



Long-Term Average vs. Short-Term Maximum Water Quality Guidelines

The Ministry of Environment (MOE) approves water quality guidelines (WQGs) to protect water quality in BC. WQGs are developed for different water uses, including drinking water, aquatic life, wildlife, and agriculture. WQG documents may also include sediment quality guidelines.

WQGs provide direction to those making decisions affecting water quality. WQGs do not have any direct legal standing, but are MOE policy and must be considered in any decision affecting water quality made within the MOE. WQGs are used to assess potential risks to water quality and may be used as the basis for determining the allowable limits in waste discharge authorizations. WQGs do not take into account local environmental conditions and as a result natural conditions may exceed some guidelines.

What is a long-term average WQG?

Long-term average (i.e. chronic) WQGs are intended to protect the most sensitive species and life stage against sub-lethal and lethal effects for indefinite exposures. An averaging period approach is used for these WQGs. This approach allows concentrations of a substance to fluctuate above and below the guideline provided that the short-term maximum is never exceeded and the long-term average is met over the specified averaging period (e.g. 5 samples in 30 days). Averaging periods are chosen as reasonable and practical durations to address long-term effects and to fit into monitoring timetables.

Note that exceeding a long-term water quality guideline does not imply that an unacceptable risk exists, but rather that the potential for adverse effects may be increased and additional

investigation may be required for consideration in resource management decisions.

The long-term average WQG is the appropriate guideline for situations where water quality parameters are being influenced by ongoing anthropogenic activities.

What is a short-term maximum WQG?

A short-term maximum (i.e. acute) WQG is a level that should never be exceeded in order to meet the intended protection of the most sensitive species and life stage against severe effects such as lethality over a defined short-term exposure period (e.g. 96 hrs). Short-term maximum WQGs are intended to assess risks associated with infrequent exposure events such as spills.

What if I don't monitor often enough to meet the monitoring criteria for the long-term average WQG?

If the monitoring frequency at a site is insufficient to meet the requirements for the specified averaging period of the long-term average WQG (often 5 samples over 30 days), then individual samples will be compared against the long-term average WQG. In this case, failure of any individual sample to meet the long-term average guideline would serve as an alert signal to increase the monitoring frequency.

Resources

BC Water Quality Guidelines -

<http://www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-quality/water-quality-guidelines>