

May 2015

### **What are selenium and uranium?**

Selenium and uranium are naturally occurring elements found in the earth's crust. Selenium is a metal and is found in deposits in rocks and soil. Uranium is a commonly occurring radioactive element that exists at low concentrations in rocks, soil, air, and water.

### **How do they get into my water?**

These elements are often found in groundwater naturally. There is selenium in water (in small amounts) from natural rock weathering and soil erosion. Naturally occurring uranium in well water comes from dissolving or eroding of soils and rocks that contain uranium. Elevated levels of uranium are more likely to be found in drilled wells where the water flows from cracks and fractures in bedrock than in dug wells.

### **If selenium and uranium are naturally occurring, do I need to be concerned?**

There are established guidelines for many naturally occurring elements in drinking water, including selenium and uranium. These guidelines recommend the optimal levels to be included in drinking water that will be consumed over a lifetime. Levels of uranium and selenium found in some wells to-date exceed these guidelines.

### **I have a private well within the affected area and have been consuming the water. Am I going to get sick?**

The levels of naturally occurring selenium and uranium that have been detected in the private well water samples tested to-date do not pose any immediate risks to health. Long-term consumption – over many decades/a lifetime – of elevated levels of these two elements can be associated with health effects. The results from testing that AHS is recommending will allow AHS to further assess any long-term risks to health, and advise of any necessary steps to reduce those risks.

### **What are the health effects associated with long-term consumption of selenium at levels higher than recommended guidelines?**

Long-term consumption, over many years or decades/a lifetime, of selenium at levels that exceed drinking water guidelines has been associated with discolouration of skin, deformation and loss of nails, reversible hair loss, lack of mental alertness and neurological problems.

### **What are the health effects associated with long-term consumption of uranium at levels higher than recommended guidelines?**

Long-term consumption, over many years or decades/a lifetime, of uranium at levels that exceed drinking water guidelines has been linked to kidney damage.

### **How will my water be tested?**

Water samples submitted to the Three Hills Community Health Centre will be sent to the Alberta Centre for Toxicology and will be tested for the presence of trace metals. As well, a routine chemistry test will also be conducted on the water samples.

**I have a private well but I am not inside the area you have outlined. Can I have my well water tested?**

AHS is providing one-time, scheduled, free testing to residents with private well water supplies located in areas north of north of Twp Road 31-0, south of Twp Road 33-0, east of Range Road 24-0 to the Red Deer River, and west of the Red Deer River to Range Road 24-0 submit a sample from their private well for trace metal testing ONLY. This includes some residents of the town of Three Hills who are on private wells.

Properties that are **not** located within the defined geographic area are not eligible to submit water samples for this free testing.

Water wells that are **not** connected to a house or residential building are also not eligible for this free testing, even if the well is located within the defined geographic area.

In general, Alberta Health Services always recommend that all Albertans who use water from a private well regularly test their water to ensure safe consumption. Specifically, AHS EPH recommends private well water testing for bacteria be completed twice per year, with at least one of those two tests being in the spring and/or early summer. AHS EPH also recommends that private well water testing for chemicals be completed every two to five years.

**I live in the affected area but do not own the property. Can I still submit a sample for testing?**

The registered owner of the property/water well will need to submit the water sample, in order for it to be eligible for free testing. If you are renting/residing on the property and are not the registered owner, please contact the owner of the property and advise them of this issue and the opportunity for this one-time testing.

**What do I do if my private well water test does show higher than recommended levels of selenium and/or uranium?**

If your test results indicate higher than recommended levels of selenium and/or uranium, you will receive information, by phone, and follow-up by mail, outlining recommended actions/options. If you require further information, you can contact the AHS Environmental Public Health Office in Drumheller by calling 403-823-3341.

**If I boil my water does it remove the selenium or uranium?**

No, boiling water does not remove selenium or uranium.

**If my private well water test does show higher than recommended levels of selenium and/or uranium is it safe to use for cooking or cleaning?**

As cooking does not remove the selenium or uranium, water containing high levels of uranium or selenium is not recommended for food preparation of any kind, including infant formula preparation. If your well is found to have high levels of uranium or selenium, you will be advised on necessary steps to take, including switching to an alternative source of drinking water/food prep water.

Household cleaning can still be done with the well water provided there is no possibility of ingesting the water.

**Is there anything I can do to remove selenium or uranium from my water?**

Reverse osmosis and distillation are the most common methods to remove both selenium and uranium from water when it occurs naturally at low levels. You may also choose to switch to an alternative drinking water supply, such as bottled or processed water if you do not have access to a chlorinated municipal water supply.

**If my test results do NOT indicate levels of selenium or uranium that exceed guidelines, can I drink my water safely, or, do I need to test my water again?**

If levels of selenium and/or uranium don't exceed guidelines and there are no other health parameters that are exceeded, your water is safe for you to continue to consume without any additional treatment. AHS EPH recommends private well water testing for bacteria be completed twice per year, with at least one of those two tests being in the spring and/or early summer. AHS EPH also recommends that private well water testing for chemicals be completed every two to five years.

This would be a routine process for you to undertake, as a private well owner/user.

**I have questions about my test results. Who do I call?**

If you require further information now, or have questions about your results after you receive them, please contact the AHS Environmental Public Health office in Drumheller at 403-823-3341.

**I live in the affected area but my drinking water comes from a municipal supply. Am I at risk?**

No. Water from municipal supplies in the affected area is not impacted by this issue. Only the private well water in the affected area could be impacted by this issue.

**How do I know if my water comes from a municipal supply?**

If you have water transported from another location or you are billed for water usage, your water almost certainly comes from a municipal supply.