealing/loans.html](http://www.health.state.mn.us/communities/environment/water/wells/sealing/loans.html)): Grants and loans to help cover the cost of installing a home water treatment unit.

To obtain this information in a different format call 651-201-4600.  
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