

304(a) Justifications for the 2018 Texas Surface Water Quality Standards Revision

Background:

The final federal Water Quality Standards Regulatory Revision, was published in the *Federal Register* on August 21, 2015, included a requirement for states and authorized tribes to provide a rationale for not adopting new or revised Clean Water Act 304(a) criteria recommendations when submitting the results of triennial reviews to the Regional Administrator. The intent of the new requirement is to increase transparency and communicate to the public how the state authorized tribe considered criteria recommendations and the latest science during its triennial review. The Environmental Protection Agency (EPA) has not provided explicit guidance for states to implement the new requirement. However, the EPA strongly encourages states and authorized tribes to include the rationale on a publicly accessible web site or utilize other mechanisms to inform the public. The TCEQ has chosen to post the rationale on this website. Provided below are the justifications the Texas Commission on Environmental Quality (TCEQ) provided to the EPA when the 2018 revisions to the Texas Surface Water Quality Standards (TSWQS) were submitted for federal approval.

Aquatic Life Criteria (Table 1):

Ammonia Criteria:

The TCEQ is not adopting numeric aquatic life criteria for ammonia at this time. Provisions to preclude toxic effects of ammonia are included in §307.6(c)(4) and §307.6(e) of the TSWQS. Whole-effluent toxicity (WET) testing remains a reasonable approach for assessing toxicity from ammonia. In accordance with the *Procedures to Implement the Texas Surface Water Quality Standards* (RG 194), facilities that have either ammonia limits to maintain instream dissolved oxygen criteria or categorical ammonia limits that exceed 4 mg/L at the edge of the mixing zone will include either modified limits for total ammonia or a chronic WET limit for the more sensitive species with a WET testing frequency of six times a year. The modified ammonia limit or WET limit applies to the following types of facilities that discharge to perennial waters or within three miles of perennial waters:

- major domestic facilities (design flow \geq 1 MGD);
- minor domestic facilities (design flow $<$ 1 MGD) that discharge to a water body that either contains a threatened or endangered species or is listed for ammonia on an EPA approved 303(d) list;
- industrial facilities that have WET testing requirements; and
- industrial facilities that discharge to a water body that either contain a threatened or endangered species or is listed for ammonia on an EPA approved 303(d) list.

By following these guidelines, the TCEQ will ensure that it is not authorizing the discharge of toxic amounts of ammonia.

The TCEQ may require more stringent permit limits for discharges that TCEQ staff determine have a high potential to adversely affect listed species of critical concern. Additional permit limits may also be imposed based on United States Fish and Wildlife Service concerns and other issues as they arise. Appropriate controls for ammonia toxicity may be subject to review during the next revision of the water quality standards.

Cadmium Criteria:

The EPA released finalized nationally recommended aquatic life criteria for cadmium on April 6, 2016. Since these criteria were published in the federal register after the TCEQ's scheduled stakeholder meetings, this 304(a) criteria document could not be considered in time for the 2018 revision of the TSWQS. Therefore, these revised criteria will be considered during the next triennial revision cycle.

Human Health Criteria (Table 2):

When revising the human health criteria, the TCEQ used the same reference doses, cancer potency factors, and bioaccumulative factors as the EPA in their 2015 Updated Human Health Ambient Water Quality Criteria. Because the TCEQ utilizes a different risk level, adult body weight, and consumption rate for both fish and water intake, the adopted statewide criteria are not identical to the federally recommended criteria. The TCEQ also used childhood body weight and childhood consumption rates as opposed to the EPA's use of a relative source contribution factor partnered with adult body weight and adult consumption rates when calculating non-carcinogen criteria. All values assumed for body weights, consumption rates, and risk level for the calculation of all human health criteria are described in detail in §307.6(d)(3) and in the *Procedures to Implement the Texas Surface Water Quality Standards* (RG 194).

Currently, the TCEQ does not have statewide criteria for the following 38 parameters for which the EPA has §304(a) nationally recommended criteria which have been updated since 2000: acenaphthene, alpha-endosulfan, benzo(b)fluoranthene, benzo(k)fluoranthene, beta-endosulfan, bis(2-chloro-1-methylethyl) ether, butylbenzyl phthalate, dibenzo(a,h)anthracene, diethyl phthalate, dimethyl phthalate, dinitrophenols, endosulfan sulfate, endrin aldehyde, fluoranthene, flourene, hexachlorocyclohexane (HCH) - technical, Ideno(1,2,3-cd)pyrene, isophorone, methylmercury, methyl bromide, nitrosopyrrolidine, n-nitrosodimethylamine, n-nitrosodi-n-propylamine, n-nitrosodiphenylamine, phenol, pyrene, zinc, 1,2,4-trichlorobenzene, 1,2-diphenylhydrazine, trans-1,2-dichloroethylene, 2,4,6-trichlorophenol, 2,4-dichlorophenol, 2,4-dinitrophenol, 2,4-dinitrotoluene, 2-chloronaphthalene, 2-chlorophenol, 2-methyl-4,6-dinitrophenol, and 3-methyl-4-chlorophenol.

The EPA submitted preliminary comments to the TCEQ on April 7, 2015, which included a list of pollutants to be considered as additions to Table 2 during the next revision of the TSWQS. A drinking water maximum concentration limit for arsenic is currently listed in Table 2 of the TSWQS for the protection of consumption of water and fish. Because the oral slope factor remains under review and was not included in EPA's 2015 human health criteria update, no other criteria were adopted for arsenic. The EPA did not ask the state to consider adding any other pollutant for which there was existing §304(a) nationally recommended human health criteria; therefore, no other additions of nationally recommended water quality criteria were considered during this revision.

The EPA finalized a nationally recommended methylmercury human health criterion of 0.3 mg/kg in fish tissue in 2001. The TCEQ adopted a criterion of 0.7 mg/kg mercury in edible fish during the 2010 revision of the TSWQS, and the rationale was presented in a letter to EPA dated April 23, 2008. EPA subsequently disapproved this value in a letter dated June 29, 2011. The TCEQ expressed strong disagreement with EPA's disapproval action of the adopted criterion in a letter, dated November 30, 2011. The TCEQ continues to retain the previously EPA approved human-health criteria for mercury in water (0.0122 ug/L in freshwater and 0.0250 ug/L in saltwater).

Nutrient Criteria:

The commission has considered federally-recommended approaches toward development of numeric nutrient criteria, and has adopted alternative criteria to better address issues unique to the state. The commission, in coordination with stakeholders in the Nutrient Criteria Development Advisory Work Group, has adopted site-specific numeric chlorophyll *a* criteria for 39 reservoirs, and has established numeric translators of narrative nutrient criteria for assessment purposes in reservoirs. In addition to adopting and implementing numeric nutrient criteria, TCEQ regulates nutrients by applying narrative criteria to address permitted nutrient loadings at sites of concern, developing watershed rules which require nutrient reductions in wastewater discharges in or near specified water bodies, and employing the TCEQ's antidegradation policy to new and increased discharge loads of nutrients. TCEQ also considers monitoring data for phosphorus, nitrogen, and chlorophyll *a* to identify areas of concern in the IR.

TCEQ is currently contracting with universities to collect nutrient, habitat, and biological data in streams and rivers and to build models of nutrient relationships in bays and estuaries in support of future criteria development. TCEQ is committed to increasing the understanding of nutrient-biological response relationships as part of criteria development and implementation, and will continue this work to protect water quality in Texas.