
Recreational Water Quality Guidelines and Aesthetics

Summary — Guidelines for Canadian recreational water quality.

Parameter	Guideline
Microbiological	
<i>Escherichia coli</i> (fecal coliforms)	The geometric mean of at least five samples taken during a period not to exceed 30 d should not exceed 2000 <i>E. coli</i> per litre. Resampling should be performed when any sample exceeds 4000 <i>E. coli</i> per litre. See Health and Welfare Canada (1992) for additional information on application of guideline.
Enterococci	The geometric mean of at least five samples taken during a period not to exceed 30 d should not exceed 350 enterococci per litre. Resampling should be performed when any sample exceeds 700 enterococci per litre. See Health and Welfare Canada (1992) for additional information on application of guideline.
Coliphages	Limits on coliphages can not be specified at this time. See Health and Welfare Canada (1992) for additional information.
Waterborne pathogens	The pathogens most frequently responsible for diseases associated with recreational water use are described in Health and Welfare Canada (1992), i.e., <i>Pseudomonas aeruginosa</i> , <i>Staphylococcus aureus</i> , <i>Salmonella</i> , <i>Shigella</i> , <i>Aeromonas</i> , <i>Campylobacter jejuni</i> , <i>Legionella</i> , human enteric viruses, <i>Giardia lamblia</i> , and <i>Cryptosporidium</i> .
Cyanobacteria (blue-green algae)	Limits have not been specified. Health Canada is in the process of developing a numerical guideline for microcystin, a cyanobacterial toxin. Water with blue-green surface scum should be avoided because of reduced clarity and possible presence of toxins.
Chemical characteristics	
Temperature	Limits for chemicals have not been specified because of lack of data. Decisions for use should be based on an environmental health assessment and the aesthetic quality. Dermal exposures to environmental contaminants has recently been reviewed by Moody and Chu (1995).
Clarity	The thermal characteristics of water should not cause an appreciable increase or decrease in the deep body temperature of bathers and swimmers.
pH	The water should be sufficiently clear that a Secchi disc is visible at a minimum of 1.2 m.
Turbidity	When the buffering capacity of the water is very low, 6.5 to 8.5; range of 5.0 to 9.0 is acceptable.
Oil and grease	A limit of 50 Nephelometric Turbidity Units (NTU) is suggested.
Aquatic plants	Oil or petrochemicals should not be present in concentrations that <ul style="list-style-type: none"> • can be detected as a visible film, sheen, or discoloration on the surface; • can be detected by odour; or • can form deposits on shorelines and bottom deposits that are detectable by sight and odour.
Aesthetics	Bathers should avoid areas with rooted or floating plants; very dense growths could affect other activities such as boating and fishing.
Nuisance organisms	All water should be free from <ul style="list-style-type: none"> • materials that will settle to form objectionable deposits; • floating debris, oil, scum, and other matter; • substances producing objectionable colour, odour, taste, or turbidity; and • substances and conditions or combinations thereof in concentrations that produce undesirable aquatic life.
	Bathing areas should be as free as possible from nuisance organisms that <ul style="list-style-type: none"> • endanger the health and physical comfort of users or • render the area unusable. Common examples include biting and nonbiting insects and poisonous organisms, for example jelly-fish.

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