

IDAPA 58 - DEPARTMENT OF ENVIRONMENTAL QUALITY

58.01.02 - WATER QUALITY STANDARDS

DOCKET NO. 58-0102-0801

NOTICE OF RULEMAKING - PROPOSED RULE

AUTHORITY: In compliance with Section 67-5221(1), Idaho Code, notice is hereby given that this agency has initiated proposed rulemaking. This action is authorized by Sections 39-105, 39-107, and 39-3601 et seq., Idaho Code.

PUBLIC HEARING SCHEDULE: No hearings have been scheduled. Pursuant to Section 67-5222(2), Idaho Code, a public hearing will be held if requested in writing by twenty-five (25) persons, a political subdivision, or an agency. Written requests for a hearing must be received by the undersigned on or before May 22, 2009. If no such written request is received, a public hearing will not be held.

DESCRIPTIVE SUMMARY: The purpose of this rulemaking is to protect human health from adverse effects of elevated arsenic (As) and protect sensitive aquatic life from cadmium (Cd) toxicity in low hardness waters. The Department of Environmental Quality (DEQ) proposes to lower Idaho's arsenic (As) human health criteria from 50 ug/L to 10 ug/L and lower the low-end hardness cap used in calculation of cadmium (Cd) aquatic life criteria from 25 mg/L to 10mg/L (Section 210). In addition, DEQ proposes to make nonsubstantive revisions to portions of Section 210 identified as needing correction or clarification.

DEQ is also initiating this rulemaking in an effort to forestall pending legal action against the U.S. Environmental Protection Agency (EPA) that would force EPA to disapprove Idaho's As standard and require EPA to promulgate a federal rule to lower the As human health criteria applicable to Idaho waters. EPA is also prepared to disapprove Idaho's Cd standard to remove the low end hardness cap for calculating criteria. DEQ proposes to reduce the low end hardness cap for Cd from 25 mg/L to 10 mg/L. Idaho's current As human health criteria are also several times higher than EPA's recommendation for protecting human health.

Anyone with an interest in the quality of surface water in Idaho may be interested in commenting on this proposed rule. For arsenic (As), those affected include Idahoans that eat fish caught from Idaho surface waters and dischargers of As to surface water. For cadmium (Cd), those affected include those who enjoy or profit from healthy communities of aquatic life in, and dischargers of Cd to, Idaho's surface waters with hardness below 25 mg/L. The proposed rule text is in legislative format. Language the agency proposes to add is underlined. Language the agency proposes to delete is struck out. It is these additions and deletions to which public comment should be addressed.

After consideration of public comments, DEQ intends to present the final proposal to the Board of Environmental Quality at the July 2009 Board meeting for adoption as a pending rule. The rule is expected to be final and effective upon the adjournment of the 2010 legislative session if adopted by the Board and approved by the Legislature.

NEGOTIATED RULEMAKING: The text of the rule has been drafted based on discussions held and concerns raised during negotiations conducted pursuant to Idaho Code Section 67-5220 and IDAPA 04.11.01.812-815. On December 3, 2008, the Notice of Negotiated Rulemaking was published in the Idaho Administrative Bulletin, Vol. 08-12, pages 106 and 107, and a preliminary draft rule was made available for public review. One meeting was held on December 17, 2008. Members of the public participated in this negotiated rulemaking process by attending the meeting and submitting written comments.

IDAHO CODE SECTION 39-107D STATEMENT: The standards included in this proposed rule are not broader in scope, nor more stringent, than federal regulations and do regulate an activity regulated by the federal government. Furthermore, the proposed standards are less stringent than those recommended by EPA. If this proposed rule is not successfully adopted by the Board of Environmental Quality and approved by the Idaho Legislature, EPA may be compelled to take action by promulgating water quality standards for Idaho that would be more stringent than the standards included in this proposed rule.

FISCAL IMPACT STATEMENT: The following is a specific description, if applicable, of any negative fiscal impact on the state general fund greater than ten thousand dollars (\$10,000) during the fiscal year: not applicable.

ASSISTANCE ON TECHNICAL QUESTIONS AND SUBMISSION OF WRITTEN COMMENTS: For assistance on technical questions concerning this rulemaking, contact Don Essig at don.essig@deq.idaho.gov, (208)373-0119.

Anyone may submit written comments by mail, fax or e-mail at the address below regarding this proposed rule. DEQ will consider all written comments received by the undersigned on or before June 5, 2009.

DATED this 3rd day of April, 2009.

Paula J. Wilson
 Hearing Coordinator
 Department of Environmental Quality
 1410 N. Hilton
 Boise, Idaho 83706-1255
 (208)373-0418/Fax No. (208)373-0481
 paula.wilson@deq.idaho.gov

THE FOLLOWING IS THE TEXT OF DOCKET NO. 58-0102-0801

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, B2, and C2 of the following table apply to waters designated for aquatic life use. (5-3-03)
 - b.** Column C2 of the following table applies to waters designated for recreation use. (5-3-03)
 - c.** Column C1 of the following table applies to waters designated for domestic water supply use.

A		B		Human health for consumption of:				
		Aquatic life		Water & organisms (µg/L) C1	Organisms only (µg/L) C2			
(Number) Compound	a CAS Number	b CMC (µg/L) B1	b CCC (µg/L) B2					
		1	Antimony	7440360		5.6	c	640
2	Arsenic	7440382	340 e	150 e	5 10	d	5 10	d
3	Beryllium	7440417				h		h
4	Cadmium	7440439	1.3 i	0.6 i		h		h
5a	Chromium III	16065831	570 i	74 i		h		h

A		B Aquatic life		Human health for consumption of:	
(Number) Compound	^a CAS Number	^b CMC (µg/L)	^b CCC (µg/L)	Water & organisms (µg/L)	Organisms only (µg/L)
		B1	B2	C1	C2
5b Chromium VI	18540299	16 e	11 e	h	h
6 Copper	7440508	17 i	11 i		
7 Lead	7439921	65 i	2.5 i	h	h
8a Mercury	7439976	g	g		
8b Methylmercury	22967926				0.3 mg/kg p
9 Nickel	7440020	470 i	52 i	610 c	4600 c
10 Selenium	7782492	20 f	5 f	170	4200
11 Silver	7440224	3.4 i			
12 Thallium	7440280			0.24 c	0.47 c
13 Zinc	7440666	120 i	120 i	7400	26000
14 Cyanide	57125	22 j	5.2 j	140 c	140 c
15 Asbestos	1332214			7,000,000 fibers/L k	
16 2, 3, 7, 8-TCDD Dioxin	1746016			0.000000005 l	0.0000000051 l
17 Acrolein	107028			190	290
18 Acrylonitrile	107131			0.051 cl	0.25 cl
19 Benzene	71432			2.2 cl	51 cl
20 Bromoform	75252			4.3 cl	140 cl
21 Carbon Tetrachloride	56235			0.23 cl	1.6 cl
22 Chlorobenzene	108907			130 c	1600 c
23 Chlorodibromomethane	124481			0.40 cl	13 cl
24 Chloroethane	75003				
25 2-Chloroethylvinyl Ether	110758				
26 Chloroform	67663			5.7 l	470 l
27 Dichlorobromomethane	75274			0.55 cl	17 cl
28 1,1-Dichloroethane	75343				
29 1,2-Dichloroethane	107062			0.38 cl	37 cl
30 1,1-Dichloroethylene	75354			330 l	7100 l
31 1,2-Dichloropropane	78875			0.50 cl	15 cl
32 1,3-Dichloropropene	542756			0.34	21
33 Ethylbenzene	100414			530 c	2100 c

A		B Aquatic life		Human health for consumption of:				
(Number) Compound	^a CAS Number	^b CMC (µg/L)	^b CCC (µg/L)	Water & organisms (µg/L)				
		B1	B2	C1	Organisms only (µg/L) C2			
34	Methyl Bromide	74839		47	c	1500	c	
35	Methyl Chloride	74873			h		h	
36	Methylene Chloride	75092		4.6	cl	590	cl	
37	1,1,2,2-Tetrachloroethane	79345		0.17	cl	4.0	cl	
38	Tetrachloroethylene	127184		0.69	l	3.3	l	
39	Toluene	108883		1300	c	15000	c	
40	1,2-Trans-Dichloroethylene	156605		140	c	10000	c	
41	1,1,1-Trichloroethane	71556			h		h	
42	1,1,2-Trichloroethane	79005		0.59	cl	16	cl	
43	Trichloroethylene	79016		2.5	l	30	l	
44	Vinyl Chloride	75014		0.025	l	2.4	l	
45	2-Chlorophenol	95578		81	c	150	c	
46	2,4-Dichlorophenol	120832		77	c	290	c	
47	2,4-Dimethylphenol	105679		380	c	850	c	
48	2-Methyl-4,6-Dinitrophenol	534521		13		280		
49	2,4-Dinitrophenol	51285		69	c	5300	c	
50	2-Nitrophenol	88755						
51	4-Nitrophenol	100027						
52	3-Methyl-4-Chlorophenol	59507						
53	Pentachlorophenol	87865	20 m	13 m	0.27	cl	3.0	cl
54	Phenol	108952			21000	c	1700000	c
55	2,4,6-Trichlorophenol	88062			1.4	cl	2.4	cl
56	Acenaphthene	83329			670	c	990	c
57	Acenaphthylene	208968						
58	Anthracene	120127			8300	c	40000	c
59	Benzidine	92875			0.000086	cl	0.00020	cl
60	Benzo(a)Anthracene	56553			0.0038	cl	0.018	cl
61	Benzo(a)Pyrene	50328			0.0038	cl	0.018	cl
62	Benzo(b)Fluoranthene	205992			0.0038	cl	0.018	cl

A		B Aquatic life		Human health for consumption of:	
(Number) Compound	^a CAS Number	^b CMC (µg/L)	^b CCC (µg/L)	Water & organisms (µg/L)	
		B1	B2	C1	C2
63	Benzo(ghi)Perylene	191242			
64	Benzo(k)Fluoranthene	207089		0.0038	cl 0.018
65	Bis(2-Chloroethoxy) Methane	111911			
66	Bis(2-Chloroethyl)Ether	111444		0.030	cl 0.53
67	Bis(2-Chloroisopropyl) Ether	108601		1400	c 65000
68	Bis(2-Ethylhexyl) Phthalate	117817		1.2	cl 2.2
69	4-Bromophenyl Phenyl Ether	101553			
70	Butylbenzyl Phthalate	85687		1500	c 1900
71	2-Chloronaphthalene	91587		1000	c 1600
72	4-Chlorophenyl Phenyl Ether	7005723			
73	Chrysene	218019		0.0038	cl 0.018
74	Dibenzo (a,h) Anthracene	53703		0.0038	cl 0.018
75	1,2-Dichlorobenzene	95501		420	c 1300
76	1,3-Dichlorobenzene	541731		320	960
77	1,4-Dichlorobenzene	106467		63	190
78	3,3'-Dichlorobenzidine	91941		0.021	cl 0.028
79	Diethyl Phthalate	84662		17000	c 44000
80	Dimethyl Phthalate	131113		270000	1100000
81	Di-n-Butyl Phthalate	84742		2000	c 4500
82	2,4-Dinitrotoluene	121142		0.11	l 3.4
83	2,6-Dinitrotoluene	606202			
84	Di-n-Octyl Phthalate	117840			
85	1,2-Diphenylhydrazine	122667		0.036	cl 0.20
86	Fluoranthene	206440		130	c 140
87	Fluorene	86737		1100	c 5300
88	Hexachlorobenzene	118741		0.00028	cl 0.00029
89	Hexachlorobutadiene	87683		0.44	cl 18

A		B Aquatic life		Human health for consumption of:	
(Number) Compound	^a CAS Number	^b CMC (µg/L)	^b CCC (µg/L)	Water & organisms (µg/L)	
		B1	B2	C1	C2
90	Hexachloro-cyclopentadiene	77474		40	1100
91	Hexachloroethane	67721		1.4	cl
92	Ideno (1,2,3-cd) Pyrene	193395		0.0038	cl
93	Isophorone	78591		35	cl
94	Naphthalene	91203			
95	Nitrobenzene	98953		17	c
96	N-Nitrosodimethylamine	62759		0.00069	cl
97	N-Nitrosodi-n-Propylamine	621647		0.0050	cl
98	N-Nitrosodiphenylamine	86306		3.3	cl
99	Phenanthrene	85018			
100	Pyrene	129000		830	c
101	1,2,4-Trichlorobenzene	120821		35	70
102	Aldrin	309002	3	0.000049	cl
103	alpha-BHC	319846		0.0026	cl
104	beta-BHC	319857		0.0091	cl
105	gamma-BHC (Lindane)	58899	2	0.08	l
106	delta-BHC	319868			
107	Chlordane	57749	2.4	0.0043	cl
108	4,4'-DDT	50293	1.1	0.001	cl
109	4,4'-DDE	72559		0.00022	cl
110	4,4'-DDD	72548		0.00031	cl
111	Dieldrin	60571	2.5	0.0019	cl
112	alpha-Endosulfan	959988	0.22	0.056	c
113	beta-Endosulfan	33213659	0.22	0.056	c
114	Endosulfan Sulfate	1031078		62	c
115	Endrin	72208	0.18	0.0023	c
116	Endrin Aldehyde	7421934		0.29	c
117	Heptachlor	76448	0.52	0.0038	cl
118	Heptachlor Epoxide	1024573	0.52	0.0038	cl

A		B Aquatic life		Human health for consumption of:				
(Number) Compound	^a CAS Number	^b CMC (µg/L)	^b CCC (µg/L)	Water & organisms (µg/L)		Organisms only (µg/L)		
		B1	B2	C1		C2		
119	Polychlorinated Biphenyls PCBs:	n	0.014 n	0.000064	clo	0.000064	clo	
120	Toxaphene	8001352	0.73	0.0002	0.00028	cl	0.00028	cl
121	Chlorine		19 k	11 k				
Table Footnotes								
a. Chemical Abstracts Service (CAS) registry numbers which provide a unique identification for each chemical.								
b. See definitions of Acute Criteria (CMC) and Chronic Criteria (CCC), Section 010 of these rules.								
c. This criterion has been revised to reflect The Environmental Protection Agency's q1* or RfD, as contained in the Integrated Risk Information System (IRIS) as of May 17, 2002. The fish tissue bioconcentration factor (BCF) from the 1980 Ambient Water Quality Criteria document was retained in each case.								
d. Inorganic form only.								
e. Criteria for these metals are expressed as a function of the water effect ratio, WER, as defined in Subsection 210.03.c.iii. CMC = column B1 value X WER. CCC = column B2 value X WER.								
f. Criterion expressed as total recoverable (unfiltered) concentrations.								
g. No aquatic life criterion is adopted for inorganic mercury. However, the narrative criteria for toxics in Section 200 of these rules applies. The Department believes application of the human health criterion for methylmercury will be protective of aquatic life in most situations.								
h. No numeric human health criteria has been established for this contaminant. However, permit authorities should address this contaminant in NPDES permit actions using the narrative criteria for toxics from Section 200 of these rules.								
i. Aquatic life criteria for these metals are expressed as expressed as a function of total hardness (mg/L as calcium carbonate), the pollutant's water effect ratio (WER) as defined in Subsection 210.03.c.iii. and multiplied by an appropriate dissolved conversion factor as defined in Subsection 210.02. For comparative purposes only, the <u>example</u> values displayed in this table are shown as dissolved metal and correspond to a total hardness of one hundred (100) mg/L and a water effect ratio of one (1.0).								
j. Criteria are expressed as weak acid dissociable (WAD) cyanide.								
k. Total chlorine residual concentrations.								
l. EPA guidance allows states to choose a risk factor of 10 ⁻⁴ to 10 ⁻⁶ . Idaho has chosen to base this criterion on carcinogenicity of 10 ⁻⁶ risk.								
m. Aquatic life criteria for pentachlorophenol are expressed as a function of pH, and are calculated as follows. Values displayed above in the table correspond to a pH of seven and eight tenths (7.8). CMC = exp(1.005(pH)-4.830) CCC = exp(1.005(pH)-5.290)								

A		B Aquatic life		Human health for consumption of:	
(Number) Compound	^a CAS Number	^b CMC (µg/L)	^b CCC (µg/L)	Water & organisms (µg/L)	Organisms only (µg/L)
		B1	B2	C1	C2
<p>n. PCBs are a class of chemicals which include Aroclors, 1242, 1254, 1221, 1232, 1248, 1260, and 1016, CAS numbers 53469219, 11097691, 11104282, 11141165, 12672296, 11096825 and 12674112 respectively. The aquatic life criteria apply to this set of PCBs.</p>					
<p>o. This criterion applies to total PCBs, (e.g. the sum of all congener, isomer, or Aroclor analyses).</p>					
<p>p. This fish tissue residue criterion (TRC) for methylmercury is based on a human health reference dose (RfD) of 0.0001 mg/kg body weight-day; a relative source contribution (RSC) estimated to be 27% of the RfD; a human body weight (BW) of 70 kg (for adults); and a total fish consumption rate of 0.0175 kg/day for the general population, summed from trophic level (TL) breakdown of TL2 = 0.0038 kg fish/day + TL3 = 0.0080 kg fish/day + TL4 = 0.0057 kg fish/day. This is a criterion that is protective of the general population. A site-specific criterion or a criterion for a particular subpopulation may be calculated by using local or regional data, rather than the above default values, in the formula: $TRC = [BW \times \{RfD - (RSC \times RfD)\}] / \Sigma TL$. In waters inhabited by species listed as threatened or endangered under the Endangered Species Act or designated as their critical habitat, the Department will apply the human health fish tissue residue criterion for methylmercury to the highest trophic level available for sampling and analysis.</p>					

(4-11-06)()

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.

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
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.

(4-11-06)()

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 including mixing zones, and low flow design discharge conditions below which numeric standards can be exceeded in flowing waters. (5-3-03)

a. For all waters for which the Department has determined mixing zones to be applicable, the criteria apply at the appropriate locations specified within or at the boundary of the mixing zone(s); otherwise the criteria apply through the waterbody including at the end of any discharge pipe, canal or other discharge point. (4-11-06)

b. Low flow design discharge conditions. Numeric chemical standards can only be exceeded in perennial streams permitted discharges outside any applicable mixing zone when flows are less than the following values:

Aquatic Life		Human Health	
CMC ("acute" criteria)	1Q10 or 1B3	Non-carcinogens	30Q5
CCC ("chronic" criteria)	7Q10 or 4B3	Carcinogens	Harmonic mean flow

(4-11-06)

i. Where "1Q10" is the lowest one-day flow with an average recurrence frequency of once in ten (10) years determined hydrologically; (5-3-03)

ii. Where "1B3" is biologically based and indicates an allowable exceedence of once every three (3) years. It may be determined by EPA's computerized method (DFLOW model); (5-3-03)

iii. Where "7Q10" is the lowest average seven (7) consecutive day low flow with an average recurrence frequency of once in ten (10) years determined hydrologically; (5-3-03)

iv. Where "4B3" is biologically based and indicates an allowable exceedence for four (4) consecutive days once every three (3) years. It may be determined by EPA's computerized method (DFLOW model); (5-3-03)

v. Where "30Q5" is the lowest average thirty (30) consecutive day low flow with an average recurrence frequency of once in five (5) years determined hydrologically; and (5-3-03)

vi. Where the harmonic mean flow is a long term mean flow value calculated by dividing the number of daily flows analyzed by the sum of the reciprocals of those daily flows. (5-3-03)

c. Application of metals criteria. (5-3-03)

i. For metals other than cadmium, for purposes of calculating hardness dependent aquatic life criteria ~~for metals~~ from the equations in Subsection 210.02, the minimum hardness allowed for use in those equations shall not be less than twenty-five (25) mg/l, as calcium carbonate, even if the actual ambient hardness is less than twenty-five (25) mg/l as calcium carbonate. For cadmium, the minimum hardness for use in those equations shall not be less than ten (10) mg/l, as calcium carbonate. The maximum hardness allowed for use in those equations shall not be greater than four hundred (400) mg/l, as calcium carbonate, except as specified in Subsections 210.03.c.ii. and 210.03.c.iii., even if the actual ambient hardness is greater than four hundred (400) mg/l as calcium carbonate. (4-6-05)(____)

ii. The hardness values used for calculating aquatic life criteria for metals at design discharge conditions shall be representative of the ambient hardnesses for a receiving water that occur at the design discharge conditions given in Subsection 210.03.b. (5-3-03)

iii. Except as otherwise noted, the aquatic life criteria for metals (compounds #1 through #13 in the criteria table of Subsection 210.02) are expressed as dissolved metal concentrations. Unless otherwise specified by the Department, dissolved concentrations are considered to be concentrations recovered from a sample which has passed through a forty-five hundredths (0.45) micron filter. For the purposes of calculating aquatic life criteria for metals from the equations in footnotes e. and i. in the criteria table in Subsection 210.01, the water effect ratio is computed as a specific pollutant's acute or chronic toxicity values measured in water from the site covered by the standard, divided by the respective acute or chronic toxicity value in laboratory dilution water. The water-effect ratio shall be assigned a value of one (1.0), except where the Department assigns a different value that protects the designated uses of the water body from the toxic effects of the pollutant, and is derived from suitable tests on sampled water representative of conditions in the affected water body, consistent with the design discharge conditions established in Subsection 210.03.b. For purposes of calculating water effects ratios, the term acute toxicity value is the toxicity test results, such as the concentration lethal one-half (1/2) of the test organisms (i.e., LC50) after ninety-six (96) hours of exposure (e.g., fish toxicity tests) or the effect concentration to one-half of the test organisms, (i.e., EC50) after forty-eight (48) hours of exposure (e.g., daphnia toxicity tests). For purposes of calculating water effects ratios, the term chronic value is the result from appropriate hypothesis testing or regression analysis of measurements of growth, reproduction, or survival from life cycle, partial life cycle, or early life stage tests. The determination of acute and chronic values shall be according to current standard protocols (e.g., those published by the American Society for Testing and Materials (ASTM)) or other comparable methods. For calculation of criteria using site-specific values for both the hardness and the water effect ratio, the hardness used in the equations in Subsection 210.02 shall be as required in Subsection 210.03.c.ii. Water hardness shall be calculated from the measured calcium and magnesium ions present, and the ratio of calcium to magnesium shall be approximately the same in laboratory toxicity testing water as in the site water, or be similar to average ratios of laboratory waters used to derive the criteria. (4-6-05)

iv. Implementation Guidance for the Idaho Mercury Water Quality Criteria. (4-6-05)

(1) The "Implementation Guidance for the Idaho Mercury Water Quality Criteria" describes in detail suggested methods for discharge related monitoring requirements, calculation of reasonable potential to exceed (RPTE) water quality criteria in determining need for mercury effluent limits, and use of fish tissue mercury data in calculating mercury load reductions. This guidance, or its updates, will provide assistance to the Department and the public when implementing the methylmercury criterion. The "Implementation Guidance for the Idaho Mercury Water Quality Criteria" also provides basic background information on mercury in the environment, the novelty of a fish tissue criterion for water quality, the connection between human health and aquatic life protection, and the relation of environmental programs outside of Clean Water Act programs to reducing mercury contamination of the environment. The "Implementation Guidance for the Idaho Mercury Water Quality Criteria" is available at the Department of Environmental Quality, 1410 N. Hilton, Boise, Idaho 83706, and www.deq.idaho.gov. (4-6-05)

(2) The implementation of a fish tissue criterion in NPDES permits and TMDLs requires a non-traditional approach, as the basic criterion is not a concentration in water. In applying the methylmercury fish tissue

criterion in the context of NPDES effluent limits and TMDL load reductions, the Department will assume change in fish tissue concentrations of methylmercury are proportional to change in water body loading of total mercury. Reasonable potential to exceed (RPTE) the fish tissue criterion for existing NPDES sources will be based on measured fish tissue concentrations potentially affected by the discharge exceeding a specified threshold value, based on uncertainty due to measurement variability. This threshold value is also used for TMDL decisions. Because measured fish tissue concentrations do not reflect the effect of proposed new or increased discharge of mercury, RPTE in these cases will be based upon an estimated fish tissue methylmercury concentration, using projected changes in waterbody loading of total mercury and a proportional response in fish tissue mercury. For the above purposes, mercury will be measured in the skinless filets of sport fish using techniques capable of detecting tissue concentrations down to point zero five (0.05) mg/kg. Total mercury analysis may be used, but will be assumed to be all methylmercury for purposes of implementing the criterion. (4-6-05)

v. Frequency and duration for toxics criteria. Column B1 criteria are concentrations not to be exceeded for a one-hour average more than once in three (3) years. Column B2 criteria are concentrations not to be exceeded for a four-day average more than once in three (3) years. (4-11-06)

04. National Pollutant Discharge Elimination System Permitting. For the purposes of NPDES permitting, interpretation and implementation of metals criteria listed in Subsection 210.02 should be governed by the following standards, that are hereby incorporated by reference, in addition to other scientifically defensible methods deemed appropriate by the Department; provided, however, any identified conversion factors within these documents are not incorporated by reference. Metals criteria conversion factors are identified in Subsection 210.02 of this rule. (5-3-03)

- a. "Guidance Document on Dissolved Criteria -- Expression of Aquatic Life Criteria," EPA, October 1993. (4-5-00)
- b. "Guidance Document on Dynamic Modeling and Translators," EPA, August 1993. (4-5-00)
- c. "Guidance Document on Clean Analytical Techniques and Monitoring," EPA, October 1993. (4-5-00)
- d. "Interim Guidance on Determination and Use of Water-Effect Ratios for Metals," EPA, February 1994. (4-5-00)

05. Development of Toxic Substance Criteria. (4-5-00)

a. Aquatic Life Communities Criteria. Numeric criteria for the protection of aquatic life uses not identified in these rules for toxic substances, may be derived by the Department from the following information: (4-5-00)

- i. Site-specific criteria developed pursuant to Section 275; (4-5-00)
- ii. Effluent biomonitoring, toxicity testing and whole-effluent toxicity determinations; (4-5-00)
- iii. The most recent recommended criteria defined in EPA's Aquatic Toxicity Information Retrieval (ACQUIRE) database. When using EPA recommended criteria to derive water quality criteria to protect aquatic life uses, the lowest observed effect concentrations (LOECs) shall be considered; or (4-5-00)

iv. Scientific studies including, but not limited to, instream benthic assessment or rapid bioassessment. (4-5-00)

b. Human Health Criteria. (4-5-00)

i. When numeric criteria for the protection of human health are not identified in these rules for toxic substances, quantifiable criteria may be derived by the Department from the most recent recommended criteria defined in EPA's Integrated Risk Information System (IRIS). When using EPA recommended criteria to derive water quality criteria to protect human health, a fish consumption rate of seventeen point five (17.5) grams/day, a water ingestion rate of two (2) liters/day and a cancer risk level of 10⁻⁶ shall be utilized. (4-11-06)