**Michael Spurvey Environmental Public Health Officer ISC Atlantic** 





Canada

Indigenous Services Services aux Autochtones Canada



A Drinking Water Advisory (DWA) is a public announcement issued by the Chief and Council/AFNWA on the recommendation of the Environmental Public Health Officer (EPHO).

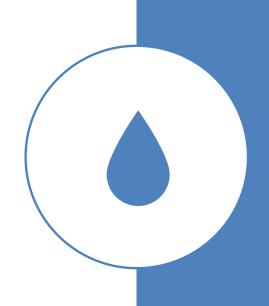
The community members are made aware that the communities drinking water supply may be unsafe.

#### Short-term Drinking Water Advisories

Remain effect for under 1 year

https://sac-isc.gc.ca/eng/1562856509704/1562856530304

#### Long-term Drinking Water Advisories Remain in effect for more than 1 year https://www.sac-isc.gc.ca/eng/1614387410146/1614387435325



There are three main types of Drinking Water Advisories which may be issued;

- Boil Water Advisory
- Do Not Consume Advisory
- Do Not Use Advisory

## **Boil Water Advisory**

Boil water advisories water users that they should bring their tap water to a rolling boil for at least 1 minute before they;

- Drink the water
- Use the water for other purposes such as; cooking, wash fruits and vegetables, brush their teeth, making infant formula

#### **BOIL YOUR TAP WATER**



Water must be

boiled before it

#### Do Not Consume Advisory

Do not consume advisories are issued when the water system has contaminants, that can't be removed from the water by boiling.

- Use bottled water for drinking, cooking, preparing infant formula or brushing your teeth
- Water can be used for showers, baths and laundry

#### **DO NOT DRINK Bottled** water must be used for: **YOUR TAP WATER** You must use bottled water for drinking Attention! and cooking. Residents of Do not drink water from a public drinking fountain. It is not safe. It is important that you sponge bathe infants or toddlers as they may accidentally swallow the water and could become ill. 3 If you or anyone in your household accidentally drinks the water and becomes ill, you should As of seek medical care. Do not use your tap water for drinking and cooking until you receive official notice that it is safe to do so. the community water is not safe to drink. For additional information, contact your **Environmental Public Health Officer or** your Health Centre. **\$**0 Ê 0 Indigenous Services Services aux Canada Autochtones Canada

cleaning dental appliances like retainers or dentures Washing fruit and vegetables You can use tap water for: Bathing, except infants and toddlers Catalogue: R122-27/4-2022E-PDF ISBN: 978-0-660-41836-0

Canada

## Do Not Use Advisory

Do not use advisories warn the public that they should not use their tap water for any reason. A do not use advisory is issued when:

- Using the water poses a health risk
- The water system has contaminants that can't be removed through boiling

#### DO NOT USE YOUR TAP WATER

#### Do not use water from public drinking Attention! fountains. It is not safe. Residents of The water system has contaminants that pose a health risk and cannot be removed by boiling. Any contact with your skin, mouth, or eyes can be dangerous. If you or anyone in your household comes into contact with the water and becomes ill, you As of should seek medical care. A source of safe drinking water will be provided to the community. Please contact the Chief and Council for further guidance.

the community water is not safe to use for any purpose.

For additional information, contact your Environmental Public Health Officer or your Health Centre.

Do not drink or use tap water for any purpose until you receive official notice that it is safe to do so.

Catalogue: R122-27/3-2022E-PDF ISBN: 978-0-660-41834-6

hdigend Canada

Indigenous Services Services aux Canada Autochtones Canada



#### **Routine Drinking Water Monitoring**

As part of routine monitoring of the community's drinking water supply, water samples are routine collected for bacteriological and water chemistry parameters.

Analyses of the water samples were performed by accredited laboratories.

#### **Routine Drinking Water Monitoring**

The results for each parameter analyzed are compared against either the respective Maximum Acceptable Concentration (MAC) or Aesthetic Objective (AO) as listed in Health Canada's Guidelines for Canadian Drinking Water Quality (GCDWQ).

MAC: Maximum Acceptable Concentration: established for substances that are known or suspected to cause adverse health effects.

AO: Aesthetic Objectives: address parameters which may affect consumer acceptance of drinking water, such as its taste, odor and color. They are also known to stain laundry and plumbing fixtures.

Some examples of parameters that have exceeded the MAC are; Lead, Manganese, and Arsenic

#### Lead

The maximum acceptable concentration (MAC) for total lead in drinking water is 0.005 mg/L (5  $\mu$ g/L).

#### Lead – Common Sources

Lead is not usually found natural water sources or in water from drinking water treatment plants.

The most significant source of lead in drinking water is plumbing.

Service lines, plumbing parts or fittings, solder, faucets or valves, may contain lead that can leach out into drinking water.

#### Lead – Health Effects

Young children and infants are particularly vulnerable to lead.

Exposure to lead in drinking water can cause effects on neurological development and behavior in young children.

Lead sampling is conducted annually from drinking fountains and cold water taps where water is used for drinking or food preparation.

#### Lead – Do Not Consume

You may see Do Not Consume Notices posted at site specific areas that have shown an exceed of lead above the MAC. i.e. a fountain, sink or budling.

Solutions: Replace old piping, or upgrade plumbing materials. Replace them with appropriate materials certified for use in drinking water systems. Water treatment devices are another option.

#### Arsenic

The maximum acceptable concentration (MAC) for Arsenic in drinking water 0.010 mg/L (10 µg/L)

#### Arsenic – Common Sources

The most common source of arsenic in groundwater is through erosion and weathering of soils, minerals, and ores.

Industrial effluents and pesticide runoff may also contribute arsenic to water in some areas.

#### Arsenic – Health Effects

Exposure to high levels of arsenic in drinking water can cause nausea, diarrhea, and muscle pain.

Over the long term, exposure to of arsenic can cause certain types of cancers.

#### Arsenic – Do Not Consume

Drinking water that has arsenic levels above the MAC should be treated to reduce the levels to acceptable levels or alternative water sources should be used.

Solutions: Effective treatment methods include

- adsorption
- anion exchange
- distillation
- reverse osmosis

#### Manganese

The aesthetic objective (AO) for manganese in drinking water 0.02 mg/L (20 µg/L)

The maximum acceptable concentration (MAC) for manganese in drinking water 0.12 mg/L (120 µg/L)

#### Manganese – Common Sources

Manganese gets into drinking water sources when water dissolves minerals that contain manganese.

#### Manganese – Health Effects

In small amounts manganese is an essential nutrient found naturally in the environment. We most often ingest it from foods, consumer products, soil and drinking water.

There are scientific studies that suggest too much manganese can cause negative health effects in humans, particularly infants, as compared to older children and adults.

For adults and older children, manganese in drinking water slightly above the guideline is unlikely to cause negative health effects.

#### Manganese – Do Not Consume

The GCDWQ indicates that infants are the most sensitive to the health effects of manganese. Therefore, an alternate drinking water supply should be provided to infants, individuals who are pregnant, mothers who are breastfeeding as well as for preparing infant formula.

Solutions: Effective treatment methods include

- reverse osmosis
- ion exchange/water softeners
- oxidizing filters.

## Boil Water Advisories

Of the drinking water advisory issued, Boil Water Advisories are the most common, representing about 95% of the advisories.

#### Reasons Boil Water Advisories Can Be Issued

- Unacceptable microbiological quality (i.e. detection of E.coli)
- Loss of positive pressure in the entire drinking water distribution (i.e. power outages, not meeting water demands)
- Water line breaks
- Planned maintenance or upgrades (i.e. Reservoir cleaning, new well pumps, new valves, new hydrant, new subdivisions)
- Waterborne outbreak (Epidemiological evidence)
- Equipment malfunction, failure
- Inadequate disinfection

## Water Trax Data (2018-2023) Community Water Supplies

BWA reasons	Number (percentage)
Planned maintenance	22 (30.5 %)
Water main breaks	19 (26%)
Pressure loss	19 (26%)
Equipment malfunction	6 (8%)
Inadequate disinfection concerns	4 (5.5%)
Unacceptable microbiological quality	2 (2%)
Total	72

#### News Release

Health

Environment

#### Update: Chromium trioxide spill / Fredericton area

31 October 2008

FREDERICTON (CNB) - Drinking water will be provided by the Department of Environment beginning today to homes and businesses affected by the chromium trioxide spill near Fredericton on Monday, Oct. 27.

The Department of Health continues to advise 10 homeowners and 20 businesses in the Evergreen Park area not to consume their well water or use it for cooking, bathing or any other use that would bring the water into contact with their bodies.

All homes or businesses considered at risk have been notified by public health inspectors. Anyone in the area who has not been notified may continue to consume their well water.

It is anticipated it will be two to three weeks before the advisory not to consume or use the well water will be removed.

"The potential severity of adverse health effects if someone drinks or comes in contact with water contaminated with this chemical requires much prudence," said Dr. Denis Allard, medical officer of health. "It is therefore imperative that people in the affected homes and businesses not use this water until the advisory is rescinded."

Testing of well water continues on a regular basis. So far, test results on well water from the residences show levels of chromium in the well water to be within acceptable levels.

Monitoring wells have been drilled to determine the extent of contamination, and provide for accurate measurements of direction and flow of groundwater. This will allow appropriate action. Affected and area residents will be notified of any further developments.

31-10-08

## Welding near pile of tires started massive Minto tire fire, records show

Contamination found in groundwater, but seems to be flowing away from residential wells, government says



Karissa Donkin · CBC News · Posted: Feb 05, 2021 6:30 AM AST | Last Updated: February 5, 2021



A massive 2019 tire fire in Minto started after workers were welding near a pile of tires and shredded material, records obtained by CBC News show. (Harvey Fire Department)

Example: Waterborne outbreak (Epidemiological evidence)

- 120 person catered event.
- All attendees became ill with vomiting and diarrhea approximately 12-24 hours later.
- Outbreak linked to a private well (>200 TC, 150 E.coli).

#### Some people sick in Fredericton Junction, where E. coli in water prompts boil order

Bacteria that can make people sick found in samples taken Oct. 26, says Department of Health

Bobbi-Jean MacKinnon · CBC News · Posted: Oct 31, 2017 5:44 PM ADT | Last Updated: October 31, 2017



Tap water should be boiled for at least one minute before being consumed, used for washing vegetables that won't be cooked, or for brushing teeth. (istock Getty Images (DO NOT USE))

## The Multi-Barrier Approach to Safe Drinking Water

- The multi-barrier approach takes all threats into account and makes sure there are "barriers" in place to either eliminate them or minimize their impact.
- The approach recognizes that while each individual barrier may be not be able to completely remove or prevent contamination, and therefore protect public health, together the barriers work to provide greater assurance that the water will be safe to drink over the long term.

# WATER QUESTIONS