

**Negotiated Rule Draft No. 4  
Docket No. 58-0102-1502, Dated July 12, 2017**

Rule revisions have been made based on meeting discussions and review of written comments received. These revisions are highlighted in yellow.

**Written comment deadline for this draft – July 28, 2017**

**Water Quality Standards  
IDAPA 58.01.02**

**004. INCORPORATION BY REFERENCE.**

Codes, standards and regulations may be incorporated by reference in these rules pursuant to Section 67-5229, Idaho Code. Such incorporation by reference shall constitute full adoption by reference, including any notes or appendices therein, unless expressly provided otherwise in these rules. Copies of the codes, standards or regulations adopted by reference throughout these rules are available in the following locations: (8-24-94)

**01. ~~Department Guidance and Technical Support Documents.~~** Idaho Department of Environmental Quality, 1410 N. Hilton, Boise, Idaho 83706-1255, [www.deq.idaho.gov](http://www.deq.idaho.gov); ~~and~~ (4-5-00)

**02. ~~Law Library.~~** ~~State Law Library, 451 W. State Street, Boise, Idaho 83720.~~ (7-1-93)

**032. ~~Federal Documents-Code of Federal Regulations.~~** Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, [www.ecfr.gov](http://www.ecfr.gov), and ~~State Law Library, 451 W. State Street, Boise, Idaho 83720.~~ (4-11-06)

(Break)

**210. NUMERIC CRITERIA FOR TOXIC SUBSTANCES FOR WATERS DESIGNATED FOR AQUATIC LIFE, RECREATION, OR DOMESTIC WATER SUPPLY USE.**

Note: In 2016, Idaho updated human health criteria for 104 toxic substances (10 of which are new). Final rule submitted to EPA on December 13, 2016 (docket 58-0102-1201). Until EPA approves the revisions in this rule docket, the human health criteria published in 2005 Idaho Administrative Code in Subsection 210.01 continue to apply and are effective for CWA purposes. These criteria are listed in Numeric Criteria for Toxic Substances (2005). The previous human health criteria based on a fish consumption rate of 6.5 g/day published in 2005 Idaho Administrative Code in Subsection 210.05.b.i. continue to apply and are effective for CWA purposes. Until EPA approves the revisions in this rule docket, the additional fish-plus-water criterion for copper; the revisions in Subsections 070.08, 210.03, 210.04, 210.05.b.ii. and 400.06; and the definition of harmonic mean published in 2015 Idaho Administrative Code continue to apply and are effective for CWA purposes. For more information, go to <http://www.deq.idaho.gov/epa-actions-on-proposed-standards>.

**01. Criteria for Toxic Substances.** The criteria of Section 210 apply to surface waters of the state as follows. (5-3-03)

**a.** Columns B1 and B2 of the following table apply to waters designated for aquatic life use. (3-25-16)

**b.** Column C2 of the following table applies to waters designated for primary or secondary contact recreation use. (3-25-16)

**c.** Column C1 of the following table applies to waters designated for domestic water supply use.

A		B Aquatic life				C Human health for consumption of:		
(Number) Compound	<sup>a</sup> CAS Number	<sup>b</sup> CMC (µg/L)		<sup>b</sup> CCC (µg/L)		Carcinogen?	Water & fish (µg/L)	Fish only (µg/L)
		B1	B2	C1	C2			
6 Copper <sup>1</sup>	7440508	17	i	11	i		1,300	q
<sup>1</sup> Effective for CWA purposes. The CMC, CCC, and footnote are effective for CWA purposes until the date EPA issues written notification that the revisions adopted under Rule Docket No. 58-0102-1502 have been approved.								
6 Copper <sup>2</sup>	7440508	<u>12.3</u>	<i>r</i>	<u>7.6</u>	<i>r</i>		1,300	q
<sup>2</sup> Not yet effective for CWA purposes. The CMC, CCC, and footnote are not effective for CWA purposes until the date EPA issues written notification that the revisions adopted under Rule Docket No. 58-0102-1502 have been approved.								

Table Footnotes

*r. Aquatic life criteria for copper shall be derived in accordance with Subsection 210.03.c.v. For comparative purposes only, the example values displayed in this table correspond to the Biotic Ligand Model output based on the following inputs: temperature = 14.9°C, pH = 8.16, dissolved organic carbon = 1.4 mg/L, humic acid fraction = 10%, calcium = 44.6 mg/L, magnesium = 11.0 mg/L, sodium = 11.7 mg/L, potassium = 2.12 mg/L, sulfate = 46.2 mg/L, chloride = 12.7 mg/L, alkalinity = 123 mg/L CaCO<sub>3</sub> and sulfide = 1.00 x 10<sup>-8</sup> mg/L.*

(3-25-16)

Footnote r is not effective for CWA purposes until the date EPA issues written notification that the revisions adopted under Rule Docket No. 58-0102-1502 have been approved.

**02. Factors for Calculating Hardness Dependent Metals Criteria.** Hardness dependent metals criteria are calculated using values from the following table in the equations: (5-3-03)

a.  $CMC = WER \exp\{mA[\ln(\text{hardness})] + bA\}$  X Acute Conversion Factor. (5-3-03)

b.  $CCC = WER \exp\{mc[\ln(\text{hardness})] + bc\}$  X Chronic Conversion Factor. (5-3-03)

Metal	mA	bA	mc	bc	aAcute Conversion Factor	aChronic Conversion Factor
Arsenic	b	b	b	b	1.0	1.0
Cadmium	0.8367	-3.560	0.6247	-3.344	0.944 see footnote a	0.909

Chromium (III)	0.819	3.7256	0.8190	0.6848	0.316	0.860
Chromium (VI)	b	b	b	b	0.982	0.962
Copper	0.9422	-1.464	0.8545	-1.465	0.960	0.960

The values for calculating hardness dependent metal criteria for copper, set out in the Copper row above, are effective for CWA purposes until the date EPA issues written notification that the revisions adopted under Rule Docket No. 58-0102-1502 have been approved. The Copper row will be deleted upon EPA approval.

Lead	1.273	-1.460	1.273	-4.705	0.791	0.791
Mercury	b	b	b	b	0.85	0.85
Nickel	0.846	2.255	0.8460	0.0584	0.998	0.997
Silver	1.72	-6.52	c	c	0.85	c
Zinc	0.8473	0.884	0.8473	0.884	0.978	0.986

Note to table: The term “exp” represents the base e exponential function.

Footnotes to table:

a. Conversion factors (CF) are from “Stephan, C. E. 1995. Derivation of conversion factors for the calculation of dissolved freshwater aquatic life criteria for metals. U.S. Environmental Protection Agency, Environmental Research Laboratory – Duluth.” The conversion factors for cadmium and lead are hardness-dependent and can be calculated for any hardness (see limitations in Subsection 210.03.b.i.) using the following equations. For comparative purposes, the conversion factors for a total hardness of one hundred (100) mg/L are shown in the table. The conversion factor shall not exceed one (1).

Cadmium

Acute:  $CF=1.136672-[(\ln \text{hardness})(0.041838)]$  NOTE: The cadmium acute criterion equation was derived from dissolved metals toxicity data and thus requires no conversion; this conversion factor may be used to back calculate an equivalent total recoverable concentration.

Chronic:  $CF=1.101672-[(\ln \text{hardness})(0.041838)]$

Lead (Acute and Chronic):  $CF=1.46203-[(\ln \text{hardness})(0.145712)]$

b. Not applicable

c. No chronic criteria are available for silver.

(3-29-10)

**03. Applicability.** The criteria established in Section 210 are subject to the general rules of applicability in the same way and to the same extent as are the other numeric chemical criteria when applied to the same use classifications. Mixing zones may be applied to toxic substance criteria subject to the limitations set forth in Section 060 and set out below. (3-25-16)

(Break)

c. Application of aquatic life metals criteria. (3-25-16)

(Break)

v. Copper Criteria for Aquatic Life.

(1) Aquatic life criteria for copper shall be derived using:

(a) Biotic Ligand Model (BLM) software that calculates criteria consistent with the “Aquatic Life Ambient Freshwater Quality Criteria – Copper”: EPA-822-R-07-001 (February 2007); or

(b) An estimate derived from BLM outputs that is based on a scientifically sound method and protective of the designated aquatic life use.

(2) To calculate copper criteria using the BLM, the following parameters from each site shall be used: temperature, pH, dissolved organic carbon (DOC), calcium, magnesium, sodium, potassium, sulfate, chloride, and alkalinity. The BLM inputs for humic acid (HA) as a proportion of DOC and sulfide shall be based on either measured values or the following default values: 10% HA as a proportion of DOC,  $1.00 \times 10^{-8}$  mg/L sulfide. Measured values shall supersede any estimate or default input.

(3) BLM input measurements shall be planned to capture the most bioavailable conditions for copper.

(4) A criterion derived using BLM software shall supersede any estimated criterion. Acceptable BLM software includes the “US EPA WQC Calculation” for copper in BLM Version 3.1.2.37 (October 2015).

(5) Implementation Guidance for the Idaho Copper Criteria for Aquatic Life. The “Implementation Guidance for the Idaho Copper Criteria for Aquatic Life: Using the Biotic Ligand Model” describes in detail methods for implementing the aquatic life criteria for copper using the BLM. This guidance, or its updates, will provide assistance to the Department and the public for determining minimum data requirements for BLM inputs and how to estimate criteria when data are incomplete or unavailable. The “Implementation Guidance for the Idaho Copper Criteria for Aquatic Life” is available at the Department of Environmental Quality, 1410 N. Hilton, Boise, Idaho 83706, and on the DEQ website at [www.deq.idaho.gov/58-0102-1502](http://www.deq.idaho.gov/58-0102-1502).

Subsection 210.03.c.v is not effective for CWA purposes until the date EPA issues written notification that the revisions adopted under Rule Docket No. 58-0102-1502 have been approved.