

Residential Water Supply

Most residents obtain drinking water from private wells ranging between 85 to 442 feet deep (average 100-225 feet). According to the Minnesota Department of Health (MDH), water drawn from these depths are not from aquifers but from shallower glacial sands and gravel. The content of water from glacial deposits may vary.

Properly constructed and maintained water wells can provide many years of trouble-free service, but like any other mechanical devices, wells will eventually deteriorate or become damaged, and allow surface contaminants to enter the water. In addition, some groundwater can contain one or more chemical substances in concentrations above state health limits. The quality and safety of drinking water from private wells is the responsibility of the homeowner since testing is not mandated by the state, county or the city.

Here are some test-frequency recommendations from the MDH that you can follow to assure that your well water is safe:

1) Coliform Bacteria

Water that has become contaminated by human or animal wastes can transmit a variety of infectious diseases, including dysentery, salmonellosis, hepatitis, and giardiasis. Symptoms vary, but nausea, vomiting, and diarrhea, with or without fever, are the most common. To assess bacterial safety, drinking water is tested for a group of "indicator bacteria" called total coliform bacteria. *Test frequency: at least once a year for bacterial safety.*

2) Nitrate

Nitrate is a common contaminant of Minnesota groundwater. Elevated levels of nitrate are often caused by run-off from barnyards or feedlots, excessive use of fertilizers, or septic systems. Wells most vulnerable to nitrate contamination include shallow wells, dug wells with nonwatertight casings, and wells with damaged, leaking casing or fittings. *Test frequency: at least once every year or two for nitrate.*

3) Lead

Well water in Minnesota usually does not contain detectable levels of lead. However, the pipes and other components of the household plumbing system (faucets, valves, or fittings) may contain lead. If they do, lead may slowly dissolve into the water. The longer the water stands idle in the pipes, the higher the lead levels can become. *Test frequency: flush standing water to reduce levels of lead.*

4) Arsenic

Arsenic occurs naturally in about half of the wells in Minnesota, and about 10 percent of Minnesota wells produce water which exceeds 10 micrograms per liter (parts per billion), the state health level. Arsenic is more prevalent in western Minnesota, but can occur almost anywhere in the state. Long-term consumption of arsenic above the drinking water standard may increase the risk of health problems of the skin, circulatory system or the nervous system, including some forms of cancer. Every private well should be tested at least once or twice to determine if arsenic is present, and at what levels. Arsenic levels in groundwater will not usually change much over time. *Test frequency: test your well water at least once or twice during the life of your well.*

Frequently Asked Questions

1. Where does arsenic come from? – *Arsenic occurs naturally in our environment. It is part of the earth's crust. As a natural component of underground rocks and soil, arsenic works its way into groundwater. As a result, water supplied from underground sources may contain amounts of arsenic. Arsenic occurs naturally in about half the wells in Minnesota and about 10% of Minnesota wells produce water with arsenic levels that exceed 10 micrograms per liter (parts per billion), the state health level.*

2. How often should my well water be tested? – *There is no requirement for testing frequency. However, once a year is a good target.*

3. What should my well be tested for? – *Arsenic, coliform bacteria, iron, and manganese. Volatile organic chemicals (VOC), pesticides and fluoride at toxic levels are highly unlikely to be present in water drawn by Greenwood residents but it is recommended that you have your well tested at least once for these contaminants.*

4. What do the test results mean? – *Arsenic and other elements in drinking water are regulated with a maximum allowable limit, known as a maximum contaminant level (MCL). The MCL for arsenic is 10 parts per billion. Elevated levels of arsenic can be a concern because people who drink water containing arsenic in excess of the MCL over many years could experience skin damage, problems with their circulatory system, and/or may have an increased risk of developing cancer.*

5. Why did the limit for arsenic drop from 50 to 10 parts per billion? – For many years, the maximum contaminant level was 50 parts per billion (ppb). During the 1990's, however, it was determined that this level was too high to provide maximum health protection, so the U.S. Environmental Protection Agency (EPA) decided to lower the MCL to 10 parts per billion in 2006.

6. What treatment options are available for arsenic? – Drilling a new well, filters for typical iron and manganese removal, or using arsenic adsorption media. Special types of water treatment systems which are proven effective in removing arsenic from drinking water include adsorption media systems, "reverse osmosis systems" with pretreatment, and "distillation" systems. Contact a reputable water treatment dealer in your area for information about water treatment systems.

7. Can a new well help? – A new well may produce lower arsenic levels; however, it is quite possible that a new well may also have concentrations of arsenic.

8. Can arsenic levels change over time? – Since the state of underground water supplies is dynamic, arsenic levels can change over time.

For More Information

In order to be fully knowledgeable about the quality and safety of your drinking water, we recommend that you test your well water annually to determine whether there are acceptable levels of **coliform bacteria, iron, manganese or arsenic** in your drinking water. A list of state certified laboratories in Hennepin County include:

Braun Intertec Corporations	Minneapolis	952-995-2638
Engel Water Testing, Inc.	Minnetrista	952-955-1800
Pace Analytical Services, Inc.	Minneapolis	612-607-1700
Tri-City	Bloomington	952-563-4904
Twin City Water Clinic, Inc.	Hopkins	952-935-3556

For a list of all state-certified laboratories, see the [MDH Certified Environmental Laboratories](#) for all your water testing needs. Be sure that the laboratory you choose is state certified to perform each test you want.

If you have questions or concerns about your well water, we recommend the following websites:

<http://www.epa.gov/safewater/arsenic/basicinformation.html#one>

http://www.epa.gov/safewater/arsenic/pdfs/fs_arsenic_justthefactsforconsumers.pdf

<http://www.health.state.mn.us/divs/eh/wells/waterquality/arsenic.html>

Homeowners drawing water from the municipal water supply of Excelsior should call Excelsior city hall at 952.474.5233 for questions regarding quality control and testing. Remember that toxic lead levels derived from plumbing can be a problem to all homeowners.

Updated 10-12-11