OFFICE OF WATER
WASHINGTON, D.C. 20460

June 5, 2024

Ms. Emma Pokon
Commissioner-Designee
Alaska Department of Environmental Conservation
P.O. Box 111800
Juneau, Alaska 99811

Dear Commissioner-Designee Pokon:

This letter constitutes the U.S. Environmental Protection Agency's Administrator's Determination, pursuant to *Clean Water Act* Section 303(c)(4)(B), that new and revised water quality standards in Alaska are necessary to meet the requirements of the CWA.[1] Specifically, the EPA has determined that new and revised human health criteria, or HHC, are needed to protect against adverse human health effects related to pollutants in Alaska's surface waters. As explained further below, this Determination is based on information indicating that Alaska's current HHC do not protect the state's designated uses and that additional HHC are needed for certain toxic pollutants for which Alaska currently lacks any HHC.

Alaska's CWA-effective WQS include HHC for a total of 107 pollutants,[2] consisting of both priority toxic pollutants (i.e., toxic pollutants listed pursuant to CWA Section 307(a)(1))[3] and nonpriority toxic pollutants (i.e., toxic pollutants not included on the 307(a)(1) list). The majority of the state's existing HHC were established through a combination of the federally promulgated 1992 National Toxics Rule[4] and a 2003 state rulemaking, which the EPA approved in 2004.[5] Alaska's state-adopted and federally promulgated HHC are based on a fish consumption rate, or FCR, of 6.5 grams per day, which was the EPA's national default rate for the general population in 1992. Since then, national, regional, and local data have become available which indicate rates of fish consumption higher than 6.5 g/day, particularly among residents of coastal states and states with residents who rely on subsistence fishing. In considering these studies, the Alaska Department of Environmental Conservation has recognized

[1] 33 U.S.C. 1313(c); *see* 40 CFR 131.22(b).
[2] Alaska's HHC include criteria for the consumption of Water and Aquatic Organisms, the consumption of Aquatic Organisms, and drinking water.
[3] See 40 CFR part 423, Appendix A – 126 Priority Pollutants.
[4] 40 CFR 131.36(d)(12)
[5] Letter from Randall F. Smith, Director, Office of Water, EPA Region 10, to Ernesta Ballard, Commissioner, Alaska DEC, dated February 27, 2004.

that the 6.5 g/day FCR used to derive the state's existing HHC is not reflective of actual fish consumption by residents in the state.[6] New and revised HHC that more accurately represent actual fish consumption will better protect the health of Alaska's residents.

DEC has identified revisions to Alaska's HHC as a priority action for more than a decade but has yet to propose new and revised HHC for adoption into Alaska's WQS. This Determination makes clear that new and revised HHC are necessary in Alaska to meet CWA requirements and that the EPA is prepared to promulgate such criteria unless the state adopts new and revised HHC that meet CWA requirements.

I. Statutory and Regulatory Background

CWA Section 101(a)(2) establishes a national goal of "water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water," wherever attainable. See also 40 CFR 131.2. The EPA interprets "fishable" to mean that, at a minimum, the designated uses promote the protection of fish and shellfish communities and that, when caught, these can be safely consumed by humans.[7]

Under the CWA, states have the primary responsibility for reviewing, establishing, and revising WQS applicable to their waters (CWA Section 303(c)). WQS define the desired condition of a water body, in part, by designating the use or uses to be made of the water (40 CFR 131.2 and 131.10) and by setting the numeric or narrative water quality criteria to protect those uses (40 CFR 131.2 and 131.11). There are two primary categories of water quality criteria: HHC and aquatic life criteria. HHC protect designated uses targeted toward human health, such as public water supply, recreation, and fish and shellfish consumption. Aquatic life criteria protect designated uses targeted toward aquatic life, such as survival, growth, and reproduction of fish, invertebrates, and other aquatic species. Water quality criteria "must be based on sound scientific rationale and must contain sufficient parameters or constituents to protect the designated use. For waters with multiple use designations, the criteria shall support the most sensitive use" (40 CFR 131.11(a)(1)).

Section 304(a) of the CWA directs the EPA to periodically develop and publish recommended water quality criteria "accurately reflecting the latest scientific knowledge" on the effects of pollutants on human health and welfare, including effects on aquatic life, as well as information on those pollutants, including their concentration and dispersal and how pollutants affect receiving waters (CWA Section 304(a)(1)). Those recommendations are available to states for use in developing their own water quality criteria (CWA Section 304(a)(3)). In 2015, the EPA updated its CWA Section 304(a) national recommended criteria for human health for 94 pollutants.[8] When states establish criteria, the EPA's regulation at 40 CFR 131.11(b)(1) specifies that they should establish numeric criteria based on: (1) the

[6] Letter from Michelle Hale, Division of Water Director, DEC, to Emily Ferry, Deputy Director, Southeast Alaska Conservation Council, dated July 22, 2016.

[7] U.S. EPA, Office of Water. (2000). Memorandum #WQSP-00-03. http://water.epa.gov/scitech/swguidance/standards/upload/2000_10_31_standards_shellfish.pdf.

[8] U.S. EPA. (June 29, 2015). *Final Updated Ambient Water Quality Criteria for the Protection of Human Health*, 80 FR 36986. *See also* U.S. EPA. (2015). *Final 2015 Updated National Recommended Human Health Criteria*. https://www.epa.gov/wqc/national-recommended-water-quality-criteria-human-health-criteria-table.

EPA's CWA Section 304(a) recommended criteria, (2) modified 304(a) recommended criteria that reflect site-specific conditions or (3) other scientifically defensible methods.
CWA Section 303(c)(2)(B), added to the CWA in the 1987 amendments to the Act,[9] requires states to adopt numeric criteria, where available, for all toxic pollutants listed pursuant to CWA Section 307(a)(1) (i.e., priority toxic pollutants)[10] for which the EPA has published CWA Section 304(a) recommended criteria, the discharge or presence of which could reasonably be expected to interfere with the states' designated uses. As articulated in the EPA's December 12, 1988, *Guidance for State Implementation of Water Quality Standards for CWA Section 303(c)(2)(B)* ("1988 Guidance"), the EPA identified three options that states could use to meet the requirements of CWA Section 303(c)(2)(B).[11] Option 1 is to adopt statewide numeric water quality criteria for all priority toxic pollutants for which the EPA has issued CWA Section 304(a) recommendations, regardless of whether those pollutants are known to be present in a state's waters.[12] Option 2 is to adopt chemical-specific numeric water quality criteria for those priority toxic pollutants for which the EPA has issued CWA Section 304(a) recommendations, and "where the state determines based on available information that the pollutants are present or discharged and can reasonably be expected to interfere with designated uses."[13] Option 3 is to adopt a procedure to be applied to a narrative WQS to be used in calculating derived numeric criteria.[14] In the 1992 NTR, the EPA promulgated water quality criteria for priority toxic pollutants for 14 states, including Alaska, based on a Determination that new or revised criteria were needed to bring those states into compliance with the requirements of CWA Section 303(c)(2)(B).[15]

States are required to hold a public hearing to review applicable WQS at least once every three years and, if appropriate, revise or adopt new standards (CWA Section 303(c)(1); 40 CFR 131.20(a)). This includes adopting criteria for additional toxic pollutants and revising existing criteria as appropriate to protect applicable designated uses (40 CFR 131.11(a)).[16] Any new or revised WQS must be submitted to the EPA for review and approval or disapproval (CWA Section 303(c)(2)(A) and (c)(3)). CWA Section 303(c)(4)(B) independently authorizes the Administrator to determine that a new or revised standard is necessary to meet CWA requirements. The authority to make a Determination under CWA Section 303(c)(4)(B) is discretionary and resides with the Administrator, unless delegated by the Administrator (40 CFR 131.22(b)). For the purposes of this Determination, the Administrator has delegated this authority to the EPA's Acting Assistant Administrator for the Office of Water.

[9] Water Quality Act Amendments of 1987, Pub. L. 100-4, 101 Stat. 7.
[10] See 40 CFR part 423, Appendix A – 126 Priority Pollutants.
[11] U.S. EPA. (December 1988). Transmittal of Final "Guidance for State Implementation for Water Quality Standards under CWA Section 303(c)(2)(B)," https://www.epa.gov/sites/production/files/2014-10/documents/cwa303c-hanmer-memo.pdf; *see also* U.S. EPA, *Establishment of Numeric Criteria for Priority Toxic Pollutants*, 57 FR 60848, 60853 (Dec. 22, 1992).
[12] *Id.*
[13] *Id.*
[14] *Id.*
[15] *Id.* at 60857.
[16] *Id.* at 60873 (Explaining that the "EPA expects to request states to continue to focus on adopting criteria for additional toxic pollutants and revising existing criteria in future triennial reviews which new information indicates is appropriate.").

II. History of Alaska's Water Quality Standards Subject to this Determination

Alaska's Existing HHC

Alaska elected to comply with CWA section 303(c)(2)(B) by following Option 1 in the EPA's 1988 Guidance.[17] In accordance with Option 1, Alaska adopted statewide numeric HHC for all priority and nonpriority toxic pollutants for which the EPA had issued CWA Section 304(a) HHC recommendations at that time. Alaska elected to adopt criteria based on the 304(a) recommendations rather than modifying them to reflect site-specific conditions or establishing criteria using other scientifically defensible methods. Specifically, Alaska incorporated all of the EPA's CWA Section 304(a) HHC recommendations available in 1987 and 1989 by reference.[18] However, because Alaska's incorporation by reference did not specify a cancer risk level with which to calculate HHC for carcinogenic pollutants, the EPA promulgated HHC for Alaska in the 1992 NTR for 59 priority toxic pollutants for which the EPA had CWA Section 304(a) HHC recommendations. When promulgating the NTR, the EPA asked Alaska to select a cancer risk level of either 1 in 1,000,000 (10^{-6}) or 1 in 100,000 (10^{-5});[19] Alaska selected 10^{-5}.[20] Therefore, the EPA promulgated HHC using Alaska's selected cancer risk level of 10^{-5} and a 6.5 g/day FCR which reflected the EPA's national recommended default rate for the general population at the time, discussed further below.[21] The EPA withdrew the arsenic criteria promulgated for Alaska in 1998 citing the state's adoption of an arsenic criterion.[22] In 1996, Alaska adopted a cancer risk level of 10^{-5} into the state's WQS; however, the state did not adopt HHC for carcinogenic toxic pollutants at the time.[23] The NTR criteria for 58 priority toxic pollutants remain in effect for the surface waters of the state.

In 2003, Alaska adopted new or revised HHC for the consumption of water and aquatic organisms and aquatic organisms for priority and nonpriority toxic pollutants,[24] consistent with the EPA's 1999 CWA Section 304(a) criteria recommendations, along with drinking water criteria consistent with the EPA's National Primary Drinking Water Regulations.[25] Alaska's state-adopted HHC are included in the *Alaska Water Quality Criteria Manual for Toxic and Other Deleterious Organic and Inorganic Substances* ("Toxics Manual") which is adopted by reference in Alaska's WQS at 18 AAC 70.020(b)(11) and 18 AAC

[17] U.S. EPA. (December 1988). Transmittal of Final "Guidance for State Implementation for Water Quality Standards under CWA Section 303(c)(2)(B)." https://www.epa.gov/sites/production/files/2014-10/documents/cwa303c-hanmer-memo.pdf.
[18] The state adopted by reference all the water quality criteria included in 45 FR 79318 in Alaska's 1987 WQS and 50 FR 30784 in Alaska's 1989 WQS.
[19] Letter from Charles E. Findley, Director, Water Division, EPA Region 10, to John Sandor, Commissioner, Alaska DEC, dated November 9, 1992.
[20] 57 FR at 60897 (Noting that the risk level of 1 in 100,000 was "to reflect the State's July 1992 proposal to amend its water quality standards and to reflect an indication of State policy preference received on November 16, 1992.").
[21] 40 CFR 131.36.
[22] U.S. EPA, Withdrawal From Federal Regulations of the Applicability to Alaska's Waters of Arsenic Human Health Criteria, 63 FR 10140 (March 2, 1998).
[23] The EPA approved the state's adoption of a cancer risk level by letter from Philip G. Millam, Director, Office of Water, EPA Region 10, to Michele Brown, Commissioner, Alaska DEC, dated April 7, 1997.
[24] There are nine pollutants for which Alaska has both state-adopted and EPA-promulgated criteria. These include: 1-3-Dichloropropene, 2,4-Dichlorophenol, chlorobenzene, cyanide, endrin, endrin aldehyde, hexachlorocyclopentadiene, nitrobenzene, and phenol.
[25] More information about the National Primary Drinking Water Regulations are available at https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations.

70.020(b)(23). Alaska derived the 2003 criteria using the 1992 national default 6.5 g/day FCR – rather than Alaska-specific consumption data – and has not revised those HHC since.[26]

Alaska's existing HHC apply to the designated fresh water uses listed below (18 AAC 70.020(b)(11)). These designated uses apply to all fresh waters in the state, except for waters with approved use changes (18 AAC 70.050(1)).

(A) Water supply
  (i) Drinking, culinary, and food processing
  (iii) Aquaculture
(B) Water Recreation
  (i) Contact recreation
  (ii) Secondary recreation
(C) Growth and propagation of fish, shellfish, other aquatic life, and wildlife

Alaska's existing HHC apply to the designated marine uses listed below (18 AAC 70.020(b)(23). These designated uses apply to all marine waters, except for waters with approved use changes (18 AAC 70.050(3)).

(A) Water supply
  (i) Aquaculture
(B) Water Recreation
  (i) Contact recreation
  (ii) Secondary recreation
(C) Growth and propagation of fish, shellfish, other aquatic life, and wildlife
(D) Harvesting for consumption of raw mollusks or other raw aquatic life

Updates to the EPA's National Default FCR Recommendation

In 1992, the EPA recommended a national default general population FCR of 6.5 g/day, based on the average per-capita consumption rate of fish from inland and nearshore waters for the U.S. population, for states to consider inputting into their calculation of HHC. In 2000, the EPA published its *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health* ("2000 Methodology").[27] The 2000 Methodology encourages the use of an upper percentile of fish consumption data for the target general population rather than an average.[28] Consistent with that approach, the EPA updated its national default general population recommended FCR to 17.5 g/day, based on the 90th percentile of national survey data from 1994-1996.[29] The 2000 Methodology also recommended a default FCR of 142.2 g/day for subsistence fishers, based on the 99th percentile of the same national survey data. The EPA updated its national default general population recommended FCR

[26] The EPA approved the state's 2003 WQS submittal by letter from Randall F. Smith, Director, Office of Water, EPA Region 10, to Ernesta Ballard, Commissioner, Alaska DEC, dated February 27, 2004.
[27] U.S. EPA. (2000). *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health. U.S. Environmental Protection Agency*, EPA-822-B-00-004. https://www.epa.gov/sites/default/files/2018-10/documents/methodology-wqc-protection-hh-2000.pdf.
[28] *Id.* at 4-24.
[29] *Id.* ("[The] EPA recommends a default fish intake rate of 17.5 grams/day to adequately protect the general population of fish consumers[.]").

again in 2014 to 22 g/day, which represents the 90th percentile consumption rate of fish and shellfish from inland and nearshore waters for the U.S. adult population 21 years of age and older.[30] The EPA based the 2014 national default general population recommended FCR on National Health and Nutrition Examination Survey, or NHANES, data from 2003 to 2010.[31] In addition, the EPA's national default general population FCR is based on the total rate of consumption of fish and shellfish from inland and nearshore waters (including fish and shellfish from local, commercial, aquaculture, interstate, and international sources). This is consistent with a principle that each state does its share to protect people who consume fish and shellfish that originate from multiple jurisdictions.[32]

Alaska's Identification of New and Revised HHC as a Priority Action

In accordance with CWA Section 303(c)(1) and 40 CFR 131.20, Alaska is required to review all of its applicable WQS, including its existing HHC, at least once every three years and, if appropriate, revise those WQS or adopt new WQS. This includes evaluating whether Alaska's existing HHC should be updated to account for more recent data on FCRs and evaluating available information on the presence or discharge of pollutants in Alaska's waters for which there are no criteria such that new HHC for those pollutants are warranted.[33] Alaska has identified adopting new and revised HHC as a priority in the state's triennial reviews for over ten years, including in its current 2024-26 triennial review.[34] However, the state has neither adopted nor proposed new and revised HHC to address this identified priority.

DEC initiated two efforts to address the state's HHC with a state-led rulemaking. In 2015, DEC convened a technical workgroup to review the EPA's 2000 Methodology, which met monthly from August 2015 to November 2018. In 2018, the workgroup produced a technical report to guide DEC in establishing HHC based on Alaska-specific data.[35] At the time, DEC also conducted public outreach, in the form of workshops, to inform the public about the state's efforts. In 2019, the Alaska Department of Fish and Game published a report analyzing regional fish harvest data collected between 2009 and 2016 to estimate FCRs for Alaska populations.[36] The report and other readily available data clearly establishes that Alaska-specific FCRs far exceed the current 6.5 g/day FCR used to derive the state's existing HHC, yet the state's rulemaking efforts to adopt HHC that more accurately account for actual consumption stalled for several years.

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[30] U.S. EPA. (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/default/files/2015-01/documents/fish-consumption-rates-2014.pdf.

[31] *Id.*

[32] U.S. EPA. (January 2013). *Human Health Ambient Water Quality Criteria and Fish Consumption Rates: Frequently Asked Questions.* https://www.epa.gov/sites/default/files/2015-12/documents/hh-fish-consumption-faqs.pdf.

[33] *See* 40 CFR 131.20 ("state review and revision of water quality standards"); 40 CFR 131.11(a)(2) ("states must review water quality data and information on discharges to identify specific water bodies where toxic pollutants may be adversely affecting water quality or the attainment of the designated water use or where the levels of toxic pollutants are at a level to warrant concern and must adopt criteria for such toxic pollutants applicable to the water body sufficient to protect the designated use.")

[34] https://dec.alaska.gov/water/water-quality/triennial-review.

[35] ADEC. (2018). Evaluation of Key Elements and Options for Development of Human Health Criteria. Technical Workgroup Report. November 13, 2018. FINAL DRAFT. Prepared by Alaska Department of Environmental Conservation, Division of Water.

[36] ADF&G. (2019). Regional Analysis of Fish Consumption Rate Estimates for Rural Alaska Populations. Prepared by Alaska Department of Fish & Game, Division of Subsistence, for the Human Health Criteria Technical Workgroup discussion, January 2019.

Following several years without meaningful progress to update the state's HHC, the EPA sent DEC a letter in September 2022 suggesting a path forward for addressing the state's HHC within a two-year timeline.[37] In response, DEC confirmed that revising the state's HHC remains a high priority and committed to a 24-month rulemaking timeline, with a proposed rule in "Winter 2023-2024" and a final rule in "Fall-Winter 2024-2025."[38] In February 2023, the state reinitiated its HHC public outreach efforts with informational webinars at multiple conferences in Alaska and accepted public scoping comments from Alaska residents from February 10, 2023, to March 31, 2023.[39] Through the state's process, the EPA has maintained close coordination with the state and engaged in several letter exchanges with DEC to provide technical assistance on questions related to HHC development and implementation.[40] Based on the schedule that DEC provided to the EPA in its written commitment, the EPA expected to receive the state's draft rulemaking for informal review in Fall 2023.[41] Despite its written commitment, DEC did not propose revised HHC in Winter 2023-2024, nor has DEC provided an updated timeline for a proposed rule that demonstrates continued and expeditious progress to adopt new and revised HHC.

III. Alaska's Current Human Health Criteria Do Not Protect Alaska's Designated Uses

As explained above, the EPA's regulation at 40 CFR 131.11(a)(1) requires that water quality criteria contain sufficient parameters or constituents to protect the most sensitive designated use. Alaska has acknowledged that "formal rulemaking is required to update Alaska's HHC to reflect current science and science policies pertaining to the protection of human health..."[42] Alaska's existing HHC rely on the national default general population FCR that the EPA recommended in 1992, which, as recognized by the state, "is not reflective of the actual fish consumption rate by the general or certain sub-populations of Alaskans."[43] There are multiple sources of fish consumption information that are currently available for Alaska, all of which point to an FCR – whether derived as a mean or upper percentile – well above the 6.5 g/day rate that is used in Alaska's existing HHC. Accordingly, Alaska's HHC that are derived using this FCR are not protecting Alaska's designated uses.

FCRs are typically reported for studied populations in terms of either "consumers plus non-consumers" or "consumers only," mean values and percentiles of the overall distribution, and for combinations of aquatic species. As described previously, in 2014 the EPA updated its recommended national default FCR value to 22.0 g/day for fish and shellfish from inland and nearshore waters (generally freshwater

[37] Letter from Casey Sixkiller, Regional Administrator, EPA Region 10, to Jason W. Brune, Commissioner, Alaska Department of Environmental Conservation. (September 6, 2022). https://www.epa.gov/ak/alaska-human-health-water-quality-criteria.
[38] Letter from Jason W. Brune, Commissioner, Alaska Department of Environmental Conservation, to Casey Sixkiller, Regional Administrator, EPA Region 10. (September 30, 2022). https://www.epa.gov/ak/alaska-human-health-water-quality-criteria.
[39] https://aws.state.ak.us/OnlinePublicNotices/Notices/View.aspx?id=209875
[40] The EPA responded to DEC's requests for technical support by letters, dated November 1, 2022, July 3, 2023, and October 30, 2023. The letter exchanges between the EPA and DEC are available for reference at https://www.epa.gov/ak/alaska-human-health-water-quality-criteria and https://dec.alaska.gov/water/water-quality/human-health-criteria/.
[41] Letter from Jason W. Brune, Commissioner, Alaska Department of Environmental Conservation, to Casey Sixkiller, Regional Administrator, EPA Region 10. (September 30, 2022). https://www.epa.gov/ak/alaska-human-health-water-quality-criteria.
[42] https://dec.alaska.gov/water/water-quality/human-health-criteria/.
[43] Letter from Michelle Hale, Division of Water Director, DEC, to Emily Ferry, Deputy Director, Southeast Alaska Conservation Council, dated July 22, 2016.

and estuarine species) based on the 90th percentile for consumers plus non-consumers, and reported a comparable value of 27.3 g/day for the Coastal Pacific area.[44] Using the same methodology, the comparable 90th percentile for all fish species was 52.8 g/day nationwide, with 61.2 g/day for the Coastal Pacific area.[45]

In addition to national datasets, there are multiple state-specific fish consumption studies available for Alaska. In 2019, the EPA funded a report that included a review of the community harvest data collected by the Alaska Department of Fish and Game which reported a statewide rural consumers plus non-consumers 90th percentile rate for a combined consumption of salmon, halibut, herring, nonmarine fish, and marine invertebrates of 302 g/day, and a mean rate of 141 g/day.[46] The species included in the rate calculation were informed by DEC's Technical Workgroup supporting HHC development.[47] In coordination with DEC, the Alaska Department of Fish and Game finalized a separate report on those data in 2019 and identified a statewide "rural/subsistence" area consumers plus non-consumers 90th percentile rate of 327.4 g/day, with a mean of 152.9 g/day.[48,49] In addition to the statewide reports, the Seldovia Village Tribe and Sun'aq Tribe of Kodiak led the development and implementation of two total seafood consumption surveys for the Cook Inlet Tribes and Kodiak Tribes, respectively.[50] The Cook Inlet study reported a 95th percentile total seafood consumption rate of 267.6 g/day and a mean total seafood consumption rate of 108 g/day.[51] The Kodiak study reported a 90th percentile total seafood consumption rate of 528 g/day and a mean total seafood consumption rate of 233 g/day.[52]

Available state-specific fish consumption data confirms that Alaska's HHC do not represent consumption rates of Alaska residents, who are eating far more fish than the 6.5 g/day FCR indicates. Moreover, the EPA has placed an emphasis on increased consumption of healthy fish for its human health benefits and is particularly concerned that people eating fish they catch for sustenance are being disproportionately impacted by toxic pollutants that may cause adverse human health effects. The available Alaska-specific fish consumption data provide sufficient evidence to determine an appropriate FCR for Alaska to derive HHC that more accurately reflect actual consumption.

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[44] The Coastal Pacific area includes coastal counties in California, Oregon, Washington, Alaska, and Hawaii.

[45] U.S. EPA. (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/default/files/2015-01/documents/fish-consumption-rates-2014.pdf.

[46] Polissar, N. and Neradilek, M. (2019). Alaska Statewide and Regional Estimates of Consumption Rates in Rural Communities for Salmon, Halibut, Herring, Non-Marine fish, and Marine Invertebrates. Final Report. March 20, 2019

[47] Other Pacific Northwest states (Washington and Oregon) have included species beyond freshwater and estuarine species, such as salmon, in their FCRs.

[48] ADF&G. (2019). *Regional Analysis of Fish Consumption Rate Estimates for Rural Alaska Populations*. Prepared by Alaska Department of Fish & Game, Division of Subsistence, for the Human Health Criteria Technical Workgroup discussion, January 2019.

[49] These FCRs are based on the per capita consumption of salmon, nonmarine fish, halibut, herring, and marine invertebrates. See table 4 of ADF&G (2019). These species were identified for inclusion in the FCR by DEC's HHC Technical Workgroup.

[50] The total seafood consumption reports analyzed the consumption of all seafood species combined. Both the EPA-funded and Alaska Department of Fish and Game reports included resource use rates that were calculated based on smaller subsets of species (e.g., salmon, halibut, herring, nonmarine fish, and marine invertebrates).

[51] Merrill, Tracie, and Michael Opheim, 2013. *Assessment of Cook Inlet Tribes Subsistence Consumption*, Seldovia Village Tribe, Environmental Department, Seldovia, Alaska. The Seldovia Village Tribe's report did not provide a 90th percentile rate.

[52] Lance, T. A., K. Brown, K. Drabek, K. Krueger, and S. Hales. 2019. *Kodiak Tribes Seafood Consumption Assessment: Draft Final Report*, Sun'aq Tribe of Kodiak, Kodiak, AK.

As described above, Alaska currently has HHC for a total of 107 toxic pollutants, including 97 priority toxic pollutants and 10 nonpriority toxic pollutants.[53] For the 99 of those pollutants for which the HHC are based on an FCR of 6.5 g/day and for which available toxicological data are sufficiently certain to support the development of revised HHC, including methylmercury, the EPA has determined that revised HHC are necessary.[54] In addition, as described further below, the EPA has determined that new HHC are necessary for eight toxic pollutants for which Alaska currently lacks HHC.

Alaska's current WQS include HHC for total mercury that were developed using the EPA 1980 Ambient Water Quality Criteria National Guidelines.[55] In 2001, the EPA published a fish tissue-based CWA Section 304(a) HHC recommendation for methylmercury.[56] The fish tissue methylmercury criterion reflects the EPA's 2000 Methodology and the best available science, and supersedes all previous 304(a) HHC recommendations for mercury published by the EPA (except for the waters of the Great Lakes System), including the 1980 total mercury HHC recommendation. The EPA recommends a fish tissue criterion for methylmercury for many reasons, including that it is more closely tied to the goal of protecting human health because it is based directly on the dominant human exposure route for methylmercury in the U.S., which is consumption of fish and shellfish. According to DEC's Fish Monitoring Program – which is used to inform fish consumption advisories in the state – various forms of mercury were detected between 2001 and 2013 among over 53 species of fish sampled from Alaska waters.[57] Additionally, Alaska's 2022 Integrated Report indicates that multiple waterbodies in the state are impaired for total mercury and there are multiple state and federal National Pollutant Discharge Elimination System permits with limits or monitoring requirements for mercury.[58] Given the presence of mercury detected in fish that people consume in Alaska, and since the vast majority of the mercury in fish is expected to be in the methylmercury form, the EPA has determined that HHC for methylmercury are needed in Alaska.

There are eight priority and nonpriority toxic pollutants for which the EPA has CWA Section 304(a) HHC recommendations and for which Alaska does not have existing HHC.[59] Alaska has not identified whether new or revised HHC are needed for these additional toxic pollutants; however, DEC's public scoping factsheet indicates the state is considering "approximately 116 pollutants" as part of its HHC rulemaking,[60] i.e., all pollutants for which the EPA has CWA Section 304(a) HHC recommendations.

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[53] These 10 nonpriority toxic pollutants are: 1,2,4,5-Tetrachlorobenzene, 2,4,5-Trichlorophenol, barium, bis(chloromethyl) ether, chlorophenoxy herbicide (2,4,5-TP) (silvex), chlorophenoxy herbicide (2,4-D), manganese, methoxychlor, nitrates, and pentachlorobenzene.

[54] At this time, the EPA has identified outstanding technical issues with arsenic, dioxin, and thallium. Therefore, the EPA is not making a Determination whether revised HHC are necessary for these pollutants. In addition, the CWA Section 304(a) HHC recommendations for asbestos, barium, copper, manganese, and nitrates do not rely on the FCR input and are therefore excluded from this Determination.

[55] U.S. EPA. 1980. Guidelines and methodology used in the preparation of health effect assessment chapters of the consent decree water criteria documents. Federal Register 45:79347, Appendix C.

[56] U.S. EPA. (January 8, 2001) Water Quality Criterion for the Protection of Human Health: Methylmercury. 66 FR 1344-1359 https://www.govinfo.gov/content/pkg/FR-2001-01-08/html/01-217.htm.

[57] https://dhss.alaska.gov/health/dph/Epi/eph/Pages/fish/default.aspx.

[58] https://dec.alaska.gov/water/water-quality/integrated-report.

[59] These eight toxic pollutants are: 3-methyl-4-chlorophenol, dinitrophenols, hexachlorocyclohexane – technical, n-nitrosodi-n-propylamine, nitrosamines, nitrosodibutylamine, nitrosodiethylamine, and nitrosopyrrolidine.

[60] DEC. 2023. Proposed Updates to Human Health Criteria. Department of Environmental Conservation Division of Water. February 10, 2023. https://dec.alaska.gov/water/water-quality/human-health-criteria/.

Given that Alaska's approach has been to adopt numeric HHC for all toxic pollutants for which the EPA has CWA Section 304(a) HHC recommendations, the EPA evaluated whether available information indicates that these additional eight pollutants are present in, or discharged to, Alaska's waters and can reasonably be expected to interfere with the state's designated uses. Since Alaska does not currently have HHC for these toxic pollutants, they are less likely to be captured in the state's water quality assessments and in data from permitted dischargers. Therefore, the EPA's review included any evidence of the presence of these toxic pollutants in surface waters, groundwater, and soil in Alaska, taking into consideration common contaminants[61] and industries in Alaska. The EPA views any evidence of the historical or current presence of these pollutants as an indicator of their presence in state waters.

Based on monitoring data from the Water Quality Portal, Toxic Release Inventory data, Alaska's CWA Section 303(d) Impaired Waters Report, discharge monitoring reports, data from contaminated sites, and scientific publications, all eight toxic pollutants were detected in surface waters, groundwater, or soil in Alaska. Based on their presence in Alaska and available toxicological data indicating potential effects to human health, the EPA has determined that new HHC are needed for the following eight toxic pollutants: 3-methyl-4-chlorophenol, dinitrophenols, hexachlorocyclohexane – Technical, n-nitrosodi-n-propylamine, nitrosamines, nitrosodibutylamine, nitrosodiethylamine, and nitrosopyrrolidine.

- 3-methyl-4-chlorophenol – which is used as a disinfectant, preservative, and antimicrobial pesticide – was found in the soil at a site operated as a gas station and automotive repair shop.[62]
- Dinitrophenols, which are semi-volatile organic compounds, were found in the soil near the abandoned Salt Chuck Mine Superfund site.[63]
- Hexachlorocyclohexane – Technical is an insecticide that was detected in surface water and soil in the Jarvis Glacier, Interior Alaska Eastern Range, and the Joint Base Elmendorf-Richardson clean-up site.[64] Hexachlorocyclohexanes were also detected in blubber and fat samples of ringed seal and polar bear near Barrow, Alaska, and the Canadian Arctic[65] and in mussel tissue

[61] According to DEC's Division of Spill and Response, common contaminants in Alaska include petroleum products, solvents, PCBs, metals, and some pesticides and insecticides, among others. https://dec.alaska.gov/spar/csp/FAQ/contaminants#tab-1.

[62] Friedman & Bruya, Inc. (2018). "Results from the Analysis of Soil Samples for Total Petroleum Hydrocarbons as Gasoline using Method AK101." Available at: https://dec.alaska.gov/Applications/SPAR/PublicMVC/CSP/SiteReport/26418.

[63] CH2MHILL. "Remedial Investigation Report Salt Chuck Mine Superfund Site Prince of Wales Island, Alaska." US EPA. Available at: https://semspub.epa.gov/work/10/100089093.pdf.

[64] Miner, Kimberley R., et al. "Organochlorine Pollutants within a Polythermal Glacier in the Interior Eastern Alaska Range." Water, vol. 10, no. 9, 2018, p. 1157. MDPI. Available at: https://doi.org/10.3390/w10091157 (Accessed 10 March 2024). Alaska Department of Environmental Conservation. (2018). Decision Document: JBER-Ft. Rich SS119 Bldg 791 Cleanup Complete Determination. DEC Alaska. Available at: https://dec.alaska.gov/Applications/SPAR/PublicMVC/CSP/Download?documentID=30287&fileName=26522_2018.04.02%20SS119%20CC_Lttr.pdf (Accessed 10 March 2024).

[65] Kucklick, J. R., Struntz, W. D., Becker, P. R., York, G. W., O'Hara, T. M., & Bohonowych, J. E. (2002). Persistent organochlorine pollutants in ringed seals and polar bears collected from northern Alaska. Science of the Total Environment, 287(1-2), 45-59. https://doi.org/10.1016/S0048-9697(01)00997-4.

sampled from National Parks in southeast and southwest Alaska.[66]

- N-nitrosodi-n-propylamine is a research chemical that was found at the site of the former Joseph Guy Community Center in Kwethluk.[67]
- Nitrosamines are organic compounds that are present in tobacco and food products. Though the EPA did not find data characterizing the presence of nitrosamines in Alaska, nitrosamines are a byproduct of wastewater treatment, other industrial processes, and food processing.[68] Therefore, it is likely that nitrosamines (including nitrosodibutylamine, nitrosodiethylamine, and nitrosopyrrolidine) are present in the environment of Alaska.

IV. Clean Water Act Section 303(c)(4)(B) Determination

The EPA has reviewed the available fish consumption data and information regarding the need for new or revised HHC for priority and nonpriority toxic pollutants in Alaska and concluded that many of Alaska's existing HHC are no longer protective of the applicable designated uses in accordance with the CWA and the EPA's regulations at 40 CFR 131.11. Specifically, Alaska's existing HHC for 99 toxic pollutants do not reflect the latest scientific knowledge and are based on a FCR that is not representative of the actual fish consumption patterns of Alaska residents. In addition, Alaska has no HHC for eight toxic pollutants where available information indicates that those toxic pollutants are discharged or are present in the state's waters and could reasonably be expected to interfere with applicable designated uses and available toxicological data support the development of risk-based HHC. Therefore, the EPA is determining, pursuant to CWA Section 303(c)(4)(B) and 40 CFR 131.22(b), that in Alaska, new HHC are needed for eight toxic pollutants and revised HHC are needed for 99 toxic pollutants. A list of pollutants subject to this Determination is provided in the appendix.

V. Next Steps

The EPA acknowledges and appreciates Alaska's commitment to developing and adopting new and revised HHC for the state. This Determination does not preclude Alaska from proceeding with its own rulemaking effort. However, following a Determination that new or revised WQS are necessary, CWA Section 303(c)(4) requires that the Administrator promptly prepare and publish proposed regulations setting forth new or revised WQS to meet the requirements of the CWA. In the event that Alaska adopts, and the EPA approves, new or revised WQS that sufficiently address this Determination before the EPA proposes or promulgates federal WQS, then the EPA would no longer be obligated to propose or promulgate those federal WQS.

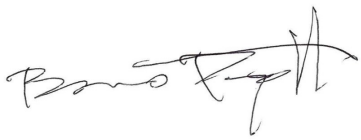
In this particular case, given the readily available fish consumption information that the EPA, state, and Tribes in Alaska have collected and the data that the EPA published in its most recent national

[66] Rider, Mary, et al. A Synthesis of Ten Years of Chemical Contaminant Monitoring Data in National Park Service - Southeast and Southwest Alaska Networks. July 2020. NOAA, Silver Spring, NOAA Technical Memorandum NOS NCCOS 227. Available at: https://repository.library.noaa.gov/view/noaa/25520 (Accessed 10 March 2024).
[67] Alaska Department of Environmental Conservation (Alaska DEC). 2023. SITE REPORT: KWETHLUK FORMER JOSEPH GUY COMMUNITY CENTER. Available at: https://dec.alaska.gov/Applications/SPAR/PublicMVC/CSP/SiteReport/25663.
[68] Venkatsean, A.K., B.F.G. Pycke, and R.U. Halden. 2014. Detection and Occurrence of N-Nitrosamines in Archived Biosolids from the Targeted National Sewage Sludge Survey of the U.S. Environmental Protection Agency. Environmental Science & Technology (48).

recommendations,[69] the EPA believes that 6-12 months is a reasonable timeframe for the agency to develop proposed federal regulations establishing HHC for Alaska that meet the requirements of the CWA. The EPA will seek input from Alaska, Tribes, and interested stakeholders on the EPA's proposed rulemaking in accordance with 40 CFR 131.22(c) and 131.20(b). In addition to engaging with Alaska on this effort, as an initial step in the process, the EPA will invite Tribal consultation. After a federal rule is proposed, the EPA will consider all comments received before proceeding to the final rule stage.

The EPA is committed to working closely and collaboratively with Alaska to ensure that the HHC are protective of applicable designated uses, based on sound scientific rationale, and responsive to the needs of Alaska's residents.

Sincerely,



Bruno Pigott
Acting Assistant Administrator

cc: Casey Sixkiller, Regional Administrator, EPA Region 10
Caleb Shaffer, Acting Director, Water Division, EPA Region 10
Christina Carpenter, Deputy Commissioner, DEC
Gene McCabe, Director, Division of Water, DEC

[69] U.S. EPA. (June 29, 2015). *Final Updated Ambient Water Quality Criteria for the Protection of Human Health*, 80 FR 36986. *See also* U.S. EPA. (2015). *Final 2015 Updated National Recommended Human Health Criteria*. https://www.epa.gov/wqc/national-recommended-water-quality-criteria-human-health-criteria-table.

Appendix – Pollutants Requiring New or Revised Human Health Criteria

Toxic Pollutants Requiring New Human Health Criteria

Chemical Name	CAS Number
3-Methyl-4-Chlorophenol	59507
Dinitrophenols	25550587
Hexachlorocyclohexane (HCH) – Technical	608731
N-Nitrosodi-n-Propylamine	621647
Nitrosamines	--
Nitrosodibutylamine	924163
Nitrosodiethylamine	55185
Nitrosopyrrolidine	930552

Toxic Pollutants Requiring Revised Human Health Criteria

Chemical Name	CAS Number
1,1,1-Trichloroethane	71556
1,1,2,2-Tetrachloroethane	79345
1,1,2-Trichloroethane	79005
1,1-Dichloroethylene	75354
1,2- Trans-Dichloroethylene (DCE)	156605
1,2,4,5-Tetrachlorobenzene	95943
1,2,4-Trichlorobenzene	120821
1,2-Dichlorobenzene	95501
1,2-Dichloroethane	107062
1,2-Dichloropropane	78875
1,2-Diphenylhydrazine	122667
1,3-Dichlorobenzene	541731
1,3-Dichloropropene	542756
1,4-Dichlorobenzene	106467
2,4,5-Trichlorophenol	95954
2,4,6-Trichlorophenol	88062
2,4-Dichlorophenol	120832
2,4-Dimethylphenol	105679
2,4-Dinitrophenol	51285
2,4-Dinitrotoluene	121142
2-Chloronaphthalene	91587
2-Chlorophenol	95578
2-Methyl-4,6-Dinitrophenol	534521
3,3'-Dichlorobenzidine	91941
Acenaphthene	83329
Acrolein	107028
Acrylonitrile	107131
Aldrin	309002
Alpha-Endosulfan	959988

alpha-Hexachlorocyclohexane (HCH)	319846
Anthracene	120127
Antimony	7440360
Benzene	71432
Benzidine	92875
Benzo(a)anthracene	56553
Benzo(a)pyrene	50328
Benzo(b)fluoranthene	205992
Benzo(k)fluoranthene	207089
Beta-Endosulfan	33213659
beta-Hexachlorocyclohexane (HCH)	319857
Bis(2-Chloro-1-Methylethyl) Ether	108601
Bis(2-Chloroethyl) Ether	111444
Bis(2-Ethylhexyl) Phthalate	117817
Bis(Chloromethyl) Ether	542881
Bromoform	75252
Butylbenzyl Phthalate	85687
Carbon Tetrachloride	56235
Chlordane	57749
Chlorobenzene	108907
Chlorodibromomethane	124481
Chloroform	67663
Chlorophenoxy Herbicide (2,4,5-TP) [Silvex]	93721
Chlorophenoxy Herbicide (2,4-D)	94757
Chrysene	218019
Cyanide	57125
Dibenzo(a,h)anthracene	53703
Dichlorobromomethane	75274
Dieldrin	60571
Diethyl Phthalate	84662
Dimethyl Phthalate	131113
Di-n-Butyl Phthalate	84742
Endosulfan Sulfate	1031078
Endrin	72208
Endrin Aldehyde	7421934
Ethylbenzene	100414
Fluoranthene	206440
Fluorene	86737
gamma-Hexachlorocyclohexane (HCH) [Lindane]	58899
Heptachlor	76448
Heptachlor Epoxide	1024573
Hexachlorobenzene	118741
Hexachlorobutadiene	87683
Hexachlorocyclopentadiene	77474
Hexachloroethane	67721

Indeno(1,2,3-cd)pyrene	193395
Isophorone	78591
Methoxychlor	72435
Methyl Bromide	74839
Methylene Chloride (Dichloromethane)	75092
Methylmercury	22967926
Nickel	7440020
Nitrobenzene	98953
N-Nitrosodimethylamine	62759
N-Nitrosodiphenylamine	86306
p,p'- Dichlorodiphenyltrichloroethane (DDT)	50293
p,p’-Dichlorodiphenyldichloroethane (DDD)	72548
p,p’-Dichlorodiphenyldichloroethylene (DDE)	72559
Pentachlorobenzene	608935
Pentachlorophenol	87865
Phenol	108952
Polychlorinated Biphenyls (PCBs)	1336363
Pyrene	129000
Selenium	7782492
Tetrachloroethylene	127184
Toluene	108883
Toxaphene	8001352
Trichloroethylene	79016
Vinyl Chloride	75014
Zinc	7440666