UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
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OFFICE OF THE REGIONAL ADMINISTRATOR

APR - 4 2019

Mr. John Tippets
Director
Idaho Department of Environmental Quality
1410 North Hilton
Boise, Idaho 83706-1255

Re: EPA's Approval of Idaho's New and Revised Human Health Water Quality Criteria for Toxics and Other Water Quality Standards Provisions

Dear Mr. Tippets:

The U.S. Environmental Protection Agency has completed its Clean Water Act review of the new and revised water quality standards and other related provisions submitted by the Idaho Department of Environmental Quality on December 13, 2016.

In accordance with the EPA's authority under the CWA section 303(c) and the implementing regulations at 40 CFR Part 131, the EPA approves Idaho's new and revised human health criteria and other related water quality standards provisions that were submitted to EPA for review and action. A summary of the EPA's action is included below and further described in the enclosed *Technical Support Document, EPA Approval of the State of Idaho's New/Revised Human Health Water Quality Criteria for Toxics and Other Water Quality Standards Provisions*. The EPA's action applies only to water bodies in the State of Idaho and does not apply to waters that are within Indian Country, as defined in 18 U.S.C. § 1151.

The new and revised WQS are codified in the Idaho Administrative Procedures Act 58, Title 01, Chapter 02 (IDAPA 58.01.02). In addition, DEQ made other changes to Idaho's regulations at IDAPA 58.01.02, sections 010, 070, 210, 284, and 400.

The EPA is taking action in accordance with our authority under CWA section 303(c), 33 U.S.C. § 1313(c), to approve the new and revised water quality standards identified in DEQ's submittal on December 13, 2016, and listed below:

- 010 Definitions
- 070 Application of Standards
- 210.01 Table of Numeric Criteria for Toxic Substances
- 210.03 Applicability
- 210.04 National Pollutant Discharge Elimination System Permitting
- 210.05 Development of Toxic Substance Criteria

The EPA is taking no action on IDAPA 58.01.02.210.01.b footnotes c, l and q, IDAPA 58.01.02.284.04 Application of South Fork Coeur d'Alene site specific criteria, and IDAPA 58.01.02.400.06 Intake Credits for Water Quality-Based Effluent Limits because the EPA has determined that these new and

revised provisions are not water quality standards subject to review and action under CWA section 303(c).

The EPA appreciates DEQ's efforts to update its human health criteria. If you have any questions or concerns, please contact me or Dan Opalski at (206) 553-1855 or opalski.dan@epa.gov.

Sincerely,

Chris Hladick
Regional Administrator

Enclosure

cc: Mr. Barry Burnell, Administrator, Water Quality Programs

U.S. ENVIRONMENTAL PROTECTION AGENCY – REGION 10

Technical Support Document

EPA Approval of the State of Idaho's New/Revised Human Health Water Quality Criteria for Toxics and Other Water Quality Standards Provisions Submitted on December 13, 2016

April 4, 2019

Technical Support Document

EPA Approval of the State of Idaho's New/Revised Human Health Water Quality Criteria for Toxics and Other Water Quality Standards Provisions Submitted on December 13, 2016

Table of Contents

I. Introduction

This document provides the basis for the U.S. Environmental Protection Agency's (EPA or the Agency) decisions under section 303(c) of the Clean Water Act (CWA), 33 U.S.C. 1313(c), and the federal water quality standards regulations at 40 CFR Part 131, to approve certain new and revised water quality standards (WQS) submitted to the EPA by the Idaho Department of Environmental Quality (DEQ) on December 13, 2016.[1]

The new and revised WQS were adopted by the 2016 Idaho State Legislature, effective March 25, 2016. DEQ's December 13, 2016, submittal contains 209 new and revised human health criteria for 105 pollutants, including 11 pollutants for which Idaho had not previously adopted criteria, that are applicable to all surface waters of the State. Idaho's WQS are codified in the Idaho Administrative Procedures Act 58, Title 01, Chapter 02 (IDAPA 58.01.02). The new and revised human health criteria were adopted into a table contained in Idaho's Administrative Rules at IDAPA 58.01.02, section 210. In addition, DEQ made several other changes to Idaho's regulations that were adopted into Idaho's Administrative Rules at IDAPA 58.01.02, sections 010, 070, 210, 284, and 400. These changes are as follows:

- 010 Definitions – Modified the definition at 010.46 for harmonic mean flow to become a generic definition of a harmonic mean of any measurements.

- 070 Application of Standards – Added a new section 070.08 to provide a narrative statement that provides protection of downstream water quality.

- 210.01 Table of Numeric Criteria for Toxic Substances – Added 23 new criteria for 13 pollutants and revised 186 criteria for 91 pollutants.

  210.01.a. – Removed application of the human health criteria in column C2 (fish only) to aquatic life uses.

  210.01.b. – Added text specifying that the human health criteria in column C2 (fish only) apply to waters designated for either primary or secondary contact recreation.

  - Included a new column to identify which human health criteria are based on carcinogenicity, a missing "C" at the top of the column for the human health criteria and revised footnotes as appropriate. Also, replaced the word "organisms" with "fish" in the labeling of columns C1 and C2.
  - Modified footnote c to reference Idaho's Technical Support Document for Human Health Criteria Calculations.
  - Modified footnote d to correct a typographical error.
  - Modified footnote l to clarify that the cancer risk range is for the incremental increase in risk and to specify Idaho's choice of a 10^{-5} (1 in 100,000) incremental increase.

[1] Letter dated December 13, 2016, from Barry Burnell, Administrator, Water Quality Division, Idaho Department of Environmental Quality, Boise, Idaho, to Daniel Opalski, Director, Office of Water and Watersheds Region 10, U.S. Environmental Protection Agency, Seattle, Washington.

- Added footnote q to clarify that the basis of the added copper criterion and unchanged criteria for arsenic and asbestos is a Maximum Contaminant Level (MCL).

- 210.03 Applicability
  210.03. – Clarified provisions relating to mixing zones for toxic substances
  210.03.a. – Clarified that criteria apply at the edge of any authorized mixing zone, or absent a mixing zone, then at the "end-of-pipe."
  210.03.b. – Clarified that the harmonic mean flow applies to non-carcinogens as well as carcinogens.
  210.03.c. – Added the words "aquatic life" to provide specificity.
  210.03.d. – Added paragraph d to address frequency and duration components of both aquatic life and human health criteria.
  210.03.d.i. – Added the words "aquatic life" for clarification.
  210.03.d.ii. – Added frequency and duration components for human health criteria.

- 210.04 National Pollutant Discharge Elimination System Permitting
  210.04.c. – Added a reference to the EPA's 1991 Technical Support Document (TSD) for water quality-based toxics control.

- 210.05 Development of Toxic Substance Criteria
  210.05.a.iii. – Updated the reference to EPA's ECOTOX database.
  210.05.b.i. – Added a focus on best available science for toxicity thresholds and allowance for consideration of peer-reviewed data.
  210.05.b.ii. – Provided specification regarding what to use when deriving human health criteria for a substance lacking an EPA 304(a) criterion.

- 284.04 Application of South Fork Coeur d'Alene site specific criteria – Eliminated redundancy by merging paragraphs b and c.

- 400.06 Intake Credits for Water Quality-Based Effluent Limits – Added an intake credit provision which specifies the limitations contained in Idaho's Pollutant Discharge Elimination System (IPDES) rules.

The EPA is taking action under CWA section 303(c), 33 U.S.C. § 1313(c), to approve all of the new and revised provisions listed above (with the exception of 210.01.b footnotes c, l and q; 284.04 Application of South Fork Coeur d'Alene site specific criteria; and 400.06 Intake Credits for Water Quality-Based Effluent Limits, because the EPA has determined that these new and revised provisions are not WQS subject to review and approval under CWA section 303(c)), having concluded that the provisions are consistent with the CWA and EPA's implementing regulations at 40 CFR Part 131.

Parts II and III of this document provide additional background information about Idaho's December 13, 2016 WQS submittal. Parts IV through IX of this document provide the basis for this action.

II. Background

A. Clean Water Act Requirements for Water Quality Standards

Under CWA section 303(c) and the EPA's implementing regulations at 40 CFR Part 131, states have the primary responsibility for reviewing, establishing, and revising WQS, which include the designated uses of a waterbody or waterbody segment and the water quality criteria necessary to protect those designated uses. The EPA's regulations at 40 CFR 131.11(a)(1) provide that "[s]uch criteria must be based on sound scientific rationale and must contain sufficient parameters or constituents to protect the designated use. For waters with multiple use designations, the criteria shall support the most sensitive use." In addition, 40 CFR 131.10(b) provides that "[i]n designating uses of a water body and the appropriate criteria for those uses, the state shall take into consideration the water quality standards of downstream waters and ensure that its water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters."

CWA section 303(c)(2)(B) requires states to adopt numeric water quality criteria for toxic pollutants listed pursuant to section 307(a)(1), 33 U.S.C. 1317(a)(1), for which the EPA has published criteria under section 304(a), 33 U.S.C. 1314(a), where the discharge or presence of these toxics could reasonably be expected to interfere with the designated uses adopted by the state. In adopting such criteria, states should establish numeric values based on one of the following: (1) section 304(a) criteria; (2) section 304(a) criteria modified to reflect site-specific conditions; or, (3) other scientifically defensible methods. 40 CFR 131.11(b). For pollutants not addressed by 303(c)(2)(B), states can establish narrative criteria where numeric criteria cannot be established, or to supplement numeric criteria.

At least once every three years, states are required to review their applicable WQS and, as appropriate, modify these standards or adopt new standards. 40 CFR 131.20. If a state does not adopt new or revised criteria for parameters for which EPA has published new or updated section 304(a) criteria, the state must provide an explanation when it submits the results of its review. *Id.* CWA section 303(c) requires states to submit new or revised WQS to the EPA for review to determine whether the revisions to surface WQS are consistent with the CWA and EPA's implementing regulations. In addition, the state must follow its own legal procedures for adopting such standards, 40 CFR 131.5, and submit certification by the state's attorney general, or other appropriate legal authority within the state, that the WQS were duly adopted pursuant to state law. 40 CFR 131.6(e).

The EPA has developed a frequently asked questions document that sets forth a plain language interpretation (informed by the CWA, EPA's implementing regulations at 40 CFR part 131, and relevant case law) of what constitutes a new or revised WQS that the Agency has the CWA section 303(c) authority and duty to approve or disapprove.[2] The document outlines a four-part test for determining what constitutes a new or revised WQS:

1. Is it a legally binding provision adopted or established pursuant to state or tribal law?

[2] *What is a New or Revised Water Quality Standard Under CWA 303(c)(3) Frequently Asked Questions*, U.S. Environmental Protection Agency, EPA Pub. No. 820F12017 (Oct. 2012). Available at https://www.epa.gov/sites/production/files/2014-11/documents/cwa303faq.pdf

2. Does the provision address designated uses, water quality criteria (narrative or numeric) to protect designated uses, and/or antidegradation requirements for waters for the United States?
3. Does the provision express or establish the desired condition (e.g., uses, criteria) or instream level of protection (e.g., antidegradation requirements) for waters of the United States immediately or mandate how it will be expressed or established for such waters in the future?
4. Does the provision establish a new WQS or revise an existing WQS?

If all four questions are answered "yes," then the provision likely constitutes a new or revised WQS that EPA has the authority and duty to approve or disapprove under CWA section 303(c)(3).

B. Overview of the EPA's 2012 Disapproval Action

On May 10, 2012, the EPA disapproved Idaho's July 7, 2010 submittal of revised WQS, which included 167 human health criteria for 88 toxic pollutants.[3] Idaho's 2010 human health criteria were based in part on newer toxicity information and a fish consumption rate (FCR) of 17.5 grams per day (g/day), which at the time was the EPA's recommended national default FCR for the general population of the U.S. The EPA's disapproval was based on Idaho's failure to demonstrate that the criteria protected Idaho's designated uses. Specifically, the EPA concluded that Idaho failed to consider available local and regional fish consumption information suggesting that fish consumption among some Idaho population groups was greater than 17.5 g/day. The EPA's review of available information suggested that recreational anglers and subsistence fishers in Idaho consume fish at rates higher than the national default rate. In addition, during tribal consultation the EPA heard from several tribes that rely on fish and other resources in Idaho waters for subsistence purposes. In its disapproval action, the EPA recommended that Idaho further evaluate levels of fish intake by recreational and subsistence fishers in Idaho when evaluating the appropriate FCR for use in deriving criteria.

C. Overview of Idaho's December 13, 2016 WQS Submission and the EPA Engagement with Idaho

From October 2012 to August 2015, DEQ held eighteen negotiated rulemaking meetings with interested parties to discuss options for revising Idaho's human health criteria to address the EPA's May 2012 disapproval action. During these meetings, DEQ decided it would conduct an Idaho-specific fish consumption survey to inform its process for revising the state's human health criteria.

Beginning in 2013, the EPA participated in the negotiated rulemaking process and issued a series of letters to the DEQ concerning the development of Idaho's revised human health water quality criteria. The EPA's letters included recommendations to use the most updated science and identified concerns regarding the scope of information and data used to establish the state's FCR.

[3] Letter from Michael A. Bussell (U.S. EPA) to Barry Burnell (Idaho DEQ), EPA Disapproval of New and Revised Human Health Criteria for Toxics, Idaho Docket 58-0102-0503 (May 10, 2012).

In the EPA's May 29, 2015, comment letter the Agency asserted for the first time in writing that, "[i]n addition to complying with the CWA and EPA's regulations, when setting criteria to adequately protect Idaho's designated uses, it is necessary to consider tribal reserved rights, including tribal treaty-reserved fishing rights (executive orders and federal statutes could also apply)."[4] This letter also asserted for the first time that, "in cases where tribal treaty or other reserved fishing rights apply, selecting a FCR that reflects unsuppressed fish consumption may be necessary in order to satisfy such rights."[5]

In June 2015, the EPA finalized updates to the Agency's national 304(a) recommendations for the protection of human health for 94 chemical pollutants.[6] These updated recommendations reflect the latest scientific knowledge, including updated recommendations regarding body weight, drinking water consumption rate, FCR, bioaccumulation factors (BAFs), toxicity values, and relative source contribution (RSC) values to use in deriving water quality criteria. The EPA accepted comments from the public from May to August 2014 on the draft updated national 304(a) human health criteria recommendations and published responses to those comments. The EPA 304(a) criteria serve as recommendations to states and tribes authorized to establish WQS under the CWA.

On August 6, 2015, DEQ published a preliminary draft rule for public comment in the Idaho Administrative Bulletin with a 30-day comment period. Following a review of public comments on the preliminary draft rule, on October 7, 2015, Idaho published a proposed rule in the Idaho Administrative Bulletin. Idaho provided a 30-day public comment period and held one public hearing on the rule proposal. DEQ received input from more than 95 commenters, including the EPA, on the 2015 proposed rule.

On December 8, 2015, DEQ posted a revised proposed rule on its website. DEQ presented the proposed rule to the Idaho Board of Environmental Quality, which adopted it as a pending rule at a December 10, 2015 Board meeting with no changes.

The pending rule went before the Idaho State Legislature and was approved and became effective under Idaho law on March 25, 2016. Idaho submitted the adopted rule to the EPA on December 13, 2016. Idaho's December 13, 2016 submittal includes human health criteria for 105 different toxic pollutants, which represent CWA section 307(a) priority and non-priority toxic pollutants.[7] Idaho's submittal also included new and revised language on several provisions listed above.

In accordance with 40 CFR 131.6(e), DEQ's December 13, 2016 WQS submission also included a letter from Doug Conde, Assistant Attorney General for the Idaho Office of the Attorney General, certifying that the new and revised WQS were "duly adopted pursuant to state law." The EPA's approval under CWA section 303(c) is required before the new and revised WQS are effective for CWA purposes.

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[4] Letter from Lisa Macchio, Water Quality Standards Coordinator, EPA Region 10, to Don Essig, Surface Water Manager, Idaho Department of Environmental Quality (May 29, 2015), p. 1.
[5] *Id.* at 4.
[6] 80 Fed. Reg. 36,986 (Jun. 29, 2015), *Final Updated Ambient Water Quality Criteria for the Protection of Human Health.* https://www.gpo.gov/fdsys/pkg/FR-2015-06-29/html/2015-15912.htm.
[7] Idaho added the new criteria values to the table of numeric toxic criteria at Section 210 in the state's WQS, which at the time of the submittal also contained aquatic life criteria. Since DEQ's submittal on December 13, 2016, Idaho has separated its aquatic life and human health numeric criteria for toxics into two different tables.

Idaho's December 13, 2016 submittal package included the following enclosures:

- August 6, 2012 letter notifying the EPA of DEQ's intent to engage in rulemaking.
- September 6, 2012 Notice of Negotiated Rulemaking.
- October 7, 2015 Notice of Proposed Rule announcing opening of 30-day public comment period on the proposed rule.
- Summary of negotiated rulemaking prepared for the DEQ Board of Environmental Quality.
- Summary of public comment and DEQ's response, including copies of meeting sign-in sheets.
- Rulemaking Timeline – Human Health Criteria for Toxic Pollutant.
- Summary of Changes in Idaho WQS made by Rule Docket 58-0102-1201.
- Idaho Human Health Criteria Technical Support Document 2015.
- Idaho Human Health Criteria Update Justification and Compliance with the Clean Water Act.
- January 6, 2016 Notice of Pending Rule – Announcing adoption by the DEQ Board of Environmental Quality.
- Notice of final rules from May 4, 2016 Administrate Bulletin, Docket 58-0102.
- Attorney General's certification that the rules were adopted according to state law.

In January 2017, the EPA submitted a letter to DEQ outlining its preliminary review of Idaho's submittal.[8] Specifically, the EPA asserted that DEQ had not adequately considered the treaty-reserved fishing rights held by several Idaho tribes when deriving criteria to protect its designated uses.[9] The EPA explained that, in light of applicable treaties, Idaho's existing primary and secondary contact recreational designated uses should be recharacterized to include a subsistence fishing use, and that it was "reasonable and appropriate" to do so. The EPA then expressed concern that Idaho's criteria were not sufficiently protective of this recharacterized subsistence designated use.[10]

D. Summary of Recent Fish Consumption Surveys in Idaho

During its negotiated rulemaking process, DEQ hired a contractor to design and implement a statewide fish consumption survey of the general population and recreational anglers in Idaho. At the same time, the EPA provided General Assistance Program funding to the Idaho tribes who were interested in

[8] Letter from Dennis McLerran, Regional Administrator, EPA Region 10, to John Tippets, Director, Idaho Dept. of Environmental Quality (January 17, 2017).
[9] *Id.* at Enc. p. 1
[10] *Id.* at Enc. p. 2

developing and implementing a tribal fish consumption survey. DEQ and the tribes coordinated the schedules for their respective surveys to ensure that all the survey results were available in time to inform DEQ's selection of a FCR.

From spring 2014 to spring of 2015, DEQ conducted telephone surveys of Idaho residents (including anglers) to collect fish consumption data that were used to establish FCRs for Idaho's general population as well as for recreational anglers in the state. These FCRs were based on statistical modeling of short term dietary recall data. The modeling methodology was originally developed by the National Cancer Institute (NCI), and is commonly referred to as the "NCI method." The NCI method is currently believed to be the state-of-the-art approach for conducting dietary intake surveys, including consumption of fish. Idaho considered these survey results in developing its new and revised state water quality criteria.[11]

DEQ's survey presented, for both the general population and recreational anglers, consumption of 1) total fish; and 2) fish obtained from Idaho waters (excluding salmon with the exception of steelhead). The EPA recommends including species from freshwater, near coastal, and estuarine habitats when determining FCRs for use in deriving human health criteria, because those are the waters under CWA jurisdiction.[12] The EPA includes species from those waters when calculating its recommended FCR based on national data. DEQ's survey presented consumption rates for total fish consumption and consumption of fish obtained in Idaho waters and is consistent with the EPA recommendations.

Survey results and FCR statistics for the Idaho general population and recreational anglers are as follows.

Table 1. Idaho General Population and Recreational Angler Total Fish Consumption Rates (grams per day)

Population	Sample Size	Statistic					
		50%	Mean	75%	90%	95%	99%
General Population	2959	14.2	22.0	29.7	51.1	67.7	118
Anglers	1175	15.9	26.5	36.9	64.6	86.4	146

[11] Idaho Human Health Criteria Update Justification and Compliance with the Clean Water Act, Idaho Docket 58-0102-1201 (Dec. 2016) (hereinafter "Idaho HHC Update Justification") pp. 6-13. *Available at* http://www.deq.idaho.gov/media/60179450/58-0102-1201-human-health-criteria-justification-compliance-clean-water-act-1216.pdf

[12] *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health*. U.S. Environmental Protection Agency, Office of Water, Washington, D.C., EPA-822-B-00-004 (Oct. 2000), pp. 4-24 (hereinafter "EPA's 2000 Human Health Methodology"). *Available at* https://www.epa.gov/wqc/human-health-water-quality-criteria.
Human Health Ambient Water Quality Criteria and Fish Consumption Rates: Frequently Asked Questions, U.S. Environmental Protection Agency (Jan. 2013). *Available at* https://www.epa.gov/wqc/human-health-ambient-water-quality-criteria-and-fish-consumption-rates-frequently-asked

Table 2. Idaho General Population and Recreational Angler Consumption Rates (grams per day) for Fish Obtained in Idaho							
Population	Sample Size	Statistic					
		50%	Mean	75%	90%	95%	99%
General Population	2959	0.1	2.3	0.8	4.7	11.2	40.5
Anglers	1175	0.6	4.5	2.9	10.8	21.4	62.4

The Idaho survey and use of the survey data were reviewed by the consulting firm WESTAT under an EPA contract[13] and by independent peer reviewers funded by a DEQ contract.[14] In response to peer review comments, DEQ contractors prepared some clarifying edits to the reports describing the survey effort and development of FCRs.[15]

From 2014 to 2015, the Nez Perce and Shoshone-Bannock Tribes in Idaho conducted surveys of current fish consumption. Additionally, the Nez Perce, Shoshone-Bannock, Kootenai of Idaho and Coeur d'Alene Tribes in Idaho prepared reports detailing historic or heritage FCRs. The surveys were funded with General Assistance Program funding, under an EPA contract, and involved three consulting firms with relevant expertise.

The current FCR for each of the two tribes was derived using the NCI methodology described in the previous section as well as a food frequency questionnaire (FFQ) approach.[16] Survey results and current FCR statistics for species of CWA relevance (freshwater, near coastal and estuarine species) for the Nez Perce and Shoshone-Bannock Tribes are summarized in Table 3. DEQ's use of the tribal survey data to derive a FCR, specifically the inclusion of some marine species such as salmon, is more representative of regional fish consumption than the FCR used to derive the EPA's 2015 updated national 304(a) human health criteria recommendations.

Survey results and FCR statistics for the tribal populations are as follows.

[13] Memorandum from Greg Frey (SRA) to John Rodgers, Rebecca Birch and David Marker re: Review of Idaho Fish Study (Oct. 19, 2015). *Available at* http://www.deq.idaho.gov/media/60178494/58-0102-1201-westat-review-1015.pdf

[14] Peer Review Report, NCI Method Estimates of Usual Intake Distributions for Fish Consumption in Idaho, prepared by Versar, Inc. (Jan. 22, 2016). *Available at* http://www.deq.idaho.gov/media/60178492/58-0102-1201-nci-method-estimates-peer-review-012216.pdf

[15] Response to Peer Review of the October 6, 2015 Draft Report: NCI Method Estimates of Usual Intake Distribution for Fish Consumption in Idaho. *Available at* http://www.deq.idaho.gov/media/60178489/58-0102-1201-ims-peer-review-comments-100615.pdf

[16] Food frequency questionnaire approaches ask respondents to estimate their consumption of dietary items of interest over the course of some period of time, for example a year.

Table 3. FCRs for Tribes in Idaho Using Food Frequency (FFQ) and National Cancer Institute Methodologies (NCI) (Note: FCRs represent consumption of fish of Clean Water Act Relevance)							
Population	Sample size	Statistic					
		50%	Mean	75%	90%	95%	99%
Nez Perce FFQ	446	61.3	104	123.3	231.4	327.9	764.5
Nez Perce NCI		36	66.5	81.7	159.4	233.9	NA
Shoshone Bannock FFQ	225	48.5	110.7	140.2	265.6	427.1	792.6
Shoshone Bannock NCI		6.5	18.6	20	48.9	80.0	NA

The survey and data analyses were peer reviewed by recognized experts in survey design, implementation and analysis of both the NCI and FFQ survey data.[17]

DEQ considered all of the survey results, including results from the Nez Perce and Shoshone-Bannock Tribes, who are high consuming subpopulations in the state. Ultimately, DEQ selected the mean FCR derived from Nez Perce Tribe data, for a FCR of 66.5 g/day. The selected FCR is equal to approximately the 95th percentile general population consumption rate for all fish, the 90th percentile of the angler population, and the 70th percentile of the Nez Perce consumption rate (the highest of the surveyed tribes). This FCR selection is consistent with the EPA's 2000 Methodology which recommends deriving an appropriate FCR using an upper bound percentile of the general population and a mean or average of higher consuming populations.[18]

E. The EPA's Approach for Considering Tribal Treaty Rights in its 2015-2017 Letters to Idaho

The May 29, 2015 letter to DEQ, and those that followed documented the evolution of a new legal theory and framework within which the EPA and states with delegated CWA authority would be required to adopt new approaches in order to "effectuate and harmonize" tribal reserved treaty rights with the CWA when establishing human health criteria.[19] Specifically, as set forth in its letters to Idaho, the EPA purported to harmonize the applicable treaty language protecting tribes' right to fish with the CWA by concluding that EPA and the state would need to provide the same level of protection to tribal treaty fishers as to the state's general population, in part by interpreting the state's recreational designated uses to also mean or include subsistence fishing. This framework had not been promulgated in any nationally applicable rule or articulated in any national recommended guidance or EPA

[17] External Peer Review of EPA's Draft Document: A Fish Consumption Survey of the [Shoshone-Bannock Tribes] [Nez Perce Tribe] Combination Draft Final Report, Contract No. EP-C-13-010
Task Order 2015-24 (Oct. 7, 2015).
[18] EPA's 2000 Human Health Methodology, pp. 4-25 to 4-26.
[19] Letter from Lisa Macchio, Water Quality Standards Coordinator, EPA Region 10, to Don Essig, Surface Water Manager, Idaho Department of Environmental Quality (May 29, 2015); Letters from Angela Chung, Water Quality Standards Unit Manager, EPA Region 10, to Don Essig, Surface Water Manager, Idaho Department of Environmental Quality (Aug 21, 2015 and Nov. 6, 2015); and Letter from Dennis McLerran, Regional Administrator, EPA Region 10, to John Tippets, Director, Idaho Dept. of Environmental Quality (January 17, 2017).

methodology. The EPA did not provide the public with adequate notice of this framework or solicit public comments before applying it to particular state submissions.

In important respects, this framework departed from longstanding EPA policy and the Agency's recommendations for setting human health criteria, including the 2000 Methodology. Because of this, the EPA stated that the 2000 Methodology "does not speak to or envision the unique situation of setting WQS that cover areas where tribes have treaty-reserved rights to practice subsistence fishing."[20] While the 2000 Methodology did not explicitly address treaty-reserved fishing rights, the EPA was aware long before development of the 2000 Methodology that certain tribal populations engaged in subsistence fishing practices and that tribal treaties contain subsistence fishing protections. Indications in EPA's 2015-2017 letters that the Agency was not cognizant of these practices or treaties when developing the 2000 Methodology are inaccurate. Moreover, the 2000 Methodology speaks directly to "greater consumption among Native American, Pacific Asian American, and other subsistence consumers" and advises states to "ensure that the risk to more highly exposed subgroups (sportfishers or subsistence fishers) does not exceed the 10^{-4} level."[21] Thus, upon further reflection, the EPA believes that the 2000 Methodology is the appropriate framework through which to assess protection of tribal members with treaty fishing rights.

In the first step of the EPA's 2015-2017 framework, the EPA unilaterally recharacterized the state's designated uses for waters where the state has jurisdiction to set WQS and federally-recognized tribes have treaty or similarly-reserved fishing rights are recharacterized to be "subsistence fishing" designated uses, regardless of how the state has promulgated or interpreted its designated use. [22]

The EPA's letters to Idaho described a series of additional steps to determine whether the State's water quality criteria are protective of the recharacterized designated use, including designating the tribal subsistence fishers as the "target general population" for purposes of establishing the water quality criteria. The EPA recommended evaluating whether the surveyed tribal FCRs were suppressed (as evidenced by comparison with information such as "heritage consumption" of tribal ancestors), and if so, the EPA concluded that Idaho must evaluate available data and, if possible, select a "current unsuppressed" FCR to establish protective water quality criteria.[23] If data were not sufficient to derive a "current unsuppressed" FCR, the EPA noted that the state could use "the upper percentile of consumer-only data to account for uncertainty in the unsuppressed consumption rates of tribal consumers within the state and to help ensure that the resulting criteria protect the tribal target general population

[20] Letter from Dennis McLerran, Regional Administrator, EPA Region 10, to John Tippets, Director, Idaho Dept. of Environmental Quality (January 17, 2017), Enc. p. 2, n. 7.
[21] *See* 2000 Methodology, pp. 1-12.
[22] Around this same time, the EPA began reinterpreting designated uses for the states of Maine and Washington under this framework. The EPA's interpretations were inconsistent with the states' interpretation of their designated uses. *See* EPA, Revision of Certain Federal Water Quality Criteria Applicable to Washington, 81 Fed. Reg. 85,417, 85,424 (Nov. 28, 2016) ("EPA has interpreted the state's EPA-approved designated fish and shellfish harvesting use to include or encompass a subsistence component based on, and consistent with, the rights reserved to the tribes through the treaties."); February 2, 2015 letter from EPA Regional Administrator H. Curtis Spaulding to Patricia W. Aho, Commissioner of Maine Department of Environmental Protection, Attachment A, pp. 2 and 31-32.
[23] Letter from Dennis McLerran, Regional Administrator, EPA Region 10, to John Tippets, Director, Idaho Dept. of Environmental Quality (January 17, 2017), Enc. p. 23.

exercising their treaty-reserved rights."[24] These steps were not established by regulation in any nationally applicable EPA rulemaking or in a guidance document or statement of policy, and they are not consistent with existing EPA policy for establishing human health criteria, including the 2000 Methodology.

The EPA's 2000 Methodology provides that members of a community that consume more fish than the general population, like subsistence fishers (tribal and non-tribal), are accounted for and protected as high consuming subpopulations.[25] Consistent with the 2000 Methodology, a 10^{-5} risk level is appropriate to protect the general population, as long as the criteria ensure that highly exposed populations (sport fishers or subsistence fishers) do not exceed a 10^{-4} risk level.[26] In the EPA's letters to DEQ, for the first time the EPA suggested that high consuming subpopulations that consume fish in accordance with a tribal treaty right must be treated by the state as the "target general population" rather than a high consuming subpopulation. The term "target general population" also was a new designation, as the EPA guidance and recommendations only refer to the "general population" and "highly exposed" subpopulations.[27] Accounting for tribal high consuming subpopulations in this manner is different from the Agency's longstanding guidance and appears to depart from the Agency's prior approach without adequate explanation.

The concept of unsuppressed fish consumption has generally been used by the EPA to evaluate changes in fish consumption due to pollutant discharge events or other significant changes in water quality that reduce, destroy or render fish populations unsafe for human consumption. The application of an unsuppressed fish consumption analysis in the context of historic or heritage fish consumption rates, however, is new and novel to the water quality standards program at the EPA. Nothing in the CWA or the EPA's regulations and guidance, including the 2000 Methodology, requires a state to set a FCR based on an estimate of unsuppressed consumption. In fact, the concept of "unsuppressed" consumption is not addressed in the 2000 Methodology. Moreover, neither the EPA's letters to the state nor applicable guidance explain how historic fish consumption rates are to be used in deriving human health criteria for surface waters. These concepts should have been presented for thorough public notice and comment prior to being incorporated into the EPA's human health criteria recommendations.

The CWA neither precludes nor compels a state or 303(c)-authorized tribe from identifying high consuming subpopulations as the "target general population." The CWA also neither precludes nor compels a state or authorized tribe from evaluating if, how and why current FCRs may be lower than prior or historic consumption rates. Within the cooperative federalism framework of the CWA, states and authorized tribes have the opportunity and discretion to establish WQS that are protective of their resources and designated uses, and that are more stringent than federal requirements. A proper application of these principles ensures that the federal role remains in reviewing various state approaches.

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[24] Letter from Angela Chung, Water Quality Standards Unit Manager, EPA Region 10, to Don Essig, Surface Water Manager, Idaho Department of Environmental Quality (Nov. 6, 2015), Enc. pp. 6-8.
[25] EPA's 2000 Human Health Methodology pp. 1-12 and 2-6 to 2-7.
[26] *Id.* at pp. 2-6 to 2-7.
[27] *See* 2000 Human Health Methodology (terms "general population" and "highly exposed" subgroups, populations, or individuals used throughout).

III. Idaho's New and Revised Human Health Water Quality Criteria

A. Idaho's Designated Uses Related to Protection of Human Health

Idaho's human health criteria, with the exception of the criterion for copper, were developed in accordance with EPA's 2000 Human Health Methodology[28] to protect human health from long-term exposure to toxic pollutants in drinking water and through eating fish containing these pollutants. For human health protection, the EPA recommends that states apply human health criteria for toxics to all waters with designated uses providing for public water supply protection (and therefore a potential water consumption exposure route), recreation, and/or aquatic life protection (and therefore a potential fish consumption route).[29] In Idaho, surface waters used for drinking water are designated as "Domestic Water Supply" (DWS). All surface waters in Idaho are designated as "Primary or Secondary Contact Recreation" (PCR/SCR) and are therefore assumed to be used for consumption of fish.

Idaho's "water + fish" criteria were established to limit pollutants to levels that are protective of consumption of drinking water and fish. These criteria apply where Idaho has designated DWS as a beneficial use. The "fish only" criteria apply where Idaho has designated the PCR/SCR, but not a DWS use. All waters in Idaho are designated for PCR/SCR and aquatic life use. The DWS designation is in addition to the PCR/SCR use designation. Therefore, the "fish only" criteria apply to all surface waters of the State of Idaho, but the "water + fish" criteria apply only to the subset of surface waters of the State of Idaho also designated as DWS.

Idaho's WQS designate beneficial uses for waters of the State for each subbasin by waterbody segment in IDAPA 58.01.02.110 through 160. For those waterbodies of the state not specifically identified in IDAPA 58.01.02.110 through 160, or those waterbodies that are included in these sections but do not have designated uses assigned to them, Idaho's WQS specify the uses and criteria that apply to undesignated surface waters. The provision at IDAPA 58.01.02.101.01 entitled, "Undesignated Surface Waters," states "… *undesignated waters shall be protected for beneficial uses which includes all recreational use in and on the water and the protection and propagation of fish, shellfish and wildlife, wherever attainable*." Further, IDAPA 58.01.02.101.01.b. specifies that IDEQ "…*will apply cold water aquatic life and primary or secondary contact recreation criteria to undesignated waters*." Thus, the human health criteria in column C2 ("fish only") of the Table of Numeric Criteria for Toxic Substances contained in IDAPA 58.01.02.210.01 apply to these undesignated waters.

Idaho describes the SCR designated use as water quality appropriate for recreational uses on or about the water, including activities such as fishing. (IDAPA 58.01.02.100.02. b.). In addition, Idaho presumes that all activities that are protected by the SCR use are also protected under the PCR designated use. In its 2016 submission DEQ clarified that although the rule language regarding contact recreation does not speak to any particular level of harvest related to fishing, the state's interpretation is that the SCR use,

[28] EPA's 2000 Human Health Methodology. *Available at* https://www.epa.gov/wqc/human-health-water-quality-criteria
[29] Water Quality Standards Handbook, U.S. Environmental Protection Agency, Office of Water, Washington, D.C., EPA-823-B-94-005a (Aug. 1994). *Available at* https://www.epa.gov/wqs-tech/water-quality-standards-handbook

and thus also the PCR use, provides protection based on a recreational level of fishing, consistent with the terminology used in the description of the designated use.[30]

As described above and consistent with the EPA's 2000 Methodology, DEQ applies the "water + fish" human health criteria for toxics to waters designated as domestic water supply. This protects from a potential water exposure route. Also consistent with the EPA's 2000 Methodology, DEQ applies the "fish only" human health criteria for toxics to recreational uses as these waters provide a potential fish consumption exposure route (i.e., fish or other aquatic life are being caught and consumed).

B. National Recommended Human Health Criteria Methodology

Human health criteria are based on two types of biological endpoints: (1) carcinogenicity and (2) systemic toxicity (i.e., all adverse effects other than cancer). Human health criteria for carcinogenic effects are calculated using the following input parameters: cancer slope factor (CSF), cancer risk level, body weight, drinking water intake rate, FCR, and bioaccumulation factors (BAFs) – see Figure 1. Human health criteria for non-carcinogenic and nonlinear carcinogenic effects are calculated using a reference dose (RfD) in place of a CSF and cancer risk level, and a relative source contribution (RSC) factor, which is intended to ensure that an individual's total exposure to a given pollutant from all sources does not exceed the RfD – see Figure 2. Each of these inputs is discussed in more detail below and in EPA's 2000 Human Health Methodology and EPA's 2015 304(a) recommended criteria. While the 2000 Human Health Methodology and the 2015 304(a) criteria provide recommended default values, it also recommends that states use the guidance to derive criteria that appropriately reflect local conditions and that states should consider developing criteria to protect highly exposed populations.[31]

Figure 1. Simplified version of the equation used to derive the human health criteria for carcinogens.

$$AWQC = \frac{(Risk\ Level \bullet BW)}{[CSF \bullet (DI + (FCR \bullet BAF))]}$$

where:

AWQC	=	Ambient Water Quality Criterion (milligrams per liter)
Risk Level	=	Risk level (unitless)
CSF	=	Cancer slope factor (milligrams per kilogram per day)
BW	=	Human body weight (kilograms)
DI	=	Drinking water intake (liters per day)
FCR	=	Fish consumption rate (kilograms per day)
BAF	=	Bioaccumulation factor (liters per kilogram)

As recommended in the EPA's 2000 Human Health Methodology, the drinking water intake (DI) term is removed when deriving fish/organism-only human health criteria.

[30] Rulemaking and Public Comment Summary, Idaho Department of Environmental Quality, Docket 58-0102-1201 (Dec. 7, 2015). *Available at* http://www.deq.idaho.gov/media/60177654/58-0102-1201-public-comment-summary-1215.pdf

[31] EPA's 2000 Human Health Methodology, pp. 4-24 to 4-28.

Figure 2. Simplified version of the equation used to derive the human health criteria for non-carcinogens.

$$AWQC = RfD \bullet RSC \bullet \frac{(BW)}{[DI + (FCR \bullet BAF)]}$$

where:

AWQC	=	Ambient Water Quality Criterion (milligrams per liter)
RfD	=	Reference dose for noncancer effects (milligrams per kilogram per day)
RSC	=	Relative source contribution factor to account for other sources of exposure (unitless)
BW	=	Human body weight (kilograms)
DI	=	Drinking water intake (liters per day)
FCR	=	Fish consumption rate (kilograms per day)
BAF	=	Bioaccumulation factor (liters per kilogram)

As recommended in the EPA's 2000 Human Health Methodology, Idaho derived organism only criteria by removing the drinking water intake (DI) term.

1. Cancer Risk Level

The EPA's national 304(a) recommended human health criteria are typically based on the assumption that carcinogenicity is a "non-threshold phenomenon," which means that there are no "no-effect" levels, because even extremely small doses are assumed to cause a finite increase in the incidence of cancer. Therefore, the EPA calculates 304(a) human health criteria for carcinogenic effects as pollutant concentrations corresponding to lifetime increases in the risk of developing cancer. The EPA calculates its national 304(a) recommended human health criteria values at a 10^{-6} (one in one million) cancer risk level and recommends lifetime cancer risk levels of 10^{-6} or 10^{-5} (one in one hundred thousand) for the general population. Consistent with the 2000 Methodology, a 10^{-5} risk level is appropriate to protect the general population, as long as the criteria ensure that highly exposed populations (sport fishers or subsistence fishers) do not exceed a 10^{-4} risk level.[32] The EPA notes that selecting an appropriate cancer risk level is a risk management decision and states and authorized tribes can also choose a more stringent risk level, such as 10^{-7} (one in ten million), when deriving human health criteria. If the pollutant is not considered to have the potential for causing cancer in humans (i.e., systemic toxicants), the EPA assumes that the pollutant has a threshold (the reference dose or RfD) below which a physiological mechanism exists to avoid or overcome the adverse effects of the pollutant.

The EPA takes an integrated approach and considers both cancer and non-cancer effects when deriving human health criteria. Where sufficient data are available, the EPA derives criteria using both carcinogenic and non-carcinogenic toxicity endpoints and recommends the lower value.

[32] *Id.* at pp. 2-6 to 2-7.

2. Cancer Slope Factor and Reference Dose

A dose-response assessment is required to understand the quantitative relationships between the exposure to a pollutant and the onset of human health effects. The EPA evaluates dose-response relationships derived from animal toxicity and human epidemiological studies to derive dose-response metrics. For carcinogenic toxicological effects, the EPA uses an oral CSF to derive human health criteria. The oral CSF is an upper bound, approximating a 95 percent confidence limit, on the increased cancer risk from a lifetime oral exposure to a stressor. For non-carcinogenic effects, the EPA uses the RfD to calculate human health criteria. A RfD is an estimate of a daily oral exposure of an individual to a substance that is likely to be without an appreciable risk of deleterious effects during a lifetime. A RfD is typically derived from a laboratory animal dosing study in which a no-observed-adverse-effect level (NOAEL), lowest-observed-adverse-effect level (LOAEL), or benchmark dose can be obtained. Uncertainty factors are applied to reflect the limitations of the data. The EPA's Integrated Risk Information System (IRIS)[33] was the primary source of toxicity values (i.e., RfD and CSF) for the EPA's 2015 updated national 304(a) recommended human health criteria.[34]

3. Exposure Assumptions

The EPA's 2015 updated national 304(a) recommended human health criteria use a default drinking water intake rate of 2.4 liters per day (L/day) and default FCR of 22 g/day for consumption of fish and shellfish from inland and nearshore waters, multiplied by pollutant-specific bioaccumulation factors (BAFs) to account for the amount of the pollutant in the edible portions of the ingested species. The EPA's 2000 Methodology for deriving human health criteria emphasizes using, when possible, measured or estimated BAFs, which account for chemical accumulation in aquatic organisms from all potential exposure routes.[35] In the 2015 national 304(a) recommended human health criteria update the EPA primarily used field-measured BAFs, and laboratory-measured bioconcentration factors (BCFs) with applicable food chain multipliers available from peer-reviewed, publicly available databases, to develop national BAFs for three trophic levels of fish. If this information was not available, the EPA selected octanol-water partition coefficients (K_{ow} values) from peer-reviewed sources for use in calculating national BAFs.[36]

The EPA's default drinking water intake rate of 2.4 L/day represents the per capita estimate of combined direct and indirect community water ingestion at the 90th percentile for adults ages 21 and older.[37] The EPA's default FCR of 22 g/day represents the 90th percentile consumption rate of fish and shellfish from inland and nearshore waters for the U.S. adult population 21 years of age and older, based on

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[33] Integrated Risk Information System (IRIS), U.S. Environmental Protection Agency, Office of Research and Development, Washington, D.C. *Available at* www.epa.gov/iris.

[34] 80 Fed. Reg. 36,986 (Jun. 29, 2015), Final Updated Ambient Water Quality Criteria for the Protection of Human Health. *See also*, Final 2015 Updated National Recommended Human Health Criteria. U.S. Environmental Protection Agency, Office of Water, Washington, D.C. *Available at* https://www.epa.gov/wqc/human-health-water-quality-criteria.

[35] EPA's 2000 Human Health Methodology, section 5.

[36] Development of National Bioaccumulation Factors: Supplemental Information for EPA's 2015 Human Health Criteria Update, U.S. Environmental Protection Agency, Office of Water, Office of Science and Technology, EPA 822-R-16-001 (Jan. 2016). *Available at* https://www.epa.gov/sites/production/files/2016-01/documents/national-bioaccumulation-factors-supplemental-information.pdf

[37] Exposure Factors Handbook 2011 edition, U.S. Environmental Protection Agency, EPA 600/R-090/052F (Sept. 30, 2011). *Available at* http://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=236252

National Health and Nutrition Examination Survey (NHANES) data from 2003 to 2010.[38,39] The EPA calculates human health criteria using a default body weight of 80 kilograms (kg), the average weight of a U.S. adult age 21 and older, based on NHANES data from 1999 to 2006.

Although the EPA uses these default values to calculate national 304(a) recommended human health criteria, the EPA's 2000 Methodology notes a preference for the use of local data to calculate human health criteria (e.g., locally derived FCRs, drinking water intake rates and body weights, and waterbody-specific bioaccumulation rates) over national default values, where data are sufficient to do so, to better represent local conditions.[40]

4. Relative Source Contribution

When deriving human health criteria for non-carcinogens and nonlinear carcinogens, the EPA recommends including a RSC value to account for sources of exposure other than drinking water and fish and shellfish from inland and nearshore waters, so that the pollutant effect threshold (i.e., RfD) is not apportioned to drinking water and fish consumption alone. The rationale for this approach is that for pollutants exhibiting threshold effects, the objective of the human health criteria is to ensure that an individual's total exposure from all sources does not exceed that threshold level. These other exposures include exposure to a particular pollutant from ocean fish and shellfish consumption (which is not included in the EPA's default FCR, but may be included in state or tribal fish consumption surveys), non-fish food consumption (e.g., fruits, vegetables, grains, meats, poultry), dermal exposure, and inhalation exposure. The EPA's guidance recommends RSC values ranging from 0.2 to 0.8 for a given pollutant.[41]

C. Human Health Criteria Inputs Selected by Idaho

When using the equations in Figures 1 and 2 (above), Idaho used the following inputs for the variables to derive human health criteria. Each of these is discussed in more detail below.

RfD: values from EPA IRIS and 2015 EPA 304(a) recommendation documents (or earlier EPA 304(a) recommendation documents for pollutants not updated in 2015), as well as other scientifically defensible sources (e.g., dioxin) consistent with EPA's 2000 Human Health Methodology

RSC: values from 2015 EPA 304(a) recommendation documents

[38] Estimated Fish Consumption Rates for the U.S. Population and Selected Subpopulations (NHANES 2003-2010), U.S. Environmental Protection Agency, Washington, DC, USA, EPA 820-R-14-002 (Apr. 2014). *Available at* https://www.epa.gov/fish-tech/estimated-fish-consumption-rates-reports

[39] The EPA's national FCR is based on the total rate of consumption of fish and shellfish from inland and nearshore waters (including fish and shellfish from local, commercial, aquaculture, interstate, and international sources). This is consistent with a principle that each state does its share to protect people who consume fish and shellfish that originate from multiple jurisdictions. Human Health Ambient Water Quality Criteria and Fish Consumption Rates: Frequently Asked Questions, U.S. Environmental Protection Agency (Jan. 2013). *Available at* https://www.epa.gov/wqc/human-health-ambient-water-quality-criteria-and-fish-consumption-rates-frequently-asked

[40] EPA's 2000 Human Health Methodology, pp. 2-2, 2-10

[41] EPA's 2000 Human Health Methodology, pp. 4-5

BW: 80 kilograms (consistent with 2015 EPA 304(a) recommendation documents)

DI: 2.4 liters per day (consistent with 2015 EPA 304(a) recommendation documents)

FCR: 66.5 grams per day (based on local data, consistent with EPA's 2000 Methodology and more protective than EPA's national default recommendation)

BCF/BAF: values from 2015 EPA 304(a) recommendation documents (or earlier EPA 304(a) recommendation documents for pollutants not updated in 2015)

Cancer risk level: 1×10^{-5} (1 in 100,000) (consistent with EPA's 2000 Methodology)

CSF: values from EPA IRIS and 2015 EPA 304(a) recommendation documents (or earlier EPA 304(a) recommendation documents for pollutants not updated in 2015)

In the case of the human health criterion for copper, DEQ derived that value differently using the copper Safe Drinking Water Act Maximum Contaminant Level Goal. The value is consistent with the EPA's national 304(a) recommended water quality criteria.

As discussed above in section III.A., DEQ adopted "water + fish" criteria (changed from "water + organisms") to protect human health from exposure through both drinking water and eating fish (in combination). DEQ adopted "organism only" criteria to protect human health from exposure through eating fish alone (not in combination with drinking water). These two sets of criteria, and the changes to the terminologies (i.e., "water + fish" and "fish only"), are reflected in the column headings in Idaho's WQS. Table 4 below provides Idaho's new and revised toxic criteria. Underlined text indicates the new and or revised criteria values, and strikeout text indicates DEQ's previous criteria values, which have been replaced by the new or revised criteria values.

Table 4: Idaho's New and Revised Criteria

	Compound	CAS Number	Water & ~~organisms~~ fish (µg/L)	~~Organisms~~ Fish only (µg/L)
1	Antimony	7440360	~~5.6~~ 5.2	~~640~~ 190
2	Copper	7440508	1,300	
3	Nickel	7440020	~~610~~ 58	~~4600~~ 100
4	Selenium	7782492	~~170~~ 29	~~4200~~ 250
5	Thallium	7440280	~~0.24~~ 0.017	~~0.47~~ 0.023

Compound		CAS Number	Water & ~~organisms~~ fish (µg/L)	~~Organisms~~ Fish only (µg/L)
6	Zinc	7440666	~~7400~~ 870	~~26000~~ 1,500
7	Cyanide	57125	~~140~~ 3.9	~~140~~ 140
8	2,3,7,8-TCDD Dioxin	1746016	~~0.000000005~~ 1.8E-08	~~0.0000000051~~ 1.9E-08
9	Acrolein	107028	~~190~~ 3.2	~~290~~ 120
10	Acrylonitrile	107131	~~0.051~~ 0.60	~~0.25~~ 22
11	Benzene	71432	~~2.2~~ 3.0	~~51~~ 28
12	Bromoform	75252	~~4.3~~ 62	~~140~~ 380
13	Carbon Tetrachloride	56235	~~0.23~~ 3.6	~~1.6~~ 15
14	Chlorobenzene	108907	~~130~~ 89	~~1600~~ 270
15	Chlorodibromomethane	124481	~~0.40~~ 7.4	~~13~~ 67
16	Chloroform	67663	~~5.7~~ 61	~~470~~ 730
17	Dichlorobromomethane	75274	~~0.55~~ 8.8	~~17~~ 86
18	1,2-Dichloroethane	107062	~~0.38~~ 96	~~37~~ 2,000
19	1,1-Dichloroethylene	75354	~~330~~ 310	~~7100~~ 5,200
20	1,2-Dichloropropane	78875	~~0.50~~ 8.5	~~15~~ 98
21	1,3-Dichloropropene	542756	~~0.34~~ 2.5	~~21~~ 38
22	Ethylbenzene	100414	~~530~~ 32	~~2100~~ 41
23	Methyl Bromide	74839	~~47~~ 130	~~1500~~ 3,700

Compound		CAS Number	Water & ~~organisms~~ fish (µg/L)	~~Organisms~~ Fish only (µg/L)
24	Methylene Chloride	75092	~~4.6~~ 38	~~590~~ 960
25	1,1,2,2-Tetrachloroethane	79345	~~0.17~~ 1.4	~~4.0~~ 8.6
26	Tetrachloroethylene	127184	~~0.69~~ 15	~~3.3~~ 23
27	Toluene	108883	~~1300~~ 47	~~15000~~ 170
28	1,2-Trans-Dichloroethylene	156605	~~140~~ 120	~~10000~~ 1,200
29	1,1,1-Trichloroethane	71556	11,000	56,000
30	1,1,2-Trichloroethane	79005	~~0.59~~ 4.9	~~16~~ 29
31	Trichloroethylene	79016	~~2.5~~ 2.6	~~30~~ 11
32	Vinyl Chloride	75014	~~0.025~~ 0.21	~~2.4~~ 5.0
33	2-Chlorophenol	95578	~~81~~ 30	~~150~~ 260
34	2,4-Dichlorophenol	120832	~~77~~ 9.6	~~290~~ 19
35	2,4-Dimethylphenol	105679	~~380~~ 110	~~850~~ 820
36	2-Methyl-4,6-Dinitrophenol	534521	~~13~~ 1.6	~~280~~ 8.6
37	2,4-Dinitrophenol	51285	~~69~~ 12	~~5300~~ 110
38	3-Methyl-4-Chlorophenol	59507	350	750
39	Pentachlorophenol	87865	~~0.27~~ 0.11	~~3.0~~ 0.12
40	Phenol	108952	~~21000~~ 3,800	~~1700000~~ 85,000
41	2,4,6-Trichlorophenol	88062	~~1.4~~ 1.5	~~2.4~~ 2.0

Compound		CAS Number	Water & ~~organisms~~ fish (µg/L)	~~Organisms~~ Fish only (µg/L)
42	Acenaphthene	83329	~~670~~ 26	~~990~~ 28
43	Anthracene	120127	~~8300~~ 110	~~40000~~ 120
44	Benzidine	92875	~~0.000086~~ 0.0014	~~0.00020~~ 0.033
45	Benzo(a)Anthracene	56553	~~0.0038~~ 0.0042	~~0.018~~ 0.0042
46	Benzo(a)Pyrene	50328	~~0.0038~~ 0.00042	~~0.018~~ 0.00042
47	Benzo(b)Fluoranthene	205992	~~0.0038~~ 0.0042	~~0.018~~ 0.0042
48	Benzo(k)Fluoranthene	207089	~~0.0038~~ 0.042	~~0.018~~ 0.042
49	Bis(2-Chloroethyl) Ether	111444	~~0.030~~ 0.29	~~0.53~~ 6.8
50	Bis(2-Chloroisopropyl) Ether	108601	~~1400~~ 220	~~65000~~ 1,200
51	Bis(2-Ethylhexyl) Phthalate	117817	~~1.2~~ 1.2	~~2.2~~ 1.2
52	Butylbenzyl Phthalate	85687	~~1500~~ 0.33	~~1900~~ 0.33
53	2-Chloronaphthalene	91587	~~1000~~ 330	~~1600~~ 380
54	Chrysene	218019	~~0.0038~~ 0.42	~~0.018~~ 0.42
55	Dibenzo (a,h) Anthracene	53703	~~0.0038~~ 0.00042	~~0.018~~ 0.00042
56	1,2-Dichlorobenzene	95501	~~420~~ 700	~~1300~~ 1,100
57	1,3-Dichlorobenzene	541731	~~320~~ 3.5	~~960~~ 4.8
58	1,4-Dichlorobenzene	106467	~~63~~ 180	~~190~~ 300
59	3,3'-Dichlorobenzidine	91941	~~0.021~~ 0.29	~~0.028~~ 0.48

Compound		CAS Number	Water & ~~organisms~~ fish (µg/L)	~~Organisms~~ Fish only (µg/L)
60	Diethyl Phthalate	84662	~~17000~~ 200	~~44000~~ 210
61	Dimethyl Phthalate	131113	~~270000~~ 600	~~1100000~~ 600
62	Di-n-Butyl Phthalate	84742	~~2000~~ 8.2	~~4500~~ 8.3
63	2,4-Dinitrotoluene	121142	~~0.11~~ 0.46	~~3.4~~ 5.5
64	1,2-Diphenylhydrazine	122667	~~0.036~~ 0.25	~~0.20~~ 0.65
65	Fluoranthene	206440	~~130~~ 6.3	~~140~~ 6.4
66	Fluorene	86737	~~1100~~ 21	~~5300~~ 22
67	Hexachlorobenzene	118741	~~0.00028~~ 0.00026	~~0.00029~~ 0.00026
68	Hexachlorobutadiene	87683	~~0.44~~ 0.031	~~18~~ 0.031
69	Hexachloro-cyclopentadiene	77474	~~40~~ 1.3	~~1100~~ 1.3
70	Hexachloroethane	67721	~~1.4~~ 0.23	~~3.3~~ 0.24
71	Ideno (1,2,3-cd) Pyrene	193395	~~0.0038~~ 0.0042	~~0.018~~ 0.0042
72	Isophorone	78591	~~35~~ 330	~~960~~ 6,000
73	Nitrobenzene	98953	~~17~~ 12	~~690~~ 180
74	N-Nitrosodimethylamine	62759	~~0.00069~~ 0.0065	~~3.0~~ 9.1
75	N-Nitrosodi-n-Propylamine	621647	~~0.0050~~ 0.046	~~0.51~~ 1.5
76	N-Nitrosodiphenylamine	86306	~~3.3~~ 14	~~6.0~~ 18
77	Pyrene	129000	~~830~~ 8.1	~~4000~~ 8.4

Compound		CAS Number	Water & ~~organisms~~ fish (µg/L)	~~Organisms~~ Fish only (µg/L)
78	1,2,4-Trichlorobenzene	120821	~~35~~ 0.24	~~70~~ 0.24
79	Aldrin	309002	~~0.000049~~ 2.5E-06	~~0.000050~~ 2.5E-06
80	alpha-BHC	319846	~~0.0026~~ 0.0012	~~0.0049~~ 0.0013
81	beta-BHC	319857	~~0.0091~~ 0.036	~~0.017~~ 0.045
82	gamma-BHC (Lindane)	58899	~~0.98~~ 1.4	~~1.8~~ 1.4
83	Chlordane	57749	~~0.00080~~ 0.0010	~~0.00081~~ 0.0010
84	4,4'-DDT	50293	~~0.00022~~ 9.8E-05	~~0.00022~~ 9.8E-05
85	4,4'-DDE	72559	~~0.00022~~ 5.5E-05	~~0.00022~~ 5.5E-05
86	4,4'-DDD	72548	~~0.00031~~ 0.00042	~~0.00031~~ 0.00042
87	Dieldrin	60571	~~0.000052~~ 4.2E-06	~~0.000054~~ 4.2E-06
88	alpha-Endosulfan	959988	~~62~~ 7.0	~~89~~ 8.5
89	beta-Endosulfan	33213659	~~62~~ 11	~~89~~ 14
90	Endosulfan Sulfate	1031078	~~62~~ 9.9	~~89~~ 13
91	Endrin	72208	~~0.059~~ 0.011	~~0.060~~ 0.011
92	Endrin Aldehyde	7421934	~~0.29~~ 0.38	~~0.30~~ 0.40
93	Heptachlor	76448	~~0.000079~~ 2.0E-05	~~0.000079~~ 2.0E-05
94	Heptachlor Epoxide	1024573	~~0.000039~~ 0.00010	~~0.000039~~ 0.00010
95	Polychlorinated Biphenyls PCBs		~~0.000064~~ 0.00019	~~0.000064~~ 0.00019
96	Toxaphene	8001352	~~0.00028~~ 0.0023	~~0.00028~~ 0.0023

Compound		CAS Number	Water & ~~organisms~~ fish (µg/L)	~~Organisms~~ Fish only (µg/L)
97	1,2,4,5-Tetrachlorobenzene	95943	0.0093	0.0094
98	2,4,5-Trichlorophenol	95954	140	190
99	Bis (Chloromethyl) Ether	542881	0.0015	0.055
100	Chlorophenoxy Herbicide (2,4,5-TP) [Silvex]	93721	82	130
101	Chlorophenoxy Herbicide (2,4-D)	94757	1,000	3,900
102	Dinitrophenols	25550587	13	320
103	Hexachlorocyclohexane (HCH)-Technical	608731	0.027	0.032
104	Methoxychlor	72435	0.0054	0.0055
105	Pentachlorobenzene	608935	0.035	0.036

1. Cancer Risk Level

Idaho's cancer risk level is 10^{-5}, consistent with the EPA's 2000 Methodology.[42] In the final pending rule that was presented to the Idaho Board of Environmental Quality in December 2015, DEQ described the selection of a 10^{-5} cancer risk level, along with a FCR of 66.5 g/day, as a risk management decision based on "(1) the risk level being within the range that is considered protective of both the general population and more highly exposed subpopulations, (2) an assessment of the overall protectiveness provided by the criteria, taking into account all the inputs; (3) a view towards developing criteria that are not only protective, but reasonably achievable; and (4) consistency with longstanding EPA guidance."[43] As discussed above, and as DEQ noted in its December 13, 2016 submittal, the EPA's 2000 Human Health Methodology gives states and authorized tribes the discretion to use a cancer risk level of 10^{-5} if highly exposed groups would at least be protected at the 10^{-4} risk level. DEQ explained in its human health criteria justification how its selection of a 10^{-5} cancer risk level is protective of the general population, and also protective of highly exposed populations at a 10^{-4} risk level.[44] For the reasons discussed herein and below, the EPA concludes that it was appropriate for the State to rely upon EPA's 2000 Human Health Methodology, and that DEQ's selected cancer risk level is consistent with the EPA's 2000 Human Health Methodology.

[42] EPA's 2000 Human Health Methodology, pp. 1-12.
[43] Idaho HHC Update Justification, pp. 21-22
[44] *Id*. at pp. 21-23

2. Cancer Slope Factor and Reference Dose

Idaho's human health criteria for carcinogens include the cancer slope factors and reference dose values consistent with the EPA's 2015 updated national 304(a) recommendations and previous values for criteria that the EPA did not update in 2015 (e.g., thallium), as well as other scientifically defensible sources (e.g., dioxin) consistent with EPA's 2000 Human Health Methodology.

3. Fish Consumption Rate

As described above, DEQ used a FCR of 66.5 g/day to derive the human health criteria. This FCR represents the mean (which is equivalent to the 70th percentile) of the Nez Perce (the highest consuming tribal subpopulation). This FCR was determined using the National Cancer Institute method based on species of CWA relevance (freshwater, near coastal and estuarine species) and represents approximately the 95th percentile of the Idaho general population and the 90th percentile of the angler population consumption rate of all fish,[45] which is consistent with the EPA's 2000 Methodology.[46] DEQ used the survey results from its Idaho general population and recreational survey and the tribal surveys to derive the FCR. DEQ's selected FCR is based on local data and is consistent with the EPA's 2000 Human Health Methodology.

4. Relative Source Contribution (RSC)

For those pollutants where the EPA has developed RSCs and included them in EPA's 2015 national 304(a) human health criteria recommendations, DEQ used those same RSCs in its human health criteria. For pollutants that were not updated in 2015, DEQ included appropriate RSCs for those pollutants (e.g., thallium). DEQ's selected RSC values are consistent with the EPA's 2015 national 304(a) recommendations and EPA's 2000 Human Health Methodology.

5. Bioaccumulation Factors (BAFs)/Bioconcentration Factors (BCFs)

DEQ derived human health criteria using BAFs and BCFs consistent with the EPA's 2015 national 304(a) recommendations. Where the EPA did not update a particular pollutant in 2015, DEQ used the bioaccumulation information associated with the EPA's previous national 304(a) recommendations for that pollutant (e.g., thallium and dioxin).

DEQ used the EPA's national trophic level weighted BAFs to derive a single trophic level weighted BAF to be used with a single FCR. This approach is consistent with the EPA's 2015 national 304(a) recommendations and the EPA's 2000 Human Health Methodology.

6. Drinking Water Intake

DEQ derived human health criteria using a drinking water intake rate of 2.4 L/day. DEQ's selection of a drinking water intake rate of 2.4 L/day to derive human health criteria is consistent with the EPA's 2015 national 304(a) recommendations.[47]

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[45] *Id.* at pp. 11-12

[46] *See* 2000 Methodology at 1-8; *id.* at 2-4 ("The choice of an acceptable cancer risk by a State or Tribe is a risk management decision").

[47] 80 Fed. Reg. 36,986 (Jun. 29, 2015) Final Updated Ambient Water Quality Criteria for the Protection of Human Health. In this final rule, EPA recommended criteria that accounted for a revised drinking water intake of 2.4 L/day based on the

7. Body Weight

DEQ derived human health criteria using a body weight assumption of 80 kg based on survey data relevant to Idaho and the EPA's 2011 Exposure Factors Handbook.[48] DEQ's selection of a body weight of 80 kg to derive human health criteria is consistent with the EPA's 2015 304(a) recommendations.

IV. The EPA's Review of Idaho's New and Revised Human Health Criteria

The EPA reviewed Idaho's 2016 new and revised human health criteria for toxic pollutants for consistency with the Clean Water Act and federal implementing regulations at 40 CFR Part 131. This included a review of Idaho's selected input values by evaluating the scientific rationale for each input and whether there was Idaho-specific information relative to each value that should be considered. The EPA's 2000 Human Health Methodology provides guidance for deriving human health criteria for toxic pollutants. For each variable used in the criteria calculation, the EPA Methodology provides a default value that may be used by states and guidance on specific adjustments that may be appropriate to reflect local conditions and/or protect identifiable subpopulations. In accordance with 40 CFR 131.11(a), the EPA must ensure that new or revised criteria are based on sound scientific rationale and contain sufficient parameters or constituents to protect designated uses.

The EPA also carefully reviewed the supporting documents DEQ developed and submitted to the EPA in support of Idaho's new and revised human health criteria. In adopting the new and revised human health criteria, DEQ clarified the State's interpretation of its PCR and SCR use regarding fishing. Specifically, DEQ explained, "The Idaho WQS meet the requirements set forth in the CWA. All waters in Idaho are protected for aquatic life and recreational uses. (IDAPA 58.01.02.100). The recreational use includes fishing on or about the water. (IDAPA 58.01.02.100.02). The human health criteria based on exposure to toxins through fish consumption alone apply to waters designated for a recreation use, while criteria based on exposure to toxins through both fish consumption and drinking water intake apply to waters additionally designated for domestic water supply. (IDAPA 58.01.02.210.01)."[49]

The EPA has determined that Idaho's submission is consistent with the CWA and protective of the Idaho general population, and of high consuming subpopulations, including tribes, in accordance with the EPA's Human Health Methodology.

Pursuant to the CWA and the EPA's regulations at 40 CFR 131.10(a), states are responsible for specifying appropriate designated uses to be achieved and protected. An interpretation of the CWA that would allow for the EPA to recharacterize a state's unambiguous designated use is not consistent with the CWA's carefully struck balance between the federal government and the states. *See, e.g.*, *Miss. Comm'n on Nat. Res. v. Costle*, 625 F.2d 1269, 1276 (5th Cir. 1980) ("[T]he specification of a waterway as one for fishing, swimming, or public water supply is closely tied to the zoning power Congress

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Exposure Factors Handbook: 2011 Edition, U.S. Environmental Protection Agency, Office of Research and Development, EPA 600/R-090/052F (Sept. 2011). *Available at* http://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=236252

[48] Exposure Factors Handbook: 2011 Edition, U.S. Environmental Protection Agency, Office of Research and Development, EPA 600/R-090/052F (Sept. 2011). *Available at* http://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=236252

[49] Idaho Human Health Criteria Update Justification and Compliance with the Clean Water Act, Idaho Docket 58-0102-1201 (Dec. 2016) (hereinafter "Idaho HHC Update Justification") p. 14

wanted left to the states."). The existence of tribal treaties with reserved fishing rights does not grant the EPA authority to recharacterize a state's designated uses or otherwise skew the federal-state balance of the CWA towards the federal government, and they also do not limit or prohibit the EPA from taking lawful action under the CWA to approve a WQS that does not include a subsistence fishing designated use.

Idaho's waters are designated for PCR and SCR, and it would exceed the EPA's statutory authority to recharacterize Idaho's existing designated uses to include subsistence fishing; indeed, Idaho's designated uses were not before the Agency in the State's 2016 submittal.[50] Idaho has not otherwise designated a general fishing or subsistence fishing use that that would require corresponding human health criteria to protect that use, which is within the State's discretion. Furthermore, the EPA Administrator has not determined that a general fishing or subsistence fishing is "necessary to meet the requirements" of the CWA. 33 U.S.C. § 1313(c)(4); 40 C.F.R. § 131.22(b). Consistent with the state's designated uses, DEQ developed its human health criteria using data from the survey of the Idaho general population and recreational fishers, as well as tribal fish consumption surveys in order to set criteria that protect the general population and Idaho tribes as high consuming subpopulations.

The EPA has reconsidered the authority and appropriateness of its prior statements indicating that, in order to effectuate the treaty-reserved fishing rights of tribal members in the state, Idaho needed to re-interpret its designated uses to include subsistence fishing. Specifically, the EPA's previous letters to the state suggested interpreting Idaho's primary and secondary contact recreation designated uses, which include a general fishing use, to include subsistence-level fish consumption of tribal members fishing pursuant to their reserved treaty rights.[51] Upon further review, the EPA has determined that recharacterizing or reinterpreting the state's approved designated use of recreational fishing is not required by the treaties and is inconsistent with EPA's CWA authorities. The approach articulated in the EPA's letters to DEQ (beginning with stating how DEQ should interpret its recreational fishing use to include a subsistence fishing component) purportedly to effectuate treaty-reserved rights under the CWA went beyond the EPA's authority under the CWA, which the applicable treaties do not expand.[52] Under the CWA, the designated use defines the limit of the state's obligations in establishing criteria. 33 U.S.C. § 1313(c)(2)(A); 40 CFR 131.11(a)(1). The text of Idaho's designated use is clear, and it would exceed EPA's statutory authority to recharacterize or reinterpret the State's designated use as including subsistence fishing. As discussed further below, the existence of tribal treaties with reserved fishing rights neither allow the EPA to take an action beyond its authority under the CWA nor limit or prohibit the EPA from taking a lawful action under the CWA.

DEQ's selection of a 10^{-5} CRL, although less stringent than its prior CRL, is consistent with the EPA's Human Health Methodology and within the range of cancer risks the 2000 Methodology specifies as

[50] http://www.deq.idaho.gov/water-quality/surface-water/beneficial-uses/

[51] *See e.g.*, Letter from Dennis McLerran, Regional Administrator, EPA Region 10, to John Tippets, Director, Idaho Dept. of Envtl. Quality (January 17, 2017), Encl. at p 2.

[52] EPA's prior framework went beyond what courts have required in order to effectuate tribal treaty rights. Indeed, the Ninth Circuit Court of Appeals has recognized that any environmental obligations stemming from the treaty-reserved fishing right will depend on the particular circumstances and declined to establish a broad habitat protection subsidiary right. *See U.S. v. Washington*, 853 F.3d 946, 965 (9th Cir. 2016) ("'The legal standards that will govern the State's precise obligations and duties under the treaty with respect to the myriad State actions that may affect the environment of the treaty area will depend for their definition and articulation upon concrete facts which underlie a dispute in a particular case.'") (citing *U.S. v. Washington*, 759 F.2d 1353, 1356 (9th Cir. 1985)).

protective of both the general population and more highly exposed subpopulations. Idaho's selection of an incremental CRL of 10^{-5} for the general population and demonstration that criteria based on a 10^{-5} CRL ensures the risk to highly exposed subgroups, including the tribal populations for which data were available (see section II.D. above), does not exceed 10^{-4}, is consistent with EPA's 2000 Human Health Methodology. For example, the EPA's 2000 Methodology states, "With AWQC [ambient water quality criteria] derived for carcinogens based on a linear low-dose extrapolation, the Agency will publish recommended criteria values at a 10^{-6} risk level. States and authorized Tribes can always choose a more stringent risk level, such as 10^{-7}. EPA also believes that criteria based on a 10^{-5} risk level are acceptable for the general population as long as States and authorized Tribes ensure that the risk to more highly exposed subgroups (sportfishers or subsistence fishers) does not exceed the 10^{-4} level."[53]

The EPA has determined that in developing its criteria, Idaho has properly ensured that these tribal fishers are protected as a high-consuming subpopulation by relying upon tribal survey data, and selecting a FCR representing the 70th percentile of Nez Perce tribal fishers in deriving its criteria. The general population in Idaho is protected at 10^{-5} with a FCR of 66.5 g/day, the 95th percentile of reported fish consumption. Idaho's high consuming subpopulations, including tribal members, are protected at a CRL of at least 10^{-4}, with a FCR of 665 g/day, greater than the 95th percentile of the highest reported tribal consumption. Idaho's CRL is protective of Idaho's highest consumers and its rationale for selecting between the recommended risk levels of 10^{-6} and 10^{-5} is within the state's discretion and is inherently a risk management decision.[54] Idaho's treatment of tribes with reserved fishing treaty rights as a high consuming subpopulation is consistent with the CWA and EPA's 2000 Methodology, and this approach gives due effect to the treaties by ensuring that tribal members exercising their treaty rights are protected in accordance with the EPA's guidance.

In the EPA's January 19, 2017 preliminary review of Idaho's submission, the EPA raised concerns with DEQ's use of a 10^{-5} cancer risk level. Upon further review and consideration, the EPA now believes that these concerns were unfounded. First, the EPA's longstanding view, consistent with the 2000 Methodology, is that a state may consider tribes with reserved fishing rights to be a high consuming subpopulation, rather than the target general population, in order to derive human health criteria, and that such consideration gives due effect to reserved fishing rights. Second, the EPA believes it is permissible under the Clean Water Act for Idaho to choose to protect tribal members at a cancer risk level of at minimum 10^{-4}, consistent with protection afforded to other highly exposed subpopulations. The EPA's statement to the contrary in its 2015-2017 letters, and specifically in its January 19, 2017 preliminary review, departed from the Agency's historic view of what risk levels would be adequately protective of high consuming subpopulations and does not reflect the Agency's current view. While the reserved rights in these tribal treaties may be considered by Idaho and the EPA when setting and reviewing WQS, they do not expand the EPA's authority under the CWA. Likewise, these treaties do not limit or prohibit the EPA from taking an otherwise lawful action under the CWA. The treaties also do not dictate the use of any cancer risk level more stringent than 10^{-4}.[55] Because there is no conflict between the tribal treaties at issue and Idaho's decision to treat high consuming tribal members at a10^{-4}

[53] EPA's 2000 Human Health Methodology, p. 1-12

[54] EPA's 2000 Human Health Methodology, p. 2-4. "The choice of an acceptable cancer risk by a State or Tribe is a risk management decision."

[55] Furthermore, after a more thorough review of the State's submission, EPA now believes that the State did not impermissibly base its decision on setting a cancer risk level on 1x10^{-5} on feasibility considerations.

CRL, it would be improper and unnecessary for the EPA to disapprove Idaho's criteria based upon a risk-management based CRL in order to "harmonize" the treaties and the CWA.

The CRL is one of a number of factors that determine the protectiveness of the criteria. In the May 10, 2012, disapproval of Idaho's 2006 human health criteria, the EPA noted the availability of local and regional fish consumption data suggesting a higher level of consumption than the EPA's default fish consumption rate that Idaho adopted. The EPA explained that to remedy the disapproval, Idaho must evaluate local and regional fish consumption information. As noted above, following the EPA's disapproval of Idaho's 2006 human health criteria, DEQ conducted a survey to collect local fish consumption data and the EPA provided comments applauding DEQ for using state-of-the-art survey methodology in its state FCR survey. The EPA also supported DEQ's inclusion of some marine species, including salmon, and market fish in their selection of a FCR.[56] As described above, Idaho's selected FCR of 66.5 g/day reflects the 95th percentile of the general population and the 70th percentile (the mean) of the higher consuming tribal subpopulation.

Idaho's selection of input parameter values used in deriving its human health criteria are based on both sound science and policy decisions. In particular, DEQ considered the best available data and incorporated risk management judgments regarding the overall protection afforded by the human health criteria that are consistent with the EPA's 2000 Human Health Methodology. The EPA has determined that these criteria are protective of Idaho's primary and secondary contact recreation designated uses.

V. The EPA Action

In accordance with its CWA authority, 33 U.S.C. § 1313(c)(3) and 40 C.F.R. Part 131, the EPA is approving the water quality standard revisions contained in Idaho's December 13, 2016 submittal (and identified in Table 5 below).

Table 5. Approved Human Health Criteria

	Compound	CAS Number	Water & Fish (µg/L)	Fish only (µg/L)
1	Antimony	7440360	5.2	190
2	Copper	7440508	1,300	
3	Nickel	7440020	58	100

[56] Inclusion of marine fish makes Idaho's FCR more protective than the EPA's national default recommendation, since the EPA only includes species from waters under CWA jurisdiction (freshwater, near coastal, and estuarine habitats) in its default FCR. Inclusion of market fish is consistent with the EPA's national default recommendation.

Compound		CAS Number	Water & Fish (µg/L)	Fish only (µg/L)
4	Selenium	7782492	29	250
5	Thallium	7440280	0.017	0.023
6	Zinc	7440666	870	1,500
7	Cyanide	57125	3.9	140
8	2,3,7,8-TCDD Dioxin	1746016	1.8E-08	1.9E-08
9	Acrolein	107028	3.2	120
10	Acrylonitrile	107131	0.60	22
11	Benzene	71432	3.0	28
12	Bromoform	75252	62	380
13	Carbon Tetrachloride	56235	3.6	15
14	Chlorobenzene	108907	89	270
15	Chlorodibromomethane	124481	7.4	67
16	Chloroform	67663	61	730
17	Dichlorobromomethane	75274	8.8	86
18	1,2-Dichloroethane	107062	96	2,000
19	1,1-Dichloroethylene	75354	310	5,200
20	1,2-Dichloropropane	78875	8.5	98
21	1,3-Dichloropropene	542756	2.5	38

Compound		CAS Number	Water & Fish (µg/L)	Fish only (µg/L)
22	Ethylbenzene	100414	32	41
23	Methyl Bromide	74839	130	3,700
24	Methylene Chloride	75092	38	960
25	1,1,2,2-Tetrachloroethane	79345	1.4	8.6
26	Tetrachloroethylene	127184	15	23
27	Toluene	108883	47	170
28	1,2-Trans-Dichloroethylene	156605	120	1,200
29	1,1,1-Trichloroethane	71556	11,000	56,000
30	1,1,2-Trichloroethane	79005	4.9	29
31	Trichloroethylene	79016	2.6	11
32	Vinyl Chloride	75014	0.21	5.0
33	2-Chlorophenol	95578	30	260
34	2,4-Dichlorophenol	120832	9.6	19
35	2,4-Dimethylphenol	105679	110	820
36	2-Methyl-4,6-Dinitrophenol	534521	1.6	8.6
37	2,4-Dinitrophenol	51285	12	110
38	3-Methyl-4-Chlorophenol	59507	350	750
39	Pentachlorophenol	87865	0.11	0.12

Compound		CAS Number	Water & Fish (µg/L)	Fish only (µg/L)
40	Phenol	108952	3,800	85,000
41	2,4,6-Trichlorophenol	88062	1.5	2.0
42	Acenaphthene	83329	26	28
43	Anthracene	120127	110	120
44	Benzidine	92875	0.0014	0.033
45	Benzo(a)Anthracene	56553	0.0042	0.0042
46	Benzo(a)Pyrene	50328	0.00042	0.00042
47	Benzo(b)Fluoranthene	205992	0.0042	0.0042
48	Benzo(k)Fluoranthene	207089	0.042	0.042
49	Bis(2-Chloroethyl) Ether	111444	0.29	6.8
50	Bis(2-Chloroisopropyl) Ether	108601	220	1,200
51	Bis(2-Ethylhexyl) Phthalate	117817	1.2	1.2
52	Butylbenzyl Phthalate	85687	0.33	0.33
53	2-Chloronaphthalene	91587	330	380
54	Chrysene	218019	0.42	0.42
55	Dibenzo (a,h) Anthracene	53703	0.00042	0.00042
56	1,2-Dichlorobenzene	95501	700	1,100
57	1,3-Dichlorobenzene	541731	3.5	4.8

Compound		CAS Number	Water & Fish (µg/L)	Fish only (µg/L)
58	1,4-Dichlorobenzene	106467	180	300
59	3,3'-Dichlorobenzidine	91941	0.29	0.48
60	Diethyl Phthalate	84662	200	210
61	Dimethyl Phthalate	131113	600	600
62	Di-n-Butyl Phthalate	84742	8.2	8.3
63	2,4-Dinitrotoluene	121142	0.46	5.5
64	1,2-Diphenylhydrazine	122667	0.25	0.65
65	Fluoranthene	206440	6.3	6.4
66	Fluorene	86737	21	22
67	Hexachlorobenzene	118741	0.00026	0.00026
68	Hexachlorobutadiene	87683	0.031	0.031
69	Hexachloro-cyclopentadiene	77474	1.3	1.3
70	Hexachloroethane	67721	0.23	0.24
71	Ideno (1,2,3-cd) Pyrene	193395	0.0042	0.0042
72	Isophorone	78591	330	6,000
73	Nitrobenzene	98953	12	180
74	N-Nitrosodimethylamine	62759	0.0065	9.1
75	N-Nitrosodi-n-Propylamine	621647	0.046	1.5

Compound		CAS Number	Water & Fish (µg/L)	Fish only (µg/L)
76	N-Nitrosodiphenylamine	86306	14	18
77	Pyrene	129000	8.1	8.4
78	1,2,4-Trichlorobenzene	120821	0.24	0.24
79	Aldrin	309002	2.5E-06	2.5E-06
80	alpha-BHC	319846	0.0012	0.0013
81	beta-BHC	319857	0.036	0.045
82	gamma-BHC (Lindane)	58899	1.4	1.4
83	Chlordane	57749	0.0010	0.0010
84	4,4'-DDT	50293	9.8E-05	9.8E-05
85	4,4'-DDE	72559	5.5E-05	5.5E-05
86	4,4'-DDD	72548	0.00042	0.00042
87	Dieldrin	60571	4.2E-06	4.2E-06
88	alpha-Endosulfan	959988	7.0	8.5
89	beta-Endosulfan	33213659	11	14
90	Endosulfan Sulfate	1031078	9.9	13
91	Endrin	72208	0.011	0.011
92	Endrin Aldehyde	7421934	0.38	0.40
93	Heptachlor	76448	2.0E-05	2.0E-05

	Compound	CAS Number	Water & Fish (µg/L)	Fish only (µg/L)
94	Heptachlor Epoxide	1024573	0.00010	0.00010
95	Polychlorinated Biphenyls PCBs	*	0.00019	0.00019
96	Toxaphene	8001352	0.0023	0.0023
97	1,2,4,5-Tetrachlorobenzene	95943	0.0093	0.0094
98	2,4,5-Trichlorophenol	95954	140	190
99	Bis (Chloromethyl) Ether	542881	0.0015	0.055
100	Chlorophenoxy Herbicide (2,4,5-TP) [Silvex]	93721	82	130
101	Chlorophenoxy Herbicide (2,4-D)	94757	1,000	3,900
102	Dinitrophenols	25550587	13	320
103	Hexachlorocyclohexane (HCH)-Technical	608731	0.027	0.032
104	Methoxychlor	72435	0.0054	0.0055
105	Pentachlorobenzene	608935	0.035	0.036

* 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 human health criteria apply to total PCBs (e.g. the sum of all congener, isomer or Arochlor analyses).

A. The EPA Action on Revised Definition and New and Revised Footnotes to Idaho's Toxic Criteria Table

In addition to adopting revised human health criteria described above, Idaho revised and submitted a definition for harmonic mean (at IDAPA 58.01.02.010.46) and three footnotes (c, l, and q) associated with numeric criteria for toxic substances (at IDAPA 58.01.02.0210.01). The new and revised language is provided below. Strikeout text specifies text that was removed, while underlined text indicates new wording.

Definition for Harmonic Mean

IDAPA 58.01.02.010.46. Harmonic Mean ~~*Flow.*~~ The number of daily ~~*flow*~~ measurements divided by the sum of the reciprocals of the ~~*flows*~~ measurements (i.e., the reciprocal of the mean of reciprocals).

The EPA Action and Rationale

The EPA considers the revision to the definition of harmonic mean to meet all four parts of the test described above and therefore to be a water quality standard that the EPA has the authority and duty to approve or disapprove. In accordance with its CWA authority, 33 U.S.C. § 1313(c)(3), and 40 CFR Part 131, the EPA approves IDAPA 58.01.02.010.46.

Idaho has revised the definition so that it refers strictly to a mathematical approach to averaging rather than specifically to flow. In mathematics, the harmonic mean is one of several kinds of averages. Typically, it is appropriate for situations when the average of rates is desired. The harmonic mean can be expressed as the reciprocal of the arithmetic mean of the reciprocals. Idaho's definition is an accurate definition for this term. Harmonic mean is used and applied to the low flow design conditions applicable to Idaho's human health criteria for toxic pollutants.

Footnotes to Table of Criteria for Toxic Substances

Footnote "c"

Description of Footnote

Idaho revised footnote c and removed outdated information, which referred to the EPA's May 17, 2002 Integrated Risk Information System (IRIS) as well as BCF information from the EPA's 1980 Ambient Water Quality Criteria document. The revised footnote provides the equations used and refers to Idaho's 2015 Technical Support Document (TSD) for information on the input values used in the calculation of Idaho's specific human health criteria.

"**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*~~. *This criterion is based on input values to human health criteria calculation specified in Idaho's Technical Support Document (TSD) for Human Health Criteria Calculations - 2015. Criteria for non-carcinogens are calculated using the formula:*

$$\underline{AWQC = RfD * RSC * \left(\frac{BW}{DI+(FI*BAF)}\right)}$$

and criteria for carcinogens are calculated using the formula:

$$\underline{AWQC = RSD * \left(\frac{BW}{DI+(FI*BAF)}\right)}$$

Where:
AWQC = Ambient water quality criterion (mg/L)
BW = Human Body Weight (kg), 80 is used in these criteria
DI = Drinking Water Intake, (L/day), 2.4 is used in these criteria
FI = Fish Intake, (kg/day), 0.0665 is used in these criteria
BAF = Bioaccumulation Factor, L/kg, chemical specific value, see TSD
RfD = Reference dose (mg/kg-day), chemical specific value, see TSD

$$RSD = \frac{\text{Target Incremental Cancer Risk}}{\text{Cancer Potency Factor}} \text{ (mg/kg-day), chemical specific value, see TSD}$$

RSC = Relative Source Contribution, chemical specific value, see TSD"

The EPA Action and Rationale

The revisions to footnote c describe the equation and input values DEQ used to derive its human health criteria. Footnote c does not express or establish a desired condition or instream level of protection now or in the future and is therefore not a WQS subject to the EPA approval or disapproval pursuant to section 303(c) of the CWA. The EPA is therefore taking no action on footnote c.

Footnote "l"

Description of Footnote

Idaho revised footnote l to the existing human health criteria for carcinogens to specify that the cancer risk range used in calculating human health criteria is 10^{-5}. Footnote l was revised as follows:

l. *EPA guidance allows states to choose ~~a risk factor~~ from a range of 10^{-4} to 10^{-6} for the incremental increase in cancer risk used in human health criteria calculation. Idaho has chosen to base this criterion on carcinogenicity of 10^{-6} $^{-5}$ risk."*

The EPA Action and Rationale

The revisions to footnote l describe the cancer risk level input parameter (10^{-5}) that DEQ selected and used to calculate the human health criteria for carcinogens. Footnote l acknowledges a risk management decision made by DEQ in the context of EPA's recommended guidance. The footnote does not establish a legally binding requirement under state law and it does not express or establish a desired condition or instream level of protection now or in the future and is therefore not a WQS subject to EPA approval or disapproval pursuant to section 303(c) of the CWA. The EPA is therefore taking no action on footnote l.

Footnote "q"

Description of Footnote

Idaho included new footnote q which applies to those criteria values that are based on the drinking water Maximum Contaminant Level (MCL). Footnote q states the following:

q. This criterion is based on the drinking water Maximum Containment Level (MCL)

The EPA Action and Rationale

The addition of the new footnote q acknowledges that the relevant criterion was based on the EPA's drinking water MCL. The footnote does not establish a legally binding requirement under state law and it does not express or establish a desired condition or instream level of protection now or in the future and is therefore not a WQS subject to the EPA approval or disapproval pursuant to section 303(c) of the CWA. The EPA is therefore taking no action on footnote q.

The EPA notes that DEQ likely made a typographical error and meant to use the word "contaminant" not "containment" and suggests DEQ corrects this error.

All other footnotes included in IDAPA 58.01.02.210.01, Criteria for Toxic Substances of Idaho's WQS, and applicable to human health criteria for toxics, remain unchanged and are not new or revised provisions subject to EPA review. Thus, EPA is not taking action on these footnotes. These footnotes remain applicable to the pollutants with which they are associated, and this applicability is not altered by any WQS revisions included in Idaho's December 13, 2016 submittal.

B. The EPA Approval of Revised Application of Human Health Criteria to Idaho's Recreation Uses

As part of the 2016 WQS revisions to Idaho's human health criteria, DEQ revised the provision at IDAPA 58.01.02.210.01 and specified that its human health criteria for "organisms only" apply only to recreation uses and do not apply to aquatic life uses. During the public comment period for the state's draft WQS rule, the EPA commented on the acceptability of this approach, given the human health criteria for "organisms only" continue to apply to Idaho's primary and secondary contact recreation uses, and therefore to all Idaho waters. In addition, DEQ revised the language in the table of numeric criteria for toxic substances and changed the nomenclature of the headings for human health criteria from "water and organisms" to "water and fish" and "organisms only" to "fish only."

Over the past 20 years, and consistent with how the EPA had previously promulgated human health criteria for Idaho in the National Toxics Rule (NTR),[57] the state applied the human health criteria for consumption of "organisms only" to all aquatic life uses and primary and secondary contact recreation uses, and the "water and organisms" criteria to the domestic water supply use. As discussed in the NTR[58], when the EPA promulgated the "organism only" criteria for waters in Idaho, the EPA did so for primary and secondary contact recreation uses and all aquatic life designated uses because these uses provide a fish consumption exposure route (i.e., fish or other aquatic life are being caught and consumed). Subsequent to the promulgation of the NTR, Idaho adopted numeric toxics criteria in 1994 and applied its human health numeric toxics criteria consistent with the EPA's approach in the NTR (i.e., the human health "organism only" criteria applied to primary and secondary contact recreation uses and all aquatic life uses, the "water and organisms" criteria applied to the domestic water supply designated use).

Idaho's 2016 new and revised human health criteria provide that "fish only" criteria apply to all waters

[57] 57 Fed. Reg. 60,848 (Dec. 22, 1992)
[58] *Id*. at 60,859

in Idaho, and the "water and fish" criteria apply to the specific subset of waters (as identified in IDAPA 58.01.02.110-160) that are designated for domestic water supply use.

The EPA has published guidance for developing criteria that protect human health endpoints and separate criteria guidance to protect aquatic life endpoints. Consistent with the science used to derive the criteria, the EPA recommends that human health criteria be applied to uses where human health could be affected by exposure from consumption of water and/or aquatic life, and aquatic life criteria be applied to uses associated with the protection of aquatic life.

Thus, most states, including Idaho, have adopted two sets of criteria for toxic pollutants, one to address the effects to human health and the other to address the effects to aquatic life. For some pollutants, this results in a waterbody segment having multiple criteria for a single pollutant, in which case the CWA and 40 CFR 131.11 require the attainment of all applicable criteria and the protection of the most sensitive designated use.

The new and revised language to IDAPA 58.01.02.210.01 is provided below. Strikeout text indicates text that was removed, while underlined text indicates new wording:

> ***210.01 Criteria for Toxic Substances****. The criteria of Section 210 apply to surface waters of the state as follows.*
>
> > ***a****. Columns B1, and B2~~, and C2~~ of the following table apply to waters designated for aquatic life use.*
> >
> > ***b.*** *Column C2 of the following table applies to waters designated for primary or secondary contact recreation use.*

The EPA Action and Rationale

Idaho's application of human health criteria is consistent with the CWA and EPA's regulations and longstanding methodology for developing human health criteria. In accordance with its CWA authority, 33 U.S.C. § 1313(c)(3), and 40 CFR Part 131, the EPA approves DEQ's revisions to IDAPA 58.01.02.210.01 a. and b.

C. The EPA Approval of New Downstream Water Quality Protection Provision

Idaho adopted a new narrative provision at IDAPA 58.0102.070.08 to protect downstream WQS, including downstream waters of another state or tribe.

> ***070. Application of Standards***
> ***.08 Protection of Downstream Water Quality.***
> *All waters shall maintain a level of water quality at their pour point into downstream waters that provides for the attainment and maintenance of the water quality standards of those downstream waters, including waters of another state or tribe.*

The EPA Action and Rationale

The EPA's regulations implementing the CWA provide that "[i]n designating uses of a water body and the appropriate criteria for those uses, the state shall take into consideration the water quality standards of downstream waters and ensure that its water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters." 40 CFR 131.10(b). In reviewing and evaluating Idaho's 2016 new and revised human health criteria submittal, the EPA was mindful that there are a number of human health criteria in Oregon and Washington that are more stringent than Idaho's new and revised human health criteria. Therefore, for those surface waters that flow from Idaho downstream into Oregon and/or Washington, the downstream WQS and human health criteria for certain toxic pollutants are more stringent than the Idaho criteria the EPA approves in this action.

Although 40 CFR 131.10(b) requires that Idaho consider downstream WQS when adopting its own standards and criteria, neither this provision nor the WQS regulations in general, compel different states to adopt the same criteria and uses, nor do they suggest that the adoption of identical criteria would be the only way a state could ensure the protection of downstream uses. The CWA and EPA's water quality regulations are structured to provide states with flexibility to adopt the criteria they believe are most appropriately protective of not only the designated uses for the waterbody to which the criteria are directly applicable, but also protective of downstream uses. When adopting criteria that are protective of designated uses, the federal regulations require that states have a sound scientific rationale for their decisions and, when not adopting criteria based on CWA section 304(a) guidance, criteria are based on scientifically defensible methods and/or reflect site-specific conditions. 40 CFR 131.11(b). The regulations provide this flexibility to ensure that states can address the unique conditions and characteristics of the circumstances in their state and/or of the waterbody to which the criteria will apply.

In a Frequently Asked Questions document pertaining to the downstream protection requirement at 40 CFR 131.10(b) (Downstream Protection FAQs), the EPA provided guidance regarding the importance of ensuring the attainment and maintenance of downstream WQS, the information and circumstances that states/tribes can consider when adopting upstream WQS, and the criteria development approaches for ensuring the attainment and maintenance of downstream WQS.[59] The Downstream Protection FAQs are for informational purposes only and are not legally binding obligations. The EPA retains discretion to adopt approaches on a case-by-case basis that differ from those described in the FAQs. However, they may provide helpful guidance for states, tribes, and the EPA to assess compliance with 40 CFR 131.10(b). In the Downstream Protection FAQs, the EPA stated that adopting either narrative or numeric criteria to ensure the attainment and maintenance of downstream WQS (i.e., designated uses, criteria and antidegradation requirements) are potential paths for states/tribes to ensure consistency with 40 CFR 131.10(b).

The EPA had previously expressed concern in its January 2017 comment letter that Idaho's narrative downstream protection criteria may be insufficient to meet Clean Water Act requirements.[60] However, in its response to comments (provided with the 2016 submittal), Idaho explained that it will implement

[59] Protection of Downstream Waters in Water Quality Standards: Frequently Asked Questions, U.S. Environmental Protection Agency, Office of Water, EPA-820-F-14-001 (Jun. 2104). *Available at* https://www.epa.gov/sites/production/files/2018-10/documents/protection-downstream-wqs-faqs.pdf.

[60] Letter from Dennis McLerran, Regional Administrator, EPA Region 10, to John Tippets, Director, Idaho Dept. of Envtl. Quality (January 17, 2017).

its human health criteria in conjunction with this downstream protection narrative in a manner that will ensure protection of downstream waters. The narrative provision, coupled with the statement in Idaho's response to comment, are consistent with the EPA's regulation requiring state water quality standards ensure the attainment and maintenance of downstream water quality standards (40 CFR 131.10(b)). Therefore, in accordance with its CWA authority, 33 U.S.C. § 1313(c)(3), and 40 CFR Part 131, the EPA approves IDAPA 58.01.02.070.08.

D. The EPA Review and Action on Other New and Revised WQS Provisions

1. IDAPA 58.01.02.210.03.a., b., b.v., c., d., d.i., and d.ii. – Applicability of Toxic Criteria

The revisions to IDAPA 58.01.02.210.03 provide clarity and consistency with the EPA recommendations related to mixing zones, low flows and the frequency and duration components of criteria.

Paragraph a clarifies that criteria apply at the edge of any authorized mixing zone, or absent a mixing zone, then at the "end-of-pipe."

Paragraph b clarifies the flow basis for water quality-based effluent limits to be the harmonic mean flow for non-carcinogens as well as carcinogens. This was revised to be consistent with the EPA's recommendation.

Paragraph c includes the words "aquatic life" which provides additional specificity.

A new paragraph d specifies the frequency and duration components of both aquatic life and human health criteria.

The following is the new and revised rule. Strikeout indicates language that has been deleted and underlined indicates language that is added.

> 210.03 *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.~~ Mixing zones may be applied to toxic substance criteria subject to the limitations set forth in Section 060 and set out below.*
>
> > *a. For all waters for which the Department has determined mixing zones to be applicable, the toxic substance criteria apply at ~~the appropriate locations specified within or at~~ the boundary of the mixing zone(s) and beyond.~~; otherwise the~~ Absent an authorized mixing zone, the toxic substance criteria apply throughout the waterbody including at the end of any discharge pipe, canal or other discharge point.*
> >
> > *b. Low flow design ~~discharge~~ conditions. Water quality-based effluent limits and*

mixing zones for toxic substances shall be based on the following low flows in perennial receiving streams. Numeric chemical ~~standards can only~~ criteria may be exceeded in perennial streams ~~permitted discharges~~ outside any applicable mixing zone only when flows are less than ~~the following~~ these values:

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

~~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~~

~~v~~i. 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.

c. Application of aquatic life metals criteria.

d. Application of toxics criteria

~~v~~i. Frequency and duration for aquatic life 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.

ii. Frequency and duration for human health toxics criteria. Columns C1 and C2 criteria are not to be exceeded based on an annual harmonic mean.

The EPA Action and Rationale

These revisions described above relate to the applicability of Idaho's toxic criteria and add specificity and clarity related to implementation of water quality standards and are consistent with the EPA's guidance. In accordance with its CWA authority, 33 U.S.C. § 1313(c)(3), and 40 CFR Part 131, the EPA approves DEQ's revisions to IDAPA 58.01.02.210.03 a., b., b.v., c., d., d.i., and d.ii.

2. IDAPA 58.01.02.210.4.e. – National Pollutant Discharge Elimination System Permitting

The following new provision at IDAPA 58.01.02.210.04.e. provides a reference to the EPA's 1991 TSD for water quality-based toxics control.

210.04.e. *"Technical Support Document for Water Quality-Based Toxics Control." EPA, March 1991. http://www.deq.idaho.gov/media/60177101/58-0102-1201-epa-technical-support-document-1991.pdf.*

The EPA Action and Rationale

The addition of the reference to the EPA's Technical Support Document for Water Quality-Based Toxics Control addresses the water quality-based procedures for the control of toxics in NPDES permitting consistent with the EPA guidance and does not address designated uses, water quality criteria or antidegradation requirements, nor does it express or establish a desired condition or instream level of protection now or in the future and is not a WQS subject to the EPA approval or disapproval pursuant to section 303(c) of the CWA. The EPA is therefore taking no action on IDAPA 58.01.02.210.4.e.

3. IDAPA 58.01.02.210.05.b.i and b.ii. – Development of Toxic Substance Criteria

DEQ updated IDAPA 58.01.02.210.05.a.iii. to reference to the EPA's ECOTOX database.

210.05.a.iii. The most recent recommended criteria defined in EPA's ~~*Aquatic Toxicity Information Retrieval (ACQUIRE)*~~ ECOTOX 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

Paragraph b.i. was expanded to focus on best available science for toxicity thresholds and allow consideration of peer-reviewed data.

210.05.b.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~~ using best available science on toxicity thresholds (i.e. reference dose or cancer slope factor), such as defined in EPA's Integrated Risk Information System (IRIS) or other peer-reviewed source acceptable to the Department*

Paragraph b.ii. allows for flexibility in derivation of future human health criteria consistent with the EPA's 2000 Human Health Methodology yet based on newer data. This section is only for situations in which Idaho might develop a human health criterion for a substance lacking an EPA 304(a) criterion.

210.05.b.ii. *When using ~~EPA recommended criteria~~ toxicity thresholds to derive water quality criteria to protect human health, a fish consumption rate ~~of seventeen point five (17.5) grams/day, a~~ representative of the population to be protected, a mean adult body weight, an adult 90th percentile water ingestion rate ~~of two (2) liters/day~~, a trophic level weighted BAF or BCF, and a hazard quotient of one (1) for non-carcinogens or a cancer risk level of 10^{-6}~~10^{-5} for carcinogens shall be utilized.*

The EPA Action and Rationale
These revisions are consistent with the EPA's 2000 Human Health Methodology and ensure that Idaho can rely on the best available science when deriving criteria in the future. In accordance with its CWA authority, 33 U.S.C. § 1313(c)(3), and 40 CFR Part 131, the EPA approves IDAPA 58.01.02.210.05, a.iii., IDAPA 58.01.02.210.05.b.i. and IDAPA 58.01.02.210.05.b.ii.

E. IDAPA 58.01.02.284.04 - Application of South Fork Coeur d'Alene Site Specific Criteria

DEQ revised IDAPA 58.01.02.284.04 and merged paragraphs b and c because the two paragraphs were redundant.

284.04.

b. The criteria described in Section 284 apply to ~~the South Fork Coeur d'Alene River subbasin, units P-ll and P-l3.~~

~~c. In addition to the waters listed in subsection 284.04.b, the criteria described in Section 284 apply to~~ all surface waters within the subbasin, except for natural lakes, for which the statewide criteria given in Section 210 apply.

The EPA Action and Rationale
The revision merging paragraphs b and c is a non-substantive change to the previous EPA approved provision contained at 210.04.b. and c. This revision does not substantively change the meaning or intent of the existing WQS and the EPA is therefore taking no action on IDAPA 58.01.02.284.04.

VI. IDAPA 58.01.02.400.06 – Intake Credits

A. Intake Credit Provision

The new provision at IDAPA 58.01.02.400.06 addresses situations where a pollutant discharged by a point source facility also exists in the facility's intake water. Below is Idaho's new intake credit provision.

400. *Rules Governing Point Source Discharges*

06. Intake Credits for Water Quality-Based Effluent Limitations. Discharge permits for point sources may incorporate intake credits for water quality-based effluent limits. These credits are subject to the limitations specified in IDAPA 58.01.25 "Rules Regulating the Idaho Pollutant Discharge Elimination System Program.

The EPA Action and Rationale
The new intake credit provision at IDAPA 58.01.02.400.06 is an implementation provision related to NPDES permitting and does not address designated uses, water quality criteria or antidegradation requirements, nor does it express or establish a desired condition or instream level of protection now or in the future and is not a WQS subject to EPA approval or disapproval pursuant to section 303(c) of the CWA. The EPA is therefore taking no action on IDAPA 58.01.02.400.06.