ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 131

[EPA–HQ–OW–2015–0804; FRL–9952–99–OW]

RIN 2040–AF59

Promulgation of Certain Federal Water Quality Standards Applicable to Maine

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (EPA) is finalizing federal Clean Water Act (CWA) water quality standards (WQS) for certain waters under the state of Maine's jurisdiction, including human health criteria (HHC) to protect the sustenance fishing designated use in waters in Indian lands and in waters subject to sustenance fishing rights under the Maine Implementing Act (MIA). EPA is promulgating these WQS to address various disapprovals of Maine's standards that EPA issued in February, March, and June 2015, and to address the Administrator's determination that Maine's HHC are not adequate to protect the designated use of sustenance fishing for certain waters.

DATES: This final rule is effective on January 18, 2017. The incorporation by reference of certain publications listed in the rule is approved by the Director of the Federal Register as of January 18, 2017.

ADDRESSES: EPA has established a docket for this action under Docket ID No. EPA–HQ–OW–2015–0804. All documents in the docket are listed on the *http://www.regulations.gov* Web site. Although listed in the index, some information is not publicly available, *e.g.,* CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available electronically through *http://www.regulations.gov.*

FOR FURTHER INFORMATION CONTACT: Jennifer Brundage, Office of Water, Standards and Health Protection Division (4305T), Environmental Protection Agency, 1200 Pennsylvania Avenue NW., Washington, DC 20460; telephone number: (202) 566–1265; email address: *Brundage.jennifer@epa.gov.*

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I. General Information

A. Does this action apply to me?

Entities such as industries, stormwater management districts, or publicly owned treatment works (POTWs) that discharge pollutants to waters of the United States in Maine could be indirectly affected by this rulemaking, because federal WQS promulgated by EPA are applicable to CWA regulatory programs, such as National Pollutant Discharge Elimination System (NPDES) permitting. Citizens concerned with water quality in Maine, including members of the federally recognized Indian tribes in Maine, could also be interested in this rulemaking. Dischargers that could potentially be affected include the following:

TABLE 1—DISCHARGERS POTENTIALLY AFFECTED BY THIS RULEMAKING

Category	Examples of potentially affected entities
Industry	Industries discharging pollutants to waters of the United States in Maine.
Municipalities	Publicly owned treatment works or other facilities discharging pollutants to waters of the United States in Maine.
Stormwater Management Districts	Entities responsible for managing stormwater runoff in the state of Maine.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities that could be indirectly affected by this action. Any parties or entities who depend upon or contribute to the quality of Maine's waters could be affected by this rule. To determine whether your facility or activities could be affected by this action, you should carefully examine this rule. If you have questions regarding the applicability of this action to a particular entity, consult Jennifer Brundage, whose contact information can be found in the **FOR FURTHER INFORMATION** section above.

B. How did EPA develop this final rule?

In developing this final rule, EPA carefully considered the public comments and feedback received from interested parties. EPA provided a 60-day public comment period after publishing the proposed rule in the **Federal Register** on April 20, 2016.[1] In addition, EPA held two virtual public hearings on June 7 and 9, 2016, to discuss the contents of the proposed rule and accept verbal public comments.

Over 100 organizations and individuals submitted comments on a range of issues. Some comments addressed issues beyond the scope of the rulemaking, and thus EPA did not consider them in finalizing this rule. In section III of this preamble, EPA discusses certain public comments so that the public is aware of the Agency's position. For a full response to these

[1] See Proposal of Certain Federal Water Quality Standards Applicable to Maine, 81 FR 23239, April 20, 2016.

and all other comments, see EPA's Response to Comments (RTC) document in the official public docket.

II. Background and Summary

A. Statutory and Regulatory Background

1. Clean Water Act (CWA)

CWA section 101(a)(2) establishes as a national goal "water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and recreation in and on the water, wherever attainable." These are commonly referred to as the "fishable/swimmable" goals of the CWA. EPA interprets "fishable" uses to include, at a minimum, designated uses providing for the protection of aquatic communities and human health related to consumption of fish and shellfish.[2]

CWA section 303(c) (33 U.S.C. 1313(c)) directs states to adopt water quality standards (WQS) for waters under their jurisdiction subject to the CWA. CWA section 303(c)(2)(A) and EPA's implementing regulations at 40 CFR part 131 require, among other things, that a state's WQS specify appropriate designated uses of the waters, and water quality criteria to protect those uses that are based on sound scientific rationale. EPA's regulations at 40 CFR 131.11(a)(1) provide that such criteria "must be based on sound scientific rationale and must contain sufficient parameters or constituents to protect the designated use." In addition, 40 CFR 131.10(b) provides that "[i]n designating uses of a waterbody 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."

States are required to review applicable WQS at least once every three years and, if appropriate, revise or adopt new standards (CWA section 303(c)(1)). Any new or revised WQS must be submitted to EPA for review, to determine whether it meets the CWA's requirements, and for approval or disapproval (CWA section 303(c)(2)(A) and (c)(3)). If EPA disapproves a state's new or revised WQS, the CWA provides the state ninety days to adopt a revised WQS that meets CWA requirements, and if it fails to do so, EPA shall promptly propose and then within ninety days promulgate such standard unless EPA approves a state replacement WQS first (CWA section 303(c)(3) and (c)(4)(A)). If the state adopts and EPA approves a state replacement WQS after EPA promulgates a standard, EPA then withdraws its promulgation. CWA section 303(c)(4)(B) authorizes the Administrator to determine, even in the absence of a state submission, that a new or revised standard is necessary to meet CWA requirements. Upon making such a determination, EPA shall promptly propose, and then within ninety days promulgate, any such new or revised standard unless prior to such promulgation, the state has adopted a revised or new WQS that EPA approves as being in accordance with the CWA.

Under CWA section 304(a), EPA periodically publishes water quality criteria recommendations for states to consider when adopting water quality criteria for particular pollutants to protect the CWA section 101(a)(2) goal uses. For example, in 2015, EPA updated its CWA section 304(a) recommended criteria for human health for 94 pollutants (the 2015 criteria update).[3] Where EPA has published recommended criteria, states should adopt water quality criteria based on EPA's CWA section 304(a) criteria, section 304(a) criteria modified to reflect site-specific conditions, or other scientifically defensible methods (40 CFR 131.11(b)(1)). CWA section 303(c)(2)(B) requires states to adopt numeric criteria for all toxic pollutants listed pursuant to CWA section 307(a)(1) for which EPA has published CWA section 304(a) criteria, as necessary to support the states' designated uses.

2. Maine Indian Settlement Acts

There are four federally recognized Indian tribes in Maine represented by five governing bodies. The Penobscot Nation and the Passamaquoddy Tribe have reservations and trust land holdings in central and coastal Maine. The Passamaquoddy Tribe has two governing bodies, one on the Pleasant Point Reservation and another on the Indian Township Reservation. The Houlton Band of Maliseet Indians and the Aroostook Band of Micmacs have trust lands farther north in the state. To simplify the discussion, EPA will refer to the Penobscot Nation and the Passamaquoddy Tribe together as the "Southern Tribes" and the Houlton Band of Maliseet Indians and Aroostook Band of Micmacs as the "Northern Tribes." EPA acknowledges that these are collective appellations the tribes themselves have not adopted, and the Agency uses them solely to simplify this discussion.

In 1980, Congress passed the Maine Indian Claims Settlement Act (MICSA) that resolved litigation in which the Southern Tribes asserted land claims to a large portion of the state of Maine. Public Law 96–420, 94 Stat. 1785. MICSA ratified a state statute passed in 1979, the Maine Implementing Act (MIA, 30 M.R.S. 6201, *et seq.*), which was designed to embody the agreement reached between the state and the Southern Tribes. In 1981, MIA was amended to include provisions for land to be taken into trust for the Houlton Band of Maliseet Indians, as provided for in MICSA. Public Law 96–420, 94 Stat. 1785 section 5(d)(1); 30 M.R.S. 6205–A. Since it is Congress that has plenary authority as to federally recognized Indian tribes, MIA's provisions concerning jurisdiction and the status of the tribes are effective as a result of, and consistent with, the Congressional ratification in MICSA.

In 1989, the Maine legislature passed the Micmac Settlement Act (MSA) to embody an agreement as to the status of the Aroostook Band of Micmacs. 30 M.R.S. 7201, *et seq.* In 1991, Congress passed the Aroostook Band of Micmacs Settlement Act (ABMSA), which ratified the MSA. Act of Nov. 26, 1991, Public Law 102–171, 105 Stat. 1143. One principal purpose of both statutes was to give the Micmacs the same settlement that had been provided to the Maliseets in MICSA. See ABMSA 2(a)(4) and (5). In 2007, the U.S. Court of Appeals for the First Circuit confirmed that the Micmacs and Maliseets are subject to the same jurisdictional provisions in MICSA. *Aroostook Band of Micmacs* v. *Ryan,* 484 F.3d 41 (1st Cir. 2007). Where appropriate, this preamble discussion will refer to the combination of MICSA, MIA, ABMSA, and MSA as the "Indian settlement acts" or "settlement acts."

3. EPA's Disapprovals of Portions of Maine's Water Quality Standards

On February 2, March 16, and June 5, 2015, EPA disapproved a number of Maine's new and revised WQS. These decision letters are available in the docket for this rulemaking. They were prompted by an ongoing lawsuit

[2] USEPA. 2000. Memorandum #WQSP–00–03. U.S. Environmental Protection Agency, Office of Water, Washington, DC. *https://www.epa.gov/sites/production/files/2015-01/documents/standards-shellfish.pdf.*

[3] Final Updated Ambient Water Quality Criteria for the Protection of Human Health, (80 FR 36986, June 29, 2015). See also: USEPA. 2015. Final 2015 Updated National Recommended Human Health Criteria. U.S. Environmental Protection Agency, Office of Water, Washington, DC. *http://water.epa.gov/scitech/swguidance/standards/criteria/current/hhfinal.cfm.*

initiated by Maine against EPA.[4] As discussed in the preamble to the proposed rule (see 81 FR 23239, 23241–23242), some of the disapprovals applied only to waters in Indian lands in Maine, while others applied to waters throughout the state or to waters in the state outside of Indian lands.[5] EPA concluded that the disapproved WQS did not adequately protect designated uses related to the protection of human health and/or aquatic life.[6] EPA requested the state to revise its WQS to address the issues identified in the disapprovals. The statutory 90-day timeframe provided to the state to revise its WQS has passed with respect to all of the disapproved WQS. EPA is required by the CWA to promptly propose and then, within 90 days of proposal, to promulgate federal standards unless, in the meantime, the state adopts and EPA approves state replacement WQS that address EPA's disapproval. The state has not adopted WQS revisions to address the disapprovals. Having published the proposed rule on April 20, 2016, EPA is today finalizing the rule. With the exception of minor revisions to several human health criteria as noted in section II.B.1.a and two small changes discussed in section II.B.2, EPA's final rule is identical to the proposed rule.

4. Scope of Action

a. Scope of Promulgation Related to Disapprovals

To address the disapprovals discussed in section II.A.3, EPA is promulgating human health criteria (HHC) for toxic pollutants and six other WQS that apply only to waters in Indian lands; two WQS for all waters in Maine including waters in Indian lands; and one WQS for waters in Maine outside of Indian lands. For the purpose of this rulemaking, "waters in Indian lands" are those waters in the tribes' reservations and trust lands as provided for in the settlement acts.

b. Scope of Promulgation Related to the Administrator's Determination

On April 20, 2016, EPA made a CWA section 303(c)(4)(B) determination that, for any waters in Maine where there is a sustenance fishing designated use and Maine's existing HHC are in effect, new or revised HHC for the protection of human health in Maine are necessary to meet the requirements of the CWA. EPA proposed (see 81 FR 23239, 23242–23243), and is now finalizing, HHC for toxic pollutants, in accordance with the CWA section 303(c)(4)(B) determination, for the following waters: (1) Waters in Indian lands in the event that a court determines that EPA's disapprovals of HHC for such waters were unauthorized and that Maine's existing HHC are in effect;[7] and (2) waters where there is a sustenance fishing designated use outside of waters in Indian lands.[8]

5. Applicability of Water Quality Standards

These water quality standards apply to the categories of waters for CWA purposes, as described in II.B below. Although EPA is finalizing WQS to address the standards that it disapproved or for which it has made a determination, Maine continues to have the option to adopt and submit to EPA new or revised WQS that remedy the issues identified in the disapprovals and determination, consistent with CWA section 303(c) and EPA's implementing regulations at 40 CFR part 131.

Some commenters urged EPA to finalize its rule without any further delay. Conversely, the state noted that EPA should give it additional time to adopt and submit its own WQS to address EPA's disapprovals. EPA acknowledges the perspectives of all of these commenters. EPA agrees that there is a compelling need to finalize the WQS, particularly in waters in Indian lands in Maine. For many pollutants, there are no criteria in effect for CWA purposes in waters in Indian lands, including most human health criteria, and it is important to remedy this gap in protection without further delay where possible. Further, the tribes have repeatedly expressed their desire for, and the importance of, their right to a sustenance fishing way of life, reserved for them under the settlement acts, to be protected. EPA, as a federal government agency, is taking action to protect that right, consistent with the settlement acts and CWA, as described further below.

EPA also agrees that the CWA is intended to protect the Nation's waters through a system of cooperative federalism, with states having the primary responsibility of establishing protective WQS for waters under their jurisdiction. However, Maine is challenging EPA's disapproval of the

[4] The state has filed an amended complaint in that lawsuit, challenging, among other things, EPA's February 2, 2015 approval of certain designated uses and disapprovals of Maine's HHC.

[5] As discussed in the proposal for this rule, unlike in most other states, Maine has the authority to promulgate WQS for waters in Indian lands in Maine, as a result of the settlement acts.

[6] After further consideration, by letter of January 19, 2016, EPA withdrew its February 2, 2015, disapprovals of Maine's HHC for six pollutants (copper, asbestos, barium, iron, manganese and nitrates) and instead approved them. EPA concluded that those criteria were not calculated using a fish consumption rate, and therefore the basis for EPA's disapprovals of the HHC in the February 2, 2015, decision letter did not apply. EPA approved them as being consistent with EPA's recommended CWA section 304(a) criteria. In addition, by letter of April 11, 2016, EPA withdrew its February 2, 2015, disapprovals of Maine's HHC for the following HHC and instead approved them: (1) For the consumption of water plus organisms for 1,2-dichloropropane, 1,4-dichlorobenzene, dichlorobromomethane, chlorodibromomethane, chrysene, methylene chloride, chlorophenoxy herbicide (2, 4, 5-TP), chlorophenoxy herbicide (2,4-D), and Nnitrosopyrrolidine; (2) for the consumption of organisms alone for acrolein and gamma-BHC (Lindane); and (3) for both the consumption of water plus organisms and for the consumption of organisms alone for 1,2-dichloroethane, acrylonitrile, benzidine, bis(chloromethyl) ether, chloroform, methyl bromide, and tetrachloroethylene. EPA calculated the HHC for these pollutants using the best science reflected in the 2015 criteria updates (which were finalized after the disapprovals), along with a fish consumption rate (FCR) of 286 g/day to protect the sustenance fishing use, and concluded that the resulting HHC were either the same or less stringent than Maine's HHC that EPA had disapproved. Accordingly, EPA withdrew the disapprovals and approved these HHC based on their being adequate to protect the sustenance fishing use.

[7] Maine has challenged EPA's disapprovals in federal district court, asserting that EPA did not have the authority to disapprove the HHC in waters in Indian lands. While EPA's position is that the disapprovals were authorized and Maine's existing HHC are not in effect, this determination ensures that EPA has the authority to promulgate the proposed HHC, and that the tribes' sustenance fishing use would be protected, even if Maine were to prevail in its challenge to EPA's disapproval authority.

[8] In its February 2015 Decision, EPA concluded that section 6207(4) and (9) of MIA constituted a new or revised water quality standard and approved the provision as a designated use of sustenance fishing applicable to all inland waters of the Southern Tribes' reservations in which populations of fish are or may be found. Accordingly, EPA's approval of MIA section 6207(4) and (9) as a designated use of sustenance fishing applies to all waters where the Southern Tribes have a right to sustenance fish, irrespective of whether such waters are determined to be outside of the scope of their reservation for purposes other than sustenance fishing.

EPA notes that there may be one or more waters where the sustenance fishing designated use based on MIA section 6207(4) and (9) extends beyond "waters in Indian lands." For example, a federal district court recently held that the Penobscot Nation's "reservation" for sustenance fishing purposes, as contained in MIA section 6207(4), is broader in scope than its "reservation" under MIA section 6203(8). *Penobscot Nation* v. *Mills*, 151 F. Supp. 3d 181 (D. Maine Dec. 16, 2015) (formerly, *Penobscot* v. *Schneider*), *appeal docketed*, No. 16–1435 (1st Cir. April 26, 2016). The court held that the Penobscot Nation has a right to sustenance fish throughout the main stem of the Penobscot River (from Indian Island to the confluence of the East and West Branches of the Penobscot River), though its reservation under section 6203(8) consists solely of the islands in that stretch of the river. The determination and corresponding final HHC apply to any water that is beyond the scope of "waters in Indian lands" and to which the sustenance fishing designated use based on MIA section 6207(4) and (9) applies. For a more detailed discussion, see section III.D.5 of this preamble, and also Topic 5 in EPA's Response to Comments document and the "Scope of Waters" Technical Support Document; both documents are in the docket for this rulemaking.

HHC for waters in Indian lands in federal court, and it commented adversely on EPA's proposed HHC, pH, bacteria, and tidal temperature criteria for waters in Indian lands. Consequently, EPA has no assurance that Maine will develop WQS that EPA can approve as scientifically defensible and protective of Maine's designated uses.

Having considered these comments, EPA, in keeping with its statutory obligation to promulgate WQS within 90 days after proposing them and the need for these WQS to meet the requirements of the CWA, is finalizing the WQS.

In the April 20, 2016, **Federal Register** notice, EPA proposed that if Maine adopted and submitted WQS that meet CWA requirements after EPA finalized its proposed rule, they would become effective for CWA purposes upon EPA approval and EPA's corresponding promulgated WQS would no longer apply. No commenters supported this proposal. Two commenters objected to it, and one asked that EPA specify that WQS adopted by the state would have to be at least as stringent as the federally proposed WQS for EPA to approve and make the state WQS effective for CWA purposes.

Upon consideration of comments received on its proposed rule, EPA decided not to finalize the above proposed approach. Consistent with 40 CFR 131.21(c), EPA's federally promulgated WQS are and will be applicable for purposes of the CWA until EPA withdraws those federally promulgated WQS. EPA would undertake a rulemaking to withdraw the federal WQS if and when Maine adopts and EPA approves corresponding WQS that meet the requirements of section 303(c) of the CWA and EPA's implementing regulations at 40 CFR part 131.

B. Description of Final Rule

1. Final WQS for Waters in Indian Lands in Maine and for Waters outside of Indian Lands in Maine Where the Sustenance Fishing Designated Use Established by 30 M.R.S. 6207(4) and (9) Applies

a. Human Health Criteria for Toxic Pollutants

After consideration of all comments received on EPA's proposed rule, EPA is finalizing the proposed criteria for 96 toxic pollutants in this rule applicable to waters in Indian lands.[9] Table 2 provides the criteria for each pollutant as well as the HHC inputs used to derive each one. These criteria also apply to any waters that are covered by the determination referenced in section II.A.4.

[9] Final human health criteria for antimony, dichlorobromomethane, nickel, nitrosamines, N-nitrosodibutylamine, N-nitrosodiethylamine, PCBs, selenium, and zinc have been modified slightly from the criteria as proposed to better reflect the appropriate number of significant figures (*i.e.*, precision) in the value.

TABLE 2—FINAL HHC AND KEY PARAMETERS USED IN THEIR DERIVATION

	Chemical name	CAS No.	Cancer slope factor, CSF (per mg/kg·d)	Relative source contribution RSC (-)	Reference dose, RfD (mg/kg·d)	Bioaccumulation factor for trophic level 2 (L/kg tissue)	Bioaccumulation factor for trophic level 3 (L/kg tissue)	Bioaccumulation factor for trophic level 4 (L/kg tissue)	Bioconcentration factor (L/kg tissue) [e]	Water & organisms (µg/L)	Organisms only (µg/L)
1	1,1,2,2-Tetrachloroethane	79–34–5	0.2			5.7	7.4	8.4		0.09	0.2
2	1,1,2-Trichloroethane	79–00–5	0.057			6.0	7.8	8.9		0.31	0.66
3	1,1-Dichloroethylene	75–35–4		0.20	0.05	2.0	2.4	2.6		300	1000
4	1,2,4,5-Tetrachlorobenzene	95–94–3		0.20	0.0003	17,000	2,900	1,500		0.002	0.002
5	1,2,4-Trichlorobenzene	120–82–1	0.029			2,800	1,500	430		0.0056	0.0056
6	1,2-Dichlorobenzene	95–50–1		0.20	0.3	52	71	82		200	300
7	1,2-Dichloropropane	78–87–5	0.036			2.9	3.5	3.9			2.3
8	1,2-Diphenylhydrazine	122–66–7	0.8			18	24	27		0.01	0.02
9	1,2-Trans-Dichloroethylene	156–60–5		0.20	0.02	3.3	4.2	4.7		90	300
10	1,3-Dichlorobenzene	541–73–1		0.20	0.002	31	120	190		1	1
11	1,3-Dichloropropene	542–75–6	0.122			2.3	2.7	3.0		0.21	0.87
12	1,4-Dichlorobenzene	106–46–7		0.20	0.07	28	66	84			70
13	2,4,5-Trichlorophenol	95–95–4		0.20	0.1	100	140	160		40	40
14	2,4,6-Trichlorophenol	88–06–2	0.011			94	130	150		0.20	0.21
15	2,4-Dichlorophenol	120–83–2		0.20	0.003	31	42	48		4	4
16	2,4-Dimethylphenol	105–67–9		0.20	0.02	4.8	6.2	7.0		80	200
17	2,4-Dinitrophenol	51–28–5		0.20	0.002	[a] 4.4	[a] 4.4	[a] 4.4		9	30
18	2,4-Dinitrotoluene	121–14–2	0.667			2.8	3.5	3.9		0.036	0.13
19	2-Chloronaphthalene	91–58–7		0.80	0.08	150	210	240		90	90
20	2-Chlorophenol	95–57–8		0.20	0.005	3.8	4.8	5.4		20	60
21	2-Methyl-4,6-Dinitrophenol	534–52–1		0.20	0.0003	6.8	8.9	10		1	2
22	3,3′-Dichlorobenzidine	91–94–1	0.45			44	60	69		0.0096	0.011
23	4,4′-DDD	72–54–8	0.24			33,000	140,000	240,000		9.3E–06	9.3E–06
24	4,4′-DDE	72–55–9	0.167			270,000	1,100,000	3,100,000		1.3E–06	1.3E–06
25	4,4'-DDT	50–29–3	0.34			35,000	240,000	1,100,000		2.2E–06	2.2E–06
26	Acenaphthene	83–32–9		0.20	0.06	[a] 510	[a] 510	[a] 510		6	7
27	Acrolein	107–02–8		0.20	0.0005	1.0	1.0	1.0		3	
28	Aldrin	309–00–2	17			18,000	310,000	650,000		5.8E–08	5.8E–08
29	alpha-BHC	319–84–6	6.3			1,700	1,400	1,500		2.9E–05	2.9E–05
30	alpha-Endosulfan	959–98–8		0.20	0.006	130	180	200		2	2
31	Anthracene	120–12–7		0.20	0.3	[a] 610	[a] 610	[a] 610		30	30
32	Antimony	7440–36–0		0.40	0.0004				1	5	40
33	Benzene	71–43–2	[b] 0.055			3.6	4.5	5.0		0.40	1.2
34	Benzo (a) Anthracene	56–55–3	0.73			[a] 3,900	[a] 3,900	[a] 3,900		9.8E–05	9.8E–05
35	Benzo (a) Pyrene	50–32–8	7.3			[a] 3,900	[a] 3,900	[a] 3,900		9.8E–06	9.8E–06
36	Benzo (b) Fluoranthene	205–99–2	0.73			[a] 3,900	[a] 3,900	[a] 3,900		9.8E–05	9.8E–05
37	Benzo (k) Fluoranthene	207–08–9	0.073			[a] 3,900	[a] 3,900	[a] 3,900		0.00098	0.00098
38	beta-BHC	319–85–7	1.8			110	160	180		0.0010	0.0011
39	beta-Endosulfan	33213–65–9		0.20	0.006	80	110	130		3	3
40	Bis(2-Chloro-1-Methylethyl) Ether	108–60–1		0.20	0.04	6.7	8.8	10		100	300
41	Bis(2-Chloroethyl) Ether	111–44–4	1.1			1.4	1.6	1.7		0.026	0.16
42	Bis(2-Ethylhexyl) Phthalate	117–81–7	0.014			[a] 710	[a] 710	[a] 710		0.028	0.028
43	Bromoform	75–25–2	0.0045			5.8	7.5	8.5		4.0	8.7
44	Butylbenzyl Phthalate	85–68–7	0.0019			[a] 19,000	[a] 19,000	[a] 19,000		0.0077	0.0077
45	Carbon Tetrachloride	56–23–5	0.07			9.3	12	14		0.2	0.3
46	Chlordane	57–74–9	0.35			5,300	44,000	60,000		2.4E–05	2.4E–05
47	Chlorobenzene	108–90–7		0.20	0.02	14	19	22		40	60
48	Chlorodibromomethane	124–48–1	0.040			3.7	4.8	5.3			1.5
49	Chrysene	218–01–9	0.0073			[a] 3,900	[a] 3,900	[a] 3,900			0.0098
50	Cyanide	57–12–5		0.20	0.0006				1	4	30
51	Dibenzo (a,h) Anthracene	53–70–3	7.3			[a] 3,900	[a] 3,900	[a] 3,900		9.8E–06	9.8E–06
52	Dichlorobromomethane	75–27–4	0.034			3.4	4.3	4.8			2.0
53	Dieldrin	60–57–1	16			14,000	210,000	410,000		9.3E–08	9.3E–08
54	Diethyl Phthalate	84–66–2		0.20	0.8	[a] 920	[a] 920	[a] 920		50	50
55	Dimethyl Phthalate	131–11–3		0.20	10	[a] 4,000	[a] 4,000	[a] 4,000		100	100
56	Di-n-Butyl Phthalate	84–74–2		0.20	0.1	[a] 2,900	[a] 2,900	[a] 2,900		2	2
57	Dinitrophenols	25550–58–7		0.20	0.002				1.51	10	70
58	Endosulfan Sulfate	1031–07–8		0.20	0.006	88	120	140		3	3
59	Endrin	72–20–8		0.80	0.0003	4,600	36,000	46,000		0.002	0.002

60	Endrin Aldehyde	7421–93–4		0.80	0.0003	440	920	850		0.09	0.09
61	Ethylbenzene	100–41–4		0.20	0.022	100	140	160		8.9	9.5
62	Fluoranthene	206–44–0		0.20	0.04	[a] 1,500	[a] 1,500	[a] 1,500		1	1
63	Fluorene	86–73–7		0.20	0.04	230	450	710		5	5
64	gamma-BHC (Lindane)	58–89–9		0.50	0.0047	1,200	2,400	2,500		0.33	
65	Heptachlor	76–44–8	4.1			12,000	180,000	330,000		4.4E–07	4.4E–07
66	Heptachlor Epoxide	1024–57–3	5.5			4,000	28,000	35,000		2.4E–06	2.4E–06
67	Hexachlorobenzene	118–74–1	1.02			18,000	46,000	90,000		5.9E–06	5.9E–06
68	Hexachlorobutadiene	87–68–3	0.04			23,000	2,800	1,100		0.0007	0.0007
69	Hexachlorocyclohexane-Technical	608–73–1	1.8			160	220	250		0.00073	0.00076
70	Hexachlorocyclopentadiene	77–47–4		0.20	0.006	620	1,500	1,300		0.3	0.3
71	Hexachloroethane	67–72–1	0.04			1,200	280	600		0.01	0.01
72	Indeno (1,2,3-cd) Pyrene	193–39–5	0.73			[a] 3,900	[a] 3,900	[a] 3,900		9.8E–05	9.8E–05
73	Isophorone	78–59–1	0.00095			1.9	2.2	2.4		28	140
74	Methoxychlor	72–43–5		0.80	2E–05	1,400	4,800	4,400		0.001	
75	Methylene Chloride	75–09–2	0.002			1.4	1.5	1.6			90
76	Methylmercury	22967–92–6		2.70E–05	0.0001						[c] 0.02 (mg/kg)
77	Nickel	7440–02–0		0.20	0.02				47	20	20
78	Nitrobenzene	98–95–3		0.20	0.002	2.3	2.8	3.1		10	40
79	Nitrosamines		43.46						0.20	0.00075	0.032
80	N-Nitrosodibutylamine	924–16–3	5.43						3.38	0.00438	0.0152
81	N-Nitrosodiethylamine	55–18–5	43.46						0.20	0.00075	0.032
82	N-Nitrosodimethylamine	62–75–9	51						0.026	0.00065	0.21
83	N-Nitrosodi-n-propylamine	621–64–7	7.0						1.13	0.0042	0.035
84	N-Nitrosodiphenylamine	86–30–6	0.0049						136	0.40	0.42
85	N-Nitrosopyrrolidine	930–55–2	2.13						0.055		2.4
86	Pentachlorobenzene	608–93–5		0.20	0.0008	3,500	4,500	10,000		0.008	0.008
87	Pentachlorophenol	87–86–5	0.4			44	290	520		0.003	0.003
88	Phenol	108–95–2		0.20	0.6	1.5	1.7	1.9		3,000	20,000
89	Polychlorinated Biphenyls (PCBs)	1336–36–3	2						31,200	[d] 4E–06	[d] 4E–06
90	Pyrene	129–00–0		0.20	0.03	[a] 860	[a] 860	[a] 860		2	2
91	Selenium	7782–49–2		0.20	0.005				4.8	20	60
92	Toluene	108–88–3		0.20	0.0097	11	15	17		24	39
93	Toxaphene	8001–35–2	1.1			1,700	6,600	6,300		5.3E–05	5.3E–05
94	Trichloroethylene	79–01–6	0.05			8.7	12	13		0.3	0.5
95	Vinyl Chloride	75–01–4	1.5			1.4	1.6	1.7		0.019	0.12
96	Zinc	7440–66–6		0.20	0.3				47	300	400

[a] This bioaccumulation factor was estimated from laboratory-measured bioconcentration factors; EPA multiplied this bioaccumulation factor by the overall fish consumption rate of 286 g/day to calculate the human health criteria.

[b] EPA's CWA section 304(a) HHC for benzene use a CSF range of 0.015 to 0.055 per mg/kg-day. EPA used the higher end of the CSF range (0.055 per mg/kg-day) to derive the final benzene criteria.

[c] This criterion is expressed as the fish tissue concentration of methylmercury (mg methylmercury/kg fish) and applies equally to fresh and marine waters. See Water Quality Criterion for the Protection of Human Health: Methylmercury (EPA–823–R–01–001, January 3, 2001) for how this value is calculated using the criterion equation in EPA's 2000 Methodology rearranged to solve for a protective concentration in fish tissue rather than in water.

[d] This criterion applies to total PCBs (*i.e.,* the sum of all congener or isomer or homolog or Aroclor analyses).

[e] EPA multiplied this bioconcentration factor by the overall fish consumption rate of 286 g/day to calculate the human health criteria.

i. Sustenance Fishing Designated Use and Tribal Target Population

In its February 2015 decision, EPA concluded that MICSA granted the state authority to set WQS in waters in Indian lands. EPA also concluded that in assessing whether the state's WQS were approvable for waters in Indian lands, EPA must effectuate the CWA requirement that WQS must protect applicable designated uses and be based on sound science in consideration of the fundamental purpose for which land was set aside for the tribes under the Indian settlement acts in Maine. EPA found that those settlement acts provide for land to be set aside as a permanent land base for the Indian tribes in Maine, in order for the tribes to be able to continue their unique cultural practices, including the ability to exercise sustenance fishing practices. Accordingly, EPA interpreted the state's "fishing" designated use, as applied to waters in Indian lands, to mean "sustenance fishing" and approved it as such. EPA also approved a specific sustenance fishing right reserved in MIA sections 6207(4) and (9) as a designated use for all inland waters of the Southern Tribes' reservations. Against this backdrop, EPA approved or disapproved all of Maine's HHC for toxic pollutants as applied to waters in Indian lands after evaluating whether they satisfied CWA requirements.

EPA determined that the tribal populations must be treated as the general target population in waters in Indian lands. EPA disapproved many of Maine's HHC for toxic pollutants based on EPA's conclusion that they do not adequately protect the health of tribal sustenance fishers in waters in Indian lands. EPA concluded that the disapproved HHC did not support the designated use of sustenance fishing in such waters because they were not based on the higher, unsuppressed fish consumption rates that reflect the tribes' sustenance fishing practices. Accordingly, EPA proposed, and is now finalizing, HHC that EPA has determined will protect the sustenance fishing designated use, based on sound science and consistent with the CWA and EPA regulations and policy.

ii. General Recommended Approach for Deriving HHC

HHC for toxic pollutants are designed to minimize the risk of adverse cancer and non-cancer effects occurring from lifetime exposure to pollutants through the ingestion of drinking water and consumption of fish/shellfish obtained from inland and nearshore waters. EPA's practice is to establish CWA section 304(a) HHC for the combined activities of drinking water and consuming fish/shellfish obtained from inland and nearshore waters, and separate CWA section 304(a) HHC for consuming only fish/shellfish originating from inland and nearshore waters. The latter criteria apply in cases where the designated uses of a waterbody include supporting fish/shellfish for human consumption but not drinking water supply sources (*e.g.*, in non-potable estuarine waters).

The criteria are based on two types of biological endpoints: (1) Carcinogenicity and (2) systemic toxicity (*i.e.*, all adverse effects other than cancer). EPA takes an integrated approach and considers both cancer and non-cancer effects when deriving HHC. Where sufficient data are available, EPA derives criteria using both carcinogenic and non-carcinogenic toxicity endpoints and recommends the lower value. HHC for carcinogenic effects are typically calculated using the following input parameters: Cancer slope factor, excess lifetime cancer risk level, body weight, drinking water intake rate, fish consumption rate(s), and bioaccumulation factor(s). HHC for noncarcinogenic and nonlinear carcinogenic effects are typically calculated using reference dose, relative source contribution (RSC), body weight, drinking water intake rate, fish consumption rate(s) and bioaccumulation factor(s). EPA selects a mixture of high-end and central (mean) tendency inputs to the equation in order to derive recommended criteria that "afford an overall level of protection targeted at the high end of the general population (*i.e.*, the target population or the criteria-basis population)." [10]

EPA received comments supporting and opposing specific input parameters EPA used to derive the proposed HHC. The specific input parameters used are explained in the following paragraphs.

iii. Maine-Specific HHC Inputs

I. Cancer Risk Level. As set forth in EPA's 2000 Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health (the "2000 Methodology"), EPA calculates its CWA section 304(a) HHC at concentrations corresponding to a 10^{-6} cancer risk level (CRL), meaning that if exposure were to occur as set forth in the CWA section 304(a) methodology at the prescribed concentration over the course of one's lifetime, then the risk of developing cancer from the exposure as described would be a one in a million increment above the background risk of developing cancer from all other exposures.[11]

In this rule, EPA derived the final HHC for carcinogens using a 10^{-6} CRL, consistent with EPA's 2000 Methodology and with Maine Department of Environmental Protection (DEP) Rule Chapter 584, which specifies that water quality criteria for carcinogens must be based on a 10^{-6} CRL, and which EPA approved for waters in Indian lands on February 2, 2015.[12] The HHC provide the tribes engaged in sustenance fishing in waters in Indian lands in Maine with an equivalent level of cancer risk protection (*i.e.*, 10^{-6}) as is afforded to the general population in Maine outside of waters in Indian lands.

EPA received comments in favor of using the proposed 10^{-6} CRL level as well as recommendations for higher and lower CRLs. Responses to those comments are summarized in section III.D.5.

II. Cancer Slope Factor and Reference Dose. For noncarcinogenic toxicological effects, EPA uses a chronic-duration oral reference dose (RfD) to derive HHC. An RfD is an estimate (with uncertainty spanning perhaps an order of magnitude) 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. For carcinogenic toxicological effects, EPA uses an oral cancer slope factor (CSF) to derive HHC. The oral CSF is an upper bound, approximating a 95% confidence limit, on the increased cancer risk from a lifetime oral exposure to a stressor.

EPA did not receive any comments on the pollutant-specific RfDs or CSFs used in the derivation of the proposed criteria, which were based on EPA's National Recommended Water Quality Criteria.[13] EPA has used the same values to derive the final HHC.

III. Body Weight. The final HHC were calculated using the proposed body weight of 80 kilograms (kg), consistent with the default body weight used in EPA's most recent National

[10] United States Environmental Protection Agency (U.S. EPA). 2000. *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health.* EPA–822–B–00–004, p. 2–1.

[11] Id., p. 2–6.

[12] The only exception from the requirement to use a CRL of 10^{-6} in Chapter 584 is for arsenic, for which a CRL of 10^{-4} is required. EPA disapproved the arsenic CRL for waters in Indian lands.

[13] Final Updated Ambient Water Quality Criteria for the Protection of Human Health, 80 FR 36986 (June 29, 2015). See also: USEPA. 2015. Final 2015 Updated National Recommended Human Health Criteria. U.S. Environmental Protection Agency, Office of Water, Washington, DC. *https://www.epa.gov/wqc/human-health-water-quality-criteria.*

Recommended Water Quality Criteria.[14] This body weight is the average weight of a U.S. adult age 21 and older, based on National Health and Nutrition Examination Survey ("NHANES") data from 1999 to 2006.[15] EPA received one comment regarding body weight, which requested that EPA use a body weight of 70 kg. However, the commenter did not present a sound scientific rationale to support the use of a different body weight. See Topic 6 of the RTC document for a more detailed response.

IV. Drinking water intake. The final HHC were calculated using the proposed drinking water intake rate of 2.4 liters per day (L/day), consistent with the default drinking water intake rate used in EPA's most recent National Recommended Water Quality Criteria.[16] This rate represents the per capita estimate of combined direct and indirect community water ingestion at the 90th percentile for adults ages 21 and older.[17] EPA did not receive any comments regarding the proposed drinking water intake rate.

V. Bioaccumulation Factors (BAFs) and Bioconcentration Factors (BCFs). The final HHC were calculated using the proposed pollutant-specific BAFs or BCFs, consistent with the factors used in EPA's most recent National Recommended Water Quality Criteria.[18] These factors are used to relate aqueous pollutant concentrations to predicted pollutant concentrations in the edible portions of ingested species. EPA did not receive any comments regarding specific proposed BAFs or BCFs.

VI. Fish Consumption Rate (FCR). In finalizing the HHC, EPA used the proposed FCR of 286 g/day to represent present day sustenance level fish consumption for waters in Indian lands. This FCR supports the designated use of sustenance fishing. EPA selected this consumption rate based on information contained in an historical/anthropological study, entitled the Wabanaki Cultural Lifeways Exposure Scenario[19] ("Wabanaki Study"), which was completed in 2009. EPA also consulted with the tribes in Maine about the Wabanaki Study and their sustenance fishing uses of the waters in Indian lands. There has been no contemporary local survey of current fish consumption that documents fish consumption rates for sustenance fishing in the waters in Indian lands in Maine. In the absence of such information, EPA concluded that the Wabanaki Study contains the best currently available estimate for contemporary tribal sustenance level fish consumption for waters where the sustenance fishing designated use applies.

EPA received many comments that agreed and some that disagreed with EPA's selection of the proposed FCR of 286 g/day. Responses to those comments can be found in section III.D of this preamble and, in further detail, in Topic 3 of the RTC document.

VII. Relative Source Contribution (RSC). For pollutants that exhibit a threshold of exposure before deleterious effects occur, as is the case for noncarcinogens and nonlinear carcinogens, EPA applied a RSC to account for other potential human exposures to the pollutant.[20] Other sources of exposure might include, but are not limited to, exposure to a particular pollutant from non-fish food consumption (*e.g.,* consumption of fruits, vegetables, grains, meats, or poultry), dermal exposure, and inhalation exposure. For substances for which the toxicity endpoint is carcinogenicity based on a linear low-dose extrapolation, only the exposures from drinking water and fish ingestion are reflected in HHC; no other potential sources of exposure to pollutants or other potential exposure pathways have been considered in developing HHC.[21] In these situations, HHC are derived with respect to the incremental lifetime cancer risk posed by the presence of a substance in water, rather than an individual's total risk from all sources of exposure.

As in the proposed HHC, for the pollutants included in EPA's 2015 criteria update, EPA used the same RSCs in the final HHC as were used in the criteria update. Also as in the proposed HHC, for pollutants where EPA did not update the section 304(a) HHC in 2015, EPA used a default RSC of 0.20 to derive the final HHC except for antimony, for which EPA used an RSC of 0.40 consistent with the RSC value used the last time the Agency updated this criterion. EPA did not receive any comments on specific RSCs used in the derivation of the proposed criteria.

2. Final WQS for Waters in Indian Lands in Maine

a. Bacteria Criteria

i. Recreational Bacteria Criteria

EPA is finalizing the proposed year-round recreational bacteria criteria for Class AA, A, B, C, GPA, SA, SB and SC waters in Indian lands. The magnitude criteria are expressed in terms of *Escherichia coli* colony forming units per 100 milliliters (cfu/100 ml) for fresh waters and *Enterococcus spp.* colony forming units per 100 milliliters (cfu/100 ml) for marine waters and are based on EPA's 2012 Recreational Water Quality Criteria (RWQC) recommendations.[22]

Several comments supported EPA's proposed rule and the year round applicability of the criteria. Maine DEP objected to EPA's inclusion of wildlife sources in the scope of the bacteria criteria and requested that the criteria not be applicable from October 1–May 14, similar to Maine's disapproved criteria. For the reasons discussed in section III.E.2., EPA has determined that, based on best available information, it is necessary to include wildlife sources in the scope of the criteria, and to apply the criteria year round, in order to protect human health and the designated use of recreation in and on the water.

ii. Shellfishing Bacteria Criteria

EPA's final bacteria rule for Class SA shellfish harvesting areas for waters in

[14] Final Updated Ambient Water Quality Criteria for the Protection of Human Health, 80 FR 36986 (June 29, 2015). See also: USEPA. 2015. Final 2015 Updated National Recommended Human Health Criteria. U.S. Environmental Protection Agency, Office of Water, Washington, DC. *https://www.epa.gov/wqc/human-health-water-quality-criteria.*

[15] USEPA. 2011. EPA Exposure Factors Handbook. United States Environmental Protection Agency, Washington, DC EPA 600/R–090/052F. *http://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=236252.*

[16] Final Updated Ambient Water Quality Criteria for the Protection of Human Health, 80 FR 36986 (June 29, 2015). See also: USEPA. 2015. Final 2015 Updated National Recommended Human Health Criteria. U.S. Environmental Protection Agency, Office of Water, Washington, DC. *https://www.epa.gov/wqc/human-health-water-quality-criteria.*

[17] USEPA. 2011. EPA Exposure Factors Handbook. United States Environmental Protection Agency, Washington, DC. EPA 600/R–090/052F. *http://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=236252.*

[18] Final Updated Ambient Water Quality Criteria for the Protection of Human Health, 80 FR 36986 (June 29, 2015). See also: USEPA. 2015. Final 2015 Updated National Recommended Human Health Criteria. U.S. Environmental Protection Agency, Office of Water, Washington, DC. *https://www.epa.gov/wqc/human-health-water-quality-criteria.*

[19] Harper, B., Ranco, D., *et al.* 2009. Wabanaki Traditional Cultural Lifeways Exposure Scenario. *https://www.epa.gov/tribal/wabanaki-traditional-cultural-lifeways-exposure-scenario.*

[20] USEPA. 2000. Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health. U.S. Environmental Protection Agency, Office of Water, Washington, DC. EPA–822–B–00–004.

[21] Id.

[22] USEPA. 2012. Recreational Water Quality Criteria. U.S. Environmental Protection Agency, Office of Water, Washington, DC. Office of Water 820–F–12–058. *https://www.epa.gov/wqc/2012-recreational-water-quality-criteria.*

Indian lands differs slightly from the proposed numeric total coliform bacteria criteria, as a result of comments from the state. Maine DEP requested EPA to express the criteria in terms of fecal coliform bacteria rather than total coliform bacteria, noting that the National Shellfish Sanitation Program (NSSP) allows the use of either indicator, that Maine DEP sets permit limits on fecal coliform bacteria rather than total coliform, and that Maine Department of Marine Resources (DMR) uses fecal coliform bacteria as its indicator parameter when making shellfish area opening/closure decisions. Maine DMR requested EPA not to specify a specific numeric standard but rather to promulgate the same narrative criterion that applies to Class SB and SC waters. For those classes of waters, Maine's WQS provide that instream bacteria levels may not exceed the criteria recommended under the NSSP.

The NSSP is the federal/state cooperative program recognized by the U.S. Food and Drug Administration (FDA) and the Interstate Shellfish Sanitation Conference (ISSC) for the sanitary control of shellfish produced and sold for human consumption.

EPA agrees that the NSSP allows for the use of either fecal coliform bacteria or total coliform bacteria as the indicator organism to protect shellfish harvesting. The current NSSP recommendations [23] for those organisms are consistent with EPA's national recommended water quality criteria.[24] The NSSP recommendations for fecal coliform standards and sampling protocols are set forth in Section II. Model Ordinance Chapter IV. Growing Areas .02 Microbial Standards (pages 51–54). The NSSP recommendations for total coliform standards and sampling protocols are set forth in Section IV, Guidance Documents Chapter II. Growing Areas .01 Total Coliform Standards (pages 216–219). Both sets of recommendations apply to various types of shellfish growing areas including remote status, areas affected by point source pollution, and areas affected by nonpoint source pollution.

In light of the state's concerns and suggestions, EPA's final rule contains a narrative criterion similar to Maine's approved criterion for Class SB and SC waters. The final rule provides "The numbers of total coliform bacteria or other specified indicator organisms in samples representative of the waters in shellfish harvesting areas may not exceed the criteria recommended under the National Shellfish Sanitation Program, United States Food and Drug Administration as set forth in the Guide for the Control of Molluscan Shellfish, 2015 Revision." EPA has added a specific reference to the date of the NSSP recommendations because there are legal constraints on incorporating future recommendations by reference. The NSSP 2015 recommendations are available online at: *http://www.fda.gov/Food/GuidanceRegulation/FederalStateFoodPrograms/ucm2006754.htm.* The recommendations are also included in the docket for this rulemaking, which is available both online at *regulations.gov* and in person at the EPA Docket Center Reading Room, William Jefferson Clinton West Building, Room 3334, 1301 Constitution Avenue NW., Washington, DC 20004, and (202) 566–1744. Finally, the 2015 NSSP recommendations are obtainable from the U.S. Food and Drug Administration's Center for Food Safety and Applied Nutrition, Shellfish and Aquaculture Policy Branch, 5100 Paint Branch Parkway (HFS–325), College Park, MD 20740.

b. Ammonia Criteria for Fresh Waters

EPA is finalizing the proposed ammonia criteria for fresh waters in Indian lands to protect aquatic life. The criteria are based on EPA's 2013 updated CWA section 304(a) recommended ammonia criteria.[25] They are expressed as functions of temperature and pH, so the applicable criteria vary by waterbody, depending on the temperature and pH of those waters. EPA received several comments in support of the proposed ammonia criteria, and received no comments requesting changes.

c. pH Criterion for Fresh Waters

EPA is finalizing the proposed pH criterion of 6.5 to 8.5 to protect aquatic life in fresh waters in Indian lands. The criterion is based on EPA's 1986 national recommended criterion.[26] EPA received comments from the state and one industry, both requesting that Maine's pH criterion of 6.0–8.5 be retained. However, EPA does not agree that 6.0 adequately protects aquatic life and notes in particular that pH values of 6.0 and lower have been shown to be detrimental to sensitive aquatic life, such as developing Atlantic salmon eggs and smolts.[27] [28] [29] See Topic 11 of the RTC document for more detailed responses to comments.

d. Temperature Criteria for Tidal Waters

EPA is finalizing the proposed temperature criteria for tidal waters in Indian lands. The criteria will assure protection of the indigenous marine community characteristic of the intertidal zone at Pleasant Point in Passamaquoddy Bay, and are consistent with EPA's CWA section 304(a) recommended criteria for tidal waters.[30] They include a maximum summer weekly average temperature and a maximum weekly average temperature rise over reference site baseline conditions.

Maine DEP commented with concerns about the difficulty of finding reference sites to determine baseline temperatures and a question about whether there should be a baseline established for each season. EPA is confident that reference sites will not be difficult to identify, and there is no need to establish separate baselines outside the defined summer season. See Topic 12 of the RTC document for a more detailed response.

e. Natural Conditions Provisions

EPA is finalizing the proposed rule for waters in Indian lands that stated that Maine's natural conditions provisions in 38 M.R.S. 420(2.A) and 464(4.C) do not apply to water quality criteria intended to protect public health. EPA received several comments in support of the proposed rule, and received no comments requesting changes.

f. Mixing Zone Policy

EPA is finalizing the proposed mixing zone policy for waters in Indian lands with one small change to the

[23] *http://www.fda.gov/downloads/Food/GuidanceRegulation/FederalStateFoodPrograms/UCM505093.pdf.*

[24] USEPA. 1986. Quality Criteria for Water 1986, United States Environmental Protection Agency, Washington, DC. EPA 440/5–86–001.

[25] USEPA. 2013. Aquatic Life Ambient Water Quality Criteria for Ammonia-Freshwater 2013. United States Environmental Protection Agency, Washington, DC. EPA 822–R–13–001. *https://www.epa.gov/wqc/aquatic-life-criteria-ammonia.*

[26] USEPA. 1986. Quality Criteria for Water 1986, U.S. Environmental Protection Agency, Office of Water, Washington, DC. EPA 440/5–86–001. pH section. *https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=00001MGA.txt.*

[27] Peterson, R.H., P.G. Daye, J.L. Metcalfe. 1980. Inhibition of Atlantic salmon (*Salmo salar*) hatching at low pH. *Can. J. Fish. Aquat. Sci.* 37: 770–774.

[28] Staurnes, M., F. Kroglund and B.O. Rosseland. 1995. Water quality requirement of Atlantic salmon (*Salmo salar*) in water undergoing acidification or liming in Norway. *Water, Air and Soil Pollution* 85: 347–352.

[29] Staurnes, M., L.P. Hansen, K. Fugelli, R. Haraldstad. 1996. Short-term exposure to acid water impairs osmoregulation, seawater tolerance, and subsequent marine survival of smolts of Atlantic salmon (*Salmo salar* L.) *Can. J. Fish. Aquat. Sci.* 53: 1965–1704.

[30] USEPA. 1986. Quality Criteria for Water 1986, U.S. Environmental Protection Agency, Office of Water, Washington, DC. EPA 440/5–86–001. Temperature section. *https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=00001MGA.txt.*

prohibition of mixing zones for bioaccumulative pollutants. Specifically, in order to avoid confusion over what is meant by "bioaccumulative pollutants" for the purpose of this rule, EPA has added a parenthetical definition which specifies that bioaccumulative pollutants are those "chemicals for which the bioconcentration factors (BCF) or bioaccumulation factors (BAF) are greater than 1,000." This definition is based on EPA's definition of bioaccumulation for chemical substances found at 64 FR 60194 (November 4, 1999).

EPA received several comments in support of the mixing zone policy. One of those commenters added that a total ban on mixing zones would be preferable. Two commenters asserted that EPA does not have the legal authority or the scientific basis to ban mixing zones for bioaccumulative pollutants outside the Great Lakes. EPA disagrees, for the reasons discussed in section III.E.1 of this preamble. One commenter raised comments about thermal mixing zones specific to its facility, and EPA's response to those comments are contained in the RTC document at Topic 9.

3. Final WQS for All Waters in Maine

a. Dissolved Oxygen for Class A Waters

EPA is finalizing the proposed dissolved oxygen criteria for all Class A waters in Maine. The rule provides that dissolved oxygen shall not be less than 7 ppm (7 mg/L) or 75% of saturation, whichever is higher, year-round. For the period from October 1 through May 14, in fish spawning areas, the 7-day mean dissolved oxygen concentration shall not be less than 9.5 ppm (9.5 mg/L), and the 1-day minimum dissolved oxygen concentration shall not be less than 8 ppm (8.0 mg/L). EPA received several comments in support of the proposed criteria, and received no comments requesting changes.

b. Waiver or Modification of WQS

EPA is finalizing the proposed rule stating that 38 M.R.S. 363–D, which allows waivers of state law in the event of an oil spill, does not apply to state or federal WQS applicable to waters in Maine, including designated uses, criteria to protect designated uses, and antidegradation requirements. EPA received several comments in support of the proposed rule, and received no comments requesting changes.

4. Final WQS for Waters in Maine Outside of Indian Lands

a. Phenol HHC for Consumption of Water Plus Organisms

EPA is finalizing the proposed phenol HHC for consumption of water plus organisms of 4000 µg/L, for waters in Maine outside of Indian lands. The criterion is consistent with EPA's June 2015 national criteria recommendation,[31] except that EPA used Maine's default fish consumption rate for the general population of 32.4 g/day, consistent with DEP Rule Chapter 584.[32] EPA received several comments in support of the proposed rule, and received no comments requesting changes.

III. Summary of Major Comments Received and EPA's Response

A. Overview of Comments

EPA received 104 total comments, 100 of which are unique comments. The vast majority of the comments were general statements of support for EPA's proposed rule from private citizens, including tribal members. Tribes and others provided substantive comments that also were generally supportive regarding the importance of protecting the designated use of sustenance fishing, identifying tribes as the target population, and using a 286 g/day fish consumption rate.

EPA also received comments critical of the proposal, principally from the Maine Attorney General and DEP, a single discharger and a coalition of dischargers, and two trade organizations. The focus of the remainder of this section III identifies and responds to the major adverse comments. Additionally, a comprehensive RTC document addressing all comments received is included in the docket for this rulemaking.

B. Maine Indian Settlement Acts

Before providing a more detailed discussion of the rationale relating to each element of EPA's analysis supporting this promulgation, the Agency first addresses a general complaint made by several commenters that EPA has developed a complex rationale for its disapproval of Maine's HHC and corresponding promulgation.

EPA acknowledges that there are several steps in the Agency's analysis of how Maine's WQS must protect the uses of the waters in Indian lands, including application of the Agency's expert scientific and policy judgment. The basic concepts are as follows:

- The Indian settlement acts provide for the Indian tribes to fish for their individual sustenance in waters in Indian lands and effectively establish a sustenance fishing designated use cognizable under the CWA for such waters.
- The CWA and EPA's regulations mandate that water quality criteria must protect designated uses of waters provided for in state law. Designated uses are use goals of a water, whether or not they are being attained.
- When analyzing how water quality criteria protect a designated use, an agency must focus on the population that is exercising that use, and must assess the full extent of that use's goal, where data are available.

The relevant explanatory details for each step of this rationale are presented below. But the underlying structure of the analysis is straightforward and appropriate under and consistent with applicable law.

Another general comment EPA received was that the agency's approach "would impermissibly give tribes in Maine an enhanced status and greater rights with respect to water quality than the rest of Maine's population." Comments of Janet T. Mills, Maine Attorney General, (page 2). EPA explains below why the analysis EPA presented in its February 2015 decision and the proposal for this action is not only permissible, but also mandated by the CWA as informed by the Indian settlement acts. But as a general matter EPA disagrees that this action is impermissible because it accords the tribes in Maine "greater rights" or somehow derogates the water quality protection provided to the rest of Maine's population.

EPA is addressing the particular sustenance fishing use provided for these tribes under Maine law and ratified by Congress. Because that use is confirmed in provisions in the settlement acts that pertain specifically and uniquely to the Indian tribes in Maine, EPA's analysis of the use and the protection of that use must necessarily focus on how the settlement acts intend for the tribes to be able to use the waters at issue here. However, Maine's claim that EPA is providing tribes in Maine "greater rights" than the general population is incorrect. In this action, EPA is not granting "rights" to anyone. Rather, EPA is simply promulgating

[31] Final Updated Ambient Water Quality Criteria for the Protection of Human Health, 80 FR 36986 (June 29, 2015). See also: USEPA. 2015. Final 2015 Updated National Recommended Human Health Criteria. U.S. Environmental Protection Agency, Office of Water, Washington, DC. *https://www.epa.gov/wqc/human-health-water-quality-criteria.*

[32] 06–096 Code of Maine Rules, Chapter 584, Surface Water Quality Criteria for Toxic Pollutants.

WQS in accordance with the requirements of the CWA—*i.e.,* identifying the designated use for waters in Indian lands, and establishing criteria to protect the target population exercising that use. As explained above, in light of the Indian settlement acts, the designated use is sustenance fishing, the tribes are the target population, and EPA has selected the appropriate FCR of that target population. This approach, together with EPA's selection of 10^{-6} CRL, is consistent with Maine's approach to protecting the target population in Maine waters outside of Indian lands. EPA's rule provides a comparable level of protection for the target population (sustenance fishers) for the waters in Indian lands that Maine provides to the target population for its fishing designated use (recreational fishers) that applies to waters outside Indian lands.[33] Further, the resulting HHC that EPA is promulgating in this rule protect both non-tribal members and tribal members in Maine. The great majority of the waters subject to the HHC are rivers and streams that are shared in common with non-Indians in the state or that flow into or out of waters outside Indian lands. It is not just the members of the Indian tribes in Maine who will benefit from EPA's action today.

One striking aspect of the comments EPA received on its proposal is that every individual who commented supported EPA's proposed action, including many non-Indians. Nearly all of the comments were individualized expressions of support, ranging from a profound recognition of the need to honor commitments made to the tribes in the Indian settlement acts to an acknowledgement that everyone in Maine benefits from improved water quality. It is notable that the record for this action shows that individuals in Maine who commented did not express concern that the tribes are being accorded a special status or that this action will in any way disadvantage the rest of Maine's population.

As described in section II.B.1, EPA previously approved MIA sections 6207(4) and (9) as an explicit designated use for the inland waters of the reservations of the Southern Tribes and interpreted and approved Maine's designated use of "fishing" for all waters in Indian lands to mean "sustenance fishing." Several commenters challenged EPA's conclusion that the Indian settlement acts in Maine have the effect of establishing a designated use that includes sustenance fishing. This section explains how the Indian settlement acts provide for the Indian tribes in Maine to fish for their sustenance, and responds to arguments that this conclusion violates the settlement acts. Section III.C explains how EPA, under the CWA, interprets those provisions of state law as a sustenance fishing designated use which must be protected by the WQS applicable to the waters where that use applies.

As explained in more detail in the RTC document, MICSA, MIA, ABMSA, and MSA include different provisions governing sustenance practices, including fishing, depending on the type of Indian lands involved. In the reservations of the Southern Tribes, MIA explicitly reserves to the tribes the right to fish for their individual sustenance.[34] In the trust lands of the Southern Tribes, MIA provides a regulatory framework that requires consideration of "the needs or desires of the tribes to establish fishery practices for the sustenance of the tribes," among other factors.[35] Congress clearly intended the Northern Tribes to be able to sustain their culture on their trust lands, consistent with Maine law, which amply accommodates a sustenance fishing diet.[36] Therefore, each of these provisions under the settlement acts in its own way is designed to establish a land base for these tribes where they may practice their sustenance lifeways. Indeed, EPA received an opinion from the Solicitor of the United States Department of the Interior (DOI), which analyzed the settlement acts and concluded that the tribes in Maine "have fishing rights connected to the lands set aside for them under federal and state statutes."[37]

In its February 2015 decision, EPA analyzed how the settlement acts include extensive provisions to confirm and expand the tribes' land base. The legislative record makes it clear that a key purpose behind that land base is to preserve the tribes' culture and support their sustenance practices. MICSA section 5 establishes a trust fund to allow the Southern Tribes and the Maliseets to acquire land to be put into trust. In addition, the Southern Tribes' reservations are confirmed as part of their land base.[38] MICSA combines with MIA sections 6205 and 6205–A to establish a framework for taking land into trust for those three Tribes, and laying out clear ground rules governing any future alienation of that land and the Southern Tribes' reservations. Sections 4(a) and 5 of the ABMSA and section 7204 of the state MSA accomplish essentially the same result for the Micmacs, consistent with the purpose of those statutes to put that tribe in the same position as the Maliseets.

EPA has concluded that one of the overarching purposes of the establishment of this land base for the tribes in Maine was to ensure their continued opportunity to engage in their unique cultural practices to maintain their existence as a traditional culture. An important part of the tribes' traditional culture is their sustenance lifeways. The legislative history for MICSA makes it clear that one critical purpose for assembling the land base for the tribes in Maine was to preserve their culture. The Historical Background in the Senate Report for MICSA opens with the observation that "All three Tribes [Penobscot, Passamaquoddy and Maliseet] are riverine in their land-ownership orientation."[39] Congress also specifically noted that one purpose of MICSA was to avoid acculturation of the tribes in Maine:

> Nothing in the settlement provides for acculturation, nor is it the intent of Congress to disturb the cultural integrity of the Indian people of Maine. To the contrary, the Settlement offers protections against this result being imposed by outside entities by providing for tribal governments which are separate and apart from the towns and cities of the State of Maine and which control all such internal matters. The Settlement also clearly establishes that the Tribes in Maine will continue to be eligible for all federal Indian cultural programs.[40]

As both the Penobscot and Maliseet extensively documented in their comments on this action, their culture relies heavily on sustenance practices, including sustenance fishing. So if a purpose of MICSA is to avoid acculturation and protect the tribes' continued political and cultural existence on their land base, then a key purpose of that land base is to support those sustenance practices.

Several comments dispute that the settlement acts are intended to provide for the tribes' sustenance lifeways, and assert instead that their key purpose was to subject the tribes to the jurisdictional

[33] EPA recognizes that the final HHC also reflect inputs consistent with EPA's 2015 section 304(a) recommendations, which are not currently reflected in Maine's HHC. EPA anticipates that Maine will update its HHC consistent with these inputs in its next triennial review.

[34] 30 M.R.S. section 6207(4).

[35] 30 M.R.S. section 6207(1), (3).

[36] 102 S. Rpt. 136 (1991).

[37] Letter from Hilary C. Tompkins, Solicitor, Department of Interior, to Avi S. Garbow, General Counsel, EPA, January 30, 2015, a copy of which is in the docket supporting this action.

[38] 30 M.R.S. section 6205(1)(A) and (2)(A).

[39] Sen. Rep. No. 96–957, at 11.

[40] Id. at 17.

authority of the state and treat tribal members identically to all citizens in the state. These comments do not dispute the evidence EPA relied on in February 2015 to find that Congress intended to support the continuation of the tribes' traditional culture. Rather, the commenters argue that the overriding purpose of the settlement acts was to impose state law, including state environmental law, on the tribes, which the commenters believe the state could do without regard to the settlement act provisions for sustenance fishing. These assertions reflect an overly narrow interpretation of the settlement acts, and EPA, with a supporting opinion from DOI, has concluded that the settlement acts both provide for the tribes' sustenance lifeways and subject the tribal lands to state environmental regulation. Those two purposes are not inconsistent, but rather support each other. It would be inconsistent for the state to codify provisions for tribal sustenance fishing in one state law, which was congressionally ratified, and then in another state law subject that practice to environmental conditions that render it unsafe.

EPA disagrees with the comment that promulgation of the HHC violates the jurisdictional arrangement in MICSA and MIA. The assertion appears to be that the grant of jurisdiction to the state in the territories of the Indian tribes in Maine means that the tribes must always be subject to the same environmental standards as any other person in Maine. As EPA made clear in its February 2015 decision, the Agency agrees that MICSA grants the state the authority to set WQS in Indian territories. Making that finding, however, does not then lead to the conclusion that the state has unbounded authority to set WQS without regard to the factual circumstances and legal framework that apply to the tribes under both the CWA and the Indian settlement acts. No state has authority or jurisdiction to adopt WQS that do not comply with the requirements of the CWA. The state, like EPA and the tribes, is bound to honor the provisions of the Indian settlement acts. Here, the CWA, as informed by and applied in light of the requirements of the settlement acts, requires that WQS addressing fish consumption in these waters adequately protect the sustenance fishing use applicable to the waters. Because this use applies only to particular waters that pertain to the tribes, the WQS designed to protect the use will necessarily differ from WQS applicable to other waters generally in the state. This result does not violate the grant of jurisdiction to the state. Rather, the state retains the authority to administer the WQS program throughout the state, subject to the same basic requirements to protect designated uses of the waters as are applicable to all states.

EPA also disagrees that promulgation of the HHC violates the so-called savings clauses in MICSA, Pub. L. 96–420, 94 Stat. 1785 sections 6(h) and 16(b), which block the application of federal law in Maine to the extent that law "accords or relates to a special status or right of or to any Indian" or is "for the benefit of Indians" and "would affect or preempt" the application of state law. EPA has consistently been clear that this action does not treat tribes in Maine in a similar manner as a state (TAS) or in any way authorize any tribe in Maine to implement tribal WQS under the federal CWA. Therefore, arguments about whether MICSA blocks the tribes from applying to EPA for TAS under CWA section 518(e) are outside the scope of, and entirely irrelevant to, EPA's promulgation of federal WQS.

Additionally, EPA disagrees that its disapproval of certain WQS in tribal waters and this promulgation will "affect or preempt the application of the laws of the State of Maine" using a federal law that accords a special status to Indians within the meaning of MICSA section 6(h) or a federal law "for the benefit of Indians" within the meaning of section 16(b). With this promulgation, EPA is developing WQS consistent with the requirements of the CWA as applied to the legal framework and factual circumstances created by the Indian settlement acts. EPA here is acting under CWA section 303, which was not adopted "for the benefit of Indians," but rather sets up a system of cooperative federalism typical of federal environmental statutes, where states are given the lead in establishing environmental requirements for areas under their jurisdiction, but within bounds defined by the CWA and subject to federal oversight. In this case, the Indian settlement acts provide for the tribes to fish for their sustenance in waters in or adjacent to territories set aside for them, which has the effect of establishing a sustenance fishing use in those waters. Because that sustenance fishing use applies in those waters, CWA section 303 requires Maine and EPA to ensure that use is protected. It cannot be the case that the savings clauses in MICSA are intended to block implementation of the Indian settlement acts or MICSA itself.

In the RTC document, EPA addresses in detail the distinctions contained in the Indian settlement acts for the Maine tribes and comments received by EPA on this point. In short, the settlement acts clearly codify a tribal right of sustenance fishing for inland, anadromous, and catadromous fish in the inland waters of the Penobscot Nation's and Passamaquoddy's reservations.[41] EPA approved this right, contained in state law, as an explicit designated use. The Southern Tribes also have trust lands, to which the explicit sustenance fishing right in section 6207 of MIA does not apply, but which are covered by a regulatory regime under MIA that specifically provides for the Southern Tribes to exercise their sustenance fishing practices. The statutory framework for the Northern Tribes' trust lands provides for more direct state regulation of those tribes' fishing practices. Nevertheless, as confirmed by an opinion from the U.S. Department of the Interior,[42] the Northern Tribes' trust lands include sustenance fishing rights appurtenant to those land acquisitions, subject to state regulation. Accordingly, EPA appropriately approved the "fishing" designated use as "sustenance fishing" for all waters in Indian lands.

Tribal representatives and members commented that EPA's promulgation of HHC is consistent with EPA's trust responsibility to the Indian tribes in Maine, and some suggested that EPA's trust relationship with the tribes compels EPA to take this action. Conversely, one commenter argued that this action is not authorized because the federal government has no obligation under the trust responsibility to take this action, and the Indian settlement acts create no specific trust obligation to protect the tribes' ability to fish for their sustenance. These comments raise questions about the nature and extent of the federal trust responsibility to the Indian tribes in Maine and the extent to which the trust is related to this action. EPA agrees that this action is consistent with the United States' general trust responsibility to the tribes in Maine. EPA also agrees that the trust relationship does not create an independent enforceable mandate or specific trust requirement beyond the Agency's obligation to comply with the legal requirements generally applicable to this situation under federal law, in this case the CWA as applied to the circumstances of the tribes in Maine under the settlement acts.

[41] 30 M.R.S. section 6207.

[42] Letter from Hilary C. Tompkins, Solicitor, Department of Interior, to Avi S. Garbow, General Counsel, EPA, January 30, 2015, a copy of which is in the docket supporting this action.

Consulting with affected tribes before taking an action that affects their interests is one of the cornerstones of the general trust relationship with tribes. EPA has fulfilled this responsibility to the tribes in Maine. EPA has consulted extensively with the tribes to understand their interests in this matter. EPA has also carefully weighed input from the tribes, as it has all the comments the Agency received on this action.

EPA does not agree that the substance of this action is compelled or authorized by the federal trust relationship with the tribes in Maine independent of generally applicable federal law. This action is anchored in two sets of legal requirements: First, the Indian settlement acts, which reserve the tribes' ability to engage in sustenance fishing; second, the CWA, which requires that this use must be protected. The trust responsibility does not enhance or augment these legal requirements, and EPA is not relying on the trust responsibility as a separate legal basis for this action. The Indian settlement acts created a legal framework with respect to these tribes that triggered an analysis under the CWA about how to protect the sustenance fishing use provided for under the settlement acts. This analysis necessarily involves application of EPA's WQS regulations, guidance, and science to yield a result that is specific to these tribes, but each step of the analysis is founded in generally applicable requirements under the CWA, not an independent specific trust mandate.

C. Sustenance Fishing Designated Use

Several commenters challenged EPA's approval, in its February 2015 Decision, of sections 6207(4) and (9) of the MIA as a designated use of sustenance fishing applicable to inland waters of the Southern Tribes' reservations. Several commenters also argued that EPA had no authority to approve Maine's "fishing" designated use with the interpretation that it means "sustenance fishing" for waters in Indian lands. Related to both approvals, the commenters argued that Maine had never adopted a designated use of "sustenance fishing," thus EPA could not approve such a use, and that EPA did not follow procedures required under the CWA in approving any "sustenance fishing" designated use. EPA disagrees, as discussed in sections III.C.1 and 2.

1. EPA's Approval of Certain Provisions in MIA as a Designated Use of Sustenance Fishing in Reservation Waters.

State laws can operate as WQS when they affect, create or provide for, among other things, a use in particular waters, even when the state has not specifically identified that law as a WQS.[43] EPA has the authority and duty to review and approve or disapprove such a state law as a WQS for CWA purposes, even if the state has not submitted the law to EPA for approval.[44] Indeed, EPA has previously identified and disapproved a Maine law as a "de facto" WQS despite the fact that Maine did not label or present it as such.[45]

The MIA is binding law in the state, and sections 6207(4) and (9) in that law clearly establish a right of sustenance fishing in the inland reservation waters of the Southern Tribes. See Topic 3 of the RTC document for a more detailed discussion. In other words, the state law provides for a particular use in particular waters. It was therefore appropriate for EPA to recognize that state law as a water quality standard, and more specifically, as a designated use. EPA's approval of these MIA provisions as a designated use of sustenance fishing does not create a new federal designated use of tribal "sustenance fishing," but rather gives effect to a WQS in state law for CWA purposes in the same manner as other state WQS. Furthermore, contrary to commenters' assertions, EPA did not fail to abide by any required procedures before approving the MIA provisions as a designated use. They were a "new" WQS for the purpose of EPA review, because EPA had never previously acted on them. When EPA acts on any state's new or revised WQS, there are no procedures necessary for EPA to undertake prior to approval.[46] The Maine state legislature, which has the authority to adopt designated uses, held extensive hearings reviewing the provisions of the MIA, including those regarding sustenance fishing.

2. EPA's Interpretation and Approval of Maine's "Fishing" Designated Use To Include Sustenance Fishing.

In addition to approving certain provisions of MIA as a designated use in the Southern Tribes' inland reservation waters, EPA also interpreted and approved Maine's designated use of "fishing" to mean "sustenance fishing" for all waters in Indian lands. EPA disagrees with comments that claim that EPA had no authority to do so because EPA had previously approved that use for all waters in Maine without such an interpretation. While EPA approved the "fishing" designated use in 1986 for other state waters, prior to its February 2015 decision, EPA had not approved any of the state's WQS, including the "fishing" designated use, as being applicable to waters in Indian lands.

Under basic principles of federal Indian law, states generally lack civil regulatory jurisdiction within Indian country as defined in 18 U.S.C. 1151.[47] Thus, EPA cannot presume a state has authority to establish WQS or otherwise regulate in Indian country. Instead, a state must demonstrate its jurisdiction, and EPA must determine that the state has made the requisite demonstration and has authority, before a state can implement a program in Indian country. Accordingly, EPA cannot approve a state WQS for a water in Indian lands if it has not first determined that the state has authority to do so.

EPA first determined on February 2, 2015, that Maine has authority to establish WQS for waters in Indian lands. Consistent with the principle articulated above, it is EPA's position that all WQS approvals that occurred prior to this date were limited to state

[43] *See Florida Pub. Interest Grp* v. *EPA,* 386 F.3d 1070, 1089–90 (11th Cir. 2004) (holding that in order to determine whether a state law constitutes a WQS, a district court must "look beyond the [state's] characterization of [the law]" and "determine[ ] whether the practical impact of the [law] was to revise [the state's WQS]" irrespective of the state's "decision not to describe its own regulations as new or revised [WQS]"); *Pine Creek Valley Watershed Ass'n* v. *United States,* 137 F. Supp. 3d 767, 776 (E.D. Pa. 2015) (deferring to EPA's determination on whether or not a state law constitutes a WQS).

[44] *See* EPA, What is a New or Revised Water Quality Standard Under CWA 303(c)(3)? Frequently Asked Questions, October 2012. *See also, Friends of Merrymeeting Bay* v. *Olsen,* 839 F. Supp. 2d 366, 375 (D. Me. 2012) ("The EPA is under an obligation to review a law that changes a water quality standard regardless of whether a state presents it for review."); *Miccosukee Tribe of Indians* v. *EPA,* 105 F.3d 599, 602 (11th Cir. 1997) ("Even if a state fails to submit new or revised standards, a change in state water quality standards could invoke the mandatory duty imposed on the Administrator to review new or revised standards.").

[45] Letter from Stephen S. Perkins, Director of Office of Ecosystem Protection, EPA, to William J. Schneider, Maine Attorney General (July 9, 2012) (disapproving as a WQS a state law that required prevention of river herring passage on St. Croix River); *see Friends of Merrymeeting Bay,* 839 F. Supp. 2d at 375 (indicating EPA must consider whether such state law has the effect of changing a WQS).

[46] See 33 U.S.C. 1313(c)(3) and 40 CFR part 131.

[47] *Alaska* v. *Native Vill. of Venetie Tribal Gov't,* 522 U.S. 520, 527 n.1. (1998) ("[g]enerally speaking, primary jurisdiction over land that is Indian country rests with the Federal Government and the Indian Tribe inhabiting it, and not with the States."); *see also Okla. Tax Comm'n* v. *Sac and Fox Nation,* 508 U.S. 114, 128 (1993) ("[a]bsent explicit congressional direction to the contrary, we presume against a State's having the jurisdiction to tax within Indian Country . . . .").

waters outside of waters in Indian lands. With regard to the "fishing" designated use, Maine submitted revisions to its water quality standards program now codified at 38 M.R.S. section 464–470, to EPA in 1986. This submittal included Maine's designated use of "fishing" for all surface waters in the state. On July 16, 1986, EPA approved most of the revised WQS, including the designated uses for surface waters, without explicit mention of the "fishing" designated use or of the standards' applicability to waters in Indian lands. Maine did not expressly assert its authority to establish WQS in Indian waters until its 2009 WQS submittal, and EPA did not expressly determine that Maine has such authority until February 2015. Therefore, EPA did not approve Maine's designated use of "fishing" to apply in Indian waters in 1986, and EPA's approval of that use for other waters in Maine at that time was not applicable to Indian waters in Maine.

EPA acknowledges the comment that, prior to February 2015, EPA had not previously taken the position that Maine's designated use of "fishing" included a designated use of "sustenance fishing." As explained herein, it was not until February 2, 2015, that EPA determined that Maine's WQS were applicable to waters in Indian lands, so it was not until then that EPA reviewed Maine's "fishing" designated use for those waters and concluded that, in light of the settlement acts, it must include sustenance fishing as applied to waters in Indian lands.

EPA disagrees with comments that asserted that EPA could not approve the "fishing" designated use as meaning "sustenance fishing" for waters in Indian lands unless EPA first made a determination under CWA section 303(c)(4)(B) that the "fishing" designated use was inconsistent with the CWA. Because EPA had not previously approved the "fishing" designated use for waters in Indian lands, EPA had the duty and authority to act on that use in its February 2015 decision, and was not required to make a determination under CWA section 303(c)(4)(B) before it could interpret and approve the use for waters in Indian lands. Additionally, because the term "fishing" is ambiguous in Maine's WQS, even if EPA had previously approved it for all waters in the state, it is reasonable for EPA to explicitly interpret the use to include sustenance fishing for the waters in Indian lands in light of the Indian settlement acts.[48] This is consistent with EPA's recent actions and positions regarding tribal fishing rights and water quality standards in the State of Washington.[49]

In acting on the "fishing" designated use for waters in Indian lands for the first time, it was reasonable and appropriate for EPA to explicitly interpret and approve the use to include sustenance fishing for the waters in Indian lands. This interpretation harmonized two applicable laws: The provision for sustenance fishing contained in the Indian settlement acts, as explained above in section III.B, and the CWA. Indeed, where an action required of EPA under the CWA implicates another federal statute, such as MICSA, EPA must harmonize the two statutes to the extent possible.[50] This is consistent with circumstances where federal Indian laws are implicated and the Indian canons of statutory construction apply.[51] Because the Indian settlement acts provide for sustenance fishing in waters in Indian lands, and EPA has authority to reasonably interpret state WQS when taking action on them, EPA necessarily interpreted the "fishing" use as "sustenance fishing" for these waters, lest its CWA approval action contradict and, as a practical matter, effectively limit or abrogate the Indian settlement acts (a power that would be beyond EPA's authority).[52] Accordingly, EPA's interpretation of Maine's "fishing" designated use reasonably and appropriately harmonized the intersecting provisions of the CWA and the Indian settlement acts.

Finally, one commenter argued that the settlement acts' provisions for sustenance fishing are merely exceptions to otherwise applicable creel limits and have no implications for the WQS that apply to the waters where the tribes are meant to fish. EPA does not agree with this narrow interpretation of the relationship between the provisions for tribal sustenance practices on the one hand and water quality on the other. Fundamentally, the tribes' ability to take fish for their sustenance under the settlement acts would be rendered meaningless if it were not supported under the CWA by water quality sufficient to ensure that tribal members can safely eat the fish for their own sustenance.

When Congress identifies and provides for a particular purpose or use of specific Indian lands, it is reasonable and supported by precedent for an agency to consider whether its actions have an impact on a tribe's exercise of that purpose or use and to ensure through exercise of its authorities that its actions protect that purpose or use. For example, the Ninth Circuit Court of Appeals recently determined that the right of tribes in the State of Washington to fish for their subsistence in their "usual and accustomed" places necessarily included the right to an adequate supply of fish, despite the absence of any explicit language in the applicable treaties to that effect.[53] Specifically, the Court held that "the Tribes' right of access to their usual and accustomed fishing places would be worthless without harvestable fish." [54] Similarly, it would defeat the purpose of MIA, MICSA, MSA, and ABMSA for the

[48] *See Arkansas* v. *Oklahoma*, 503 U.S. 91, 110 (1992) (holding that EPA's interpretation of state WQS in the NPDES context is entitled to "substantial deference").

[49] *See* Revision of Certain Federal Water Quality Criteria Applicable to Washington: 81 FR 85417 (November 28, 2016).

[50] *See Nat'l Ass'n of Home Builders* v. *Defenders of Wildlife*, 551 U.S. 644, 664 (2007) (acknowledging EPA's duty to harmonize CWA and Endangered Species Act to give effect to both statutes where the Agency has discretion to do so); *see also United States* v. *Borden Co.*, 308 U.S. 188, 198 (1939) ("When there are two acts upon the same subject, the rule is to give effect to both if possible.").

[51] *See Penobscot Nation* v. *Mills*, 151 F. Supp. 3d at 213–214 (applying the Indian canons of statutory construction to MIA and MICSA); *see also Penobscot Nation* v. *Fellencer*, 164, F.3d 706, 709 (1st Cir. 1999) (applying Indian cannon to MICSA and citing to *County of Oneida* v. *Oneida Indian Nation*, 470 U.S. 226, 247 (1985) ("it is well established that treaties should be construed liberally in favor of the Indians with ambiguous provisions interpreted for their benefit")).

[52] *See Minn.* v. *Mille Lacs Band of Chippewa Indians*, 526 U.S. 172, 202 (1999) ("Congress may abrogate Indian treaty rights, but it must clearly express its intent to do so.").

[53] *United States* v. *Washington*, No. 13–35474, 2016 U.S. App. Lexis 11709 (9th Cir. June 27, 2016). *See also United States* v. *Winans*, 198 U.S. 371, 384 (1905) (tribe must be allowed to cross private property to access traditional fishing ground); *Kittitas Reclamation District* v. *Sunnyside Valley Irrigation District*, 763 F.2d 1032, 1033–34 (9th Cir. 1985) (tribe's fishing right protected by enjoining water withdrawals that would destroy salmon eggs before they could hatch); *Grand Traverse Band of Ottawa and Chippewa Indians* v. *Director, Mich. Dept of Nat. Resources*, 141 F.3d 635 (6th Cir. 1989) (treaty right to fish commercially in the Great Lakes found to include a right to temporary mooring of treaty fishing vessels at municipal marinas because without such mooring the Indians could not fish commercially); *Colville Confederated Tribes* v. *Walton*, 647 F.2d 42, 47–48 (9th Cir. 1981) (implying reservation of water to preserve tribe's replacement fishing grounds); *Winters* v. *United States*, 207 U.S. 564, 576 (1908) (express reservation of land for reservation impliedly reserved sufficient water from the river to fulfill the purposes of the reservation); *Arizona* v. *California*, 373 U.S. 546, 598–601 (1963) (creation of reservation implied intent to reserve sufficient water to satisfy present and future needs).

[54] *United States* v. *Washington*, No. 13–35474, 2016 U.S. App. Lexis 11709 (9th Cir. June 27, 2016). The court also acknowledged that the fishing clause of the Stevens Treaties could give rise to other environmental obligations, but that those would need to be addressed on a case-by-case basis depending on the precise nature of the action. *Id.* at *18–19.

tribes in Maine to be deprived of the ability to safely consume fish from their waters at sustenance levels. Consistent with this case law, the Department of the Interior provided EPA with a legal opinion which concludes that "fundamental, long-standing tenets of federal Indian law support the interpretation of tribal fishing rights to include the right to sufficient water quality to effectuate the fishing right." [55] If EPA were to ignore the impact that water quality, and specifically water quality standards under the CWA, could have on the tribes' ability to safely engage in their sustenance fishing practices on their lands, the Agency would be contradicting the clear purpose for which Congress ratified the settlement acts in Maine and provided for the establishment of Indian lands in the state. Therefore, it is incumbent upon EPA when applying the requirements of the CWA to harmonize those requirements with this Congressional purpose.

D. Human Health Criteria for Toxics for Waters in Indian Lands

1. Target Population

EPA received two comments that it improperly and without justification identified the tribes as the target population, as opposed to a highly exposed subpopulation, for the HHC for waters in Indian lands. On the contrary, EPA's approach is entirely consistent with EPA regulations and policy, as informed by the settlement acts.

Pursuant to 40 CFR 131.11(a)(1), water quality criteria must be adequate to protect the designated uses. Developing HHC to protect the sustenance fishing designated use in waters in Indian lands necessarily involves identifying the population exercising that use as the target population.[56] The tribes are not a highly exposed or high-consuming subpopulation in their own lands; they are the general population for which the federal set-aside of these lands and their waters was designed.[57] Treating tribes as the target general population results in HHC sufficient under the CWA to ensure that the tribes' ability to exercise the designated use of sustenance fishing, as provided for in the settlement acts, is not substantially affected or impaired. Therefore, the tribal population must be the focus of the risk assessment supporting HHC for the waters to which the sustenance fishing use applies. To do otherwise risks undermining the purpose for which Congress established and confirmed the tribes' land base, as described more fully in section III.B.

Contrary to the commenters' claims, EPA's 2000 Methodology does not mandate that the tribes be treated as a highly exposed subpopulation. EPA's general approach in the 2000 Methodology, and in deriving national CWA section 304(a) recommended criteria, is for HHC to provide a high level of protection for the general population, while recognizing that more highly exposed "subpopulations" may face greater levels of risk.[58] However, in addition to recommending protection of the general population based on fish consumption rates designed to represent "the general population of fish consumers," the 2000 Methodology recommends that states assess whether there might be more highly exposed subpopulations or "population groups" that require the use of a higher fish consumption rate to protect them as the "target population group(s)." [59] The 2000 Methodology does not speak to or expressly envision the unique situation of setting HHC for waters where there is a tribal sustenance fishing designated use. Nevertheless, it is entirely consistent with the 2000 Methodology for EPA to identify the tribes as the target general population for protection, rather than as a highly exposed subpopulation, and to apply the 2000 Methodology's recommendations on exposure for the general population, including the FCR and CRL, to the tribal target population.

2. Wabanaki Study

EPA received several comments that the FCR of 286 g/day, derived to support the sustenance fishing use, and used in the calculation of the promulgated HHC, is too high and not based on sound science. In particular, commenters asserted that it was improper for EPA to rely on the Wabanaki Study because it is irrelevant and aspirational. These commenters instead prefer the use of a 1992 study conducted by McLaren/Hart—ChemRisk of Portland, Maine ("the 1992 ChemRisk Study").[60] EPA disagrees for the following reasons.

After considering other sources, including the 1992 ChemRisk Study (see discussion below), EPA derived the FCR from a peer-reviewed estimate of traditional sustenance fish consumption from the Wabanaki Study. EPA finds that the Wabanaki Study used a sound methodology (peer reviewed, written by experts in risk assessment and anthropology), and contains the best currently available information for the purpose of deriving an FCR for HHC adequate to protect present day sustenance fishing for such waters. It is the only local study focused on the tribal members and areas most heavily used by those members today. While it relies on daily caloric and protein intake to derive heritage FCRs, the FCR of 286 g/day is also the best currently available estimate for contemporary tribal sustenance level fish consumption for waters where the sustenance fishing designated use applies.

In addition, EPA consulted with tribal governments to obtain their views on the suitability of the Wabanaki Study and any additional relevant information to select a FCR for this final rulemaking. The tribes represented that the Wabanaki study and corresponding rate of 286 g/day is an appropriate and accurate portrayal of their present day sustenance fishing lifeway, absent significant improvement in the availability of anadromous fish species, and EPA gave significant weight to the tribes' representations.[61]

[55] Letter from Hilary C. Tompkins, Solicitor, Department of Interior, to Avi S. Garbow, General Counsel, EPA, January 30, 2015, a copy of which is in the docket supporting this action.

[56] One of the commenters, Maine's Attorney General, concedes as much. Her objection to EPA's approach rests on her assertion that there is no designated use of sustenance fishing for the waters in Indian lands. But she recognizes that had the Maine Legislature adopted proposed legislation for a "subsistence fishing" designated use for a portion of the Penobscot River, the adoption of that use would have protected the subsistence fishers as the target population for the stretch of the river to which the use applied. *See* Comments of Maine's Attorney General at 11.

[57] EPA recognizes that tribal members will not be the only population fishing from some of these waters. On major rivers such as the Penobscot River, for example, the general population has the right to pass through the waters in Indian lands. The presence of some nonmembers fishing on these waters, however, does not change the fact that the resident population in the Indian lands is made up of tribal members who expect to fish for their sustenance in the waters in Indian lands pursuant to the settlement acts.

[58] USEPA. 2000. Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health (2000). U.S. Environmental Protection Agency, Office of Science and Technology, Washington, DC. EPA 822–B–00–004, pp. 2–1 to 2–3.

[59] Id., pp. 4–24 to 4–25.

[60] ChemRisk, A Division of McLaren Hart, and HBRS, Inc., *Consumption of Freshwater Fish by Maine Anglers,* as revised, July 24, 1992.

[61] Indeed, in developing its own 2014 tribal water quality criteria, the Penobscot Nation used a FCR of 286 g/day. The Nation explained that it chose the inland non-anadromous total FCR of 286 g/day presented in the Wabanaki Study because, although the Penobscot lands are in areas that would have historically supported an inland anadromous diet (with total FCR of 514 g/day), the contemporary populations of anadromous species in Penobscot waters are currently too low to be harvested in significant quantities. Penobscot Nation, Department of Natural Resources, *Response to Comments on Draft Water Quality Standards,* September 23, 2014, p. 9.

As explained in EPA's disapproval and preamble to the proposed rule, the data from the ChemRisk Study are not suitable as a source for deriving the FCR for waters in Indian lands in Maine. That study was not a survey of tribal sustenance fishers in tribal waters. Rather, it was a statewide recreational angler survey that polled anglers with state fishing licenses and was not a survey intended to characterize tribal fish consumption in tribal waters. As explained by tribal representatives both in comments on Maine's 2012 revisions and in comments on this rule, and by DEP in its response to comments on the 2012 revisions, tribal members are not necessarily required to get state licenses to fish and therefore were likely underrepresented in the survey.[62]

In addition, EPA disagrees with commenters who assert that there were no fish advisories or that there were an insignificant number of river miles covered by fish advisories during the time of the ChemRisk Study. It is well documented that fish advisories were in place on some waters in Maine at the time of the ChemRisk Study. As documented by Maine's Department of Health and Human Services in a 2008 history of dioxin fish consumption advisories in Maine,[63] fish advisories were first issued in Maine on the Androscoggin River in 1985 and on the Kennebec and Penobscot River in 1987, before the ChemRisk Study survey was conducted. While relative to the state as a whole this may seem to be a small portion of river miles that were affected by a fish consumption advisory, the Penobscot River is a very large portion of the sustenance fishery for the Penobscot Indian Nation, and it is a waterbody with a high profile and symbolic significance in the Indian community.

Further, as documented by DEP in its response to comments on its 2012 WQS revisions, during the time that the ChemRisk survey was conducted:

> [P]ublic awareness of historical pollution in industrialized rivers can be expected to have suppressed fish consumption on a local basis. The Department is unable to quantify the extent of suppression due to historical pollution in the major rivers or the dioxin advisories in place at the time of the ChemRisk study, but believes that the ChemRisk (Ebert *et al.*) estimates of fish consumption for rivers and streams as well as the inclusive 'all waters' categories are likely to have been affected to some degree.[64]

3. Cancer Risk Level

With respect to the cancer risk management value used in deriving the HHC of 10^{-6}, one commenter noted that this value was unduly protective of public health while another implied the Agency could adopt a more protective risk management level, and several supported EPA's use of 10^{-6}. In promulgating HHC for the tribes in Maine, EPA incorporated an excess cancer risk level of 10^{-6} as the appropriate target level for two reasons. First, it is consistent with Maine DEP Rule 06–096, Chapter 584, which EPA approved for waters in Indian lands on February 2, 2015, and which specifies that water quality criteria for carcinogens must be based on a 10^{-6} CRL.[65] Second, it is consistent with EPA guidance that states, "For deriving CWA section 304(a) criteria or promulgating water quality criteria for states and tribes under Section 303(c) based on the 2000 Human Health Methodology, EPA intends to use the 10^{-6} risk level, which the Agency believes reflects an appropriate risk for the general population."[66] As explained above, EPA considers the tribes to be the general target population for waters in Indian lands. In promulgating HHC that correspond to an excess cancer risk level of 10^{-6} for tribes in Maine, not only is EPA acting consistent with both EPA guidance and Maine's existing rule, but EPA is providing the tribes engaged in sustenance fishing in waters in Indian lands with an equivalent level of cancer risk protection as is afforded to the general population in Maine outside of waters in Indian lands.

4. Trophic Level Specific Fish Consumption Rates

Since the Wabanaki Study presented estimates of the total amount of fish and aquatic organisms consumed but not the amount consumed from each trophic level, for the purpose of developing HHC for the Maine tribes, EPA assumed that Maine tribes consume the same relative proportion of fish and aquatic organisms from the different trophic levels 2 through 4 as is consumed by the adult U.S. population. As identified in the 2015 criteria update, the relative percent of the total fish consumption rate for trophic levels 2 through 4 for the adult U.S. population amounts to 36%, 40%, and 24%.[67] Accordingly, EPA adjusted the 286 g/day total tribal fish consumption rate by these same percentages and arrived at trophic-specific fish consumption rates of 103 g/day (trophic level 2), 114 g/day (trophic level 3), and 68.6 g/day (trophic level 4). These trophic specific fish consumption rates were thus used in deriving the HHC for those compounds for which the 2015 criteria update included trophic level specific BAFs. For compounds where, in 2015, EPA estimated BAFs from laboratory-measured BCFs and therefore derived a single pollutant-specific BAF for all trophic levels, and where EPA's existing 304(a) recommended human health criteria for certain pollutants still incorporate a single BCF and those pollutants are included in this final rule, EPA derived the HHC using a total fish consumption rate of 286 g/day.

The Penobscot Nation requested EPA use a slightly different weighting scheme when refining the fish consumption rate based on the trophic levels of the fish and shellfish species they consume. While EPA recommends the use of local data relevant to the population of interest whenever possible in deriving human health criteria, such data must be from a sound scientific study before it can be utilized. The Penobscot Nation did not provided adequate information to support a different trophic level weighting scheme. See Topic 5 in the RTC document for a more detailed response.

5. Geographic Extent of Waters To Which the HHC Apply

The HHC contained in the rule are designed to protect the designated use of sustenance fishing as exercised by the tribes in Maine. The HHC thus apply to waters where that designated use is approved. EPA approved a sustenance fishing designated use in two general categories of waters: (1) Waters in Indian lands, and (2) waters outside Indian lands where the sustenance fishing right reserved in MIA section

[62] Id., Exhibit 8, pages 14 and 19; June 20, 2016, Letter from Chief Brenda Commander, Houlton Band of Maliseet Indians, to Gina McCarthy, Administrator, EPA, page 15.

[63] Smith, Andrew E., and Frohmberg, Eric, *Evaluation of the Health Implications of Levels of Polychlorinated Dibenzo-p-Dioxins (dioxins) and Polychlorinated Dibenzofurans (furans) in Fish from Maine Rivers*, Maine Department of Health and Human Service, January, 2008, pages 2–3.

[64] January 14, 2013, Letter from Patricia Aho, DEP to Curt Spalding, EPA, regarding "*USEPA Review of P.L. 2011, Ch. 194 and revised 06–096 CMR 584*", Exhibit 8, pages 20–21.

[65] The only exception from the requirement to use a CRL of 10^{-6} in Chapter 584 is for arsenic, for which a CRL of 10^{-4} is required. EPA disapproved the arsenic CRL for waters in Indian lands.

[66] USEPA. 2000. Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health. U.S. Environmental Protection Agency, Office of Water, Washington, DC. EPA–822–B–00–004, p. 2–6.

[67] USEPA. 2014. Estimated Fish Consumption Rates for the U.S. Population and Selected Subpopulations (NHANES 2003–2010). EPA–820–R–14–002. *https://www.epa.gov/sites/production/files/2015-01/documents/fish-consumption-rates-2014.pdf.*

6207(4) applies.[68] The first category, "waters in Indian lands," covers waters within the tribes' reservations and trust lands as provided for under the settlement acts. The second category applies in the limited circumstances where it is determined that a Southern Tribe's sustenance fishing right reserved in MIA section 6207(4) extends to a waterbody outside of its reservation as provided for under the settlement acts. As explained below, this situation currently exists in only one waterbody, a clearly delineated stretch of the Penobscot River.

The outer bounds of waters that may fall within the two categories of the rule are based on the settlement acts and are thereby generally identifiable. The rule, however, does not identify the specific boundaries of each waterbody or portion thereof to which the HHC apply. Whether a specific waterbody falls within one of these categories will depend on the status of such water under applicable federal and state law. The status of such a waterbody may therefore be determined as a result of litigation or other legal developments regarding that specific waterbody. The two general categories of waters to which the HHC apply, however, will remain constant.

Three commenters asserted that this approach is overly broad and vague. EPA disagrees. Here, EPA has clearly described the specific categories of waters to which this rule applies, which flow directly from and are bounded by the express provisions of the settlement acts. The purpose of the rule is to establish WQS that address EPA's disapprovals and necessity determination and adequately protect applicable designated uses. It is both reasonable and appropriate, and consistent with prior practice under the CWA, for EPA to promulgate these WQS without a final adjudication or determination of the precise boundaries of each specific waterbody that falls within each category, so long as the WQS protect the uses and clearly apply only to waters subject to those uses. As described below, the extent of waters in Indian lands is largely established under the settlement acts and subsequent trust conveyances that have occurred under the terms of those acts. But there are isolated disputes and one pending lawsuit regarding the boundaries of Indian lands and the geographic extent of tribal sustenance fishing rights. EPA's approach is designed to be responsive to the potential that these disputes could result in clarifications of the particular boundaries of the disputed waters, while maintaining protection of the tribes' sustenance fishing use.[69]

a. Adequate Notice

Although this rulemaking does not identify the exact boundaries of each waterbody or portion thereof covered by the rule, it nevertheless provides adequate notice to potentially regulated parties because the categories are clearly described, and waters that could reasonably fall within these two categories are either precisely described in the settlement acts or, in circumstances where there are ongoing disputes or uncertainties, located in limited areas in Maine representing a small fraction of all waters within the state. In fact, any uncertainties as to the scope of waters in Indian lands largely pertain to particular stretches of the Penobscot and St. Croix Rivers. EPA anticipates that any existing uncertainty will be addressed by the current litigation regarding the Main Stem of the Penobscot River and DOI's work with the Passamaquoddy Tribe to determine the status of the relevant stretch of the St. Croix River.

The first category—"waters in Indian lands"—covers waters within a tribe's reservation or trust lands. The tribes' trust lands are all the result of modern conveyances recorded after the 1980 settlements, the boundaries of which are described in the deeds for those parcels. Although there are ongoing disputes over the extent of some of the reservation lands, the Indian settlement acts identify the outer bounds of what could reasonably be identified as reservation land. In the Economic Analysis conducted for this rulemaking, EPA took a conservative approach and identified all discharges for which there is any reasonable potential that they discharge to waters in Indian lands or their tributaries. In doing so, EPA identified a total of only 33 facilities, a small subset of the 478 Maine Pollutant Discharge Elimination System (MEPDES) permitted dischargers in the state.

One commenter expressed concern that the boundaries of the sustenance fishing designated use as it applies to the tribes' trust lands may expand if any of the tribes exercise what remaining authority they may have under the settlement acts to purchase and take more land into trust outside the reservations. However, EPA did not intend for its approval and disapproval decisions on WQS for waters in Indian lands, or for this rule, to apply to waters that may be part of after-acquired trust lands. EPA's promulgation of HHC to address the disapprovals is thus limited to waters in trust lands as of February 2, 2015, and waters in the Southern Tribes' reservations. EPA's promulgation of HHC in accordance with the Administrator's determination is likewise limited. The sustenance fishing designated use and appropriate HHC would not apply to any waters in after-acquired trust lands until such time as the state or EPA took further action under the CWA. This step would give interested parties an opportunity to comment on that action. EPA also notes that where the settlement acts have not already specifically identified parcels that qualify to be taken into trust, they clearly provide for the state to receive notice of any trust acquisition.[70]

The second category is quite narrow, limited to waterbodies outside of Indian lands where the Southern Tribes' sustenance fishing right reserved in MIA section 6207(4) applies. Currently, the Main Stem of the Penobscot River is the only waterbody in the state that has been adjudicated to be a waterbody outside of Indian lands to which a tribe, the Penobscot Nation, has a right to sustenance fish based in MIA.[71] The "Main Stem" addressed by the court in the *Mills* litigation is clearly identified as "a portion of the Penobscot River and stretches from Indian Island north to the confluence of the East and West Branches of the Penobscot River."[72] Significantly, the court in *Mills* concluded that the Penobscot Nation has a sustenance fishery reservation, under MIA section 6207, in "the waters

[68] For "waters in Indian lands," this final rule promulgates HHC as well as six other WQS (narrative and numeric bacteria criteria for the protection of primary contact recreation and shellfishing; ammonia criteria for protection of aquatic life in fresh waters; provisions that ensure that WQS apply to HHC even if they are naturally occurring; a mixing zone policy; a pH criterion for fresh waters; and tidal temperature criteria). For the second category of waters, where there is a sustenance fishing designated use outside of waters in Indian lands, the rule promulgates only the HHC. This response focuses on the HHC because the HHC apply to the broadest set of tribal-related waters and because the comments addressing the geographical scope of the rule are largely framed in terms of concerns about the HHC.

[69] It is important to note that EPA has expressly answered the question of who has jurisdiction over all the waters involved in this matter, irrespective of which category they fall under or which use(s) and criteria apply. EPA did so in its February 2015 decision when it determined that the state has jurisdiction to set WQS over all waterbodies in Maine, including those within tribal reservations and trust lands. EPA is also determining that the HHC at issue will apply only where designated use of sustenance fishing applies. EPA is not, however, making any determinations in this rulemaking on the narrower technical question regarding the full extent of precise waters to which that use, and thus the HHC, apply.

[70] 30 MRSA 6205–A(1); 30 MRSA 7204.

[71] *Penobscot Nation* v. *Mills*, 151 F. Supp. 3d at 222–223.

[72] *Id.* at 186.

adjacent to its island reservation," under MIA section 6203.[73] Accordingly, in scenarios like the one addressed by the court in *Mills,* waters that fall under this second category will likely share a geographic nexus with the Southern Tribes' reservations.

This second category thus represents a limited universe of potential waters that fall outside the existing waters in Indian lands only to the extent the fishing right reserved in MIA section 6207(4) extends beyond the reservation of a Southern Tribe under MIA section 6203 under the reasoning of the U.S. District Court in the *Mills* litigation. In the event the law of the case in the *Mills* litigation changes, it is also possible that no waters would fall within this second category. Accordingly, the waters covered by this rule are at most the waters in Indian lands and the limited additional waters where a Southern Tribe has a right to sustenance fish, which will likely share a geographic nexus with the tribes' reservations.

b. General Approach

Under the CWA, it is not uncommon for a state, authorized tribe, or EPA to take an approach, when promulgating WQS (*i.e.,* designated uses, water quality criteria, and antidegradation policies), of identifying a category of waters to which the WQS apply, where additional information will need to be gathered before the implementing agency can determine whether such WQS applies to any specific waterbody. For these WQS, any uncertainties regarding applicability to a specific waterbody are appropriately resolved as the standards are implemented through various actions under the CWA, such as NPDES permitting and listing of impaired waters under section 303(d) of the CWA, among others.

An example of this approach already in effect in Maine involves the state's criteria for dissolved oxygen (DO). Maine's longstanding DO criteria for Class B and C waters include generally applicable criteria as well as more protective criteria that apply only to fish spawning areas in the colder months.[74] The DO criteria do not list each specific fish spawning area in Class B or C waters, nor do the more general classifications of fresh waters at 38 M.R.S. 467 and 468. Rather, Maine must determine whether a spawning area is implicated on a permit-by-permit basis.[75] Similarly, Maine's WQS contain certain natural conditions provisions that alter the way in which pollutants may be treated for WQS purposes if they are naturally occurring.[76] The waters in which such conditions occur are not identified in the WQS themselves but rather must be determined on a case-by-case basis.

There are numerous examples from other states identifying general categories of waters to which certain standards apply. For example, the State of Wisconsin has several narrative water quality criteria that apply to "wetlands," defined as "an area where water is at, near or above the land surface long enough to be capable of supporting aquatic or hydrophytic vegetation and which has soils indicative of wet conditions."[77] Florida has promulgated numeric interpretations of its narrative nutrient criteria that apply to "streams," defined as "a predominantly fresh surface waterbody with perennial flow in a defined channel with banks during typical climatic and hydrologic conditions for its region within the state," but excluding certain non-perennial stream segments, ditches, canals, and other conveyances that have various characteristics as defined in the regulation.[78] Whether a specific discharge implicates a waterbody that falls within these general categories, and thus whether the associated water quality criteria apply, is left to the implementing agency to determine by applying the case-specific facts to the general category definition.

EPA is taking a similar approach here, by defining two general categories of waters covered by this rule. The determination of whether a specific waterbody falls within one of these categories will be made, in the first instance, by the implementing (*e.g.,* permitting) authority. Determining whether a waterbody is within one of the two categories covered by EPA's rule will require application of the facts relevant to that particular waterbody to the definition of the category. However, disputes regarding the extent of waters which may be subject to this rule are primarily limited to stretches of two waterbodies, as described above. Therefore, EPA anticipates that the case-by-case identification of whether a waterbody is covered by this rule will be straight-forward in most instances.

E. Other Water Quality Standards

1. Mixing Zone Policy for Waters in Indian Lands

Two commenters asserted that EPA does not have the legal authority or the scientific basis to ban mixing zones for bioaccumulative pollutants outside the Great Lakes. EPA disagrees. EPA's authority to promulgate a mixing zone policy, and to prohibit its use for bioaccumulative pollutants, derives from section 303(c) of the CWA. While states are not required to adopt mixing zone policies, when a state includes a mixing zone policy in its water quality standards, the policy is subject to EPA's review and approval or disapproval. 40 CFR 131.13. Adoption of a mixing zone policy is necessary for a mixing zone to be authorized in the issuance of a CWA discharge permit. EPA disapproved Maine's mixing zone policy for waters in Indian lands because it did not meet the requirements of the CWA. Recognizing that Maine intended to authorize mixing zones as part of its water quality standards, EPA, pursuant to CWA section 303(c)(4)(A), is now promulgating a mixing zone policy that includes protections that were missing from Maine's policy that EPA disapproved. EPA has determined that a ban on a mixing zone for bioaccumulating pollutants is reasonable and appropriate for the reasons discussed below, and nothing in CWA section 303(c) or EPA's implementing regulations constrains EPA's legal authority to do so.

EPA guidance has long cautioned states and tribes against mixing zone policies that allow mixing zones for discharges of bioaccumulative pollutants, since they may cause significant ecological and human health risks such that the designated use of the waterbody as a whole may not be protected.[79] [80] [81] EPA's WQS Handbook notes that this is particularly the case where mixing zones may encroach on

[73] *Id.* at 221–222.

[74] 38 M.R.S. sections 465.3.B and 465.4.B, respectively. Note that as part of this rulemaking, EPA is promulgating dissolved oxygen criteria for Class A waters, also with specific criteria that apply to fish spawning areas.

[75] 06–096–585 Code of Maine Rules, Chapter 584, Surface Water Quality Criteria for Toxic Pollutants.

[76] This rule includes provisions to ensure that these natural conditions WQS are not applied to HHC.

[77] Wis. Admin. Code NR section 103.03 (2016). For additional examples of states with WQS for "wetlands," *see* 5 Colo. Code Regs. section 1002–31.11 (LexisNexis 2016); Iowa Admin. Code r. 567–61.3 (2016); Minn. R. 7050.0186 (2016)l 117 Neb. Admin. Code section 7–001 (2015); 15A N.C. Admin. Code 02B.0231 (2016); Ohio Admin Code 3475–1–50.

[78] Fla. Admin. Code. Ann. r. 62–302.200 (2016).

[79] USEPA. 1991. Technical Support Document for Water Quality-based Toxics Control. US Environmental Protection Agency, Office of Water, Washington, DC. Section 2.2.2, p. 34; Section 4.3.1, p. 71; Section 4.3.4, p. 72; Section 4.6.2, p. 87. EPA 505–290–001.

[80] Final Rule to Amend the Final Water Quality Guidance for the Great Lakes System to Prohibit Mixing Zones for Bioaccumulative Chemicals of Concern, 65 FR 67638, 67641–42 (November 13, 2000); 40 CFR part 132.

[81] USEPA. 2014. Water Quality Standards Handbook, Chapter 5 at 5–8. EPA 820–B–14–008.

areas used for fish harvesting. The waters in Indian lands, to which this mixing zone policy will apply, not only are used for fish harvesting but have a designated use of sustenance fishing. By their very nature, bioaccumulative pollutants are those that accumulate in fish and shellfish and other organisms. Moreover, as EPA has explained elsewhere, the effects of such pollutants are not short term, nor are they limited to a localized zone of initial dilution.[82] Since the effects could be persistent and occur well beyond the mixing zone, there is no assurance that all designated uses would be protected. EPA is particularly concerned about the potential adverse effects of such a mixing zone on the sustenance fishing use for those reasons. EPA also notes that the state has not in the past granted mixing zones for bioaccumulative pollutants, and neither the state nor the regulated community in Maine have raised a concern in their comments about EPA's proposal that mixing zones cannot be authorized for bioaccumulative pollutants. Therefore, EPA's final rule includes the prohibition on a mixing zone for bioaccumulative pollutants.

2. Bacteria Criteria for Waters in Indian Lands

a. Recreational Bacteria Criteria

EPA received one comment in opposition to the proposed recreational bacteria criteria. Maine DEP objected to EPA's inclusion of wildlife sources in the scope of the bacteria criteria for several reasons. It argued that inclusion of wildlife sources is beyond the scope of the CWA, which DEP asserts is only concerned with human pollution, and that *E.coli* are used only as an indicator of human sewage. It also asserted that EPA incorrectly "construed 'animal sources' of bacteria from studies as equivalent to naturally occurring 'wildlife sources' in the proposed rule"; that EPA cited to only one study in EPA's 2012 Recreational Water Quality Criteria (RWQC) that links potential human health risks with non-human sources of fecal contamination; and that because bacteria from natural sources are likely to be "temporal," removing a use (recreation in and on the water) simply due to a high level of *E. coli* where the bacteria source is of natural origins "is, at best, unwise."[83] None of these comments provides a basis for excluding wildlife sources from EPA's rule, which is based on the 2012 recommended RWQC.

First, the CWA does not limit EPA to consideration of human causes of pollution when developing water quality criteria protective of human health. CWA section 502(23) defines "pathogen indicator" to mean "a substance that indicates the potential for human infectious disease" with no limitation on source. EPA's recommended RWQC identify levels of fecal indicator bacteria (which include fecal coliforms, *E.coli,* enterococci or *Enterococcus* spp.) that will be protective of human health. Those pathogen indicators are not limited to pathogens coming only from human sources.[84]

Second, *E. coli* are typically found in the digestive systems of warm-blooded animals, and can be used to indicate the presence of fecal material in surface waters regardless of their origin, whether from humans, domestic animals, or wildlife. The literature provides many studies documenting wildlife as sources of *E. coli.*[85] [86] [87] For decades, EPA's regulatory premise concerning recreational water quality has been that nonhuman-derived human pathogens, including those from wildlife, in fecally contaminated waters present a potential risk to human health.[88] EPA has investigated sources of fecal contamination in its *Review of Published Studies to Characterize Relative Risks from Different Sources of Fecal Contamination in Recreational Waters*[89] and *Review of Zoonotic Pathogens in Ambient Waters,*[90] and determined that both human and animal feces, including feces from wildlife, in recreational waters do pose potential risks to human health. EPA again confirmed, in the development of the 2012 RWQC, that wildlife can carry both zoonotic pathogens capable of causing illness in humans and fecal indicator bacteria, and these microbes can be transmitted to surface waters.[91]

Contrary to the commenter's assertion, EPA cited more than one study in the RWQC that links potential human health risks with non-human sources of fecal contamination.[92] Furthermore, in the development of the RWQC, EPA did not, as the commenter claimed, equate bacteria from domestic animal sources to those of naturally occurring wildlife. On the contrary, EPA's research for the development of the RWQC clearly recognized that there is a risk differential between human and non-human animal sources, as well as among non-human animal sources.[93] Nevertheless, because zoonotic pathogens are present in animal (including wildlife) fecal matter, creating a potential risk from recreational exposure to zoonotic pathogens in animal-impacted waters, EPA found no scientific basis on which to exclude wildlife altogether from the scope of the RWQC, nor has the commenter provided any scientific basis for excluding wildlife sources altogether from the scope of the EPA's rule for waters in Indian lands in Maine.

Maine DEP commented that because bacteria from natural sources are likely to be "temporal," removing a use (recreation in and on the water) simply due to a high level of *E. coli* where the bacteria source is of natural origins "is, at best, unwise." This circumstance is not a justification for excluding wildlife sources altogether from the scope of recreational bacteria criteria. EPA recognizes that health risks associated with exposure to waters impacted by animal sources can vary substantially, depending on the animal source. In some cases, these risks can be similar to exposure to human fecal contamination, and in other cases, the risk is lower.[94] [95] [96] [97] In situations with

[82] Id.

[83] The commenter also refers to the 1997 Guidance ("Establishing Site Specific Aquatic Life Criteria Equal to Natural Background") "cited by EPA," and states that it "stands for possible reevaluation of uses based on known background concentrations not establishing criteria which necessitates regulation of naturally occurring bacteria. . . ." EPA did not cite to that guidance in the context of the proposed bacteria criteria, and it has no bearing on EPA's decision to include wildlife sources in the scope of the criteria.

[84] USEPA. 2012. Recreational Water Quality Criteria. U.S. Environmental Protection Agency, Office of Water, Washington, DC. Office of Water 820–F–12–058, pages 1–9.

[85] Levesque, B., P. Brousseau, P. Simard, E. Dewailly, M. Meisels, D. Ramsay, and J. Joly. 1993. Impact of the ring-billed gull (*Larus delawarenesis*) on the microbiological quality of recreational water. *Applied and Environmental Microbiology* 59 (4) 1128–1230.

[86] Center for Watershed Protection. 1999. Microbes and urban watersheds: concentrations, sources, and pathways. *Watershed Protection Techniques.* 3(1):554–565.

[87] Makino. S., H. Kobori, H. Asakura, M. Watarai, T. Shirahata, T. Ikeda, K. Takeshi and T. Tsukamoto. 2000. Detection and characterization of Shiga toxin-producing *Escherichia coli* from seagulls. *Epidemiol. Infect.* 125: 55–61.

[88] USEPA. 2009. Review of Published Studies to Characterize Relative Risks from Different Sources of Fecal Contamination in Recreational Water. U.S. Environmental Protection Agency, Office of Water, Health and Ecological Criteria Division. Washington, DC. EPA 822–R–09–001.

[89] Id.

[90] USEPA. 2009. Review of Zoonotic Pathogens in Ambient Waters. U.S. Environmental Protection Agency, Office of Water, Health and Ecological Criteria Division. Washington, DC. EPA–822–R–09–002.

[91] USEPA. 2012. Recreational Water Quality Criteria. U.S. Environmental Protection Agency, Office of Water, Washington, DC. Office of Water 820–F–12–058.

[92] Id., pages 34–38.

[93] Id., pages 36–38.

[94] Schoen, M.E. and N.J. Ashbolt. 2010. Assessing pathogen risk to swimmers at non-sewage impacted

non-human sources of fecal contamination, the state may choose to conduct sanitary surveys, epidemiological studies and/or a Quantitative Microbial Risk Assessment (QMRA). If sanitary surveys, water quality information, or health studies show the sources of fecal contamination to be non-human, and the indicator densities reflect a different risk profile, then the state has the option to develop and adopt site-specific alternative recreational bacteria criteria to reflect the local environmental conditions and human exposure patterns.[98] For waterbodies where non-human fecal sources predominate, QMRA can be used to determine a different enterococci or *E. coli* criteria value that is equally protective as the criteria EPA is promulgating today.[99]

Maine DEP also objected to EPA's proposal to apply the bacteria criteria year round, and requested that EPA exclude the period of October 1–May 14, similar to Maine's disapproved criteria. The state asserted that EPA had not demonstrated that recreational activities occur in this time frame. Other commenters supported the year round criteria. EPA disagrees with the state's characterization of the record. First, the activities cited by EPA in the proposal were merely examples of readily available information that recreation does occur during the period October 1 to May 14. The record also included information from one tribal member confirming that activities in and on the Penobscot River occur whenever the waters are ice free. In its comment supporting the proposed criteria, the Penobscot Nation specifically noted that the tribe engages in year round activities in and on the Penobscot River, including for paddling, fishing, and ceremonial uses. EPA had invited comment on whether a seasonal term shorter than October 1–May 14, during which the recreational bacteria criteria would not apply, would still adequately protect recreational uses. EPA received no comments that provided specific information that could support the establishment of a seasonal timeframe in which the absence of bacteria criteria would be protective of uses. Therefore, EPA has retained the year round applicability in the final rule.

IV. Economic Analysis

EPA is not required under CWA section 303(c) or its implementing regulations at 40 CFR part 131 to conduct an economic analysis regarding implementation of these EPA-promulgated WQS. For the purpose of transparency, EPA conducted a cost analysis for the WQS in this final rule. Potential economic effects of this rule are presented here.

These WQS may serve as a basis for development of NPDES permit limits. Maine has NPDES permitting authority and retains considerable discretion in implementing standards. EPA evaluated the potential costs to NPDES dischargers associated with state implementation of EPA's final criteria. This analysis is documented in "Final Economic Analysis for Promulgation of Certain Federal Water Quality Criteria Applicable to Maine," which can be found in the docket for this rulemaking.

Any NPDES-permitted facility that discharges pollutants for which the revised WQS are more stringent than the previously applicable WQS could potentially incur increased compliance costs. The types of affected facilities could include industrial facilities and POTWs discharging wastewater to surface waters (*i.e.,* point sources). EPA did not attribute compliance with water quality-based effluent limitations (WQBELs) reflective of Maine's existing (hereafter "baseline") WQS to the final rule. Once in compliance with WQBELs reflective of baseline criteria, EPA expects that dischargers will continue to use the same types of controls to come into compliance with any revised WQBELs reflective of the more stringent WQS.

The following final criteria are not expected to result in incremental costs to permitted dischargers: pH, temperature, ammonia, and all but one HHC (for waters in Indian lands); phenol (for state waters outside Indian lands); and dissolved oxygen (for all state waters). As described below, the cost analysis identifies potential costs of compliance with one HHC (bis(2-ethylhexyl)phthalate), bacteria, and the final mixing zone policy for waters in Indian lands.

EPA did not fully evaluate the potential for costs to nonpoint sources. Very little data were available to assess the potential for the rule to result in WQS exceedances attributable to nonpoint sources. It is difficult to model and evaluate the potential cost impacts of this final rule to nonpoint sources because they are intermittent, variable, and occur under hydrologic or climatic conditions associated with precipitation events. Finally, legacy contamination (*e.g.,* in sediment) may be a source of ongoing loading. Atmospheric deposition may also contribute loadings of the pollutants of concern (*e.g.,* mercury). EPA did not estimate sediment remediation costs, or air pollution control costs, for this analysis.

A. Identifying Affected Entities

EPA identified 33 facilities (major and non-major) that discharge to waters in Indian lands or their tributaries, two facilities that discharge phenol to other state waters, and 26 facilities that discharge to Class A waters throughout the state. EPA identified 16 point source facilities that could incur additional costs as a result of this final rule. Of these potentially affected facilities, eight are major dischargers and eight are minor dischargers. Two are industrial dischargers and the remaining 14 are publicly owned treatment works (POTWs). EPA did not include general permit facilities in its analysis because data for such facilities are limited. EPA evaluated all of the potentially affected facilities.

EPA does not agree with the comment that its economic analysis ("EA") was deficient because uncertainty—including with respect to the geographic scope of the rule's applicability—constrained the Agency's ability to assess the economic impacts of the rule. Although the commenter is correct that the geographic extent of the waters covered by this promulgation could change due to litigation or other legal developments regarding Indian land status, EPA used an inclusive approach in its analysis that accounted for all facilities that could reasonably fall within the two general categories of waters to which the HHC may apply. If the geographic scope of waters to which the HHC apply is smaller, then fewer facilities will be affected by the rule and costs will be lower.

B. Method for Estimating Costs

For the 16 facilities that may incur costs, EPA evaluated existing baseline permit conditions and the potential to exceed new effluent limits based on the

recreational beaches. *Environmental Science and Technology* 44(7): 2286–2291.

[95] Soller, J.A., M.E. Schoen, T. Bartrand, J.E. Ravenscroft, N.J. Ashbolt. 2010. Estimated human health risks from exposure too recreational waters impacted by human and non-human sources of faecal contamination. *Water Research* 44: 4674–4691.

[96] Soller, J.A., T. Bartrand, J. Ravenscroft, M. Molina, G. Whelan, M. Schoen, N. Ashbolt. 2015. Estimated health risks from recreational exposures to stormwater runoff containing animal faecal material. *Environmental Modelling and Software* 72: 21–32.

[97] USEPA. 2010. Quantitative Microbial Risk Assessment to Estimate Illness in Freshwater Impacted by Agricultural Animals Sources of Fecal Contamination. U.S. Environmental Protection Agency, Office of Water, Washington, DC. EPA 822–R–10–005.

[98] USEPA. 2012. Recreational Water Quality Criteria. U.S. Environmental Protection Agency, Office of Water, Washington, DC. Office of Water 820–F–12–058. Section 6.2.

[99] Id., Section 6.2.2.

final rule. In instances of exceedances of projected effluent limitations under the final criteria, EPA determined the likely compliance scenarios and costs. Only compliance actions and costs that would be needed above the baseline level of controls are attributable to the rule.

EPA assumed that dischargers will pursue the least cost means of compliance with WQBELs. Incremental compliance actions attributable to the rule may include pollution prevention, end-of-pipe treatment, and alternative compliance mechanisms (*e.g.,* variances). EPA annualized capital costs, including study (*e.g.,* variance) and program (*e.g.,* pollution prevention) costs, over 20 years using a 3% discount rate to obtain total annual costs per facility.

C. Results

1. Costs From Final Human Health Criteria Applicable to Waters in Indian Lands

Based on this approach, EPA identified one facility that has reasonable potential to exceed permit effluent limits based on one final criterion (bis(2-ethylhexyl)phthalate). EPA calculated a projected effluent limitation based on the same procedures utilized by Maine in its NPDES permitting practices. To estimate potential costs to this facility from meeting the projected effluent limits, EPA considered source controls, end-of-pipe treatments, and alternative compliance mechanisms (*e.g.* variances). For this provision, EPA estimated total annual compliance costs of $28,000 (for source controls) to $43,000 (for end-of-pipe treatments).

2. Costs From Final Recreational Bacteria Criteria for Waters in Indian Lands

EPA does not expect the final recreational bacteria criteria to result in any new treatment processes being added to facilities, but does expect that 14 facilities with existing limitations for bacteria will need to operate their disinfection systems year-round, extending treatments for an additional 226 days per year. EPA estimated the costs of chemicals and monitoring during this extended period based on the facilities' effluent flow rate, type of treatment, and monitoring costs. For this provision, EPA estimated total annual compliance costs of $185,000 to $705,000.

3. Costs From Final Mixing Zone Policy

EPA identified one facility with an existing permit that establishes a thermal mixing zone that may affect waters in Indian lands. It is unknown whether reductions in thermal loads will be necessary to reduce the mixing zone to a size and configuration that would meet the new mixing zone policy at this facility; possible outcomes include the need for facility-specific studies, revisions to permit conditions that could require recalculating thermal discharge limits, or changes in facility processes or operations to reduce the thermal load. To estimate the costs of this provision, EPA used as lower-bound the cost to conduct a study to characterize the discharger's existing thermal plume and support evaluation of whether the current mixing zone complies with the new mixing zone policy ($1,000, annual cost for 20 years) and as upper-bound the potential cost impacts for installing new cooling towers at the facility ($273,000, annualized over 30 years at a 3 percent discount rate).

4. Total Costs

Table 3 summarizes the estimated point source compliance costs from the final WQS. EPA estimates that the total annual compliance costs for all provisions may be in the range of $214,000 to $1.0 million.

TABLE 3—SUMMARY OF ESTIMATED POINT SOURCE COMPLIANCE COSTS

Final WQS	Annualized costs (thousands; 2014$) [1]
Human health criteria for waters in Indian lands	$28–$43
Recreational bacteria criteria for waters in Indian lands	185–705
Mixing zone policy	1–273
Total	214–1,021

[1] One-time costs are annualized over 20 years (30 years in the case of cooling towers under the mixing zone policy) using a 3% discount rate.

V. Statutory and Executive Order Reviews

A. Executive Order 12866 (Regulatory Planning and Review) and Executive Order 13563 (Improving Regulation and Regulatory Review)

This action is a significant regulatory action that was submitted to the Office of Management and Budget (OMB) for review. Any changes made in response to OMB recommendations have been documented in the docket.

EPA prepared an analysis of the potential costs and benefits associated with this action. This analysis is summarized in section IV of the preamble and is available in the docket.

B. Paperwork Reduction Act

This action does not impose any direct new information collection burden under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* Actions to implement these WQS could entail additional paperwork burden. Burden is defined at 5 CFR 1320.3(b). This action does not include any information collection, reporting, or record-keeping requirements.

C. Regulatory Flexibility Act

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. This action will not impose any requirements on small entities. Small entities, such as small businesses or small governmental jurisdictions, are not directly regulated by this rule. This rule will thus not impose any requirements on small entities.

EPA-promulgated standards are implemented through various water quality control programs including the NPDES program, which limits discharges to navigable waters except in compliance with an NPDES permit. The CWA requires that all NPDES permits include any limits on discharges that are necessary to meet applicable WQS. Thus, under the CWA, EPA's promulgation of WQS establishes standards that the state implements through the NPDES permit process. The state has discretion in developing discharge limits, as needed to meet the standards. As a result of this action, the

State of Maine will need to issue permits that include limitations on discharges necessary to comply with the standards established in the final rule. In doing so, the state will have a number of approaches available to it associated with permit writing. While Maine's implementation of the rule may ultimately result in new or revised permit conditions for some dischargers, including small entities, EPA's action, by itself, does not directly impose any requirements on small entities. Any impact from EPA's action on small entities would therefore only be indirect because the requirements of this rule are not self-implementing.

D. Unfunded Mandates Reform Act

This action contains no federal mandates under the provisions of Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), 2 U.S.C. 1531–1538 for state, local, or tribal governments or the private sector. As these water quality criteria are not self-implementing, EPA's action imposes no enforceable duty on any state, local or tribal governments or the private sector. Therefore, this action is not subject to the requirements of sections 202 or 205 of the UMRA.

This action is also not subject to the requirements of section 203 of UMRA because it contains no regulatory requirements that could significantly or uniquely affect small governments.

E. Executive Order 13132

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government. This rule does not alter Maine's considerable discretion in implementing these WQS, nor will it preclude Maine from adopting WQS in the future that EPA concludes meet the requirements of the CWA, which will eliminate the need for federal standards. Thus, Executive Order 13132 does not apply to this action.

F. Executive Order 13175 (Consultation and Coordination With Indian Tribal Governments)

This action has tribal implications, however, it would neither impose substantial direct compliance costs on federally recognized tribal governments, nor preempt tribal law. Therefore, consultation is not required under the Executive Order. In the state of Maine, there are four federally recognized Indian tribes represented by five tribal governments. As a result of the unique jurisdictional provisions of the Maine Indian Claims Settlement Act, as described above, the state has jurisdiction for setting water quality standards for all waters in Indian lands in Maine. This rule will have no effect on that jurisdictional arrangement. This rule would affect federally recognized Indian tribes in Maine because the water quality standards will apply to all waters in Indian lands. Some will also apply to waters outside of Indian lands where the sustenance fishing designated use established by 30 M.R.S. 6207(4) and (9) applies. Finally, many of the final criteria for such waters are protective of the sustenance fishing designated use, which is based in the Indian settlement acts in Maine.

The EPA consulted with tribal officials under the EPA Policy on Consultation and Coordination with Indian Tribes early in the process of developing this rule to permit them to have meaningful and timely input into its development. Summaries of those consultations are provided in the following documents: "Maine WQS Tribal Leaders Consultation 4–27–16;" "Maine WQS Technical Consultation 4–11–16;" and "Summary of Tribal Consultations Regarding Water Quality Standards Applicable to Waters in Indian Lands within the State of Maine," which are available in the docket for this rulemaking.

G. Executive Order 13045 (Protection of Children From Environmental Health and Safety Risks)

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that the EPA has reason to believe may disproportionately affect children, per the definition of "covered regulatory action" in section 2–202 of the Executive Order. This action is not subject to Executive Order 13045 because it does not concern an environmental health risk or safety risk that may disproportionately affect children.

H. Executive Order 13211 (Actions That Significantly Affect Energy Supply, Distribution, or Use)

This action is not a "significant energy action" because it is not likely to have a significant adverse effect on the supply, distribution or use of energy.

I. National Technology Transfer and Advancement Act of 1995

This action does not involve technical standards.

J. Executive Order 12898 (Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations)

The human health or environmental risk addressed by this action will not have potential disproportionately high and adverse human health or environmental effects on minority, low-income or indigenous populations.

Conversely, this action will increase protection for indigenous populations in Maine from disproportionately high and adverse human health effects. EPA developed the criteria included in this rule specifically to protect Maine's designated uses, using the most current science, including local and regional information on fish consumption. Applying these criteria to waters in the state of Maine will afford a greater level of protection to both human health and the environment.

K. Congressional Review Act (CRA)

This action is subject to the CRA, and EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. This action is not a "major rule" as defined by 5 U.S.C. 804(2).

List of Subjects in 40 CFR Part 131

Environmental protection, Incorporation by reference, Indians—lands, Intergovernmental relations, Reporting and recordkeeping requirements, Water pollution control.

Dated: December 8, 2016.

Gina McCarthy,

Administrator.

For the reasons set forth in the preamble, EPA amends 40 CFR part 131 as follows:

PART 131—WATER QUALITY STANDARDS

■ 1. The authority citation for part 131 continues to read as follows:

Authority: 33 U.S.C. 1251 *et seq.*

Subpart D—Federally Promulgated Water Quality Standards

■ 2. Add § 131.43 to read as follows:

§ 131.43 Maine.

(a) *Human health criteria for toxics for waters in Indian lands and for Waters outside of Indian lands where the sustenance fishing designated use established by 30 M.R.S. 6207(4) and (9) applies.* The criteria for toxic pollutants for the protection of human health are set forth in the following table 1:

TABLE 1—HUMAN HEALTH CRITERIA

Chemical name	CAS No.	Water and organisms (µg/L)	Organisms only (µg/L)
1. 1,1,2,2-Tetrachloroethane	79–34–5	0.09	0.2
2. 1,1,2-Trichloroethane	79–00–5	0.31	0.66
3. 1,1-Dichloroethylene	75–35–4	300	1000
4. 1,2,4,5-Tetrachlorobenzene	95–94–3	0.002	0.002
5. 1,2,4-Trichlorobenzene	120–82–1	0.0056	0.0056
6. 1,2-Dichlorobenzene	95–50–1	200	300
7. 1,2-Dichloropropane	78–87–5		2.3
8. 1,2-Diphenylhydrazine	122–66–7	0.01	0.02
9. 1,2-Trans-Dichloroethylene	156–60–5	90	300
10. 1,3-Dichlorobenzene	541–73–1	1	1
11. 1,3-Dichloropropene	542–75–6	0.21	0.87
12. 1,4-Dichlorobenzene	106–46–7		70
13. 2,4,5-Trichlorophenol	95–95–4	40	40
14. 2,4,6-Trichlorophenol	88–06–2	0.20	0.21
15. 2,4-Dichlorophenol	120–83–2	4	4
16. 2,4-Dimethylphenol	105–67–9	80	200
17. 2,4-Dinitrophenol	51–28–5	9	30
18. 2,4-Dinitrotoluene	121–14–2	0.036	0.13
19. 2-Chloronaphthalene	91–58–7	90	90
20. 2-Chlorophenol	95–57–8	20	60
21. 2-Methyl-4,6-Dinitrophenol	534–52–1	1	2
22. 3,3′-Dichlorobenzidine	91–94–1	0.0096	0.011
23. 4,4′-DDD	72–54–8	9.3E–06	9.3E–06
24. 4,4′-DDE	72–55–9	1.3E–06	1.3E–06
25. 4,4′-DDT	50–29–3	2.2E–06	2.2E–06
26. Acenaphthene	83–32–9	6	7
27. Acrolein	107–02–8	3	
28. Aldrin	309–00–2	5.8E–08	5.8E–08
29. alpha-BHC	319–84–6	2.9E–05	2.9E–05
30. alpha-Endosulfan	959–98–8	2	2
31. Anthracene	120–12–7	30	30
32. Antimony	7440–36–0	5	40
33. Benzene	71–43–2	0.40	1.2
34. Benzo (a) Anthracene	56–55–3	9.8E–05	9.8E–05
35. Benzo (a) Pyrene	50–32–8	9.8E–06	9.8E–06
36. Benzo (b) Fluoranthene	205–99–2	9.8E–05	9.8E–05
37. Benzo (k) Fluoranthene	207–08–9	0.00098	0.00098
38. beta-BHC	319–85–7	0.0010	0.0011
39. beta-Endosulfan	33213–65–9	3	3
40. Bis(2-Chloro-1-Methylethyl) Ether	108–60–1	100	300
41. Bis(2-Chloroethyl) Ether	111–44–4	0.026	0.16
42. Bis(2-Ethylhexyl) Phthalate	117–81–7	0.028	0.028
43. Bromoform	75–25–2	4.0	8.7
44. Butylbenzyl Phthalate	85–68–7	0.0077	0.0077
45. Carbon Tetrachloride	56–23–5	0.2	0.3
46. Chlordane	57–74–9	2.4E–05	2.4E–05
47. Chlorobenzene	108–90–7	40	60
48. Chlorodibromomethane	124–48–1		1.5
49. Chrysene	218–01–9		0.0098
50. Cyanide	57–12–5	4	30
51. Dibenzo (a,h) Anthracene	53–70–3	9.8E–06	9.8E–06
52. Dichlorobromomethane	75–27–4		2.0
53. Dieldrin	60–57–1	9.3E–08	9.3E–08
54. Diethyl Phthalate	84–66–2	50	50
55. Dimethyl Phthalate	131–11–3	100	100
56. Di-n-Butyl Phthalate	84–74–2	2	2
57. Dinitrophenols	25550–58–7	10	70
58. Endosulfan Sulfate	1031–07–8	3	3
59. Endrin	72–20–8	0.002	0.002
60. Endrin Aldehyde	7421–93–4	0.09	0.09
61. Ethylbenzene	100–41–4	8.9	9.5
62. Fluoranthene	206–44–0	1	1
63. Fluorene	86–73–7	5	5
64. gamma-BHC (Lindane)	58–89–9	0.33	
65. Heptachlor	76–44–8	4.4E–07	4.4E–07
66. Heptachlor Epoxide	1024–57–3	2.4E–06	2.4E–06
67. Hexachlorobenzene	118–74–1	5.9E–06	5.9E–06
68. Hexachlorobutadiene	87–68–3	0.0007	0.0007
69. Hexachlorocyclohexane-Technical	608–73–1	0.00073	0.00076
70. Hexachlorocyclopentadiene	77–47–4	0.3	0.3

TABLE 1—HUMAN HEALTH CRITERIA—Continued

Chemical name	CAS No.	Water and organisms (µg/L)	Organisms only (µg/L)
71. Hexachloroethane	67–72–1	0.01	0.01
72. Indeno (1,2,3-cd) Pyrene	193–39–5	9.8E–05	9.8E–05
73. Isophorone	78–59–1	28	140
74. Methoxychlor	72–43–5	0.001	
75. Methylene Chloride	75–09–2		90
76. Methylmercury	22967–92–6		0.02 [a] (mg/kg)
77. Nickel	7440–02–0	20	20
78. Nitrobenzene	98–95–3	10	40
79. Nitrosamines		0.00075	0.032
80. N-Nitrosodibutylamine	924–16–3	0.00438	0.0152
81. N-Nitrosodiethylamine	55–18–5	0.00075	0.032
82. N-Nitrosodimethylamine	62–75–9	0.00065	0.21
83. N-Nitrosodi-n-propylamine	621–64–7	0.0042	0.035
84. N-Nitrosodiphenylamine	86–30–6	0.40	0.42
85. N-Nitrosopyrrolidine	930–55–2		2.4
86. Pentachlorobenzene	608–93–5	0.008	0.008
87. Pentachlorophenol	87–86–5	0.003	0.003
88. Phenol	108–95–2	3,000	20,000
89. Polychlorinated Biphenyls (PCBs)	1336–36–3	[b] 4E–06	4E–06 [b]
90. Pyrene	129–00–0	2	2
91. Selenium	7782–49–2	20	60
92. Toluene	108–88–3	24	39
93. Toxaphene	8001–35–2	5.3E–05	5.3E–05
94. Trichloroethylene	79–01–6	0.3	0.5
95. Vinyl Chloride	75–01–4	0.019	0.12
96. Zinc	7440–66–6	300	400

[a] This criterion is expressed as the fish tissue concentration of methylmercury (mg methylmercury/kg fish) and applies equally to fresh and marine waters.
[b] This criterion applies to total PCBs (i.e., the sum of all congener or isomer or homolog or Aroclor analyses).

(b) *Bacteria criteria for waters in Indian lands.* (1) The bacteria content of Class AA and Class A waters shall be as naturally occurs, and the minimum number of *Escherichia coli* bacteria shall not exceed a geometric mean of 100 colony-forming units per 100 milliliters (cfu/100 ml) in any 30-day interval; nor shall 320 cfu/100 ml be exceeded more than 10% of the time in any 30-day interval.

(2) In Class B, Class C, and Class GPA waters, the number of *Escherichia coli* bacteria shall not exceed a geometric mean of 100 colony forming units per 100 milliliters (cfu/100 ml) in any 30-day interval; nor shall 320 cfu/100 ml be exceeded more than 10% of the time in any 30-day interval.

(3) The bacteria content of Class SA waters shall be as naturally occurs, and the number of *Enterococcus* spp. bacteria shall not exceed a geometric mean of 30 cfu/100 ml in any 30-day interval, nor shall 110 cfu/100 ml be exceeded more than 10% of the time in any 30-day interval.

(4) In Class SA shellfish harvesting areas, the numbers of total coliform bacteria or other specified indicator organisms in samples representative of the waters in shellfish harvesting areas may not exceed the criteria recommended under the National Shellfish Sanitation Program, United States Food and Drug Administration, as set forth in the Guide for the Control of Molluscan Shellfish, 2015 Revision. The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. You may obtain a copy from the U.S. Food and Drug Administration Center for Food Safety and Applied Nutrition, Shellfish and Aquaculture Policy Branch, 5100 Paint Branch Parkway (HFS–325), College Park, MD 20740 or *http://www.fda.gov/Food/GuidanceRegulation/FederalStateFoodPrograms/ucm2006754.htm*. You may inspect a copy at the U.S. Environmental Protection Agency Docket Center Reading Room, William Jefferson Clinton West Building, Room 3334, 1301 Constitution Avenue NW., Washington, DC 20004, (202) 566–1744, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.*

(5) In Class SB and SC waters, the number of *Enterococcus* spp. bacteria shall not exceed a geometric mean of 30 cfu/100 ml in any 30-day interval, nor shall 110 cfu/100 ml be exceeded more than 10% of the time in any 30-day interval.

(c) *Ammonia criteria for fresh waters in Indian lands.* (1) The one-hour average concentration of total ammonia nitrogen (in mg TAN/L) shall not exceed, more than once every three years, the criterion maximum concentration (*i.e.,* the "CMC," or "acute criterion") set forth in Tables 2 and 3 of this section.

(2) The thirty-day average concentration of total ammonia nitrogen (in mg TAN/L) shall not exceed, more than once every three years, the criterion continuous concentration (*i.e.,* the "CCC," or "chronic criterion") set forth in Table 4.

(3) In addition, the highest four-day average within the same 30-day period as in (2) shall not exceed 2.5 times the CCC, more than once every three years.

Table 2. Temperature and pH-Dependent Values of the CMC (Acute Criterion Magnitude)—*Oncorhynchus* spp. Present. (Figure 5a in Aquatic Life Ambient Water Quality Criteria for Ammonia-Freshwater, EPA 822-R-13-001, April 2013.)

	Temperature (°C)																
pH	0-14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
6.5	33	33	32	29	27	25	23	21	19	18	16	15	14	13	12	11	9.9
6.6	31	31	30	28	26	24	22	20	18	17	16	14	13	12	11	10	9.5
6.7	30	30	29	27	24	22	21	19	18	16	15	14	13	12	11	9.8	9.0
6.8	28	28	27	25	23	21	20	18	17	15	14	13	12	11	10	9.2	8.5
6.9	26	26	25	23	21	20	18	17	15	14	13	12	11	10	9.4	8.6	7.9
7.0	24	24	23	21	20	18	17	15	14	13	12	11	10	9.4	8.6	8.0	7.3
7.1	22	22	21	20	18	17	15	14	13	12	11	10	9.3	8.5	7.9	7.2	6.7
7.2	20	20	19	18	16	15	14	13	12	11	9.8	9.1	8.3	7.7	7.1	6.5	6.0
7.3	18	18	17	16	14	13	12	11	10	9.5	8.7	8.0	7.4	6.8	6.3	5.8	5.3
7.4	15	15	15	14	13	12	11	9.8	9.0	8.3	7.7	7.0	6.5	6.0	5.5	5.1	4.7
7.5	13	13	13	12	11	10	9.2	8.5	7.8	7.2	6.6	6.1	5.6	5.2	4.8	4.4	4.0
7.6	11	11	11	10	9.3	8.6	7.9	7.3	6.7	6.2	5.7	5.2	4.8	4.4	4.1	3.8	3.5
7.7	9.6	9.6	9.3	8.6	7.9	7.3	6.7	6.2	5.7	5.2	4.8	4.4	4.1	3.8	3.5	3.2	3.0
7.8	8.1	8.1	7.9	7.2	6.7	6.1	5.6	5.2	4.8	4.4	4.0	3.7	3.4	3.2	2.9	2.7	2.5
7.9	6.8	6.8	6.6	6.0	5.6	5.1	4.7	4.3	4.0	3.7	3.4	3.1	2.9	2.6	2.4	2.2	2.1
8.0	5.6	5.6	5.4	5.0	4.6	4.2	3.9	3.6	3.3	3.0	2.8	2.6	2.4	2.2	2.0	1.9	1.7
8.1	4.6	4.6	4.5	4.1	3.8	3.5	3.2	3.0	2.7	2.5	2.3	2.1	2.0	1.8	1.7	1.5	1.4
8.2	3.8	3.8	3.7	3.5	3.1	2.9	2.7	2.4	2.3	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.2
8.3	3.1	3.1	3.1	2.8	2.6	2.4	2.2	2.0	1.9	1.7	1.6	1.4	1.3	1.2	1.1	1.0	0.96
8.4	2.6	2.6	2.5	2.3	2.1	2.0	1.8	1.7	1.5	1.4	1.3	1.2	1.1	1.0	0.93	0.86	0.79
8.5	2.1	2.1	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.2	1.1	0.98	0.90	0.83	0.77	0.71	0.65
8.6	1.8	1.8	1.7	1.6	1.5	1.3	1.2	1.1	1.0	0.96	0.88	0.81	0.75	0.69	0.63	0.59	0.54
8.7	1.5	1.5	1.4	1.3	1.2	1.1	1.0	0.94	0.87	0.80	0.74	0.68	0.62	0.57	0.53	0.49	0.45
8.8	1.2	1.2	1.2	1.1	1.0	0.93	0.86	0.79	0.73	0.67	0.62	0.57	0.52	0.48	0.44	0.41	0.37
8.9	1.0	1.0	1.0	0.93	0.85	0.79	0.72	0.67	0.61	0.56	0.52	0.48	0.44	0.40	0.37	0.34	0.32
9.0	0.88	0.88	0.86	0.79	0.73	0.67	0.62	0.57	0.52	0.48	0.44	0.41	0.37	0.34	0.32	0.29	0.27

Table 3. Temperature and pH-Dependent Values of the CMC (Acute Criterion Magnitude)—*Oncorhynchus* spp. Absent. (Figure 5b in Aquatic Life Ambient Water Quality Criteria for Ammonia-Freshwater, EPA 822-R-13-001, April 2013.)

	Temperature (°C)																				
pH	0-10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
6.5	51	48	44	41	37	34	32	29	27	25	23	21	19	18	16	15	14	13	12	11	9.9
6.6	49	46	42	39	36	33	30	28	26	24	22	20	18	17	16	14	13	12	11	10	9.5
6.7	46	44	40	37	34	31	29	27	24	22	21	19	18	16	15	14	13	12	11	9.8	9.0
6.8	44	41	38	35	32	30	27	25	23	21	20	18	17	15	14	13	12	11	10	9.2	8.5
6.9	41	38	35	32	30	28	25	23	21	20	18	17	15	14	13	12	11	10	9.4	8.6	7.9
7.0	38	35	33	30	28	25	23	21	20	18	17	15	14	13	12	11	10	9.4	8.6	7.9	7.3
7.1	34	32	30	27	25	23	21	20	18	17	15	14	13	12	11	10	9.3	8.5	7.9	7.2	6.7
7.2	31	29	27	25	23	21	19	18	16	15	14	13	12	11	9.8	9.1	8.3	7.7	7.1	6.5	6.0
7.3	27	26	24	22	20	18	17	16	14	13	12	11	10	9.5	8.7	8.0	7.4	6.8	6.3	5.8	5.3
7.4	24	22	21	19	18	16	15	14	13	12	11	9.8	9.0	8.3	7.7	7.0	6.5	6.0	5.5	5.1	4.7
7.5	21	19	18	17	15	14	13	12	11	10	9.2	8.5	7.8	7.2	6.6	6.1	5.6	5.2	4.8	4.4	4.0
7.6	18	17	15	14	13	12	11	10	9.3	8.6	7.9	7.3	6.7	6.2	5.7	5.2	4.8	4.4	4.1	3.8	3.5
7.7	15	14	13	12	11	10	9.3	8.6	7.9	7.3	6.7	6.2	5.7	5.2	4.8	4.4	4.1	3.8	3.5	3.2	2.9
7.8	13	12	11	10	9.3	8.5	7.9	7.2	6.7	6.1	5.6	5.2	4.8	4.4	4.0	3.7	3.4	3.2	2.9	2.7	2.5
7.9	11	9.9	9.1	8.4	7.7	7.1	6.6	3.0	5.6	5.1	4.7	4.3	4.0	3.7	3.4	3.1	2.9	2.6	2.4	2.2	2.1
8.0	8.8	8.2	7.6	7.0	6.4	5.9	5.4	5.0	4.6	4.2	3.9	3.6	3.3	3.0	2.8	2.6	2.4	2.2	2.0	1.9	1.7
8.1	7.2	6.8	6.3	5.8	5.3	4.9	4.5	4.1	3.8	3.5	3.2	3.0	2.7	2.5	2.3	2.1	2.0	1.8	1.7	1.5	1.4
8.2	6.0	5.6	5.2	4.8	4.4	4.0	3.7	3.4	3.1	2.9	2.7	2.4	2.3	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.2
8.3	4.9	4.6	4.3	3.9	3.6	3.3	3.1	2.8	2.6	2.4	2.2	2.0	1.9	1.7	1.6	1.4	1.3	1.2	1.1	1.0	0.96
8.4	4.1	3.8	3.5	3.2	3.0	2.7	2.5	2.3	2.1	2.0	1.8	1.7	1.5	1.4	1.3	1.2	1.1	1.0	0.93	0.86	0.79
8.5	3.3	3.1	2.9	2.7	2.4	2.3	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.2	1.1	0.98	0.90	0.83	0.77	0.71	0.65
8.6	2.8	2.6	2.4	2.2	2.0	1.9	1.7	1.6	1.5	1.3	1.2	1.1	1.0	0.96	0.88	0.81	0.75	0.69	0.63	0.58	0.54
8.7	2.3	2.2	2.0	1.8	1.7	1.6	1.4	1.3	1.2	1.1	1.0	0.94	0.87	0.80	0.74	0.68	0.62	0.57	0.53	0.49	0.45
8.8	1.9	1.8	1.7	1.5	1.4	1.3	1.2	1.1	1.0	0.93	0.86	0.79	0.73	0.67	0.62	0.57	0.52	0.48	0.44	0.41	0.37
8.9	1.6	1.5	1.4	1.3	1.2	1.1	1.0	0.93	0.85	0.79	0.72	0.67	0.61	0.56	0.52	0.48	0.44	0.40	0.37	0.34	0.32
9.0	1.4	1.3	1.2	1.1	1.0	0.93	0.86	0.79	0.73	0.67	0.62	0.57	0.52	0.48	0.44	0.41	0.37	0.34	0.32	0.29	0.27

Table 4. Temperature and pH-Dependent Values of the CCC (Chronic Criterion Magnitude). (Figure 6 in Aquatic Life Ambient Water Quality Criteria for Ammonia-Freshwater, EPA 822-R-13-001, April 2013.)

	Temperature (°C)																							
pH	0-7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
6.5	4.9	4.6	4.3	4.1	3.8	3.6	3.3	3.1	2.9	2.8	2.6	2.4	2.3	2.1	2.0	1.9	1.8	1.6	1.5	1.5	1.4	1.3	1.2	1.1
6.6	4.8	4.5	4.3	4.0	3.8	3.5	3.3	3.1	2.9	2.7	2.5	2.4	2.2	2.1	2.0	1.8	1.7	1.6	1.5	1.4	1.3	1.3	1.2	1.1
6.7	4.8	4.5	4.2	3.9	3.7	3.5	3.2	3.0	2.8	2.7	2.5	2.3	2.2	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1
6.8	4.6	4.4	4.1	3.8	3.6	3.4	3.2	3.0	2.8	2.6	2.4	2.3	2.1	2.0	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.1
6.9	4.5	4.2	4.0	3.7	3.5	3.3	3.1	2.9	2.7	2.5	2.4	2.2	2.1	2.0	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1.0
7.0	4.4	4.1	3.8	3.6	3.4	3.2	3.0	2.8	2.6	2.4	2.3	2.2	2.0	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.1	0.99
7.1	4.2	3.9	3.7	3.5	3.2	3.0	2.8	2.7	2.5	2.3	2.2	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1.0	0.95
7.2	4.0	3.7	3.5	3.3	3.1	2.9	2.7	2.5	2.4	2.2	2.1	2.0	1.8	1.7	1.6	1.5	1.4	1.3	1.3	1.2	1.1	1.0	0.96	0.90
7.3	3.8	3.5	3.3	3.1	2.9	2.7	2.6	2.4	2.2	2.1	2.0	1.8	1.7	1.6	1.5	1.4	1.3	1.3	1.2	1.1	1.0	0.97	0.91	0.85
7.4	3.5	3.3	3.1	2.9	2.7	2.5	2.4	2.2	2.1	2.0	1.8	1.7	1.6	1.5	1.4	1.3	1.3	1.2	1.1	1.0	0.96	0.90	0.85	0.79
7.5	3.2	3.0	2.8	2.7	2.5	2.3	2.2	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1.0	0.95	0.89	0.83	0.78	0.73
7.6	2.9	2.8	2.6	2.4	2.3	2.1	2.0	1.9	1.8	1.6	1.5	1.4	1.4	1.3	1.2	1.1	1.1	0.98	0.92	0.86	0.81	0.76	0.71	0.67
7.7	2.6	2.4	2.3	2.2	2.0	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.1	1.0	0.94	0.88	0.83	0.78	0.73	0.68	0.64	0.60
7.8	2.3	2.2	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1.0	0.95	0.89	0.84	0.79	0.74	0.69	0.65	0.61	0.57	0.53
7.9	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1.0	0.95	0.89	0.84	0.79	0.74	0.69	0.65	0.61	0.57	0.53	0.50	0.47
8.0	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.1	1.0	0.94	0.88	0.83	0.78	0.73	0.68	0.64	0.60	0.56	0.53	0.50	0.44	0.44	0.41
8.1	1.5	1.5	1.4	1.3	1.2	1.1	1.1	0.99	0.92	0.87	0.81	0.76	0.71	0.67	0.63	0.59	0.55	0.52	0.49	0.46	0.43	0.40	0.38	0.35
8.2	1.3	1.2	1.2	1.1	1.0	0.96	0.90	0.84	0.79	0.74	0.70	0.65	0.61	0.57	0.54	0.50	0.47	0.44	0.42	0.39	0.37	0.34	0.32	0.30
8.3	1.1	1.1	0.99	0.93	0.87	0.82	0.76	0.72	0.67	0.63	0.59	0.55	0.52	0.49	0.46	0.43	0.40	0.38	0.35	0.33	0.31	0.29	0.27	0.26
8.4	0.95	0.89	0.84	0.79	0.74	0.69	0.65	0.61	0.57	0.53	0.50	0.47	0.44	0.41	0.39	0.36	0.34	0.32	0.30	0.28	0.26	0.25	0.23	0.22
8.5	0.80	0.75	0.71	0.67	0.62	0.58	0.55	0.51	0.48	0.45	0.42	0.40	0.37	0.35	0.33	0.31	0.29	0.27	0.25	0.24	0.22	0.21	0.20	0.18
8.6	0.68	0.64	0.60	0.56	0.53	0.49	0.46	0.43	0.41	0.38	0.36	0.33	0.31	0.29	0.28	0.26	0.24	0.23	0.21	0.20	0.19	0.18	0.16	0.15
8.7	0.57	0.54	0.51	0.47	0.44	0.42	0.39	0.37	0.34	0.32	0.30	0.28	0.27	0.25	0.23	0.22	0.21	0.19	0.18	0.17	0.16	0.15	0.14	0.13
8.8	0.49	0.46	0.43	0.40	0.38	0.35	0.33	0.31	0.29	0.27	0.26	0.24	0.23	0.21	0.20	0.19	0.17	0.16	0.15	0.14	0.13	0.13	0.12	0.11
8.9	0.42	0.39	0.37	0.34	0.32	0.30	0.28	0.27	0.25	0.23	0.22	0.21	0.19	0.18	0.17	0.16	0.15	0.14	0.13	0.12	0.12	0.11	0.10	0.09
9.0	0.36	0.34	0.32	0.30	0.28	0.26	0.24	0.23	0.21	0.20	0.19	0.18	0.17	0.16	0.15	0.14	0.13	0.12	0.11	0.11	0.10	0.09	0.09	0.08

(d) *pH Criteria for fresh waters in Indian lands.* The pH of fresh waters shall fall within the range of 6.5 to 8.5.

(e) *Temperature criteria for tidal waters in Indian lands.* (1) The maximum acceptable cumulative increase in the weekly average temperature resulting from all artificial sources is 1 °C (1.8 °F) during all seasons of the year, provided that the summer maximum is not exceeded.

(i) Weekly average temperature increase shall be compared to baseline thermal conditions and shall be calculated using the daily maxima averaged over a 7-day period.

(ii) Baseline thermal conditions shall be measured at or modeled from a site where there is no artificial thermal addition from any source, and which is in reasonable proximity to the thermal discharge (within 5 miles), and which has similar hydrography to that of the receiving waters at the discharge.

(2) Natural temperature cycles characteristic of the waterbody segment shall not be altered in amplitude or frequency.

(3) During the summer months (for the period from May 15 through September 30), water temperatures shall not exceed a weekly average summer maximum threshold of 18 °C (64.4 °F) (calculated using the daily maxima averaged over a 7-day period).

(f) *Natural conditions provisions for waters in Indian lands.* (1) The provision in Title 38 of Maine Revised Statutes 464(4.C) which reads: "Where natural conditions, including, but not limited to, marshes, bogs and abnormal concentrations of wildlife cause the dissolved oxygen or other water quality criteria to fall below the minimum standards specified in section 465, 465–A and 465–B, those waters shall not be considered to be failing to attain their classification because of those natural conditions," does not apply to water quality criteria intended to protect human health.

(2) The provision in Title 38 of Maine Revised Statutes 420(2.A) which reads "Except as naturally occurs or as provided in paragraphs B and C, the board shall regulate toxic substances in the surface waters of the State at the levels set forth in federal water quality criteria as established by the United States Environmental Protection Agency pursuant to the Federal Water Pollution Control Act, Public Law 92–500, Section 304(a), as amended," does not apply to water quality criteria intended to protect human health.

(g) *Mixing zone policy for waters in Indian lands.* (1) *Establishing a mixing zone.* (i) The Department of Environmental Protection ("department") may establish a mixing zone for any discharge at the time of application for a waste discharge license if all of the requirements set forth in paragraphs (g)(2) and (3) of this section are satisfied. The department shall attach a description of the mixing zone as a condition of a license issued for that discharge. After opportunity for a hearing in accordance with 38 MRS section 345–A, the department may establish by order a mixing zone with respect to any discharge for which a license has been issued pursuant to section 414 or for which an exemption has been granted by virtue of 38 MRS section 413, subsection 2.

(ii) The purpose of a mixing zone is to allow a reasonable opportunity for dilution, diffusion, or mixture of pollutants with the receiving waters such that an applicable criterion may be exceeded within a defined area of the waterbody while still protecting the designated use of the waterbody as a whole. In determining the extent of any mixing zone to be established under this section, the department will require from the applicant information concerning the nature and rate of the discharge; the nature and rate of existing discharges to the waterway; the size of the waterway and the rate of flow therein; any relevant seasonal, climatic, tidal, and natural variations in such size, flow, nature, and rate; the uses of the waterways that could be affected by the discharge, and such other and further evidence as in the department's judgment will enable it to establish a reasonable mixing zone for such discharge. An order establishing a mixing zone may provide that the extent thereof varies in order to take into account seasonal, climatic, tidal, and natural variations in the size and flow of, and the nature and rate of, discharges to the waterway.

(2) *Mixing zone information requirements.* At a minimum, any request for a mixing zone must:

(i) Describe the amount of dilution occurring at the boundaries of the proposed mixing zone and the size, shape, and location of the area of mixing, including the manner in which diffusion and dispersion occur;

(ii) Define the location at which discharge-induced mixing ceases;

(iii) Document the substrate character and geomorphology within the mixing zone;

(iv) Document background water quality concentrations;

(v) Address the following factors;

(A) Whether adjacent mixing zones overlap;

(B) Whether organisms would be attracted to the area of mixing as a result of the effluent character; and

(C) Whether the habitat supports endemic or naturally occurring species.

(vi) Provide all information necessary to demonstrate whether the requirements in paragraph (g)(3) of this section are satisfied.

(3) *Mixing zone requirements.* (i) Mixing zones shall be established consistent with the methodologies in Sections 4.3 and 4.4 of the "Technical Support Document for Water Quality-based Toxics Control" EPA/505/2–90–001, dated March 1991.

(ii) The mixing zone demonstration shall be based on the assumption that a pollutant does not degrade within the proposed mixing zone, unless:

(A) Scientifically valid field studies or other relevant information demonstrate that degradation of the pollutant is expected to occur under the full range of environmental conditions expected to be encountered; and

(B) Scientifically valid field studies or other relevant information address other factors that affect the level of pollutants in the water column including, but not limited to, resuspension of sediments, chemical speciation, and biological and chemical transformation.

(iii) Water quality within an authorized mixing zone is allowed to exceed chronic water quality criteria for those parameters approved by the department. Acute water quality criteria may be exceeded for such parameters within the zone of initial dilution inside the mixing zone. Acute criteria shall be met as close to the point of discharge as practicably attainable. Water quality criteria shall not be violated outside of the boundary of a mixing zone as a result of the discharge for which the mixing zone was authorized.

(iv) Mixing zones shall be as small as practicable. The concentrations of pollutants present shall be minimized and shall reflect the best practicable engineering design of the outfall to maximize initial mixing. Mixing zones shall not be authorized for bioaccumulative pollutants (*i.e.,* chemicals for which the bioconcentration factors (BCF) or bioaccumulation factors (BAF) are greater than 1,000) or bacteria.

(v) In addition to the requirements above, the department may approve a mixing zone only if the mixing zone:

(A) Is sized and located to ensure that there will be a continuous zone of passage that protects migrating, free-swimming, and drifting organisms;

(B) Will not result in thermal shock or loss of cold water habitat or otherwise

interfere with biological communities or populations of indigenous species;

(C) Is not likely to jeopardize the continued existence of any endangered or threatened species listed under section 4 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) or result in the destruction or adverse modification of such species' critical habitat;

(D) Will not extend to drinking water intakes and sources;

(E) Will not otherwise interfere with the designated or existing uses of the receiving water or downstream waters;

(F) Will not promote undesirable aquatic life or result in a dominance of nuisance species;

(G) Will not endanger critical areas such as breeding and spawning grounds, habitat for state-listed threatened or endangered species, areas with sensitive biota, shellfish beds, fisheries, and recreational areas;

(H) Will not contain pollutant concentrations that are lethal to mobile, migrating, and drifting organisms passing through the mixing zone;

(I) Will not contain pollutant concentrations that may cause significant human health risks considering likely pathways of exposure;

(J) Will not result in an overlap with another mixing zone;

(K) Will not attract aquatic life;

(L) Will not result in a shore-hugging plume; and

(M) Is free from:

(*1*) Substances that settle to form objectionable deposits;

(*2*) Floating debris, oil, scum, and other matter in concentrations that form nuisances; and

(*3*) Objectionable color, odor, taste, or turbidity.

(h) *Dissolved oxygen criteria for class A waters throughout the State of Maine, including in Indian lands.* The dissolved oxygen content of Class A waters shall not be less than 7 ppm (7 mg/L) or 75% of saturation, whichever is higher, year-round. For the period from October 1 through May 14, in fish spawning areas, the 7-day mean dissolved oxygen concentration shall not be less than 9.5 ppm (9.5 mg/L), and the 1-day minimum dissolved oxygen concentration shall not be less than 8 ppm (8.0 mg/L).

(i) *Waiver or modification of protection and improvement laws for waters throughout the State of Maine, including in Indian lands.* For all waters in Maine, the provisions in Title 38 of Maine Revised Statutes 363–D do not apply to state or federal water quality standards applicable to waters in Maine, including designated uses, criteria to protect existing and designated uses, and antidegradation policies.

(j) *Phenol criterion for the protection of human health for Maine waters outside of Indian lands.* The phenol criterion to protect human health for the consumption of water and organisms is 4000 micrograms per liter.

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