



Updates from the Water Quality Program at Health Canada

Anne Vezina and France Lemieux CWWA Window on Ottawa Virtual Luncheon Series June 21st, 2023

YOUR HEALTH AND SAFETY ... OUR PRIORITY.

Outline

- What we are working on
 - Current & upcoming priorities
 - Public consultations, final documents
- Updates on:
 - PFAS
 - Corrosion control
 - Iron
 - Operational guidelines
- Spotlight on challenges:
 - Fluoride
 - Asbestos
- Web content and outreach products

Current priorities

- 1,1-Dichloroethylene
- 1,4-Dichlorobenzene
- 2,4,6-Trichlorophenol
- Acrylamide
- Antimony
- Arsenic
- Asbestos
- Corrosion control
- Fluoride
- HAAs

- Iron
- Operational guidance
- PFAS
- Premise plumbing / legionella
- Radiological parameters
- Recreational water guidelines
- THMs

Upcoming priorities (next 5 years)

- Bisphenol A
- Boil Water Advisories / Drinking Water Advisories
- Chlorate/chlorite
- Cyanide
- Estriol / Estrone
- Formaldehyde
- Hydrocarbons
- Intake-to-Tap
- Nitrilotriacetic Acid

- Overview microbiological document
- Pentachlorophenol
- Phthalates
- Styrene
- TCE
- Turbidity
- Vanadium
- Zinc

Public consultations

Recently completed:

- Guidelines for Canadian Recreational Water Quality:
 Microbiological Pathogens and Biological Hazards (ended November 2, 2022)
- Draft Guidance on Sampling and Mitigation Measures
 for Controlling Corrosion (ended February 15, 2023)
- Draft Technical Document Guidelines for Canadian Drinking Water Quality – Antimony (ended March 8, 2023)
- Draft Objective for Per- and Polyfluoroalkyl Substances in Canadian Drinking Water (ended April 12, 2023)

Public consultations (continued)

Upcoming:

- Iron
- Operational Guidelines
- Radiological parameters
- Recreational Water: Microbiological sampling and analysis
- Recreational Water: Microbiological pathogens and biological hazards

Final documents

Recently published:

- Guidelines for Canadian Drinking Water Quality: Summary Tables (Sept 2022)
- Guidance on **Waterborne Pathogens** in Drinking Water (Sept 2022)
- Guidelines for Canadian Drinking Water Quality: Dimethoate and Omethoate (Sept 2022)
- Guidelines for Canadian Drinking Water Quality: Malathion (Jan 2023)
- Canadian Recreational Water Quality Guidelines: Indicators of fecal contamination (Feb 2023)
- Canadian Recreational Water Quality Guidelines: Guidelines for Understanding and Managing Risks in Recreational Waters (Mar 2023)
- Guidelines for Canadian Drinking Water Quality: Boron (Mar 2023)

Final documents

Upcoming

- Recreational water quality:
 - Physical, Aesthetic and Chemical Characteristics;
 - Microbiological pathogens and biological hazards;
 - Summary Document.
- Corrosion control
- Antimony
- PFAS Objective
- Report of fluoride expert panel

PFAS -Basis for the Objective

- Levels of PFAS found in Canadian waters
- Availability of validated methods to detect PFAS
- Ability of technology to remove PFAS
- Lowest concentrations that are technically achievable for a larger number of quantifiable PFAS
- Although health effects information was considered, a quantitative health-based risk assessment was not conducted



Health Considerations

- Toxicity information available for a limited number of PFAS
- Effects commonly reported in animals: liver, immune system, kidney, reproduction, development, endocrine system (thyroid), the nervous system, and metabolism (lipids, glucose homeostasis, body weight).
- Outcomes in human studies involve similar endpoints
- New science: rapidly developing, effects at progressively lower levels, no consensus on key endpoint



Why is the Objective lower than previous Guidelines and Screening Values?

- Research is occurring at a very rapid pace
- The objective is based on the best available information at this time
 - ➡ Value may change again as the science is updated

To reduce exposure to multiple PFAS through drinking water and lower the risk to health

Public Comments -summary

Comment Categories	Highlights from comments in this category
Consider other PFAS exposure sources /point source reduction	A number of commenters mentioned that since drinking water is not generally the main source of exposure to PFAS, the Government of Canada should be exploring other ways to reduce exposure to, and manage the risk from, PFAS.
Grouping is not science (or health) based	A number of commenters are concerned about evaluating PFAS as a class, believing it will lead to an overestimation of risk.
No definition/scope for PFAS. Align with SOPR	A number of commenters indicated that it was premature to develop drinking water guidance without having released the SOPR with a Canadian definition for PFAS.

Corrosion Control – some history...

Current corrosion control guidance document in 2007; Final document published in 2009



Guidance on Controlling Corrosion in Drinking Water Distribution Systems







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> Guidance on Sampling and Mitigation Measures for Controlling Corrosion

Guidance Document for Public Consultation

Consultation period ends February 15, 2023

 Image: State Stat

2023 update to reflect new science and protocols

Canada

Changes in guidelines since 2009

- Distribution system information now included in guidelines
- Accumulation/release of metals included in guideline documents on:
 - cadmium

• manganese

- chromium
- lead

• uranium

strontium

- Revised pH document (pH 7-10.5) in recognition of corrosion impacts and treatment effectiveness
- Clearly identified need to monitor at the tap for lead, copper and other metals
- Addressed impact of nitrification on pH in ammonia, nitrite/nitrate and chloramines documents

Focus of revised corrosion guidance

- Protocols for assessing corrosion control – primary focus on Pb
- Reflects revised Pb MAC
 complementary approach
- Updated information on optimizing and implementing corrosion control
- Includes newest available information on orthophosphate, silicates, etc.
- Updated information on monitoring



CWWA consultation comments (1)

- Responsibility of utility vs homeowner
 To be clarified and stated at beginning
- Clarify how Guidance document complements Pb – Links between sampling protocols and objectives;
- Limited information implementation of programs
 Companion document to be made available
- Greater emphasis on lead service line removal
 Text to be added to further emphasize this option
- Missing recent Canadian research
 - Related to lag time between completion and publication; New information will be added

CWWA consultation comments (2)

- Sampling protocols need clarification
 Sampling protocols in A.2.5. will be clarified as needed
- Limited information on how to implement corrosion control program
 - Development of companion document on corrosion control programs in progress (contract with Dalhousie)
- RDT sampling, variability and sampling size
 - Add clarification as needed for these points and differences with other sampling protocols
- Corrosion indices
 - Add clarification on use and limitations
- Review period

Iron –Considerations for revision

- The current guideline (1978, 1987) for iron is an aesthetic objective (AO) ≤ 0.3 mg/L (≤ 300 µg/L) as total iron
- Is aesthetic objective still appropriate?
 - Studies on lower visual and taste thresholds
- Removal of iron helps with manganese control/removal
- Distribution system impacts
 - Iron (II) depletes disinfectant residual
 - Water quality issues (turbidity, water discolouration)
 - Accumulation/remobilization of metals (e.g. Pb) with Fe
 - Provides habitat for microorganisms
 - Reduced hydraulic capacity (unlined cast iron, galvanized pipes)

Operational Guidelines

- Consolidates 7 operational parameters
 - Most were written in the 70's and 80's
 - One guideline document rather than 7 separate guidelines
- Operational document will include:
 - Hardness, Calcium, Magnesium, Chloride, Sulphate
 - Total dissolved solids (TDS)
 - Total sulphide (Hydrogen Sulphide, H2S)
- Status: peer-reviewed and approved by CDW

Fluoride

- Current guideline for fluoride in drinking water was established in 2010;
- Identified as a priority assessment group 1, which includes any chemicals that are classified as high priority for review based on new information about either health risk, treatment and measurement methods, or needs identified by federal, provincial and territorial authorities;
- At this time, we are actively reviewing the latest science on the health effects from fluoride in drinking water.

Fluoride (continued)

- Health Canada convened an expert panel on this topic early in June 2023 to discuss how the new science might impact the Health Based Value for fluoride in drinking water;
- We expect to publish a report of that panel's findings, which will inform the health risk assessment and the update of the guideline for fluoride in drinking water;
- Once updated, guideline technical document will be available for a public comment period.

Asbestos

- Increased media attention on asbestos cement pipes throughout Canada
- Focus on possible health effects caused by asbestos from deteriorating pipes into drinking water.
- Asbestos cement pipes were installed in the mid-20th century and remain in use across Canada.
- Health Canada's position is that there is no consistent, convincing evidence that asbestos ingested through drinking water is harmful to your health.
 - This position is consistent with WHO and the Australian National Health and Medical Research Council (NHMRC).
- The current Health Canada guideline for asbestos in drinking water was published in 1989 and Health Canada has recently started the update.

Web content and outreach products

Infographics:

- Finding a drinking water filter (April, 2023)
- Cleaning faucet aerators (April, 2023)
- Other outreach products:
- Recreational water web content (June 2023)
- Health Canada Healthy Homes water component

 Virtual workshop on private well water testing in Canada (January 2023) – possibility of a follow-up workshop on private wells (topic TBD)



How to stay connected

- New email subscription system: Consultation and Stakeholder Information Management System (CSIMS). Join at <u>https://csims-sgici.hc-</u> <u>sc.gc.ca/csims/login.html?lang=en</u>
 - To ensure you continue receiving notices about water quality, including recreational water, please register and choose "drinking water quality" under Area of Interest
- Website: <u>www.canada.ca</u> (search for drinking water)
- Canada Gazette: The official newspaper of the Government of Canada <u>http://www.gazette.gc.ca/accueil-home-eng.html</u>



Useful link to Canadian water information

 Summary Tables Canadian Guidelines for Drinking Water Quality

https://www.canada.ca/en/healthcanada/services/environmental-workplace-health/reportspublications/water-quality/guidelines-canadian-drinking-waterquality-summary-table.html



Contacts

- Anne Vezina, Senior Science Advisor, Water Quality Program: <u>anne.vezina@hc-sc.gc.ca</u>
- France Lemieux, Head of Materials and Treatment, Water Quality Program: france.lemieux@hc-sc.gc.ca
- Stephanie McFadyen, Manager, Water Quality Program: <u>stephanie.mcfadyen@hc-sc.gc.ca</u>
- For easy access to Health Canada's drinking water program:
 - Email inquiries: <u>hc.water-eau.sc@canada.ca</u>
 - Phone number: 1-833-223-1014 (toll free)