

Users are advised to consult the Canadian Environmental Quality Guidelines introductory text, factsheet, and/or protocols for specific information and implementation guidance pertaining to each environmental quality guideline.

Lead

Parameter 1: INORGANIC

Parameter 3: Metals

Water Quality for the Protection of Aquatic Life

Freshwater

Concentration ($\mu\text{g/L}$)

Equation

The CWQG for lead is related to water hardness (as CaCO_3):

When the hardness is 0 to ≤ 60 mg/L, the CWQG is 1 $\mu\text{g/L}$

At hardness >60 to ≤ 180 mg/L the CWQG is calculated using this equation (see calculator below)

$$\text{CWQG } (\mu\text{g/L}) = e^{(1.273[\ln(\text{hardness})] - 4.705)}$$

At hardness >180 mg/L, the CWQG is 7 $\mu\text{g/L}$

If the hardness is unknown, the CWQG is 1 $\mu\text{g/L}$

The online calculator (below) will return the correct value over the entire range of hardness.

Enter water hardness here:

mg/L CaCO_3

Calculated lead guideline:

$\mu\text{g/L}$ Pb

Note: No fact sheet created. For more information on this guideline, please refer to Canadian Water Quality Guidelines (CCREM 1987). Out of convenience, this guideline was presented as a range depending upon the water hardness in earlier versions of CCME (1999). It is now presented as an equation as it originally appears in CCREM (1987).

Date 1987

Marine

Concentration (µg/L) *No data*

Date *No data*

Water Quality for the Protection of Agriculture

Irrigation

Concentration (µg/L) 200

No fact sheet created. For more information on this guideline, please refer to Canadian Water Quality Guidelines (CCREM 1987).

Date 1987

Livestock

Concentration (µg/L) 100

No fact sheet created. For more information on this guideline, please refer to Canadian Water Quality Guidelines (CCREM 1987).

Date 1987

Sediment Quality for the Protection of Aquatic Life

Further documentation on these guidelines can be found in the Canadian Environment Quality Guidelines.

[Download Factsheet](#)

Freshwater

Concentration (µg/kg dry weight) - ISQG 35 000

Guideline	% ≤ ISQG	ISQG < % < PEL	ISQG % ≥ PEL
Lead	5	23	42

Concentration (µg/kg dry weight) - PEL 91 300

Guideline	% ≤ ISQG	ISQG < % < PEL	ISQG % ≥ PEL
Lead	5	23	42

Date 1998

Marine

Concentration (µg/kg dry weight) - ISQG 30 200

Guideline	% ≤ ISQG	ISQG < % < PEL	ISQG % ≥ PEL
Lead	6	26	58
Concentration (µg/kg dry weight) - PEL			112 000
Guideline	% ≤ ISQG	ISQG < % < PEL	ISQG % ≥ PEL
Lead	6	26	58
Date			1998

Soil Quality for the Protection of Environmental and Human Health

Further documentation on these guidelines can be found in the Canadian Environment Quality Guidelines. [Download Factsheet](#)

Concentration (mg/kg dry weight) - Agricultural 70

Data are sufficient and adequate to calculate a Soil Quality Guideline for Human Health (SQG_{HH}) and a Soil Quality Guideline for Environmental Health (SQG_E). Therefore the soil quality guideline is the lower of the two and represents a fully integrated de novo guideline for this land use, derived in accordance with the soil protocol (CCME 1996;2006). The corresponding interim soil quality criterion (CCME 1991) is superseded by the soil quality guideline.

For guidelines derived prior to 2004, differentiation between soil texture (coarse/fine) is not applicable.

Concentration (mg/kg dry weight) - Residential / parkland 140

Data are sufficient and adequate to calculate a Soil Quality Guideline for Human Health (SQG_{HH}) and a Soil Quality Guideline for Environmental Health (SQG_E). Therefore the soil quality guideline is the lower of the two and represents a fully integrated de novo guideline for this land use, derived in accordance with the soil protocol (CCME 1996;2006). The corresponding interim soil quality criterion (CCME 1991) is superseded by the soil quality guideline.

For guidelines derived prior to 2004, differentiation between soil texture (coarse/fine) is not applicable.

Concentration (mg/kg dry weight) - Commercial 260

Data are sufficient and adequate to calculate a Soil Quality Guideline for Human Health (SQG_{HH}) and a Soil Quality Guideline for Environmental Health (SQG_E). Therefore the soil quality guideline is the lower of the two and represents a fully integrated de novo guideline for this land use, derived in accordance with the soil protocol (CCME 1996;2006). The corresponding interim soil quality criterion (CCME 1991) is superseded by the soil quality guideline.

For guidelines derived prior to 2004, differentiation between soil texture (coarse/fine) is not applicable.

Concentration (mg/kg dry weight) - Industrial 600

Data are sufficient and adequate to calculate a Soil Quality Guideline for Human Health (SQG_{HH}) and a Soil Quality Guideline for Environmental Health (SQG_E). Therefore the soil quality guideline is the lower of the two and represents a fully integrated de novo guideline for this land use, derived in accordance with the soil protocol (CCME 1996;2006). The corresponding interim soil quality criterion (CCME 1991) is superseded by the soil quality

guideline.

For guidelines derived prior to 2004, differentiation between soil texture (coarse/fine) is not applicable.

Date	1999
Tissue Residue Quality for the Protection of Wildlife Consumer of Aquatic Biota	
Concentration ($\mu\text{g}/\text{kg}$ diet wet weight)	<i>No data</i>
Date	<i>No data</i>