After a flood – Private Well Water Information

For Homeowners impacted by flooding

Most up to date information can be found at ottawapublichealth.ca/flooding

SUMMARY

Follow the steps below and note that before testing your well water you should:

1. **Wait until the floodwaters have receded.**

   There should be no floodwater immediately surrounding the well. The ground around the well may have eroded during flooding, possibly creating unsafe conditions or a pathway for surface water and contaminants to enter the well. In other cases, the electrical wires attached to the pump in a well may be damaged risking electrocution. Therefore, well owners should exercise extreme caution approaching their wells, especially older, large diameter dug wells after a flood.

2. **Disinfect your well with a chlorine solution and flush out this disinfectant.**

   See Appendix A for information on "How to disinfect a well".

3. **Wait two days before collecting a water sample. If your septic system is ready to use, and if you do not suspect chemical contamination of your well, you can use your well water for household tasks, but not for anything in which the water would be swallowed or get into the eyes or mouth.**

   The best option is to stop using your well water and use another potable water source such as bottled water for ALL water use, including drinking, preparing food, cleaning, bathing, hand washing. **If you want to continue to use your well water and do not suspect chemical contamination**, bring the water to a rolling boil for at least one minute and let it cool before using it for drinking, making infant formula, juices, ice or recipes, brushing your teeth, rinsing contact lenses, and washing food or dishes. Refrigerate your boiled water until it is used. See the information further below on "What to do if your well is contaminated".

4. **Take a sample of your well water. If the result indicates your water is "safe to drink", you will still need to take two additional water samples.**

   - The safest option is to continue using an alternative source of treated water or boiling your water as in step #3 above until you take a second sample and get a second "safe to drink" result.
   - The second sample should be taken approximately one week after the first sample. The water can now be considered safe to drink, but a third sample should be taken to be sure the well water remains safe.

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- The third sample should be taken 2 to 4 weeks after the first sample. This will confirm the potability of your well water.
- If all three samples are safe, continue to sample three to four times per year**.**

See below for information on “How to sample your well water for bacteria”.

DETAILS

When to test well water and drinking water safety considerations

If floodwaters have reached the level of your wellhead, or covered your wellhead, your well water may be contaminated and not safe to drink. Residents who own private wells affected by flooding are advised to:

- **The best option is to stop using your well water** and use another potable water source such as bottled water for ALL water use, including drinking, preparing food, cleaning, bathing, hand washing.
- **If you want to continue to use your well water and do not suspect chemical contamination**, bring the water to a rolling boil for at least one minute and let it cool before using it for drinking, making infant formula, juices, ice or recipes, brushing your teeth, rinsing contact lenses, and washing food or dishes. Refrigerate your boiled water until it is used.
- **If you suspect chemical contamination of your well**, Public Health Ontario (PHO) Laboratories test for the indicators of bacterial contamination (coliforms and E. coli). The sample is not tested for any other contaminants. For a list of licensed labs refer to https://www.ontario.ca/page/list-licensed-laboratories that can test your private well water for chemicals. If you suspect chemical contamination of your drinking water and well, please contact the local office of the Ontario Ministry of Environment, Parks and Conservation (MECP) at 613-521-3450.
- **Do not test** your well water during a flood. Test your well water once the flood water levels have receded and the well is no longer affected by floodwater. There should be no floodwater immediately surrounding the well.
- The ground around the well may have eroded during flooding, possibly creating unsafe conditions or a pathway for surface water and contaminants to enter the well. In other cases, the electrical wires attached to the pump in a well may be damaged risking electrocution. Therefore, well owners should exercise extreme caution approaching their wells; especially older, large diameter dug wells after a flood.
- Before testing your well water, it is important to first disinfect your well with a chlorine solution and flush out this disinfectant.

- Wait **two days** before collecting a water sample. Continue to use your water for household tasks, with the exception of drinking and cooking purposes.
- Take a sample of your well water. If the result indicates your water is “safe to drink”, you will still need to take two additional water samples.
    - The safest option is to continue using an alternative source of treated water or boiling your water until you take a second sample and get a second “safe to drink” result.
    - The second sample should be taken approximately one week after the first sample. The water can now be considered safe to drink, but a third sample should be taken to be sure the well water remains safe.
    - The third sample should be taken 2 to 4 weeks after the first sample. This will confirm the potability of your well water.
    - If all three samples are safe, continue to sample three to four times per year.

How to sample your well water for bacteria

Bacterial testing for private wells is performed free of charge by the Ontario Ministry of Health Public Health Laboratory at 2380 St. Laurent Blvd. Sample bottles are available for pickup at that laboratory, and at water testing pickup and drop-off locations.

1. Obtain a water sample bottle.
2. Plan to sample your well water when you are sure it can be delivered to a drop-off location **within 12 hours** of the collection time.
3. Remove any aerator, screen, or other attachment from your kitchen faucet. If you cannot do this, take a sample from an inside faucet with no aerator, such as the bathtub. Do not take a sample from an outside faucet or the garden hose.
4. Turn on the cold water and run for two to three minutes to remove standing water.
5. Disinfect the end of the faucet spout with an alcohol swab, or a diluted bleach solution (1 part household bleach to 10 parts water)**.**
6. Turn on the cold water again and run for three minutes before sampling. Remove the lid of the sample bottle. Do not touch the inside of the lid, put down the lid, or rinse out the bottle.
7. Fill the bottle to "fill line" directly from the tap without changing the flow of water. Do not touch the bottle lip. Replace cap tightly.
8. Samples must be refrigerated after collection. During transportation, put bottle in a cooler if possible.
9. Remove ONE of the bar code stickers from the bottle and attach it to the blue card that came with your water sample bottle. This bar code is your PERSONAL IDENTIFICATION NUMBER (PIN). You will need it to get your results over the phone.
10. Return the sample and completed form within **12 hours** of collection. If your form is incomplete, the laboratory will not test your sample and you will need to submit another sample with another form.

Well water test results

You can usually get your test results **three to five business days** after you drop off your sample. Test results are available by:

- **Telephone**: Call 1-877-723-3426 and key in the barcode number from the sample bottle (PIN) to hear an automated message with your test results and interpretation. OR
- **Mail**: If you indicated on the form that you want the report mailed or made no choice, the report will be mailed to the name and address written on the form. OR
- **In-person at 2380 St. Laurent Blvd:** If you indicated on the form that you will pick up the report at the laboratory, show your photo identification at the reception desk during regular operating hours.

What the water test results mean

If you need help interpreting the results, please contact Ottawa Public Health at 613-580- 6744 and speak with a Public Health Inspector.

Bacteriology interpretation

Drinking water is tested for the presence of two groups of bacteria: Total Coliforms and E.coli (*Escherichia coli*).

Total Coliforms are a group of bacteria commonly found in animal waste, sewage, soil and vegetation. They are also found in the intestines of animals and humans. Total Coliforms are not likely to cause illness, but their presence indicates that your water supply may have been contaminated by more harmful microorganisms present in surface water seeping into your well.

E.Coli bacteria are normally found only in human and animal digestive systems. The presence of these bacteria in your drinking water, usually means that human and animal waste is entering your well from a nearby source such as a local septic system or manure. Although most strains of E. coli bacteria are harmless, the presence of E. coli in well water indicates fecal contamination. This means there could be harmful bacteria, viruses, or parasites in your well water.

Results	What it means?	What to do?
Total coliform=0 *E. coli* = 0	No significant bacterial contamination was found	• Continue to test your drinking water on a regular basis to see if there are any changes in your drinking water quality. • Three samples taken 1-3 weeks apart are needed to determine the stability of the water supply.
Total coliform= less than or equal to 5 *E. coli* = 0	No significant bacterial contamination was found	• Safety difficult to assess based on a single test. • Resample as soon as possible. • Follow the Public Health Ontario water sampling procedures above. Three samples taken 1-3 weeks apart are needed to determine the stability of the water supply.
Total coliform= more than 5 *E. coli* = 0	Significant bacterial contamination was found	**Stop using your well water, use bottled or boiled water.** • If you want to continue to use your well water, bring it to a rolling boil for at least one minute and let it cool before using it for drinking, making infant formula, juices, ice or recipes, brushing your teeth, rinsing contact lenses, and washing food or dishes. Refrigerate your boiled water until it is used. • Disinfect the well and resample, following the proper disinfection procedures below.
Total coliform= 1 or more *E. coli* = 1 or more	Indicates bacterial conta mination from animal or human feces	**Stop using your well water, use bottled or boiled water.** • If you want to continue to use your well water, bring it to a rolling boil for at least one minute and let it cool before using it for drinking, making infant formula, juices, ice or recipes, brushing your teeth, rinsing contact lenses, and washing food or dishes. Refrigerate your boiled water until it is used. • Disinfect the well and resample. Follow proper disinfection procedures described below.
NDOGN - No Data: Overgrown with Non-target	Only "non-target" bacteria commonly found in the environment are visible during the test process. They are not usually a health hazard but can interfere with detection of Total Coliforms and/or E. coli	**Stop using your well water, use bottled or boiled water.** • If you want to continue to use your well water, bring it to a rolling boil for at least one minute and let it cool before using it for drinking, making infant formula, juices, ice or recipes, brushing your teeth, rinsing contact lenses, and washing food or dishes. Refrigerate your boiled water until it is used. • Disinfect the well and resample. Follow proper disinfection procedures described below.
NDOGT - No Data: Overgrown with Target	A large number of bacteria present and Total Coliforms and/or E. coli are visible to the analyst but it is dificult to determine exactly how much	**Stop using your well water, use bottled or boiled water.** • If you want to continue to use your well water, bring it to a rolling boil for at least one minute and let it cool before using it for drinking, making infant formula, juices, ice or recipes, brushing your teeth, rinsing contact lenses, and washing food or dishes. Refrigerate your boiled water until it is used. • Disinfect the well and resample. Follow proper disinfection procedures below.

What to do if your well is contaminated

If you want to continue to use your well water and do not suspect chemical contamination, bring it to a rolling boil for at least one minute and let it cool before using.

Use tap water for:	Use bottled or boiled water for:	Do not use the water for:
• Flushing toilets • Washing clothes, linens and bedding • Taking showers (for adults and older children) • Washing floors	• Drinking • Brushing teeth • Making food and baby formula • Sponge bathing babies and young children (after cooling the water) • Making coffee • Making ice • Washing fruits and vegetables	• Kitchen and other household water filters • Ice makers directly connected to the affected water supply • Children's water play stations (e.g. wading pools and water tables)

Appendix A: How to disinfect a well

See special considerations for Sand point wells, dug wells and drilled wells below.

To bring a well back into service safely, a well owner should consider contacting:

- a qualified registered professional (e.g. professional engineer or professional geoscientist) or a licensed well driller to evaluate and service a drilled well;
- a qualified registered professional or a licensed well digger to evaluate and service a dug well;
- a licensed pump installer and, if necessary a certified electrician, to evaluate and service the well pump.
- To find a licensed contractor refer to the Ontario Ministry of Environment, Conservation and Parks website: **https://www.ontario.ca/page/find-licenced-well-contractors**

A residential private well owner can work on and disinfect his or her own well. However, there are some safety considerations when working on a well and many technical steps needed to properly clean and disinfect a well. Therefore, the well owner should consider retaining the services of a qualified professional or qualified technician as noted above.

You can disinfect your well contaminated with bacteria by "shock-treating" it with ordinary chlorinated household bleach containing 5.25 per cent sodium hypochlorite. Don't use scented bleach for this purpose. Buy fresh bleach to do this because the chlorine in bleach is unstable and evaporates over time.

1. Store enough clean water to meet household needs for a minimum of 12 hours.
2. Bypass or disconnect any carbon filters, water softeners or other water treatment devices or else any pipes located past these filters will not be disinfected. Replace the filters once chlorination is completed. Highly chlorinated water can damage treatment units. The treatment devices will themselves have to be disinfected: It is important to follow the manufacturer's recommendations to ensure any treatment systems are properly disinfected. Be sure that the hot water tank's heat source is shut off.
3. Estimate the chlorine necessary to disinfect the water in the building's plumbing including the hot water tank, and the chlorine necessary to disinfect the water in the well water column. Add them together.
4. Drain all water out of plumbing including the hot water tank prior to dosing.
5. Mix the chlorine required to disinfect the well in 25 litres (5 gallons) of water.
6. Pour the mixture into your well.
7. Thoroughly mix the chlorine solution and the water throughout the well column. This can be accomplished by attaching a hose to a tap and running water from the well through the hose and back into the well.
8. Start the pump and bleed air from the pressure tank. Open all water taps one at a time, including outside hose bibs and cold and hot water taps. Allow the water to run until a chlorine smell is detected from each faucet then turn off each tap. Since chlorinated water can damage the action in a septic system, chlorinated water should not be allowed into the building's sewage system.
9. If a strong chlorine odour is not present, return to step 4, add half the amount of chlorine used for the initial treatment to the well and repeat steps 5 and 6.
10. Let the chlorinated water stand in the system for 12 to 24 hours.
11. Start the pump and run water through the outside hose away from vegetation until the strong smell of chlorine disappears. Make certain that the water does not enter any watercourse. Finally, open the indoor taps until the system is completely flushed. Taps or fixtures discharging to the septic tank systems should be temporarily diverted to an outside discharge point to avoid affecting the septic system.
12. Wait 48 hours and then sample the water using the instructions and bottle provided by the laboratory. If the result indicates your water is "safe to drink" you will still need to take two additional water samples. The second sample should be taken approximately one week after the first sample. The third sample should be taken 2 to 4 weeks after the first sample. This will confirm the potability of your well water. If all three samples are safe, continue to sample three to four times per year.
13. If the above steps do not alleviate the problem, it is recommended that the source of the ongoing contamination be determined and corrected, possibly with professional help.

Resample your drinking water after corrective actions have been taken. As a private well owner, you are ultimately responsible for the system maintenance, operation and quality of your water. If your drinking water quality does not improve, you may need to have your well inspected by a licensed well contractor who will be able to provide you with options to address the issue.

You could also install a treatment system to remove bacteria. For treatment options, consult with a water treatment professional. http://www.ottawapublichealth.ca/en/public-health-topics/private-wells.aspx#Well-water-problems-and-solutions

Disinfecting a Sand Point Well (Well Point)

A well with a diameter of two inches (5 cm): Add about one quarter ounce (6 ml) of household bleach for every 10 ft (3 m) of water depth.

Before starting the disinfection process, the outside of the sand point well (well point) and all associated equipment should be cleaned and disinfected. Homeowners can use disinfectant wipes or alcohol swabs. Unscented household bleach can be introduced in the well by removing the well cap. Ensure your pump does not run dry.

Using a drain plug opening, pressure gage opening outlet pipe, or other opening into the pressure tank, add chlorine bleach or other chlorine into the pressure tank, so that the water in the tank contains approximately 50 ppm free chlorine. This will take approximately 3 (three) tablespoons, or 1 ½ ounces of bleach for each 10 (ten) gallon of tank capacity (a 50-gallon tank, for example, will require approximately ¾ (three quarters) of a cup of bleach).

Disinfecting a Dug Well - A well with a diameter of three feet (1 m): Add one quart (one litre) of household bleach for every five feet (1.5 m) of water depth.

Well Depth (feet)	Well Depth (metres)	Bleach Volume (litres)
5	1.5	1
10	3	2

Disinfecting a Drilled Well - A well with a diameter of six inches (15 cm): Add five ounces (148 mL) of household bleach for every 25 ft (7.6 m) of water depth.

Well Depth (feet)	Well Depth (metres)	Bleach Volume (fluid oz.)	Bleach Volume (ml)
25	7.5	5	148