

Negotiated Rule Draft No. 2
Docket No. 58-0102-1502, Dated July 8, 2016

Section 210 has been updated with the revisions adopted by the Board in 2015 and approved by the 2016 Idaho Legislature under Docket No. 58-0102-1201.

The following revisions are highlighted in yellow:

- text inserted to demonstrate which version of rule will be effective until EPA approves this rule docket
- revisions carried over from the October 9, 2015 Preliminary Draft Negotiated Rule (Draft No. 1)
- addition of reference to Implementation Guidance for the Idaho Copper Criteria for Aquatic Life

DEQ is not requesting written comments on this draft.

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

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.

d. Effectiveness.

i. Copper (6a). The values and table footnotes in Columns B1 and B2 for Copper (6a) are effective until the date EPA issues written notification that the revisions adopted under Rule Docket No. 58-0102-1502 have been approved. For information regarding the status of EPA review go to <http://www.deq.idaho.gov/epa-actions-on-proposed-standards>.

ii. Copper (6b). The values and table footnotes in Columns B1 and B2 for Copper (6b) are effective on the date EPA issues written notification that the revisions adopted under Rule Docket No. 58-0102-1502 have been approved. For information regarding the status of EPA review go to <http://www.deq.idaho.gov/epa-actions-on-proposed-standards>.

iii. Table Footnote r. Table Footnote r is effective on the date EPA issues written notification that the revisions adopted under Rule Docket No. 58-0102-1502 have been approved. For information regarding the status of EPA review go to <http://www.deq.idaho.gov/epa-actions-on-proposed-standards>.

Note: In 2006, Idaho updated 167 human health criteria for 88 chemicals. On May 10, 2012, EPA disapproved Idaho's 2006 update of 167 human health criteria for toxic substances and the use of 17.5 g/day fish consumption rate for human health criteria (see IDAPA 58.01.02.210.05.b.i). This action was based on EPA's judgment that the fish consumption rate used in criteria derivation was not adequately protective. As a result of this action, the human health criteria published in the 2005 version of IDAPA 58.01.02.210.01 continue to apply and are effective for federal Clean Water Act purposes. These criteria are summarized in "Numeric Criteria for Toxic Substances (2005)" located at http://www.deq.idaho.gov/media/451725-human_health_criteria.pdf.

For more information regarding this EPA disapproval, go to <http://www.deq.idaho.gov/epa-actions-on-proposed-standards>.

A		B Aquatic life			C Human health for consumption of:	
(Number) Compound	^a CAS Number	^b CMC (µg/L)	^b CCC (µg/L)	Carcinogen?	Water & fish (µg/L)	Fish only (µg/L)
		B1	B2		C1	C2
6a Copper	7440508	17 i	11 i		1,300 q	

6a. The values and table footnotes in Columns B1 and B2 are effective until the date EPA issues written notification that the revisions adopted under Rule Docket No. 58-0102-1502 have been approved. See Subsection 210.01.d.i.

6b Copper	7440508	19.4 i	12.0 i		1,300 q	
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6b. The values and table footnotes in Columns B1 and B2 are effective on the date EPA issues written notification that the revisions adopted under Rule Docket No. 58-0102-1502 have been approved. See Subsection 210.01.d.ii.

Table Footnotes

r. Aquatic life criteria for copper are derived from the Biotic Ligand Model, Version 2.2.3 (June 2007) available at www.deq.idaho.gov. For comparative purposes only, the example values displayed in this table correspond to the model output based on the following inputs: temperature = 15.2°C, pH = 7.9, dissolved organic carbon = 1.9 mg/L, humic acid fraction = 10%, Calcium = 68.9 mg/L, Magnesium = 44.2 mg/L, Sodium = 65.5 mg/L, Potassium = 1.9 mg/L, Sulfate = 72.6 mg/L, Chlorine = 54.5 mg/L, and alkalinity = 280 mg/L CaCO₃.

Table Footnote r. Effective on the date EPA issues written notification that the revisions adopted under Rule Docket No. 58-0102-1502 have been approved. See Subsection 210.01.d.iii.

(3-25-16)

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)

c. Effectiveness. The values for calculating hardness dependent metal criteria for copper are effective until the date EPA issues written notification that the revisions adopted under Rule Docket No. 58-0102-1502 have been approved. For information regarding the status of EPA review go to <http://www.deq.idaho.gov/epa-actions-on-proposed-standards>.

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 are effective until the date EPA issues written notification that the revisions adopted under Rule Docket No. 58-0102-1502 have been approved. See Subsection 210.02.c.						
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
<p>Note to table: The term “exp” represents the base e exponential function.</p> <p>Footnotes to table:</p> <p>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).</p> <p>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.</p> <p>Chronic: $CF=1.101672-[(\ln \text{hardness})(0.041838)]$</p> <p>Lead (Acute and Chronic): $CF=1.46203-[(\ln \text{hardness})(0.145712)]$</p> <p>b. Not applicable</p> <p>c. No chronic criteria are available for silver.</p>						

(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.

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

v. Implementation Guidance for the Idaho Copper Criteria for Aquatic Life. The “Implementation Guidance for the Idaho Copper Criteria for Aquatic Life” describes in detail methods for implementing the aquatic life criteria for copper using the biotic ligand model. This guidance, or its updates, will provide assistance to the Department and the public for determining minimum data requirements, how to derive criteria estimates when data are incomplete, and guidance on developing permit limits and identifying impairments using the biotic ligand model. 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.