

TITLE 327 WATER POLLUTION CONTROL DIVISION

Rule Information Sheet

Aquatic Life and Human Health Ambient Water Quality Criteria for Metals
LSA Document #14-58

Overview

This rulemaking proposes revisions to Indiana's aquatic life and human health ambient water quality criteria (WQC) for specific metals to reflect updates based on the most recent science and National Recommended Water Quality Criteria (NRWQC) developed by the United States Environmental Protection Agency (U.S. EPA) pursuant to Section 304(a) of the Clean Water Act (CWA). Section 304(a) requires U.S. EPA to develop criteria for ambient water quality that reflect the latest scientific knowledge on the impacts of pollutants on human health and aquatic life. Under the CWA, states are responsible for periodically reviewing and revising their water quality standards, which include WQC. WQC are amounts of constituents that, when met in ambient waters, protect human health and aquatic life. WQC apply to Indiana waterbodies themselves and do not impose any requirements or costs on any specific entity. A state's WQC are subject to U.S. EPA approval, and, if a state deviates from U.S. EPA's recommended WQC, the state must explain why.

Based on the latest scientific knowledge and IDEM's careful review and consideration, proposed aquatic life and human health ambient WQC under this rulemaking may become more or less stringent than existing criteria. For waters outside of the Great Lakes System, the acute and chronic aquatic life criteria for arsenic, cadmium, and nickel are proposed to be set at the NRWQC and to become more stringent than the current criteria. The acute and chronic aquatic life criteria for zinc are proposed to be set at the NRWQC and to become less stringent than the current criteria. For chromium III (trivalent), this rulemaking proposes to adopt the NRWQC, which will make the acute aquatic life criterion less stringent and the chronic criterion more stringent than the current criteria. For silver, the acute aquatic life criterion is proposed to be set at the NRWQC and is more stringent than the current criterion; however, the NRWQC does not include a chronic criterion and none is proposed in the rulemaking. For chromium VI (hexavalent), copper, lead, and mercury, no changes to the current criteria are proposed in this rulemaking.

For selenium, the NRWQC does not include an acute criterion so this rulemaking proposes to remove the current acute aquatic criterion. The NRWQC chronic criterion is composed of water column criterion elements (lentic or "still" water, lotic or "flowing" water, and intermittent, for example, stormwater) and fish tissue criterion elements (egg-ovary, muscle, and whole fish). The lentic and lotic water column criterion elements are more stringent than the current chronic aquatic criterion, and the intermittent water column criterion element is site-specific and can be either more or less stringent than the lentic or lotic criterion element. This rulemaking proposes a site-specific criterion for waters outside of the Great Lakes System where neither sturgeon nor paddlefish (Order Acipenseriformes) occur. For these waters, the water column criterion elements are more stringent than the current criterion but are less stringent than the criterion proposed for Acipenseriformes waters. IDEM developed the site-specific criterion because sturgeon was the species tested for the NRWQC that was most sensitive to the impacts of

selenium, and fishes in the Order Acipenseriformes do not occur at the site for certain waters outside of the Great Lakes System.

The WQC changes proposed in this rulemaking for the Great Lakes System are fewer in number than for the waters outside of the Great Lakes System because the Great Lakes System criteria are mostly set at the NRWQC. Under this rulemaking, both the acute and chronic aquatic life criteria for cadmium are proposed to be set at the NRWQC and will become more stringent than the current criteria. The acute and chronic aquatic criteria for lead are proposed to be set at the NRWQC. Since there are currently no criteria for lead in the Great Lakes System, lead criteria will become more stringent. The arsenic and chromium VI (hexavalent) criteria are changing slightly due to rounding the current criteria to two significant figures. Selenium is proposed for adoption at the NRWQC as is the proposal for the waters outside of the Great Lakes System; however, this rulemaking will not include a site-specific criterion for non-Acipenseriformes waters, since it is assumed that lake sturgeon are present, or being reintroduced, into these waters.

In the Second Notice of Comment Period (posted November 15, 2017), IDEM proposed to adopt acute and chronic criteria for aluminum for waters within and outside of the Great Lakes System. However, U.S. EPA published NRWQC for aluminum in 2018 based on the bioavailability of aluminum and calculated based on the interaction of aluminum with pH, dissolved organic carbon, and hardness. IDEM's draft rule posted at Second Notice proposed aluminum criteria that are not equivalent to the 2018 NRWQC for aluminum. The proposed rule as preliminarily adopted does not include aluminum criteria. IDEM will consider adopting the 2018 NRWQC for aluminum in a future rulemaking.

In waters outside of the Great Lakes System, human health criteria for antimony, copper, and zinc are proposed to become more stringent while criteria for nickel are proposed to become less stringent. These proposed criteria are the NRWQC. For selenium, this rulemaking proposes to adopt the NRWQC, which will make the criterion for the consumption of water plus organism less stringent, and include a new criterion for the consumption of organism only, which will be more stringent since there is no criterion in the current rule. There are no NRWQC human health criteria for beryllium, cadmium, trivalent and hexavalent chromium, lead, and silver so removal of these criteria is proposed. Human health criteria for arsenic, mercury, and thallium are not proposed to change. There are no changes in this rulemaking to human health criteria in the Great Lakes System.

Tables 6-1 and 6-2 of 327 IAC 2-1-6 and Table 8-1 of 327 IAC 2-1.5-8 in the existing rules have been struck out entirely in this proposed rule. An all new Table 6-1 and Table 6-4 and a new reformatted Table 8-1 have been added as shown by the bold font. The purpose of this reformatting is to provide clarity and consistency with the way aquatic life and human health criteria are presented in these two rules. The existing Table 6-1 at 327 IAC 2-1-6(a)(3) includes both aquatic life and human health criteria. However, in 327 IAC 2-1.5-8, aquatic life and human health criteria are presented in separate tables (Table 8-1 and Table 8-3). New Table 6-1 at 327 IAC 2-1-6 (a)(3) in the proposed rule includes aquatic life criteria. New Table 6-4 at 327 IAC 2-1-6(a)(7) in the proposed rule contains the human health criteria that are included in the existing Table 6-1. Additionally, for waters outside of the Great Lakes System, the formulas for those metal criteria that are hardness-based included in existing Table 6-2 at 327 IAC 2-1-6(a)(3) are

included in the newly formatted aquatic life Table 6-1 rather than in a separate table, which is consistent with the 327 IAC 2-1.5-8, Table 8-1 formatting for metals criteria. CAS numbers for chemical substances to which the criteria apply are included in new Table 6-1 and Table 6-4 in the proposed rule at 327 IAC 2-1-6. This will provide consistency with the way CAS numbers are shown in Table 8-1 and Table 8-3 at 327 IAC 2-1.5-8. The changes to existing tables that were struck with new tables added in bold were done as allowed by rule formatting of tables in order to enhance readability so that small table cells are not over crowded with strike out of existing language and insertion of new bold language. Despite these changes that seem extensive due to the amount of bold language, the substantive changes in this rulemaking are limited to updating the select metals criteria to the NRWQC. Other changes are done for rule formatting purposes under the Administrative Rules Drafting Manual.

Since the preliminary adoption hearing on November 18, 2020, the proposed rule has been revised only in a few minor places. Each change is shown with underlining. As a result of discussion with U.S. EPA, footnote 1 in Table 8-1 has been relocated from the heading of the table to the columns regarding CMC, CCC, and the chloride statement at the end of the table. IDEM realizes that finding the U.S. EPA's document that is incorporated by reference (IBR) in both 327 IAC 2-1-6 and 327 IAC 2-1.5-8 by using the Government Publishing Office web site is difficult. Therefore, the GPO web site has been deleted from the IBR statement at the end of both 327 IAC 2-1-6 and 327 IAC 2-1.5-8. The document is easier to find using the U.S. EPA National Service Center for Environmental Publications web site, which remains in the IBR statements. The only other revisions to the rule language stem from editing suggestions that the Indiana Register staff made when preparing the proposed rule for its posting on April 21, 2021, to begin the third comment period.

Affected Persons

This rulemaking does not impose requirements or costs on any entity. WQC apply to Indiana waterbodies themselves and are set at levels that, when met, protect human health and aquatic life.

Reasons for the Rule

Under the CWA, IDEM is required to periodically review and revise Indiana's WQC. This rulemaking is updating Indiana's WQC for specific metals to reflect best available science in accordance with U.S. EPA's NRWQC. By updating WQC to reflect the latest scientific knowledge, IDEM is ensuring the protection of human health and aquatic life. Additionally, updating these criteria will result in more consistency in the metals criteria for waters within and outside of the Great Lakes System.

Economic Impact of the Rule

This rulemaking does not impose requirements or costs on any entity.

Scheduled Board Action and Hearings

First Public Hearing: November 18, 2020, at 1:30 P.M., held remotely through Zoom.

Join Zoom Meeting

<https://zoom.us/j/93846345845?pwd=eklqWHVKRk1LU1hGMVVzaStldDVxZz09>

By phone:

312-626-6799
929-205-6099

Meeting ID: 938 4634 5845
Password: 963768

Second Public Hearing: August 11, 2021, at 1:30 P.M., at the Indiana Government Center North, 100 North Senate Avenue, Conference Room 1319, Indianapolis, Indiana. The public may attend the board meeting in person or join by using the following Zoom link, meeting ID, and passcode, or telephone numbers:

Join Zoom Meeting

<https://us06web.zoom.us/j/87921936763?pwd=RVJQVEITZ0VsdHE2NnVVREpUR0Nldz09&from=addon>

By phone:

301-715-8592
312- 626-6799

Meeting ID: 879 2193 6763
Passcode: 649397

IDEM Contact

Additional information regarding this rulemaking action can be obtained from MaryAnn Stevens, Rules Development Branch, Office of Legal Counsel, (317) 232-8635, (800) 451-6027 (in Indiana), or mstevens@idem.in.gov.