



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
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San Francisco, CA 94105-3901

Trevor Baggione
Director, Water Quality Division
Arizona Department of Environmental Quality
1110 W. Washington St
Phoenix, Arizona 85007

By Email Only

Re: Arizona's 2020-2022 List of Impaired Waters under Clean Water Act (CWA) section 303(d) (2020-2022 List)

Dear Director Baggione:

I am pleased to partially approve the subject List, including all water quality-limited segments and associated pollutants identified by the Arizona Department of Environmental Quality as requiring a total maximum daily load (TMDL) under CWA section 303(d). As requested, I am also disapproving the State's omission of Horsethief Lake and Santa Fe Lake for methylmercury-in-fish-tissue impairments and am identifying both waters for inclusion on the 2020-2022 List.

The Environmental Protection Agency's (EPA) review and rationale is in the enclosure to this letter. EPA finds Arizona developed its list partially consistent with the requirements of CWA section 303(d) but found Arizona's decision not to list Horsethief Lake and Santa Fe Lake for mercury-in-fish-tissue impairments was inconsistent with Arizona's methylmercury numeric criterion for fish consumption. EPA will issue a public notice providing for a 30-day public comment period on the inclusions of the two impairments to Arizona's 2020-2022 List. After considering any comments received, EPA may make revisions, as appropriate, and will transmit its listings to Arizona for incorporation into the State's water quality management plan.

I look forward to our continued partnership to protect Arizona water quality and advance human health and wildlife protection. Please call me if you would like to discuss further, or your staff may contact Matt Bolt at (415) 972-3575 or bolt.matthew@epa.gov with specific questions concerning this decision.

Sincerely,

Signature on file, dated June 16, 2022

Tomás Torres
Director, Water Division

Enclosure

cc: Erin Jordan, ADEQ

Enclosure

EPA Review of Arizona’s 2020-2022 CWA Section 303(d) List

I. Purpose

Section 303(d) of the Clean Water Act (CWA) requires each state and territory to “identify those waters within its boundaries for which [current pollution control technologies] ... are not stringent enough to implement any water quality standard applicable to such waters.” This list is referred to as the Impaired Waters List, 303(d) List or Category 5 (see Five Reporting Categories below).¹ In addition to section 303(d) lists of impaired waters (List), states are required to submit CWA section 305(b) water quality reports that provide information on the water quality status of all waters in the state. EPA recommends that states combine the section 305(b) report and section 303(d) List into a single “Integrated Report” (IR). EPA reviews CWA 305(b) reports but is only required to approve or disapprove CWA 303(d) Lists. EPA reviews Integrated Report submittals for consistency with the CWA and its implementing regulations, as well as EPA Guidance addressing assessment, listing and reporting requirements under CWA sections 303(d), 305(b) and 314 (see References).

Five Integrated Report Categories	
Category 1	All designated uses are supported, no use is threatened.
Category 2	Available data and/or some information indicated that some, but not all of the designated uses are supported.
Category 3	There is insufficient available data and/or information to make a use support determination.
Category 4	Available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed.
Category 5	Available data and/or information indicate that at least one designated use is not being support or is threatened, and a TMDL is needed.

EPA received the Arizona Department of Environmental Quality’s (ADEQ) submittal: *Arizona’s 2022 Clean Water Act Assessment (2020-2022 IR)* in the ATAINS database on April 19, 2022. The 2020-2022 IR submittal includes Arizona’s 2020 and 2022 CWA section 303(d) list of water quality-limited segments (WQLSs) requiring a Total Maximum Daily Load (TMDL) pursuant to 40 C.F.R. § 130.7 (2020-2022 List) and its required CWA section 305(b) report.

This document describes EPA’s decision to partially approve Arizona’s 2020-2022 List identified in the 2020-2022 IR, *Arizona’s 2022 Clean Water Act Assessment Appendix C* and the 303(d) listings in EPA’s ATAINS database. This review also describes the basis for EPA’s decision to disapprove the State’s omission of two waterbodies (Horsethief Lake and Santa Fe Lake) from its list of WQLSs requiring a TMDL for methylmercury in fish-tissue consistent with

¹ U.S. Environmental Protection Agency. 2005. “Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act,” Diane Regas, EPA Office of Wetlands, Oceans, and Watersheds, Washington, DC.

Arizona’s water quality standards. Pursuant to CWA section 303(d) EPA is only acting on Arizona’s listing decisions in *Arizona’s 2022 Clean Water Act Assessment*.

II. Statutory and Regulatory Background

A. Identification of WQLSs for Inclusion in the List

CWA section 303(d)(1) directs states to identify those waters within its jurisdiction for which effluent limitations required by CWA section 301(b)(1)(A) and (B) are not stringent enough to achieve applicable water quality standards, and to establish a priority ranking for addressing such waters, taking into account the severity of the pollution and the designated uses of such waters. CWA section 303(d) listing requirements apply to waters impaired by both point sources and nonpoint sources of pollution.

As provided at 40 C.F.R. § 130.7(b)(1), a state need not include WQLSs in Category 5 when specific circumstances exist. Such WQLSs are included in Category 4 as follows:

- Category 4a: A TMDL to address a specific segment/pollutant combination has been approved or established by EPA.
- Category 4b: A use impairment caused by a pollutant is being addressed by the state through other pollution control requirements.
- Category 4c: A use is impaired, but the impairment is not caused by a pollutant.

B. Consideration of Existing and Readily Available Water Quality-Related Data and Information

EPA regulations require each state to “assemble and evaluate all existing and readily available water quality-related data and information to develop the list” and provide a rationale, subject to EPA approval, for any decision not to use existing and readily available data and information. 40 C.F.R. § 130.7(b).

The regulations at 40 C.F.R. § 130.7(b)(5) specify that this requirement includes, but is not limited to, all the existing and readily available data and information about the following categories of waters:

- Waters identified as partially meeting or not meeting designated uses or as threatened in the state’s most recent CWA section 305(b) report.
- Waters for which dilution calculations or predictive modeling indicate nonattainment of applicable standards.
- Waters for which water quality problems have been reported by governmental agencies, members of the public, or academic institutions.
- Waters identified as impaired or threatened in any CWA section 319 nonpoint source assessment submitted to the EPA.

Pursuant to 40 C.F.R. § 130.7(b)(6), each state must include, as part of its submittal to EPA, documentation to support decisions to rely or not rely on particular data and information, and decisions to list or not list waters. Such documentation needs to include, at a minimum, the following information: (1) a description of the methodology used to develop the list; (2) a description of the data and information used to identify waters; and (3) any other reasonable information requested by EPA.

C. Priority Ranking

EPA regulations at 40 C.F.R. § 130.7(b)(4) also require each state to prioritize WQLSs for TMDL development, and to specifically identify those targeted for TMDL development in the next two years. In prioritizing and targeting waters, each state must, at a minimum, take into account the severity of the pollution and the uses of such waters. CWA section 303(d)(1)(A). A state may consider other factors including immediate programmatic needs including vulnerable aquatic habitats, recreational, economic, and aesthetic importance, degree of public interest and support, and state or national policies and priorities.^{2,3}

III. Analysis of Submittal

A. Identification of WQLSs for Inclusion in the List

EPA has reviewed Arizona's submittal and concludes Arizona's 2020-2022 List is in partial compliance with CWA section 303(d) and 40 C.F.R. § 130.7.

Arizona based its 2020-2022 List on its analysis of readily available data and information to determine whether additions to or deletions from its 2018 List were necessary (*Arizona 2018 303(d) List of Impaired Waters*). Arizona's approach, wherein previously listed waters remain WQLSs unless the existing and readily available water quality-related data no longer indicate impairment, is consistent with federal requirements. EPA finds it was reasonable for the State to include most of the previously listed waters on its 2020-2022 List. The State also added new listings based on review of new data.

B. Assembly of Data

EPA evaluated whether Arizona reasonably considered existing and readily available water quality-related data and information and reasonably identified waters required to be listed and finds Arizona's approach to be reasonable.

EPA's finds the State's data compilation process was clear and provided an adequate basis for assessments. The State considered data provided by government and non-government agencies and water quality data collected by the ADEQ staff between July 1, 2012 through June 30, 2021.

² U.S. Environmental Protection Agency. 1992. July 24, 1992 Federal Register and 40 C.F.R. Parts 122, 123, 130, revision of regulation, 57 Fed. Reg. 43 pp. 33040.

³ U.S. Environmental Protection Agency. 1991. "Guidance for Water Quality-Based Decisions: The TMDL Process," Office of Water. EPA 440/4-91-001.

ADEQ compiled data and information from multiple sources, including those identified in 40 C.F.R. § 130.7(b)(5)(iii). The State opened a public call for water quality data between February 9, 2021 and April 30, 2021 via the ADEQ website (<https://www.azdeq.gov/programs/water-quality-programs/surface-water-monitoring-and-assessment>) and through its email list to interested parties. ADEQ also actively sought data from available websites, agencies, and groups likely to have data. Most of the data assessed in the 2020-2022 IR originated from ADEQ’s monitoring program and from the U.S. Geological Survey (USGS). Additional water quality data considered was provided by volunteer and other entities that report data to the State, however, the primary sources of data are federal and state agencies.

List of sources of data used for the 2020-2022 IR⁴

- Arizona Department of Environmental Quality
- United States Geological Survey
- Adventure Scientists
- Aravaipa Group
- Butte Creek Restoration Council
- Colorado River Water Quality Improvement Program
- Coronado Resource Conservation & Development
- Friends of the Forest
- Friends of the Tonto
- Gila Watershed Partnership
- Oak Creek Watershed Improvement Council
- Prescott Creeks
- Sierra Club
- Verde River Institute
- Arizona Game and Fish
- Arizona State Parks Park
- Bureau of Land Management
- Bureau of Reclamation
- City of Tucson
- City of Tempe
- National Park Service
- Pima County
- Slide Rock State Park
- US Fish and Wildlife Services
- US Forest Service
- US Environmental Protection Agency
- Allied Signal Engines
- ASARCO
- BHP
- Capstone Mining
- Golder and Associates
- Hargis & Assoc. Inc.
- International Boundary and Water Commission
- Pinal Creek Group
- Resolution Copper
- Salt River Project
- University of Arizona
- Walker Ecological Services

ADEQ considered water quality data that met the state’s credible data requirements as described in Chapter 3 of the 2020-2022 IR. ADEQ also considered fish catch consumption advisories and associated fish tissue data that were jointly published by the Department and the Arizona Game and Fish Department (AZGFD).

⁴ Arizona’s 2022 Clean Water Act Assessment. Arizona Department of Environmental Quality (ADEQ). Figure 2-2.

C. Listing Methodology

The State's listing methodology identifies impaired waters and specifies explicit factors for making listing and de-listing decisions for different pollutant types based on different kinds of data and information. In general, the State lists a waterbody based on adequate documentation that water quality standards (WQS), as defined in the Arizona Administrative Code (AAC), Title 18, Chapter 11, Article 1: Water Quality Standards for Surface Waters, and approved by EPA, were not met during the assessment period.

Decisions to list or de-list are based on the quality and quantity of data, water body type and the applicable WQS. The State's surface waters are monitored to determine if water quality conditions support aquatic life, human health, recreational uses, and ecosystem health. Chapter 3-26 of the 2022 Integrated Report notes *"In the past, EPA has identified assessment units and pollutants of concern that needed to be added to Arizona's impaired water list to make the list consistent with federal regulations (over-filings). In subsequent assessments, EPA must decide when these additional impairments are removed from Arizona's 303(d) List. In this respect, these impairments are tracked separately. However, once listed by EPA, ADEQ recognizes these waters as impaired, initiates TMDL according to priorities, and protects them from further pollutant loadings according to Arizona's antidegradation rules and permit requirements."* EPA clarifies that de-listing of all impairments, including those added by EPA, are the responsibility of the State and should be based on ADEQ's review of exiting and readily available data.

The State's assessment methodologies and quantitative assessment factors include statistical methods for evaluating potential WQS exceedances, and data quality requirements. These decision factors are applied to various types of data, including water chemistry, bacteria, nutrients, and other parameters. The State used the assessment decision factors as the basis for its decisions. EPA has reviewed the assessments and concludes they are consistent with federal listing requirements and applicable WQS. However, EPA, relying on federal listing regulations under 40 C.F.R. § 130.7, has determined that Horsethief Lake and Santa Fe Lake are impaired for mercury-in-fish-tissue and were omitted from the State's list of WQLSs requiring a TMDL. In this action EPA disapproves the omission as it is inconsistent with Arizona's approved methylmercury criterion for fish consumption (FC).

Basis for EPA decision to add two waterbodies to Arizona's 2020-2022 List

This section describes the basis for EPA's decision to disapprove the State's omission of Santa Fe Lake (Coconino County) and Horsethief Lake (Yavapai County) and to identify them for addition to the 2020-2022 List. When determining whether to add waters to Arizona's 2020-2022 List, EPA considered the State WQSs as well as EPA's listing regulations at 40 C.F.R. § 130.7(b) and considerations described in EPA's guidance documents.

The applicable Arizona water quality standards for Santa Fe Lake and Horsethief Lake is the FC criterion of 0.3 mg methylmercury per kg of wet weight fish tissue (0.3 mg/kg). This criterion was adopted in 2009 in accordance with the requirements of CWA Section 303(c) and approved by EPA. However, under Arizona law, implementation procedures must be adopted in its Impaired Waters Identification Rule (IWIR) in order for the state to list impairments. The IWIR

does not include fish tissue assessment procedures therefore the State cannot use the available data information that includes fish consumption advisories, associated fish tissue data, and individual exceedances as the basis to add waters to the List. Arizona did evaluate fish tissue methylmercury data and information and shared its findings with EPA. Based on its analysis of methylmercury in fish tissue, in January of 2021 ADEQ and AZGFG, issued fish consumption advisories for largemouth bass in Horsethief Lake and for black crappie in Santa Fe Lake. In Chapter 2 of the 2022 IR, Arizona also identified exceedances of the FC methylmercury criterion in both lakes. However, ADEQ did not identify these waters as impaired on its 2020-2022 List. In its submittal to EPA, ADEQ requested that the EPA add Horsethief Lake and Santa Fe Lake to its list of impaired waters due to methylmercury in fish tissue.⁵

EPA reviewed the methylmercury data and information and found that the arithmetic mean methylmercury concentrations exceeded Arizona's FC criterion of 0.3 mg methylmercury/kg in fish tissue in both Horsethief Lake and Santa Fe Lake. EPA concludes the Fish Consumption use is impaired and these waterbodies are required to be identified as WQLSs under 40 C.F.R. § 130.7. Therefore EPA disapproves Arizona's omission of Horsethief Lake and Santa Fe Lake from the 2020-2022 List.

When EPA disapproves a listing decision, EPA must propose listing in accordance with 40 C.F.R. § 130.7(d)(2). Therefore, EPA is adding WQLSs for Santa Fe Lake and Horsethief Lake to the 2020-2022 List which do not meet WQS for fish consumption.

D. New Impairment Listings

The State added 42 new WQLSs and 33 new waterbodies in the 2020-2022 List compared to its 2018 List. New listings are shown in Chapter 2 of the 2020-2022 IR. The most common pollutants associated with new listings are copper, selenium, *E. coli*, mercury, zinc, lead, and dissolved oxygen.

As discussed above in Section C, EPA is adding new impairment listings for Horsethief Lake and Santa Fe Lake, for a total of 44 WQLSs added to the 2020-2022 List.

E. Waters Removed from Arizona's 303(d) List

The State's 2020-2022 IR removes 10 WQLS and nine waterbodies that were identified on the 2018 List. The de-listings and their rationales are shown in *Arizona's 2022 Clean Water Act Assessment, Chapter 2*. EPA requested and the State provided additional details by email demonstrating good cause for de-listing decisions consistent with 40 C.F.R. § 130.7(b)(6)(iv). The most frequent waterbody/pollutant de-listings are for selenium, dissolved oxygen, ammonia-nitrogen, arsenic, and *E. coli*. EPA has reviewed the information provided and concludes that the State's decision to de-list the waters identified in its submittal is consistent with federal listing requirements.

⁵ Email from Jason Jones, ADEQ, to Matt Bolt, U.S. EPA April 5, 2022; *see also* Letter from Trevor Baggio, ADEQ, to Tomás Torres, U.S. EPA August 15, 2018 for previously waters added at ADEQ's request "Arizona does not currently have impairment identification procedures for listing waters based on mercury in fish tissue, but does believe these waters to be impaired."

F. Public Comment

Arizona solicited public comments on its draft 2020-2022 IR over a 31-day period from December 6, 2021 through January 6, 2022, through the ADEQ's website and through its email list to interested parties. The full list of public comments from commenters and ADEQ's responses to comments are included in the 2020-2022 IR submittal to EPA and in the ATTAINS database. EPA reviewed the public comments and the State's responses. EPA finds the State's List was developed with opportunities for public participation.

IV. TMDL Priority Ranking and Schedule

The State's submittal includes a priority ranking for TMDL completion for those waters requiring a TMDL, using a low/medium/high scale. The State's TMDL priority rankings are shown in *Appendix D – 2022 TMDL Priority Ranking* of the 2020- 2020-2022 IR. EPA finds that the State developed a priority ranking for TMDL development consistent with the requirements in 40 C.F.R. § 130.7(b).

References

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U.S. Environmental Protection Agency. 2015. "Information Concerning 2016 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions," Benita Best-Wong, Office of Wetlands, Oceans, and Watersheds, August 13, 2015.

U.S. Environmental Protection Agency. 2017. "Information Concerning 2018 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions," John Goodin, Office of Wetlands, Oceans, and Watersheds, December 22, 2017.

U.S. Environmental Protection Agency. 2021. "Information Concerning 2022 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions," John Goodin, Office of Wetlands, Oceans, and Watersheds, March 31, 2021.