

## Environmental Quality Standards

Environmental quality standards are the “measuring stick” against which the acceptability of the presence and concentration of substances in soil, surface water, ground water, vapour and sediment are determined. They help us better assess the quality of the environment and how clean “clean” is.

### What are environmental quality standards and what are they used for?

The environmental quality standards are based on and designed to be protective of the toxicological effects of contaminants on both human and environmental health.

**Human health** – The potential effects of environmental contamination on humans range from minor physical symptoms to life-threatening diseases such as cancer. Children are often most at risk from exposure to contaminated soil, air, water, and food.

**Environmental health** – Contamination can seriously affect the environment by releasing substances that kill fish, impair the reproduction of birds, and contaminate the food web.

Standards can be used to:

- determine if a site is contaminated;
- determine when a site has been adequately cleaned up; and
- determine when a Contaminated Soil Relocation Agreement may occur

### What types of standards are there?

The *Environmental Management Act* (EMA) and Contaminated Sites Regulation (the Regulation) define two general types of standards:

- **Numerical standards** define acceptable concentrations of substances in soil, surface water, groundwater, vapour and sediments.
- **Risk-based standards** are acceptable risk levels from exposure to substances at sites.

Within these general areas, there are five specific types:

*Matrix numerical standards* provides a matrix of environmental and human health protective standards for various site-specific exposure pathways and conditions.

*Generic numerical standards* are intended to protect human health and the environment at any site, without any consideration of site-specific features.

*Site-specific numerical standards* are derived under Protocols using models, equations, site data, and specific site information. Site specific numerical standards apply only to the specific site for which they were derived.

*Director’s interim numerical standards* are environmental quality standards for a substance that a Director of Waste Management has the legal power to adopt when he or she believes necessary to protect human or ecological health. A Director’s interim standard has the same legal effect as a standard set out in a schedule in the Regulation. However, a Director’s Interim

standard ceases to have legal effect after one year, unless it is adopted into the Regulation.

*Risk-based standards* pertain both to the protection of the environment and human health. Unlike numerical standards, legally, the risk based standards cannot be used to determine if a site is contaminated. The risk-based standards take the form of specified risk levels, to be used in human health and ecological risk assessment. The Regulation's default risk-based standards are similar to those used in many jurisdictions throughout North America. The default risk-based standards were developed in consultation with the B.C. Ministry of Health, the B.C. Medical Health Officers Council and Provincial and International ecological health experts.

### **How were the standards derived?**

The numerical standards in Schedules 3.1 (Parts 1, 2 and 3), 3.2, 3.3 and 3.4 of the Regulation are generally either derived in accordance with [Protocol 28, "2016 Standards Derivation Methods"](#) or adopted and modified as necessary from various other jurisdictions (e.g. US EPA, Health Canada, World Health Organization, etc.) in accordance with Protocol 28 and [Technical Guidance 7, "Supplemental guidance for Risk Assessments"](#).

For further information about environmental quality standards, see [Technical Guidance 3, "Environmental Quality Standards"](#).

*Note: This summary is solely for the convenience of the reader. The current legislation and regulations should be consulted for complete information.*

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