

**Negotiated Rule Draft No. 4
Docket No. 58-0102-1701, Dated September 1, 2017**

Rule revisions have been made based on the July 25, 2017, meeting discussion and review of written comments received. These revisions are highlighted in yellow.

The comment period for this negotiated rulemaking has concluded. The comment period on the proposed rule will commence upon publication of the proposed rule in the September 6, 2017, issue of the Idaho Administrative Bulletin.

**Water Quality Standards
IDAPA 58.01.02**

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	a	b	b	Carcinogen?	Water & fish (µg/L)	Fish only (µg/L)
	CAS Number	CMC (µg/L) B1	CCC (µg/L) B2		C1	C2

10	Selenium ¹	7782492	20	f	5	f	29	c	250	c
¹ Effective for CWA purposes. The CMC value and footnote and the CCC value are effective for CWA purposes until the date EPA issues written notification that the revisions adopted under Rule Docket No. 58-0102-1701 have been approved. The CMC value and footnote and the CCC value will be deleted upon EPA approval.										
10	Selenium ²	7782492	20	f	5	f	29	c	250	c
² Not yet effective for CWA purposes. CMC footnotes and CCC footnotes are not effective for CWA purposes until the date EPA issues written notification that the revisions adopted under Rule Docket No. 58-0102-1701 have been approved.										

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Table Footnotes
f. Criterion expressed as total recoverable (unfiltered) concentrations.

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r.					
Chronic				Short-term	
Egg-Ovary (mg/kg dw)	Fish Tissue (mg/kg dw)		Water Column (µg/L)		Water Column (µg/L)
<i>Egg-Ovary</i>	<i>Whole-Body</i>	<i>Muscle</i>	<i>Water Lentic</i>	<i>Water Lotic</i>	<i>Water</i>
15.1 ¹	8.5 ²	11.3 ²	1.5 (30 day average) ³	3.1 (30 day average) ³	Intermittent exposure Equation ^{3,4}
<i>mg/kg dw – milligrams per kilogram dry weight, µg/L – micrograms per liter</i>					
<p>1. Egg-ovary supersedes any whole-body, muscle, or water column element when fish egg-ovary concentrations are measured. Single measurement of an average or composite sample of at least five (5) individuals of the same species.</p> <p>2. Fish whole-body or muscle tissue supersedes water column element when both fish tissue and water concentrations are measured. Single measurement of an average or composite sample of at least five (5) individuals of the same species and where the smallest individual is no less than seventy-five percent (75%) of the total length (size) of the largest individual.</p> <p>3. Water column values are based on dissolved total selenium in water and are derived from fish tissue values via bioaccumulation modeling. Water column values are the applicable criterion element in the absence of steady-state condition fish tissue data. In fishless waters, selenium concentrations in fish from the nearest downstream waters may be used to assess compliance using approaches methods provided in Aquatic Life Ambient Water Quality Criterion for Selenium – Freshwater, EPA-822-R-16-006, Appendix K: Translation of a Selenium Fish Tissue Criterion Element to a Site-Specific Water Column Value (June 2016).</p>					

4. Intermittent Exposure Equation=

$$\frac{WQC_{30\text{-day}} - C_{bkgrnd}(1 - f_{int})}{f_{int}}$$

where $WQC_{30\text{-day}}$ is the water column monthly element, for either lentic or lotic waters; C_{bkgrnd} is the average background selenium concentration, and f_{int} is the fraction of any 30-day period during which elevated selenium concentrations occur, with f_{int} assigned a value ≥ 0.033 (corresponding to one day).

s. There is no specific acute criterion for aquatic life; however, the aquatic life criterion is based on chronic effects of selenium on aquatic life and is expected to adequately protect against acute effects.

Footnotes r. and s. are not effective for CWA purposes until the date EPA issues written notification that the revisions adopted under Rule Docket No. 58-0102-1701 have been approved.

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287. SITE-SPECIFIC AQUATIC LIFE CRITERIA FOR SELENIUM.

Site-specific water column values (30-day average) are based on dissolved total selenium in water and are derived using a performance-based approach from fish tissue values via either the mechanistic modeling or empirical bioaccumulation modeling-factor (BAF) methods in Aquatic Life Ambient Water Quality Criterion for Selenium – Freshwater, EPA-822-R-16-006, Appendix K: Translation of a Selenium Fish Tissue Criterion Element to a Site-Specific Water Column Value (June 2016).

01. Subsections of Blackfoot Subbasins, Blackfoot River - confluence of Lanes and Diamond Creeks to Blackfoot Reservoir (unit US-10), and all tributaries thereof; and Georgetown Creek – source to mouth (unit B-22), and all tributaries thereof. The site-specific fish tissue and water column values criterion for these water bodies are set out in the following table.

Chronic			Short-term		
Egg-Ovary (mg/kg dw)	Fish Tissue (mg/kg dw)		Water Column (µg/L)		Water Column (µg/L)
Egg-Ovary	Whole-Body	Muscle	Water Lentic	Water Lotic	Water
25.3 24.5 ¹	11.6 12.5 ²	14.1 12.8 ²	3.4	6.3 ^{3,4,5}	Intermittent exposure Equation ^{3,4,5,6}

mg/kg dw – milligrams per kilogram dry weight, µg/L – micrograms per liter

1. Egg-ovary supersedes any whole-body, muscle, or water column element when fish egg-ovary concentrations are measured. Single measurement of an average or composite sample of at least three-five (3-5) individuals of the same species.
2. Fish whole-body or muscle tissue supersedes water column element when both fish tissue and water concentrations are measured. Single measurement of an average or composite sample of at least three-five (3-5) individuals of the same species and where the smallest individual is no less than seventy-five percent (75%) of the total length (size) of the largest individual.

3. Water column values are derived using the empirical BAF method. For comparative purposes only, the example value displayed in this table represents the lotic water column value for Sheep Creek based on the average BAF for Cutthroat Trout among all sampling locations and years.

4. Lotic Water Column Equation =

$$\frac{\text{Tissue}_{\text{criterion}}}{\text{BAF}}$$

where $\text{Tissue}_{\text{criterion}}$ is the fish tissue element (whole-body), and BAF is the bioaccumulation factor derived by dividing site-specific field-collected samples of fish tissue (whole-body) by site-specific field-collected samples of water.

35. Water column values are the applicable criterion element in the absence of steady-state condition fish tissue data. In fishless waters, surface water from the fishless waters and fish tissue from the nearest downstream waters are used for bioaccumulation modeling. Fish tissue supersedes any site-specific water column values when fish are sampled downstream of fishless waters.

4. Fish tissue supersedes any site-specific water column values when fish are sampled downstream of the fishless waters.

56. Intermittent Exposure Equation =

$$\frac{WQC_{30\text{-day}} - C_{\text{bkgnd}}(1 - f_{\text{int}})}{f_{\text{int}}}$$

where $WQC_{30\text{-day}}$ is the lotic water column monthly element, for either lentic or lotic waters; C_{bkgnd} is the average background selenium concentration, and f_{int} is the fraction of any 30-day period during which elevated selenium concentrations occur, with f_{int} assigned a value ≥ 0.033 (corresponding to one day).

02. Subsection of Bear Lake Subbasin. Georgetown Creek - source to mouth (unit B-22), and all tributaries thereof. The site-specific criterion for these water bodies is set out in the following table.

Chronic			Short-term	
Egg-Ovary (mg/kg dw)	Fish Tissue (mg/kg dw)		Water Column (µg/L)	Water Column (µg/L)
Egg-Ovary	Whole-Body	Muscle	Water Lotic	Water
21.0 ¹	12.5 ²	12.8 ²	3.4 ^{3,4,5}	Intermittent exposure Equation ^{3,4,5,6}

mg/kg dw – milligrams per kilogram dry weight, µg/L – micrograms per liter

1. Egg-ovary supersedes any whole-body, muscle, or water column element when fish egg-ovary concentrations are measured. Single measurement of an average or composite sample of at least five (5) individuals of the same species.

2. Fish whole-body or muscle tissue supersedes water column element when both fish tissue and water concentrations are measured. Single measurement of an average or composite sample of at least five (5) individuals of the same species where the smallest individual is no less than seventy-five percent (75%) of the total length (size) of the largest individual.

3. Water column value is derived using the empirical BAF method. For comparative purposes only, the example displayed in this table represents the lotic water column value for Georgetown Creek, upstream of the intermittent reach, based on the average BAF for Brook Trout in all sampling locations and years.

4. Lotic Water Column Equation =

$$\frac{\text{Tissue}_{\text{criterion}}}{\text{BAF}}$$

where $Tissue_{criterion}$ is the fish tissue element (whole-body), and BAF is the bioaccumulation factor derived by dividing site-specific field-collected samples of fish tissue (whole-body) by site-specific field-collected samples of water.

5. Water column values are the applicable criterion element in the absence of steady-state condition fish tissue data. In fishless waters, surface water from the fishless waters and fish tissue from the nearest downstream waters are used for bioaccumulation modeling. Fish tissue supersedes any site-specific water column values when fish are sampled downstream of fishless waters.

6. Intermittent Exposure Equation=

$$\frac{WQC - C_{bkgrnd}(1 - f_{int})}{f_{int}}$$

where WQC is the lotic water column element; C_{bkgrnd} is the average background selenium concentration, and f_{int} is the fraction of any 30-day period during which elevated selenium concentrations occur, with f_{int} assigned a value ≥ 0.033 (corresponding to one day).

023. Subsection of Salt Subbasin – Sage Creek. Sage Creek – source to mouth (unit US-9) and Crow Creek – Sage Creek confluence to Wyoming state line (US 8), including Hoopes Spring channel downstream of the spring complex, South Fork Sage Creek downstream of the spring complex, Sage Creek downstream of the confluence of Hoopes Spring with Sage Creek to its confluence with Crow Creek, North Fork Sage Creek and tributaries (including Pole Canyon Creek); Crow Creek downstream of its confluence with Sage Creek to the Wyoming Border. The site-specific fish tissue and water column values criterion for these water bodies are set out in the following table.

Chronic ¹			Short-term	
Egg-Ovary (mg/kg dw)	Fish Tissue (mg/kg dw)	Water Column (µg/L)		Water Column (µg/L)
Egg-Ovary	Whole-Body	Water Lentic	Water Lotic	Water
19.9 ²⁷	13.6 ^{32,3}	4.5	13.55 (30 day average) ⁶ 16.2 ^{4,5,3}	Intermittent exposure Equation ^{3,4,5,7}

mg/kg dw – milligrams per kilogram dry weight, µg/L – micrograms per liter

- Egg-ovary supersedes any whole-body or water column element when fish egg-ovary concentrations are measured. Single measurement of an average or composite sample of at least five (5) individuals of the same species.
- Fish tissue supersedes water column element when both fish tissue (whole-body) and water concentrations are measured. Fish tissue elements are expressed as a single arithmetic average of tissue concentrations from at least five (5) individuals of the same species, one hundred fifty (150) mm total length or less, and where the smallest individual is no less than seventy-five percent (75%) of the total length (size) of the largest individual.
- Fish whole body tissue supersedes water column element when both fish tissue (whole body) and water concentrations are measured.
- Water column values are based on total selenium concentrations derived from fish tissue values using the empirical bioaccumulation factor (BAF) method approach and a site specific dissolved total concentration translator (zero point nine eight) (0.98). Water column values are the applicable criterion element in the absence of steady-state condition fish tissue data. In fishless waters, selenium concentrations in fish from the nearest downstream waters may be used to assess compliance.
- Water column values are the applicable criterion element in the absence of steady state condition fish tissue data. For fishless waters, selenium concentrations in fish from the nearest downstream waters may be used to assess compliance.

6. The 30-day average can be based on a single or multiple days of monitoring within a 30-day period. The geometric mean is used as the average.

74. Intermittent Exposure Equation=

$$\frac{WQC_{30\text{-day}} - C_{bkgrnd}(1 - f_{int})}{f_{int}}$$

where $WQC_{30\text{-day}}$ is the lotic water column monthly element, for either lentic or lotic waters; C_{bkgrnd} is the average background selenium concentration, and f_{int} is the fraction of any 30-day period during which elevated selenium concentrations occur, with f_{int} assigned a value ≥ 0.033 (corresponding to one day).

04. Subsection of Salt Subbasin – Crow Creek. Crow Creek – Downstream of Sage Creek confluence to Wyoming state line (US-8). The site-specific criterion for these water bodies is set out in the following table.

Chronic			Short-term
Egg-Ovary (mg/kg dw)	Fish Tissue (mg/kg dw)	Water Column (µg/L)	Water Column (µg/L)
Egg-Ovary	Whole-Body	Water Lotic	Water
19.9 ¹	13.6 ²	4.1 ³	Intermittent exposure Equation ^{3,4}

mg/kg dw – milligrams per kilogram dry weight, µg/L – micrograms per liter

1. Egg-ovary supersedes any whole-body or water column element when fish egg-ovary concentrations are measured. Single measurement of an average or composite sample of at least five (5) individuals of the same species.
2. Fish tissue supersedes water column element when both fish tissue (whole-body) and water concentrations are measured. Fish tissue elements are expressed as a single arithmetic average of tissue concentrations from at least five (5) individuals of the same species where the smallest individual is no less than seventy-five percent (75%) of the total length (size) of the largest individual.
3. Water column values are derived using the empirical BAF method. Water column values are the applicable criterion element in the absence of steady-state condition fish tissue data. In fishless waters, selenium concentrations in fish from the nearest downstream waters may be used to assess compliance.

4. Intermittent Exposure Equation=

$$\frac{WQC - C_{bkgrnd}(1 - f_{int})}{f_{int}}$$

where WQC is the lotic water column element; C_{bkgrnd} is the average background selenium concentration, and f_{int} is the fraction of any 30-day period during which elevated selenium concentrations occur, with f_{int} assigned a value ≥ 0.033 (corresponding to one day)

035. Portions of Idaho. Non-sturgeon Waters. All waters of the state except the main stems of the Kootenai, Salmon, and Snake Rivers, as well as 4th field HUC subbasins flowing directly into the aforementioned rivers and those designated as critical salmonid habitat. A list of subbasins included in non-sturgeon waters are set out in the following table.

a. This site-specific criterion applies in the HUC subbasins set out in the following table.

<u>HUC</u>	<u>Subbasin</u>	<u>HUC</u>	<u>Subbasin</u>
<u>16010102</u>	<u>Central Bear</u>	<u>17040207</u>	<u>Blackfoot</u>
<u>16010201</u>	<u>Bear Lake</u>	<u>17040208</u>	<u>Portneuf</u>
<u>16010202</u>	<u>Middle Bear</u>	<u>17040209</u>	<u>Lake Walcott</u>
<u>16010203</u>	<u>Little Bear-Logan</u>	<u>17040210</u>	<u>Raft</u>
<u>16010204</u>	<u>Lower Bear-Malad</u>	<u>17040211</u>	<u>Goose</u>
<u>16020309</u>	<u>Curlew Valley</u>	<u>17040214</u>	<u>Beaver-Camas</u>
<u>17010103</u>	<u>Yaak</u>	<u>17040215</u>	<u>Medicine Lodge</u>
<u>17010302</u>	<u>South Fork Coeur d Alene</u>	<u>17040216</u>	<u>Birch</u>
<u>17010306</u>	<u>Hangman</u>	<u>17040218</u>	<u>Big Lost</u>
<u>17010308</u>	<u>Little Spokane</u>	<u>17040220</u>	<u>Camas</u>
<u>17040104</u>	<u>Palisades</u>	<u>17040221</u>	<u>Little Wood</u>
<u>17040105</u>	<u>Salt</u>	<u>17050104</u>	<u>Upper Owyhee</u>
<u>17040201</u>	<u>Idaho Falls</u>	<u>17050105</u>	<u>South Fork Owyhee</u>
<u>17040202</u>	<u>Upper Henrys</u>	<u>17050106</u>	<u>East Little Owyhee</u>
<u>17040203</u>	<u>Lower Henrys</u>	<u>17050107</u>	<u>Middle Owyhee</u>
<u>17040204</u>	<u>Teton</u>	<u>17050108</u>	<u>Jordan</u>
<u>17040205</u>	<u>Willow</u>	<u>17060109</u>	<u>Rock</u>
<u>17040206</u>	<u>American Falls</u>		

b. The site-specific criterion for the water bodies identified in Subsection 287.05.a. is set out in the following table.

<u>Chronic</u>				<u>Short-term</u>	
<u>Egg-Ovary (mg/kg dw)</u>	<u>Fish Tissue (mg/kg dw)</u>		<u>Water Column (µg/L)</u>		<u>Water Column (µg/L)</u>
<u>Egg-Ovary</u>	<u>Whole-Body</u>	<u>Muscle</u>	<u>Water Lentic</u>	<u>Water Lotic</u>	<u>Water</u>
<u>19.0¹</u>	<u>9.5²</u>	<u>13.1²</u>	<u>1.7 (30 day average)³</u>	<u>3.4 (30 day average)³</u>	<u>Intermittent exposure Equation^{3,4}</u>

mg/kg dw – milligrams per kilogram dry weight, µg/L – micrograms per liter

1. *Egg-ovary supersedes any whole-body, muscle, or water column element when fish egg-ovary concentrations are measured. Single measurement of an average or composite sample of at least five (5) individuals of the same species.*

2. *Fish whole-body or muscle tissue supersedes water column element when both fish tissue and water concentrations are measured. Single measurement of an average or composite sample of at least five (5) individuals of the same species where the smallest individual is no less than seventy-five percent (75%) of the total length (size) of the largest individual.*

3. *Water column values are based on dissolved total selenium in water and are derived from fish tissue values via bioaccumulation modeling using the empirical BAF method. Water column values are the applicable criterion element in the*

absence of steady-state condition fish tissue data. In fishless waters, selenium concentrations in fish from the nearest downstream waters may be used to assess compliance.

4. Intermittent Exposure Equation=

$$\frac{WQC_{30\text{-day}} - C_{bkgrnd}(1 - f_{int})}{f_{int}}$$

where $WQC_{30\text{-day}}$ is the water column ~~monthly~~ element, for either lentic or lotic waters; C_{bkgrnd} is the average background selenium concentration, and f_{int} is the fraction of any 30-day period during which elevated selenium concentrations occur, with f_{int} assigned a value ≥ 0.033 (corresponding to one day)

Section 287 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.
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