

Arsenic in Assiniboine Delta Aquifer groundwater

Does arsenic occur in your well water?

The only way to know for sure is to test your well water.

Is my well water safe to drink?

The quality of groundwater in the Assiniboine Delta Aquifer is typically good. However, it is variable and influenced by both natural conditions and man-made sources. One element which has been found in well water in some areas of the Assiniboine Delta Aquifer is arsenic. Long-term consumption of well water containing arsenic may cause health effects.

What is arsenic?

Arsenic is a naturally occurring trace element found in the sand and gravel soils comprising the Assiniboine Delta Aquifer. It is present in small amounts in all living matter. Arsenic compounds are also used for a wide variety of commercial and industrial purposes.

Where is the Assiniboine Delta Aquifer?

Refer to map on flip side of this information sheet.

How arsenic gets into well water

Most of the arsenic found in Manitoba well water occurs naturally. It is a result of groundwater coming into contact with rocks or soils containing arsenic. The concentration of arsenic in well water depends on a number of factors, such as the amount of arsenic present in the rock or soil through which the groundwater has passed and whether the water chemistry is favourable for arsenic to remain dissolved.

Less commonly, arsenic in groundwater may be caused by waste from commercial or industrial operations, or through the use or disposal of arsenic-containing products such as pesticides.

Drinking water guideline for arsenic

Health Canada has established a maximum acceptable concentration (MAC) of 0.01 milligrams per litre (mg/L) for arsenic in drinking water. Private well owners are not legally required to meet this guideline but, where levels are high, a treatment device or other corrective action is recommended.

Health effects of arsenic

Arsenic's effect on human health depends on factors such as the level and length of exposure. Drinking well water with elevated levels of arsenic over a lifetime may increase the risk for some cancers such as bladder, liver, kidney, lung and skin cancer.



For health related questions, call Health Links/Info Santé at 204-788-8200 or toll free at 1-888-315-9257 or your local public health office.

How to test well water for arsenic

Arsenic does not create a taste or odour in water. The only way to know if well water contains arsenic is to have a water sample tested by an accredited laboratory. Three laboratories that offer trace element analysis of water, which includes arsenic, are:

ALS Environmental

12-1329 Niakwa Road E.
Winnipeg, MB R2J 3T4
Phone: 204-255-9720
Toll Free: 1-800-607-7555
Fax: 204-255-9721

Horizon Lab Ltd.

4055 Portage Avenue
Winnipeg, MB R3K 2E8
Phone: 204-488-2035
Fax: 204-488-4772

Bureau Veritas Canada Inc.

Unit D, 675 Berry Street
Winnipeg, MB R3H 1A7
Phone: 204-772-7276
Fax: 204-772-2386

All wells should be tested to ensure there are no arsenic concerns. In general, well water should be tested for arsenic every three to five years in areas known to have elevated levels.

Private well owners should ask for the Manitoba Trace Elements Package. Test costs will vary from year to year, and well owners should contact the laboratories directly for an estimate.

What to do if arsenic is found in your well water

If the arsenic level in the well water is above the drinking water quality guideline of 0.01 mg/L, private well owners should consider how they are using this water and may wish to discuss health risks with their doctor.

Private well owners may also wish to consider options to increase the safety of water used for drinking or food preparation (such as for beverages, baby formula, soup and coffee). For options, refer to Manitoba's Trace Elements in Well Water Fact Sheet "Arsenic in Manitoba Well Water" or contact the Office of Drinking Water at 204-948-1351.

Sharing your laboratory test results

If you would like to share your laboratory test results to help improve the understanding of arsenic in well water on the Assiniboine Delta Aquifer, please contact the Office of Drinking Water at 204-948-1351.



Additional water quality analyses that well owners should consider

Although it does not occur as frequently as arsenic, barium is another naturally occurring trace element that is sometimes found in well water on the Assiniboine Delta Aquifer. It, too, can have potential health effects associated with the long-term consumption of well water. Private well owners are encouraged to sample for barium if levels are not known. For more information on barium, refer to Manitoba's Trace Elements in Well Water Fact Sheet "Barium in Manitoba Well Water" located at www.manitoba.ca/drinkingwater.

Private well owners are also reminded to test their well water for bacteria (total coliform and *E. coli*) on an annual basis. Testing is recommended every spring after the snow melt and spring run-off. You should also test for bacteria if you see any changes in the water (ex: change in taste, clarity, colour or odour). A sample for nitrate should also be collected every three to five years. For more information on well water sampling, please refer to www.manitoba.ca/drinkingwater.