

FACTS ON DRINKING WATER

Antimony

Antimony (Sb) is a metal that is present naturally in small quantities in water, rocks, and soils.

Sources

In groundwater, sources of antimony also include plumbing materials, mining wastes, manufacturing effluent, leaching of fertilizers, leaching of landfills, and fossil fuel combustion products

Health Risks

Guidelines for Drinking Water Quality are of two different types:

Maximum Acceptable Concentrations (MAC) are based upon potential adverse health effects (listed in this factsheet if applicable) but water test results that exceed these levels do not necessarily indicate any immediate health problem. This is because whenever possible MACs are developed to be low enough that years of exposure at this level would still only increase the health risk slightly.

However, corrective actions should be taken if water test results exceed the MAC in order to remove any potential for increased health risk.

Aesthetic Objectives (AO) are not based upon health effects, but water test results that exceed these levels may indicate that the water could have objectionable taste, odour, appearance or other factors.

Corrective actions are recommended if water test results exceed the AO but may not be necessary.

Short-term exposure (over days or weeks) to antimony in drinking water at very high concentrations (above 30 mg/L) can cause nausea, vomiting, and diarrhea.

The risk to human health is through ingestion only – drinking, cooking, teeth brushing. Well water with antimony levels greater than 0.006 mg/L may safely be used for bathing, handwashing, and dishwashing.

Maximum Acceptable Concentration for Drinking Water = 0.006 mg/L

In water, antimony has no taste, smell, or colour. It can only be detected through a chemical test.

The Canadian Drinking Water Quality Guideline for antimony is 0.006 milligrams per litre (mg/L).

Testing

Regularly test your well water for a standard suite of chemical parameters, including antimony. Use an SCC or CALA accredited water testing laboratory. Find a list of accredited laboratories at www.scc.ca or www.cala.ca see the Yellow Pages under “laboratories.”

Get the special sampling bottles and instructions on proper sampling from the laboratory.

For more information on water testing services, please see Department of Environment’s water testing services at www.gnb.ca/environment Cost of analysis will vary depending on the accredited laboratory and the number of parameters being tested.

Solutions

If antimony is present above 0.006 mg/L in the first test, you must determine the source of the antimony. Get a second test, taking a sample of water from the well before it enters the building. This will help determine whether the antimony is present in the groundwater or the plumbing materials.

If the source of antimony is corrosion of antimony-containing plumbing materials, consider the following options:

- Remove the source of antimony.
- Flush faucets until the water runs as cold as possible before using the water for drinking, cooking, or teeth brushing.
- Avoid using hot tap water for drinking, cooking, or making baby formula.
- Adjust pH so water is less corrosive (for more information, see the pH and Corrosive Water fact sheets).
- Use a treatment system, to reduce antimony levels.
- Use alternative water sources, such as bottled water or another well that has been tested and found to be safe.

Treatment

We recommend purchasing a treatment system that has been certified to meet the current NSF standards. NSF International is a not-for-profit, non-governmental organization that sets health and safety standards for manufacturers in 80 countries. See its website at www.nsf.org.

Although there are currently no treatment units certified specifically for antimony reduction, effective treatment methods for reducing antimony levels in drinking water include

- coagulation/filtration
- distillation
- reverse osmosis

Once installed, re-test your water to ensure the treatment system is working properly. Maintain the system according to the manufacturer's instructions to ensure a continued supply of safe drinking water.

For more information on water treatment, please contact a private water treatment company.

Adapted from Nova Scotia's The Drop on Water fact sheets

For more information, please contact the nearest regional Health Protection Branch office:

Bathurst

165 St- Andrew Street
(506) 549-5550

St. Stephen

41 King Street
(506) 466-7615

Perth-Andover

35 F Tribe Rd.
(506) 273-4715

Grand Falls

131 Pleasant Street
(506) 737-4400

Caraquet

295, boulevard St-Pierre Ouest
(506) 726-2025

Tracadie

3520, rue Principale
(506) 394-3888

Shippagan

239B, boulevard J.D. Gauthier
(506) 336-3061

Moncton

81 Albert Street
(506) 856-2814

Fredericton

300 St Mary's Street
(506) 453-2830

Campbellton

10 Village Avenue, Unit 15
(506) 789-2549

Sussex

30 Moffett Avenue
(506) 432-2104

Saint John

55 Union Street
(506) 658-3022

Miramichi

1780 Water Street
(506) 778-6765

Edmundston

121 Church Street
(506) 737-4400

Woodstock

200 King Street
(506) 325-4408