



Homeowner's Guide to Water Sampling



Water sampling kit

The water sampling bottles you have been given are from the State Drinking Water Laboratory in Lansing. The box contains an instruction sheet, a blank lab slip, protective packing material, a bottle for nitrate testing, and a bottle for bacteria testing.

Step 1. Collect water samples according to the instruction sheet.

Step 2. Immediately drive samples to a lab or ship them overnight to a lab for analysis (other options may be available; please contact BEDHD if you would like to know more). The samples can be driven to the Lansing lab (8a–5p, M–Th; 8a–4:30p, F) or to a satellite lab in Grand Rapids on Fuller Street (8a–5p, M–F). To mail the samples overnight, use the address on the box for the Lansing lab. Qualified private labs may also be available. Call the health department or check the MDEQ Laboratory Services website for more information.

IMPORTANT: For results to be correct, bacteria samples must be received by a lab no later than 30 hours after water was collected. If a sample is more than 30 hours old, it will not be accepted.

If you are sampling due to illness or general curiosity...

The sample should be collected from your primary drinking tap, usually the kitchen sink.

If you are sampling due to new well construction...

All new wells must be disinfected with chlorine and sampled for coliform bacteria and nitrates shortly after construction is finished. If you use a water softener, activate its bypass so that chlorinated water does not run through the softener. After your well has been chlorinated, run all of the cold water taps in the house until you smell chlorine—this usually only takes a few minutes. Next, turn off the taps and do not use them for at least 4 hours, but preferably overnight. Do not use this water to drink, cook, or shower. You can still flush toilets.

After the taps have sat without use for at least 4 hours, flush the chlorine out of the water system. Turn on a garden hose and run it for approximately 8–12 hours to ensure that chlorine has been flushed from the well. Be sure to set the hose away from your septic system and well. After 8–12 hours and once you no longer smell chlorine, turn off the hose. Next, turn on each of the inside taps for approximately ten minutes and until you can no longer smell chlorine to flush any leftover chlorine from your pipes.

Now a sample can be collected. The sample must be collected from the pressure tank sampling tap, not a tap at the kitchen sink or bathroom. Sterilize the metal outlets of the sample tap with a chlorine solution or a propane or butane torch. Wash your hands. Run water from the sample tap for 5–10 minutes (collect the water with a bucket), and then collect a sample from a steady stream of water about the diameter of a pencil. Do not touch the inside of the bottles or the inside of the lids.



Pressure tank sampling tap

Checklist to sample wells (if your well was not recently chlorinated, ignore the first 5 steps)

1. Bypass your water softener
2. Run cold water through taps until you smell chlorine
3. Shut off the taps and let water sit for 4 hours, or preferably overnight
4. Run a garden hose for 8–12 hours
5. Run all of the inside taps until you cannot smell chlorine
6. Locate the sampling tap on your pressure tank (see above picture)
7. Sterilize the sampling tap with chlorine solution or a torch
8. Run water from the tap for 5–10 minutes
9. Fill the sampling kit bottles with water
10. Get the samples to a laboratory within 30 hours



Interpreting Your Test Results

What You Are Sampling for

Two substances can be harmful to your health if there is too much of them in drinking water. These substances are coliform bacteria and nitrates.

Coliform Bacteria Coliform bacteria, especially fecal coliform bacteria, is found in the intestines of humans and other animals. Coliform bacteria can also be found in soil and organic matter. Because this bacteria is most commonly found in water contaminated by sewage or surface water, it is used to figure out how sanitary or clean of drinking water is. Testing by a qualified lab is needed to see if coliform bacteria are present in your water. To test for coliform bacteria, check **code "B"** on the lab slip provided and enclose a check made out to the "State of Michigan" for the correct fee.

Nitrates Nitrates come from fertilizer, sewage, and feedlots. They are very harmful to babies under six months of age and to immune-suppressed individuals when there are high levels in drinking water. A chemical analysis by a qualified lab is needed to see if there are nitrates in your water and, if so, how much. Use **code "R"** on the lab slip provided and enclose a check to the "State of Michigan" for the appropriate fee.

Other Partial Chemistry Substances Other substances tested for include nitrites, chloride, sodium, fluoride, water hardness, iron, and sulfate levels. It can be important to know the levels of these substances, for example, if someone in your household is on a restricted sodium (salt) diet and because fluoride is important for children's dental health. Finally, a partial chemical analysis can indicate other contaminants in your water supply and help determine whether additional, more in-depth analysis is needed. Use **code "R"** on the lab slip provided and enclose a check to the "State of Michigan" for the appropriate fee.

You should receive your results in approximately 10 days. Here's what the lab report may say:

Bacteriological Analysis

ND= Not Detected. Coliform organisms were not detected. However, other harmful contaminants could still be present.

POS= Positive. Coliform bacteria were detected. Drinking water may not be safe. Have your well and plumbing chlorinated by a well driller as soon as possible, and contact the health department for further testing.

EC POS= Positive for E. Coli organisms. Stop using water for drinking and cooking right away. Buy bottled water and contact the health department. Have your well and plumbing chlorinated by a well driller as soon as possible. Collect and mail another sample 2–3 days after chlorinating. Continue to use bottled water for drinking and cooking until you get an "ND" result.

Partial Chemical Analysis		
	Harmful Range	Problem
Nitrates	Over 10 mg/L	Nitrate poisoning, especially in infants and immune-suppressed individuals
Nitrites	Over 1.0 mg/L	Same as above
Chloride	Over 250 mg/L	Taste, corrosion
Fluoride	Over 4.0 mg/L Under 0.8 mg/L	Teeth mottling Tooth decay
Hardness	Over 250 mg/L Under 25 mg/L	Lime deposits, soap scum, Corrosion
Iron	Over 0.5 mg/L	Staining, taste, odor, color
Sulfate	Over 250 mg/L	Laxative effect, taste, odor
Sodium	Over 160 mg/L	Taste, corrosion, dietary restrictions



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Be Active • Be Safe • Be Healthy

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