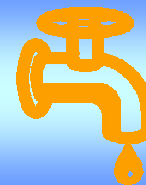


# SAFE TO DRINK

## Drinking Water Safety



### Drinking Water Safety

Canada has one of the safest water supplies in the world. However, drinking water quality can vary depending on the condition of the source water from which it is drawn and the method of treatment it receives. There are a number of treatment options available to ensure water is safe to drink during an emergency, on an ongoing basis or whenever you are unsure about the safety of your drinking water.

### Common Ground Water Quality Problems

Problem	Possible Cause	Treatment
Health Effects: Diarrhea, stomach cramps	Bacteria, parasites, viruses	1. Chlorination/ filtration method 2. Ultra-violet systems 3. Chlorination injector units
Methaemoglobinemia (blue baby syndrome)	Nitrate*	- Reverse osmosis units
High blood pressure	Sodium	- Reverse osmosis units
Scale build-up in kettles and water heaters Soap scum, bathtub ring	Hardness (hard water)	- Water softeners
Red to brown slime in toilet tanks Iron staining Unpleasant taste or odours	Iron bacteria	- Chlorination/filtration units
Rusty black stains on fixtures, laundry	Iron and/or manganese	- Filtration - Greensand filters - Water softeners - Chlorination/ filtration units
"Rotten-egg" smell and taste	Hydrogen sulphide and/or sulphate reducing bacteria	- Chlorination/ filtration units - Greensand filters - Aeration
Water has laxative effects	Sulphate	- Reverse-osmosis units
Salty taste, corrosive	Chloride	- Reverse-osmosis units
Gassy smell, gas bubbles escaping from water	Gasses (methane)	- Aeration - Activated carbon filters
Cloudy water	Turbidity (Clay)	- Filters - Alum treatment

### Water Treatment Devices for Bacteria

**Chlorinators:** These are chemical feed pumps that continuously add chlorine to the contact chamber. The contact chamber allows the chlorine enough contact time with the water to kill pathogens. Chlorinators need to be checked often to make sure a sufficient amount of chlorine is being added to the water.

**Ultra-Violet Light (UV Filters):** Water is passed through a chamber and exposed to an ultra-violet light source to kill harmful pathogens. Water must be filtered and must be very clear before treatment for the treatment to work properly. This method does not provide a chemical residual following treatment.

**Distillers:** Water is boiled in one compartment, then condensed and collected in another compartment. Water should be filtered before treatment and refrigerated afterwards. Some organic and inorganic chemicals are also removed. This method does not provide a chemical residual following treatment.

**Ozonators:** These units add small amounts of ozone to the water to kill pathogens. This method does not provide a chemical residual following treatment.

### Water Treatment Devices for Chemicals

**Carbon Filter:** These units remove some chemicals by passing the water through an activated carbon filter. Carbon filters are used to remove tastes, odours and organic chemicals.



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## If Your Drinking Water is Unsafe

For untreated surface water, or when drinking water results show that your usual source of drinking water is unsafe to drink,, follow these guidelines until your water supply is safe again.

Use one of the following options for a safe supply of dinking water:

- Bring water to a rolling boil for 1 minute; or
- Mix ¼ tsp (1.25ml) of liquid household bleach (such as Javex) with 1 gallon (4.5 liters) of water and let stand for 30 minutes; or
- Use commercially bottled water.

Store boiled or treated water in clean containers in the refrigerator.

## Other Water Use

**Handwashing:** Use bottled, boiled or treated water (as above) OR use the usual supply for washing hands; then follow with an alcohol-based hand sanitizer.

**Food Preparation:** Use bottled, boiled or treated water to make juice or formula or to wash ready-to-eat foods such as fruits and vegetables. If the food will be boiled for longer than 5 minutes during the cooking process, it is not necessary to use treated water. Do not make ice cubes with unsafe water.

**Bathing/showering:** Adults may continue to use the usual supply, *as long as no water is swallowed*. After bathing or showering, use treated water to wash hands. Give sponge baths to children using treated water.

**Brushing teeth:** Use bottled, boiled or treated water.

**Laundry:** Use your usual source of water.

**Dishwashing:** Use bottled, boiled or treated water.

**Pets:** Use bottled, boiled or treated water.

**Livestock:** Consult a veterinarian.

### QUESTIONS ABOUT WATER SAFETY?

Contact a Public Health Inspector at one of these Northwestern Health Unit offices.

**Kenora**  
(807) 468-3147  
1-800-830-5978

**Dryden**  
(807) 223-3301  
1-888-404-4231

**Fort Frances**  
(807) 274-9827  
1-800-461-3348

## How to Disinfect your Well

If your well is microbiologically contaminated, sometimes a one-time (shock) chlorination of your well will make it safe again. This procedure is not recommended if the well is dug (because dug wells are open to contamination) or if there is a known source of contamination. In these cases, you need a more permanent solution such as a new well or treatment devices such as a chlorinator or ultra-violet light. Consult a licensed well driller or plumber for help. Similarly, if shock chlorination does not work, consider adding a treatment device or constructing a new well.

### FOLLOW THESE INSTRUCTIONS TO SHOCK YOUR WELL:

1. Add the following amount of liquid household bleach to your well:
  - **Drilled Well:** 142 (5oz) of bleach for every 7.5 m (25ft) of water
2. Run water through all taps until you can smell the bleach. Turn off the taps and let the water and bleach sit in the pipes for 12 hours.
3. Run the treated water though an outside hose away from the septic tank system until the smell of the bleach is gone.
4. Wait at least two days before collecting a sample for testing.
5. After completing this procedure, get 2 consecutive satisfactory samples to ensure your drinking water is safe. These should be collected at least 24 hours apart. *Assume your water is unsafe until you get these 2 satisfactory results.*

### Notes:

\*Remember to take enough water for the 12 hours you cannot use the water.

\*\*Most water treatment equipment, such as water heaters, softeners and pressure tanks, should remain connected to the system during disinfection. Some water filters, such as carbon filters, should be by-passed or temporarily disconnected during shock chlorination. To avoid damage to equipment, check your owner's manual or manufacturer's literature before shock chlorinating.

Information adapted from *Drinking Water Safety* produced by the Canadian Institute of Public Health Inspectors.