

Potable Water Regulation - High Quality Groundwater (HQGW) Definition and Fluoride

Update

Background

Fluoride is a naturally occurring mineral which can be found in most sources of drinking water across Canada. Health Canada has established a maximum allowable concentration (MAC) of 1.5 mg/L for fluoride in drinking water under the [Guidelines for Canadian Drinking Water Quality](#) (GCDWQ) to protect against adverse health effects.

Alberta Environment and Parks (AEP) adopted Health Canada's MAC of 1.5 mg/L for waterworks systems in Alberta; however, has allowed groundwater systems with naturally occurring fluoride to have a maximum concentration of 2.4 mg/L. This allowance is reflected in the definition of high quality groundwater in the [Potable Water Regulation](#).

Proposed Change

The definition of high quality groundwater will be adjusted to remove the exception that allowed naturally occurring fluoride concentrations up to 2.4 mg/L. This change will result in a requirement to meet the MAC for fluoride of 1.5 mg/L. This change will:

- Align with other regulated waterworks systems in the province and current Health Canada guidelines that are science-based and collaboratively built with other provinces, and territories;
- Enable consistent application of the current Health Canada fluoride MAC across all Alberta drinking waterworks systems; and
- Support ongoing management of public health risks using current science.

The definition of HQGW will also change in the [Activities Designation Regulation](#), [Code of Practice for Waterworks Systems using High Quality Groundwater](#), and [Action protocol for exceedances of chemical health parameters in drinking water](#).

Who is affected?

Waterworks systems using high quality groundwater as their source water and that currently have naturally occurring fluoride concentrations above 1.5 mg/L in their source water.

Implementation

All AEP regulated waterworks systems that have elevated concentrations of naturally occurring fluoride above 1.5 mg/L will be provided time to assess the quality of their raw source water and create a plan to manage concentrations.

Waterworks systems that cannot meet fluoride concentrations below 1.5 mg/L in their source water will be required to shift to an [Environmental Protection and Enhancement Act](#) (EPEA) Approval.

Waterworks systems whose source water can remain below 1.5 mg/L will continue to be regulated under an EPEA Registration that follows the *Code of Practice for Waterworks Systems Using High Quality Groundwater*, as amended.

Treatment

Waterworks systems with naturally occurring fluoride levels greater than the MAC of 1.5 mg/L, can be treated on both municipal and residential scales through various approaches and technologies.

At the municipal level, options may include but are not limited to:

- Source water selection and management
- Treatment processes—activated alumina, reverse osmosis, lime softening, ion exchange, etc.
- Regionalization – connect to receive treated water from another provider

At the residential scale, options include but are not limited to:

- Removal of excess fluoride levels by point-of-use (POU) or point-of-entry (POE) treatment technologies (i.e. reverse osmosis, distillation systems)

Where can I learn more?

Health Canada's [Guidelines for Canadian Drinking Water Quality: Guideline Technical Document – Fluoride](#)

For more information contact:

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