

Flooding and Public Drinking Water Systems

After a flood, drinking water may be contaminated by chemicals, bacteria, parasites, or viruses. Open waters, such as lakes and streams, are more likely to be contaminated than deep groundwater wells. The closer water is to the surface, the greater the chance of contamination. Water from flood-affected areas should not be used for drinking and other consumptive uses until declared safe by the owner of the public drinking water system.

Am I on a public drinking water system?

If you receive your drinking water from a city, town, or Local Service District (LSD) and pay that entity

for drinking water services, then you are on a public drinking water system.

Can I drink the water from my public drinking water system after a flood?

- You should not drink the water if you are unsure whether it is safe or not.
- Take precautions when bathing children to ensure children do not swallow water that may be contaminated (sponge baths using clean water is recommended).
- Contact your city, town or LSD to ask about the status of the drinking water system. You should not use the water for consumptive purposes until you have been informed by the owner of the public drinking water system that the water is safe.
- Consult the publically available list of Boil Water Advisories for public drinking water systems in Newfoundland and Labrador:
mae.gov.nl.ca/wrmd/BWA_Reports/BWA_Summary_Community.pdf
- Consult the publically available list of Non-Consumption Advisories for public drinking water systems in Newfoundland and Labrador:
mae.gov.nl.ca/waterres/quality/drinkingwater/pdf/NCAAs.pdf



What are consumptive uses of water?

Consumptive uses of water include:

- Drinking
- Cooking
- Washing food or for food preparation
- Making ice
- Making infant formula and cereal
- Making juices and other drinks from concentrate or powders
- Washing dishes
- Brushing teeth

What is a Boil Water Advisory (BWA)?

A BWA is a public announcement issued by a regulatory agency responsible for drinking water advising the public that they should boil their water for drinking or other consumptive purposes. BWAs may be issued during a flood event if the drinking water system is at risk (e.g. water source contamination due to flooding, power failure causing a disinfection system to shut down, flood water entering a distribution system).

What is a Non-Consumption Advisory (NCA)?

A NCA is a public announcement issued by a regulatory agency responsible for drinking water advising the public not to consume their drinking water.



How will I know when the BWA or NCA is over?

Notification that the BWA or NCA is lifted will be made in the same way initial notification for the advisory was issued. If you do not know whether the BWA or NCA is still in effect, visit the publicly available BWA and NCA lists on the province's web page:

mae.gov.nl.ca/wrmd/BWA_Reports/BWA_Summary_Community.pdf

mae.gov.nl.ca/waterres/quality/drinkingwater/pdf/NCAs.pdf

How does the owner of a public drinking water system know if the water is safe to drink?

The owner of a drinking water system must ensure the water is safe to drink before lifting either a BWA or NCA. A BWA will not be lifted until the pressure and chlorine levels have been restored in the water

distribution system and after testing shows the water is free of bacteria. A NCA will not be lifted until testing shows the water is free of contaminants.

When can I expect my water to be safe for drinking again?

In some cases, it may take some time for power to return and for the public drinking water system to be fully repaired and ready for use. You should continue

to boil, treat, or use other approved sources of water until the BWA or NCA is lifted.

What do I do if my home flooded or flooding has occurred between my home and where my service line connects to the water main?

In this case, it would be advisable to flush your service line and household plumbing, as follows:

- Start with the outside tap farthest from your service connection. Run water through the tap until you notice a change in water temperature, then shut the faucet off.
- Work back towards the service connection by flushing one tap or water fixture at a time.

Remove the aerator before you flush kitchen or bathroom taps. Flushing should take five minutes or less at each tap.

- Be sure to drain and refill your water heater.

This flushing should remove any air or contaminants that may have entered your plumbing system during the flood.

What do I do if there is no water or only a weak stream of water when I open my tap?

If your tap produces no water or only a weak stream and you have not already been told to boil your water, call your public drinking water system owner right away to report a possible water outage. Boil or disinfect your water until the owner confirms your supply is safe. Once you receive that confirmation, flush your home's plumbing and service line as described above.

Be alert for water leaks and outages after a flood event. If the flood washed soil away from a water main, the main could break days or weeks later. Report leaking mains or outages to your public drinking water system owner immediately.

What do I use for drinking water and water for consumable uses?

If your regular water service has been interrupted during a flood or other emergency, you have the following options:

- Use bottled water.
- Use water you have properly prepared and stored as an emergency water supply. Store at least 4-L of water per person per day for three days, for drinking and sanitation.
- Boil your water to make it safe.
- Disinfect your water to make it safe.
- Distill your water to make it safe.

Water that is boiled or disinfected should be cooled and stored in clean covered containers made for food or water.

Flood waters can contain chemical hazards such as heavy metals, salts, hydrocarbons, etc. that disinfection and boiling alone may not remove. Please refer to the NCA list for further information. Distilling your water will remove most of these chemical hazards.





How do I treat water for emergency consumption and/or hygiene?

The following steps should be taken for the emergency treatment of water:

1. If water is cloudy, let it settle and filter the water using a clean piece of cloth or coffee filter to remove solid particles.
2. Bring water to a rolling boil for about one full minute.

To improve the flat taste of boiled water, add one pinch of salt to each liter of water, or pour the water from one clean container to another several times.

How do I treat water for emergency consumption and/or hygiene if I cannot boil my water?

The following steps should be taken for the emergency disinfection of water if you cannot boil your water:

1. Locate a clean dropper from your medicine cabinet or emergency supply kit. Add 8 drops (0.4 ml) of liquid chlorine bleach per 2-L bottle of water (or 4 drops (0.2 ml) per 1-L bottle of water). Stir to mix. Sodium hypochlorite of the concentration of 5.25% to 8.25% should be the only active ingredient in the bleach. There should not be any added soap or fragrances.
2. Let stand 30 minutes. The longer the treated water stands, the better the disinfection.
3. If it smells of chlorine, you can use it. If it does not smell of chlorine, add 8 more drops per 2-L bottle of water, let stand 30 minutes and smell it again. If it smells of chlorine, you can use it. If it does not smell of chlorine, discard it and find another source of water.

If the chlorine taste is too strong, pour the water from one clean container to another and let it stand for a few hours before use.

Bleach will kill viruses and bacteria, but may not kill parasites, such as Giardia, which require boiling. Disinfection does not work as well when water is cloudy or colored. If you are unsure about the safety of your water, even after it has been treated with bleach, do not consume it.



What type of bleach should I use to disinfect my drinking water?

Only use regular household bleach products that are suitable for disinfection and sanitization as indicated on the label. Avoid scented, colour-safe, non-chlorine and bleaches with added cleaners. The label may say that the active ingredient contains 5.25-8.25% of sodium hypochlorite. Use fresh liquid chlorine bleach or liquid chlorine bleach that has been stored at room

temperatures for less than one year. Bleach works best in warm water that is approximately 20°C, while colder water may require additional drops of bleach.

If you are using chlorine tablets, follow the directions on the package.

Can I use disinfection tablets to disinfect water?

You can disinfect water with tablets that contain chlorine, iodine, chlorine dioxide, or other disinfecting agents. These tablets are available online or at pharmacies and sporting goods stores. Follow the instructions on the product label as each product may have a different strength.



What if the water is still cloudy or murky after boiling or disinfection?

If the water is cloudy or murky, pour it through a clean cloth or coffee filter. Let any remaining particles settle to the bottom, then pour the water into clean containers made for food or water and cover.

The water might still look a little cloudy. If you are ever unsure about the safety of your water, even after it has been treated, do not consume it.

Can I use a household water filter to treat my water?

Jug-type water filters are not designed to remove contaminants from an unsafe water supply and will not remove Giardia. Some built-in water filtration systems will remove Giardia, but they need regular

maintenance to work well. To remove some types of contaminants, such as Giardia, filters must have an absolute pore size of 1 micron or less, and be certified by the National Sanitation Foundation (NSF).

What can I use as an emergency alternative source of water?

Although bottled water is your safest choice as an emergency alternative source of water, you may be able to make use of other available sources if you can determine they are safe and clean, including:

- A neighbour's private well
- Water drained from your hot water tank or pipes
- Melting ice
- Nearby river or lake water: It is generally better to use flowing water than still, stagnant water. However, do not use water with floating material in it or water that has a dark color or questionable odour.
- Roadside springs

If you do end up using an emergency alternative source of water, treat the water by following the instructions above. Please be aware that alternative water sources may also have been impacted by the disaster that shut down your public water system. Water from questionable sources may be contaminated by a variety of microorganisms, including bacteria and parasites that cause waterborne disease and diarrhea. All water of uncertain quality should be treated before use.



How should I store an emergency supply of water?

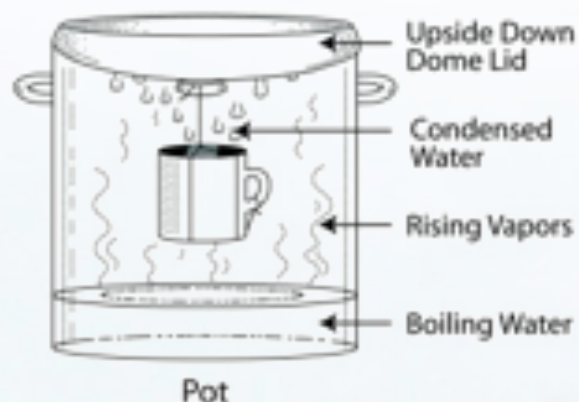
When buying commercially bottled water, store it in the sealed original container in a cool, dark place. If you must prepare your own containers of water, purchase food grade water storage containers. Before filling with chlorinated water, thoroughly clean the

containers with dishwashing soap and sanitize the bottles by cleaning with a solution of 1 teaspoon of non-scented liquid household chlorine bleach to 1-L of water. Water that has not been commercially bottled should be replaced every six months.

What should I do if my water supply is contaminated with chemicals?

While boiling and disinfection will kill most pathogens in water, distillation will remove pathogens that resist these methods, as well as heavy metals, salts and most other chemicals. Distillation involves boiling water and then collecting the water vapour that condenses. The condensed vapour will not include salt or most other contaminants.

To distill, fill a pot halfway with water. Tie a cup to the handle on the pots' lid so that the cup will hang right-side up when the lid is upside-down (make sure the cup is not dangling into the water) and boil the water for 20 minutes. Water that drips from the lid into the cup is distilled.



Who can I contact if I need more information?

For further information, please contact:

Water Resources Management Division
Municipal Affairs and Environment
Government of Newfoundland and Labrador
P.O. Box 8700
St. John's NL A1B 4J6
Telephone: 709.729.4048

mae.gov.nl.ca