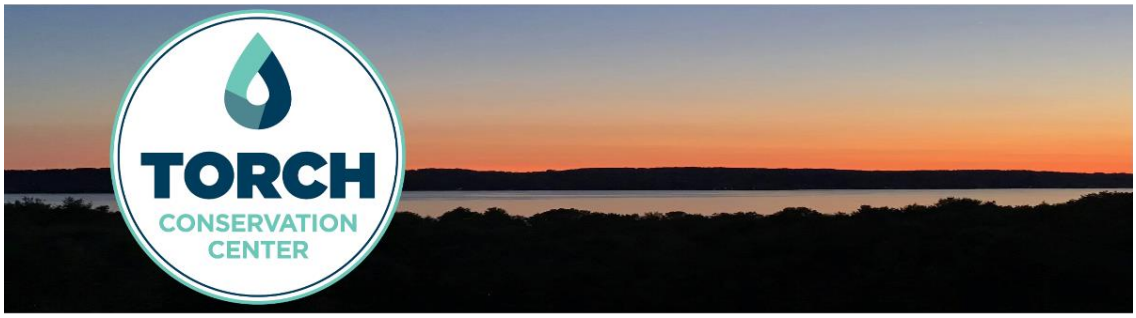
How safe is your drinking water?



TRUE BLUE News

Do You Know?

Private water wells provide water to homes built in the Torch Lake Watershed.

Water quality in our wells can change over time.

The safety of your drinking water is YOUR responsibility.

The Health Department of Northwest Michigan recommends testing well water annually for:

- Partial Chemistry (Fluoride, Chloride, Hardness, Iron, Sodium, Sulfates, Nitrites and Nitrates) and
- Total Coliform Bacteria

or whenever

- a plumbing system is opened for repairs
- the water changes in taste, smell, or look

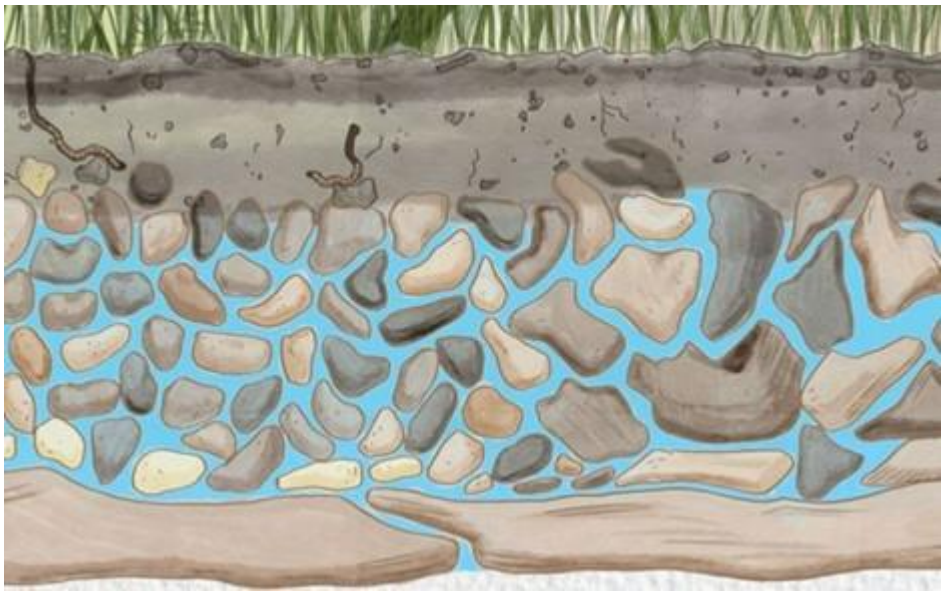


Image: The Nature Conservancy

Key Facts:

The glaciers left water underground more than 10,000 years ago. This groundwater is stored between soil and rock particles and is called an aquifer.

Surface water travels over land from rain, snowmelt and irrigation and into the ground. It accumulates in the spaces between grains of sand and soil- not in large underground lakes.

As water travels in the ground, it dissolves minerals that naturally occur in the sand, gravel and rock.

Plant, animal and human-generated waste can also collect in groundwater.
Private wells can be contaminated by

- leaking septic tanks and drain fields,
- rainwater carrying toxic chemicals from paved roads and driveways,
- waste from grazing animals,
- lawn fertilizers,
- sewage sludge applied to fields and
- landfills.

Leaking underground storage tanks can contaminate wells with harmful chemicals. Industrial waste dumped in wetlands like the TCE plume in Mancelona can contaminate drinking water.

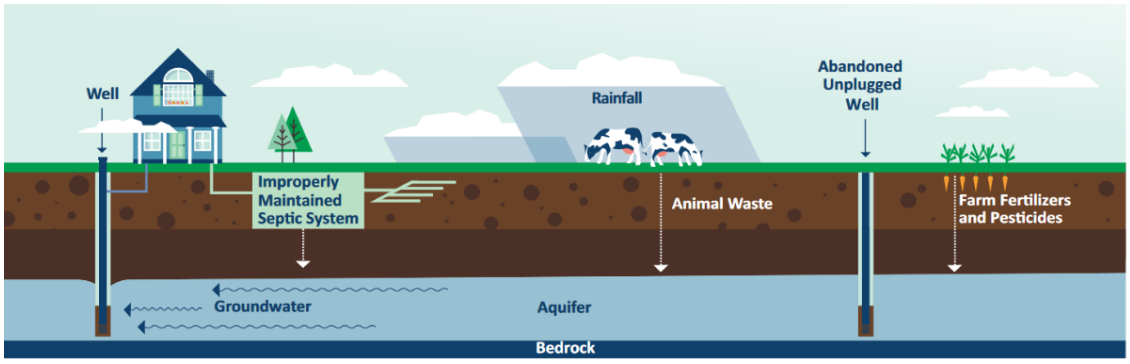


Image: Michigan Department of Health and Human Services

High levels of nitrates/nitrites and coliform bacteria in drinking water can harm you and your family.

Nitrate/Nitrite

Nitrate and Nitrite are forms of nitrogen; composed of nitrogen and oxygen.

You cannot taste, see, or smell nitrate/nitrite in your water.

The U.S. Environmental Protection Agency (EPA) Safe levels of nitrate are 0-10 ppm and 0-1 ppm for nitrite for public water supplies.

Nitrate can change into nitrite in your body and reacts with blood.

Elevated nitrite levels in drinking water can cause health problems:

- Interfere with the oxygen carrying capacity of blood
  - In children, this can cause Blue Baby Syndrome.
  - In adults, this can cause nitrate induced methemoglobinemia, anemia, cardiovascular disease, lung disease, sepsis, glucose-6-phosphate dehydrogenase deficiency and other metabolic problems.
- Increase heart rate
- Nausea and abdominal cramps
- Headaches
- Increase risk of cancer, especially gastric cancer

Photo: Torch Conservation Center

Coliform Bacteria

You cannot taste, see or smell bacteria or other microbes in your water, so you must test it.

It is not practical to test water for every disease-causing microbe, but it is easy to test for a group of indicator bacteria called total coliform bacteria. These bacteria are good indicators of the sanitary condition of well water, because they are everywhere on the surface of the ground, but do not usually occur past a few feet into the soil.

Total coliform bacteria is a large collection of different kinds of bacteria found in soil, plants,

surface water and in the intestines/feces of warm-blooded animals and humans.

One type of fecal coliform bacteria, *Escherichia coli* (*E. coli*) is commonly found in the intestines of humans, mammals and birds. It is a good indicator of fecal waste in water. *E. coli* may be tested by itself.

The U.S. Environmental Protection Agency (EPA) guidelines for drinking water Total Coliforms (including fecal coliform and *E. Coli*) is zero. If present, they are not a health threat but can indicate that surface contamination has gotten into the water and other disease-carrying germs (bacteria, viruses and parasites) may be present.

High levels of coliform or *E. coli* can cause upset stomach, vomiting, diarrhea, dysentery, headaches and hepatitis.

Show You Care!

Step 1. Test your well water each year. Add it to your Spring/Summer TO DO List.

Stop by the Health Department to pick up and pay for sample bottles.
Health Department of Northwest Michigan
209 Portage Drive
Bellaire, MI 49615
Hours: Monday-Friday 8:00-12:00 or 1:00-5:00

- Bacteriologic (Coliform) Sampling Fee: $24.00
- Partial Chemical Sampling (Fluoride, Chloride, Hardness, Iron, Sodium, Sulfates, Nitrites and Nitrates) Fee: $24.00

Step 2. Follow the instructions on the bottle. Samples must be collected and dropped off on the same day due to the time sensitivity of the testing.

Step 3. Drop off the water samples at the Health Department of Northwest Michigan in Bellaire Monday, Tuesday or Wednesday from 8:00-11:00.

Step 4. You will receive a written report in the mail within the week.

Step 5. Take further action if results indicate elevated unsafe levels.

PFAs
Per- and polyfluoroalkyl substances (PFAS) are a group of human-made chemicals that do not occur naturally in our environment.

PFAS are used in many commercial products such as stain repellents, fast food wrappers, waterproofing sprays and fire fighting foam.
Sources of PFAS include: Unlined landfills, maufacturing wastes and farmlands fertilized with treated biosolids containing PFAS.

PFAS have been linked to the following health conditions: Thyroid disease, Liver damage, Kidney and Testicular Cancer, Reduced fertility rates, High Blood Pressure in pregnant women, Lower infant birth weight, and Lower immune response to vaccines.

If you are concerned about the harmful chemicals called PFAs in your well water, then call the Michigan Department of Environment, Great Lakes, and Energy (EGLE) Drinking Water Laboratory to order: 517-335-8184

- An 18-analyte test kit Sampling Fee: $290
- This kit uses EPA Method 537.1.
- This kit includes a return UPS shipping label.

Dog Days of Summer at the Lake

Photo: Brian Apley (left) Joe Cash (right)

Sources:

https://www.cdc.gov/healthywater/drinking/private/wells/testing.html

https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations

https://www.michigan.gov/mdhhs/

https://www.health.state.mn.us/communities/environment/water/wells/waterquality/bacteria.html

https://www.health.state.mn.us/communities/environment/water/wells/waterquality/nitrate.html

https://www.health.ny.gov/environmental/water/drinking/coliform_bacteria.html

Personal Communication with Janenne Irene Pung, Public Information Officer, July 2023, Health Department Northwest Michigan Health www.nwhealth.org

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At Torch Conservation Center, we **BELIEVE**
an informed Torch Lake Watershed community cares for Torch Lake
and keeps toxins, nutrients, sediments and invasive species out of the water.
Join us.
Donate now.
Helping Torch Lake is just a click away.

Our mailing address is:
Torch Conservation Center
P. O. Box 1142
Bellaire, MI 49615