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Guidance for Issuing and Rescinding Drinking Water Avoidance Advisories in Emergency Situations

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Guidance for Issuing and Rescinding Drinking Water Avoidance Advisories in Emergency Situations

Federal-Provincial-Territorial Committee on
Drinking Water

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Other documents concerning Canadian drinking water quality can be found on the following Web page: www.healthcanada.gc.ca/waterquality

Table of contents

Background on Guidance Documents	1
<u>Part A - Guidance on drinking water avoidance advisories</u>	2
A.1 Incident response	2
A.2 Conditions for issuing a drinking water avoidance advisory	3
Types of drinking water advisories	3
A.3 Conditions for rescinding a drinking water avoidance advisory	4
A.4 Other drinking water advisories	4
<u>Part B - Supporting information</u>	5
B.1 References	5

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Background on Guidance Documents

The main role of the Federal-Provincial-Territorial Committee on Drinking Water is the development of the *Guidelines for Canadian Drinking Water Quality*. This role has evolved over the years, and new methodologies and approaches have led the Committee to develop a new type of document, Guidance documents, to provide advice and guidance on issues related to drinking water quality for parameters that do not require a formal Guideline for Canadian Drinking Water Quality.

There are two instances when the Federal-Provincial-Territorial Committee on Drinking Water may choose to develop guidance documents. The first would be to provide operational or management guidance related to specific drinking water related issues (such as boil water advisories), in which case the documents would provide only limited scientific information or health risk assessment.

The second instance would be to make risk assessment information available when a guideline is not deemed necessary. The Federal-Provincial-Territorial Committee on Drinking Water establishes the *Guidelines for Canadian Drinking Water Quality* specifically for contaminants that meet all of the following criteria:

1. exposure to the contaminant could lead to adverse health effects;
2. the contaminant is frequently detected or could be expected to be found in a large number of drinking water supplies throughout Canada; and
3. the contaminant is detected, or could be expected to be detected, at a level that is of possible health significance.

If a contaminant of interest does not meet all these criteria, the Federal-Provincial-Territorial Committee on Drinking Water may choose not to establish a numerical guideline or develop a Guideline Technical Document. In that case, a guidance document may be developed.

Guidance documents undergo a similar process as Guideline Technical Documents, including public consultations through the Health Canada web site. They are offered as information for drinking water authorities, and in some cases to help provide guidance in spill or other emergency situations.

Part A - Guidance on drinking water avoidance advisories

Drinking water avoidance advisories are public announcements that are typically issued by responsible authorities in emergency situations (such as a chemical spill upstream of a drinking water intake) to advise the public that they should avoid using their tap water, either completely or for specified uses. Water avoidance advisories are much less common than boil water advisories. They would typically be issued following a catastrophic event such as a natural disaster or as a result of accidental or deliberate action, where the drinking water or its source may or has become heavily contaminated (usually by chemicals) and its use could pose a significant public health risk. These advisories are not intended to address short-term minor exceedances over existing guideline values, as the guidelines generally represent a level of exposure that is acceptable over a lifetime (70 years) without causing an increased risk to health.

Decisions concerning the issuing of drinking water avoidance advisories are made at the provincial/territorial or local level, using a risk management/risk assessment approach based upon site-specific knowledge and conditions. Specific guidance related to drinking water advisories, including issuing, rescinding, and implementing these advisories, should be obtained from appropriate drinking water authorities in the affected jurisdiction. This document summarizes the factors that these authorities should consider in their decisions with regard to issuing and rescinding drinking water avoidance advisories in emergency situations.

A.1 Incident response

A quick and effective response to catastrophic, accidental, or deliberate incidents (e.g., chemical spill which could impact a source of drinking water), such as the issuing of a drinking water avoidance advisory, is a critical part of the source to tap approach to the provision of safe drinking water (CCME, 2004). Consequently, incident response teams should be in place before an incident occurs to quickly respond to any drinking water-related event that has had or may have an effect on drinking water quality or public health. Incident response team members should include professionals responsible for source water protection, treatment plant operation and water distribution, water quality monitoring, regulation of drinking water, and public health surveillance. Incident response teams provide an effective mechanism for the rapid exchange of information, so that any remedial measures that may be required in the watershed, at the treatment plant, or in the distribution system can be instituted without delay. It is also important for appropriate communication mechanisms to have been identified prior to the occurrence of an incident, so that those that may be affected, such as residents, workers, and travellers, can be notified as soon as possible.

Depending on the nature and seriousness of the incident, the team should also have established criteria to determine the type of advisory that should be issued and when it can be rescinded. In some jurisdictions, these criteria may be specified in applicable regulations.

A.2 Conditions for issuing a drinking water avoidance advisory

Drinking water avoidance advisories may be issued in situations where there is a potential or confirmed incident of contamination, when the contaminant of concern may not be removed or inactivated by boiling, when there is a significant risk from ingestion, dermal contact, or inhalation of the contaminant, or when an unknown or unexpected chemical contaminant is detected in the distribution system. Drinking water avoidance advisories should be issued only when there is convincing evidence of a potential or real significant public health risk, and every effort should be made to minimize the risk of adverse effects without unnecessarily disrupting the use of the water supply. When alternative supplies are recommended, it is essential to ensure the microbiological safety of the alternative supplies before they can be used.

Examples of circumstances that could trigger the issuance of drinking water avoidance advisories include:

- the occurrence of a catastrophic event, an accident, or deliberate action that may or has caused massive contamination of the drinking water supply;
- significant exceedance of the guideline value for a chemical contaminant with an acute health effect from short-term exposure;
- the presence of a chemical contaminant with no established guideline, but which may pose a health risk from short-term exposure;
- changes in colour, odour, or taste that are significant or unexpected or that have no identified source; and
- intrusion of unknown contamination due to cross-connection problems.

Depending on the contaminant of concern, specific or additional guidance may be necessary for sensitive subpopulations, such as pregnant women or bottle-fed infants. It may also be necessary to provide advice to specific target groups, such as dentists, doctors, and operators of health care facilities, food processors, retail food establishments, day care facilities, schools, hotels, restaurants, spas, and swimming pools.

Types of drinking water advisories

Recommendations regarding the water avoidance advisory will depend on the nature of the problem. The applicable recommendations should be included in the communication to the public and fall into two main categories:

- In cases where the exposure to the contaminant is only of concern through ingestion, potentially rendering the water unsuitable for drinking or cooking purposes, a “do not consume” advisory would be issued, advising the public to avoid using the water for drinking; preparing food, beverages, or ice cubes; washing fruits and vegetables; dish-washing; and personal hygiene, such as brushing teeth. However, the water supply can be used for other domestic purposes, such as toilet flushing and showering/bathing.
- In cases where dermal or inhalation exposure to the contaminant of concern in drinking water could affect the skin, eyes, and/or nose, a “do not use” advisory would be issued to advise the public to avoid the water for all domestic purposes, including all uses identified for a “do not consume” advisory, as well as activities such as showering and bathing.

It should be emphasized that drinking water avoidance advisories rarely, if ever, require a cessation of supply, as the water will most likely be suitable for domestic purposes such as flushing toilets and washing clothes and necessary for essential services such as firefighting.

A.3 Conditions for rescinding a drinking water avoidance advisory

The primary criterion for rescinding a drinking water avoidance advisory is the resolution of the situation that prompted the issuing of the advisory. This can be through confirmation that the contamination did not occur, the risk of contamination has been averted, or the contamination event has been resolved. More specifically, drinking water avoidance advisories may be rescinded:

- when there is evidence that the quality of the source water shows no contamination and the drinking water is safe for drinking and other uses;
- when there is evidence that the source of elevated concentrations of the hazardous contaminant has been removed and the distribution system (including the plumbing systems within buildings) has been thoroughly flushed;
- if the cause of the advisory was a chemical spill impacting the drinking water source, when the spill has been dealt with and appropriate action has been taken to prevent a recurrence;
- when failures associated with treatment processes/distribution systems, including measures to address a cross-connection issue, have been corrected; or
- once appropriate treatment has been installed to effectively remove/reduce the contaminant of concern.

A.4 Other drinking water advisories

When the contaminant of concern to a drinking water supply is a microbiological parameter, then a “boil water advisory” can be issued as a preventative measure to protect public health from waterborne infectious agents that could be or are known to be present in the drinking water.

For advice on dealing with boil water advisories, refer to the Guidance Document entitled “Issuing and Rescinding Boil Water Advisories” (Health Canada, 2009).

Part B - Supporting information

B.1 References

CCME. From source to tap: Guidance on the multi-barrier approach to safe drinking water. Produced jointly by the Federal-Provincial-Territorial Committee on Drinking Water and the CCME Water Quality Task Group. Canadian Council of Ministers of the Environment, Winnipeg, Manitoba. 2004. (www.ccme.ca/assets/pdf/mba_guidance_doc_e.pdf)

Health Canada. *Guidelines for Canadian Drinking Water Quality: Guidance document — Issuing and rescinding boil water advisories*. Water, Air and Climate Change Bureau, Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario. 2009.