PENOBSCOT NATION
WATER QUALITY STANDARDS
September 5, 2014

TABLE OF CONTENTS

APPENDICES

PENOBSCOT NATION
WATER QUALITY STANDARDS
September 5, 2014

SUBCHAPTER I. GENERAL PROVISIONS

Section 101. Purpose.

A. Pursuant to its inherent sovereign authority to protect the health and welfare of its members and its political integrity and economic security, the Penobscot Nation hereby enacts these Penobscot Water Quality Standards ("PWQS" or "Standards"). The purpose of these Standards is to protect, maintain, and improve the quality of Penobscot Waters for public and private drinking water supplies; to promote the habitation, growth, and propagation of native and other desirable aquatic plant and animal life; to protect existing and future domestic, cultural, agricultural, recreational, and industrial uses; and to protect any other existing and future beneficial uses of Penobscot Waters, including economic uses. Penobscot people have resided upon Penobscot Waters and have depended upon fish, plants, and wildlife from those waters for their physical, cultural, and spiritual survival from time immemorial. The Penobscot Nation, in its government-to-government dealings with the Commonwealth of Massachusetts, the State of Maine, and the United States, has ceaselessly worked to protect Penobscot Waters and the fish, plant, and wildlife habitats therein. Through these Standards, the Penobscot Nation exercises its sacred stewardship of the river from which it derives its name and upon which its people derive their identity. To carry out these purposes, these Standards:

(1) Designate the existing and attainable uses for which Penobscot Waters shall be protected;

(2) Prescribe water quality standards to sustain these designated uses; and

(3) Assure that degradation of Penobscot Waters shall be minimized and that economic growth shall occur consistent with preserving the Nation's existing clean water resources.

B. An additional purpose of the Penobscot Nation in enacting these Standards is to achieve at least the minimum level of water quality required by the law of the State of Maine.

Section 102. Applicability.

These Standards apply to all Penobscot Waters and to all persons and all activities within the Penobscot Nation. These Standards will become applicable and effective for purposes of the Clean Water Act, 33 U.S.C. §§ 1251-1387, if and to the extent they are approved by EPA pursuant to Clean Water Act § 303(c), 33 U.S.C. § 1313(c). Once effective, these Standards

shall supersede and replace any pre-existing water quality standards enacted by the Penobscot Nation.

Section 103. Definitions.

A. For purposes of these PWQS:

(1) *Acute Criteria* means a one-hour average concentration in ambient waters which should not be exceeded more than once every three years on average. In general, acute criteria thresholds are higher than those for chronic criteria.

(2) *Acute Toxicity* means toxicity that exerts short-term lethal impacts on representative sensitive organisms with a duration of exposure generally less than, or equal to, 96 hours. Acute toxicity may include other effects such as, but not limited to, behavioral changes or immobilization.

(3) *Attainable Use* means a use of water that has the water quality and all other characteristics necessary to support and maintain such use, or that would support and maintain such use after the implementation of these Standards.

(4) *Best Management Practices* means methods, measures, or practices undertaken to prevent or reduce the pollution of Penobscot Waters, including to control, restrict, or diminish nonpoint sources of pollution, and that are consistent with these Standards.

(5) *Bioaccumulation* means the process of a chemical accumulating in a biological food chain by being passed from one organism to another as the contaminated organism is consumed by another organism.

(6) *Chronic Criteria* means the four-day average concentration of a pollutant in ambient water which should not be exceeded more than once every three years on average. Generally, chronic criteria thresholds are lower than those for acute criteria.

(7) *Chronic Toxicity* means toxicity that exerts sub-lethal negative effects such as growth or reproductive impairment, or which becomes lethal after long-term exposure, generally measured by a 28-day test on representative sensitive organisms.

(8) *Clean Water Act ("CWA")* means the federal Clean Water Act codified at 33 U.S.C. §§ 1251-1387, as amended.

(9) *Confirmed Sustenance Fishing and Hunting Rights* means the rights of Penobscot members to take fish (including anadromous and catadromous fish) and wildlife (including waterfowl, muskrat, and beaver) for their sustenance as confirmed by Congress pursuant to the Maine Indian Claims Settlement Act, 25 U.S.C. §§ 1721-1735, *ratifying* 30 M.R.S.A. §§ 6201-6214.

(10) *Criteria* means elements of water quality standards that are expressed as pollutant concentrations, levels, or narrative statements representing a water quality that supports a particular designated use. When criteria are met, water quality should protect the designated use.

(11) *Cultural and Ceremonial Use* means a use of water for cultural, religious, and traditional practices by members of the Penobscot Nation. Such use involves the intentional and incidental ingestion of water, immersion into or inhalation of water, or use of sediments.

(12) *Designated Use* means a use of water described in Section 401 that is to be protected under these Penobscot Water Quality Standards.

(13) *Director* means the Director of the Penobscot Nation's Department of Natural Resources ("DNR") or his or her designee.

(14) *EPA* means the U.S. Environmental Protection Agency.

(15) *Effluent* means a discharge into Penobscot Waters from other-than natural sources.

(16) *Ephemeral Water* means a water body that flows temporarily in direct response to precipitation or snowmelt and with a channel that is always above the water table.

(17) *Existing Uses* means those uses actually attained in a water body on or after November 28, 1975, whether or not they are referred to in these Standards.

(18) *Geometric Mean* means a mean calculated by converting all values to logarithms, averaging the logarithms, and determining the antilogarithm of that average.

(19) *Intermittent Stream* means a stream or reach that flows only at certain times of the year when receiving flow from springs, melting snow, or localized precipitation. It also means a stream or reach that does not flow continuously when water losses from evaporation or seepage exceed available stream flow.

(20) *Mixing Zone* means a three-dimensional zone in which discharged effluent mixes with the receiving water and within which there is a gradation of water quality.

(21) *Nonpoint Source* means a source of pollution that is not a discernible, confined, and discrete conveyance (for example, surface runoff).

(22) *NTU* means nephelometric turbidity unit, which is a unit of turbidity based on a standard method using formazin polymer or its equivalent as the standard reference suspension. NTUs are numerically identical to formazin turbidity units.

(23) *Oil* means oil in any form, including but not limited to petroleum, crude oil, gasoline, diesel oil, lubricating oil, oil refuse, sludge, vegetable oil, animal oil, and oil mixed with waste.

(24) *Penobscot Indian Reservation* means the Penobscot Indian Reservation confirmed by Congress pursuant to the Maine Indian Claims Settlement Act, 25 U.S.C. §§ 1721-1735, *ratifying* 30 M.R.S.A. §§ 6201-6214.

(25) *Penobscot Nation* or *Nation* means, with regard to territory, (a) all land (including submerged lands and banks of lands that may be dry for part of the year) and waters within the Penobscot Indian Reservation, including but not limited to submerged lands and waters in which Penobscot Nation tribal members enjoy Confirmed Sustenance Fishing and Hunting Rights, notwithstanding the issuance of any patent and including rights-of-way running through such lands and waters, and notwithstanding the presence of manmade items like dams, piers, abandoned boom piers, abandoned logs, bridge supports, or other structures or things that may exist on or in such lands and waters, and (b) all land and waters outside of the Penobscot Indian Reservation acquired by the United States and held in trust on behalf of the Penobscot Nation.

(26) *Penobscot Waters* means all surface waters, including but not limited to all or portions of rivers, streams (including perennial, intermittent, and ephemeral streams and their tributaries), lakes, ponds, marshes, waterways, wetlands, sloughs, wet meadows, impoundments, riparian areas, springs, and all other bodies or accumulations of surface water, natural or artificial, public or private, including those dry for part of the year, that are within or bordering upon the Nation. Consistent with federal requirements, the Nation may exclude from Penobscot Waters certain waste treatment systems.

(27) *Perennial Water* means a flowing or non-flowing surface water that is present continuously throughout the year.

(28) *Person* means any individual, partnership, company, corporation, firm, association, or society; any federal, state, or local government or any of its programs, agencies, or other subdivisions; or any Indian tribe, including the Penobscot Nation, or any tribal agencies, divisions, departments, programs, enterprises, companies, or other entities.

(29) *Point Source* means any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, landfill leachate collection system, container, or concentrated animal feeding operation ("CAFO"), from which pollutants are or may be discharged into a water body. The term does not include agricultural storm water discharges (except from CAFOs) or return flows from irrigated agriculture.

(30) *Pollutant* means any type of contaminant, including but not limited to toxic substances, hazardous substances, dredge spoil, solid waste, sewage, chemicals, pesticides, herbicides, fungicides, rodenticides, fertilizers, incinerator residue, discarded equipment, rock, sand, dirt, sewage, and oil, regardless of whether in liquid, solid, or gaseous form.

(31) *Pollution* means any man-made or man-induced alteration of the chemical, physical, biological, or radiological integrity of Penobscot Waters.

(32) *Program Manager* means the Water Resources Program Manager within the Penobscot Nation Department of Natural Resources or his or her designee.

(33) *Turbidity* means a measure of the cloudiness or muddiness of water that causes incident light to be scattered or absorbed rather than transmitted in straight lines.

(34) *Water Body* means any Penobscot Water, including any portion thereof.

(35) *Wetlands* means areas that are inundated or saturated by surface or groundwater frequently and long enough to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. The term generally includes swamps, marshes, bogs, and similar areas.

Section 104. Authorities and Responsibilities.

The Penobscot Nation hereby delegates to the DNR Director the authority and duty to administer these Standards. The day-to-day operations necessitated by these Standards are delegated to the DNR Water Resources Program, which operations include but are not limited to sampling and monitoring water quality and preparing for the mandatory triennial review process, including any interim review of the Standards that may be needed. The Water Resources Program is also authorized to develop related water quality protection programs, such as but not limited to a CWA § 319 nonpoint source management program, CWA § 401 certification program, or groundwater quality program, in consultation with the Director and as approved by the Penobscot Nation Chief and Tribal Council.

Section 105. Revisions to Penobscot Water Quality Standards.

A. *Triennial Review*. Consistent with CWA § 303(c)(1), 33 U.S.C. § 1313(c)(1), as amended, the Nation, through its Water Resources Program, shall hold public hearings at least once every three years to review and, as appropriate, revise these Penobscot Water Quality Standards. Revisions shall incorporate relevant scientific and engineering advances with respect to water quality and shall be made pursuant to the public comment and hearing procedures described in subsection B of this section. Whenever the Nation revises or adopts a new standard, the revised or new standard shall be submitted to EPA for review pursuant to CWA § 303(c)(2), 33 U.S.C. § 1313(c)(2), as amended.

B. *Public Comment and Hearing*. Any revisions to these Penobscot Water Quality Standards shall be made pursuant to the following procedures:

(1) Public notice

The Program Manager shall provide the public with notice of any proposed revisions to these PWQS by:

(a) mailing or emailing notice to other Penobscot departments and programs, federal agencies, and agencies of affected tribes and states that are likely to have an interest in the rulemaking, such as environmental agencies and agencies and departments with jurisdiction over fish and wildlife and other natural resources;

(b) mailing or emailing notice to persons on a list maintained by the Water Resources Program of persons who may be interested in or affected by the proposed revisions to the PWQS;

(c) publishing notice in a daily or weekly newspaper of general circulation at the Penobscot Nation, and

(d) using any other method that the Program Manager finds to be appropriate for eliciting public participation, such as issuing a press release, posting notice on a web page, or providing notice at a public or traditional forum.

The notice shall provide at least 30 days for the public to comment in writing on the proposed revisions.

(2) Public hearing

The Program Manager also shall provide a public hearing on proposed revisions to these Standards so that comments may be made orally. Notice of a public hearing shall be made at least 45 days prior to the hearing, unless there are no substantial documents that must be reviewed for effective hearing participation and no complex or controversial matters to be addressed, in which case the notice may be provided at least 30 days before the hearing. Public notice of the hearing may be made at the same time as public notice of the proposed revisions to the PWQS, and the two notices may be combined.

(3) Contents of notice

Public notices issued under this subsection shall contain the following information:

(a) Name and address of the office proposing the revisions;

(b) A brief description of the proposed revisions;

(c) Name, address, email address, and telephone number of a person from whom interested persons may obtain further information, including copies of the proposed revisions (the proposed revisions also may be posted on a website and the website address provided);

(d) A brief description of the comment procedures and the time and place of the public hearing;

(e) The location of the administrative record, the times at which the record will be open for public inspection, and a statement that all comments submitted will be available as part of the administrative record; and

(f) Any additional information that the Program Manager considers appropriate to provide.

If the public notice for a hearing is issued separately from the public notice of the proposed revisions, in addition to providing the information listed in subparagraphs (a)-(f) of this paragraph (3), the public notice for the hearing shall

reference the date of any previous public notices relating to the proposed revisions and include a brief description of the nature and purpose of the hearing, including applicable procedures.

(4) Procedures for Public Hearing

(a) The Program Manager shall designate a Hearing Moderator for the public hearing. The Program Manager or a member of the staff of the Water Resources Program or another program within DNR may serve as the Hearing Moderator, so long as the Hearing Moderator does not have a financial interest in the outcome of the proposed revisions. The public hearing is not an adjudicative hearing and is conducted solely for the purpose of providing an opportunity to the public to orally present their views on the proposed revisions to the Standards. The Hearing Moderator shall be responsible for the orderly conduct of the public hearing but is not empowered to make any findings of fact, conclusions of law, or recommendations on the proposed revisions to the Standards.

(b) Hearings shall be held at a time and place that facilitates attendance by the public.

(c) The Program Manager, a member of the Water Resources Program staff, or the Hearing Moderator shall inform the audience of the issues involved in the proposed revisions, the considerations the Water Resources Program and the Director will take into account, the Director's tentative determinations (if any) to be recommended to the Penobscot Nation Chief and Tribal Council, and any information that is particularly solicited from the public.

(d) Any person may submit oral or written statements and information concerning the proposed revisions to the Standards. The Hearing Moderator may set reasonable limits on the time allowed for oral statements. The Hearing Moderator shall allow the submission of written statements at the hearing but shall not require a written statement instead of or as a condition of making an oral statement.

(e) A tape recording or written transcript shall be made of the hearing. At the conclusion of the hearing, the Hearing Moderator shall forward to the Director the record of the hearing, which shall consist of the tape recording or written transcript and any materials submitted at the hearing. The hearing record shall be made available to the public for review.

(f) If the Program Manager determines it is necessary, after consultation with the Director, the Program Manager shall extend the public comment period provided under paragraph (B)(1) of this section to allow the record to remain open for at least 20 days after the public hearing to provide an opportunity for submission of rebuttal and supplementary information.

(5) Obligation to Raise Issues During the Public Comment Period

(a) All persons who believe that a proposed revision to the Standards should be issued, modified, or withdrawn must raise all reasonably ascertainable issues and submit all reasonably available arguments and facts supporting their position, including all supporting material, by the close of the public comment period.

(b) The Program Manager, in consultation with the Director, may extend the public comment period on his or her own initiative or on request if the Program Manager determines that such extension is necessary to obtain full public participation and may grant additional time to comment to any person who demonstrates a need for such time.

(6) Reopening the Public Comment Period

(a) Whenever any data, information, or arguments submitted during the public comment period appear to raise substantial new questions concerning a proposed revision to the Standards or whenever the Water Resources Program becomes aware of significant new information, the Director may take one of the following actions:

(i) Withdraw the proposed revision to the Standards;

(ii) Prepare a new proposed revision and direct the Program Manager to reopen the public comment period; or

(iii) Direct the Program Manager to reopen or extend the comment period to give interested persons an opportunity to comment on the information or arguments submitted.

(b) The Program Manager shall issue public notice under paragraph (B)(1) of this section of any action taken pursuant to this paragraph (6). In addition to the requirements of paragraph (B)(1) of this section, the notice for any action taken to reopen the public comment period shall state the scope of the reopening. Such scope shall be limited to the substantial new questions or significant new information that caused the reopening.

(c) If the comment period is reopened pursuant to subparagraphs (a)(ii) or (iii) of this paragraph (6), all reasonably available legal and factual grounds concerning the substantial new questions or significant new information, including any supporting material, shall be submitted in writing by a date not less than 30 days after the date of the public notice issued pursuant to subparagraph (6)(b). Persons desiring to comment may request longer comment periods, which the Program Manager, in consultation with the Director, may grant to the extent that the Program Manager finds is necessary to effect the purpose of the reopening.

(7) Response to Comments and Administrative Record

(a) Response to comments

The final revisions to the Standards shall be accompanied by a response to comments received. The response shall fully consider all comments received during the public comment period, including any comments received during a public hearing. The response shall specify which of the proposed revisions have been changed, if any, and the reasons for the change; briefly describe and respond to all significant comments raised during the public comment period, including the public hearing; and be made available to the public.

(b) Administrative record

(i) The administrative record shall consist of:

(A) The proposed revisions;

(B) The public notice(s);

(C) All comments received during the public comment period, including comments received during any extension or reopening of the public comment period;

(D) The tape or transcript of the public hearing and any written materials submitted at the hearing;

(E) The response to comments and any new material that is referenced in response to comments;

(F) Any other documents contained in the supporting file for the revisions to the Standards; and

(G) The final revised Standards.

The documents required under this subparagraph (7)(b)(i) shall be added to the record as soon as possible after their receipt or issuance. The administrative record shall be complete upon issuance of the revised Standards. The administrative record shall be available for public inspection beginning no later than the date of the public notice, despite not yet being complete.

(ii) Material readily available at the DNR office or published material that is generally available need not be physically included with the rest of the administrative record.

(8) Issuance and Effective Date of Revised Standards

(a) The Director shall issue the final revised Standards based on the administrative record.

(b) The revised Standards shall become effective upon approval by the Penobscot Nation General Meeting~~Chief and Tribal Council~~.

(c) The Program Manager shall give public notice of the adoption of the revised Standards as soon as possible pursuant to paragraph (B)(1) of this section and shall mail or email a notice to the same persons as were mailed or emailed notice of the proposed revisions, as well as to all persons who commented on the proposed revisions and to anyone else who requests to receive notice.

C. *Judicial Review*.

(1) Exhaustion

Any person challenging revised Standards must have followed the procedures set forth in subsection (B) of this section as a prerequisite to seeking judicial review of the revised Standards.

(2) Notice of Appeal

A person may seek judicial review in the Penobscot Nation Tribal Court no later than 30 days after the Director issues notice, pursuant to subparagraph (B)(8)(c) of this section, of the revised Standards at issue.

(3) Filing the Administrative Record

Within 30 days following the date that a petition for review is filed pursuant to paragraph (2) of this subsection (C), the Director shall file in the Penobscot

Nation Tribal Court a certified index of the administrative record on which the revised Standards were based.

(4) Standard for Review

The Court's review shall be based on the administrative record. The Court may affirm, reverse, modify in whole or in part, or remand to DNR for further consideration any revised Standard, provided that the Court may reverse, modify, or remand only if the action at issue is arbitrary and capricious, an abuse of discretion, or otherwise not in accordance with the law; in excess of jurisdiction or statutory authority; without observance of procedure required by law; or unsupported by substantial evidence. In no event shall the Court award damages against the Nation.

Section 106. Severability.

If any provision of these Standards or the application of any provision of these Standards to any person or circumstance is held to be invalid, the remainder of these Standards and the application of such provision to other persons or circumstances shall remain unaffected.

Section 107. Water Rights.

The water rights of the Nation and the authority of the Nation to allocate quantities of water and administer water rights within its jurisdiction shall not be superseded, abrogated, or otherwise impaired by these Standards.

Section 108. Collaboration with Federal and State Agencies.

The Nation will collaborate with federal and state agencies to prevent, reduce, and eliminate water pollution in coordination with programs for managing water resources.

Section 109. Dispute Resolution.

If a dispute arises between the Nation and a state or another Indian tribe approved by EPA to administer a water quality standards program due to differing water quality standards between the two jurisdictions, the Nation will follow the Dispute Resolution Mechanism promulgated by EPA and found at 40 C.F.R. §131.7, as may be revised from time to time.

SUBCHAPTER II. ANTIDEGRADATION POLICY AND IMPLEMENTATION PLAN

Section 201. Antidegradation Policy.

A. Existing water uses and the level of water quality necessary to protect existing water uses shall be maintained and protected.

B. Where existing water quality exceeds levels necessary to support existing uses, including but not limited to the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water, that water quality shall be maintained and protected unless the Nation finds, after full interagency coordination and public participation, that a lower level of water quality is required in order to accommodate important economic or social development in the area of the water in question. In allowing such degradation of water quality, the Nation shall nevertheless ensure water quality adequate to protect existing uses fully.

C. The Nation shall mandate the highest statutory and regulatory requirements for all new and existing point sources and the most cost-effective and reasonable best management practices for control of nonpoint source pollution.

D. Where high-quality waters constitute an exceptional recreational, cultural, or ecological resource of the Nation, those waters may be designated as Outstanding Tribal Resource Waters. The existing water quality of Outstanding Tribal Resource Waters shall be fully maintained and protected and no permanent degradation of such water quality shall be permitted for any reason.

E. This antidegradation policy includes protection against water quality impairment associated with thermal discharges and shall be implemented consistent with CWA § 316, 33 U.S.C. § 1326, as amended.

Section 202. Implementation.

A. The Water Resources Program shall implement these Standards, including the antidegradation policy, by establishing and maintaining controls on the introduction of pollutants into Penobscot Waters and by taking the actions listed below in coordination with federal, tribal, and state agencies, as appropriate:

(1) Review the adequacy of existing data on Penobscot Waters, including their quality and designated uses, as well as on any activities that may detrimentally impact those waters and uses, and obtain additional data where required;

(2) Monitor water quality to assess the effectiveness of pollution controls and to determine whether designated uses are being supported and water quality standards are being attained;

(3) Obtain and assess information on the impact of effluents on receiving waters, including the capability of receiving waters to support designated uses and achieve these PWQS;

(4) Advise prospective dischargers of discharge requirements, and coordinate with the appropriate permitting agencies as to the same;

(5) Require the highest and best degree of wastewater treatment practicable, commensurate with protecting and maintaining designated uses and existing water quality;

(6) Develop water quality-based effluent limitations and provide comment on technology-based effluent limitations, as appropriate, for inclusion in any permit issued to a discharger pursuant to CWA § 402, 33 U.S.C. § 1342, as amended;

(7) Require that effluent limitations or other appropriate limitations applicable to activities with the potential to discharge into Penobscot Waters be included in any permit as a condition for certification by the Nation pursuant to CWA § 401, 33 U.S.C. § 1341, as amended;

(8) Coordinate water pollution control activities with other local, tribal, state, and federal agencies, as appropriate;

(9) Develop and pursue inspection programs to ensure that dischargers comply with the requirements of these Standards and to support the enforcement of federal permits issued by the U.S. Environmental Protection Agency or the U.S. Army Corps of Engineers;

(10) Provide technical assistance to wastewater treatment facility operators;

(11) Publish results of water quality investigations and interpretation of those results;

(11) Encourage, in conjunction with other agencies, implementation of best management practices to control nonpoint sources of pollution and so to support designated uses and meet these PWQS;

(12) Examine existing and future Penobscot Nation policies pertaining to septic systems, solid waste disposal, and other relevant activities to ensure that those policies are consistent with meeting these PWQS;

(13) Determine whether in-stream flows and water levels are adequate to support designated uses and to meet these PWQS;

(14) Conduct an antidegradation analysis for regulated actions that may impair water quality; and

(15) Implement specific policies and procedures to protect designated Outstanding Tribal Resource Waters.

B. In the event that water quality monitoring identifies water bodies where attainable quality is less than the water quality required under designated uses, these Standards may be revised to reflect actual attainability for those water bodies subject to the provisions of the Clean Water Act

and consistent with the use attainability analysis described in 40 C.F.R. § 131.10(g), as may be revised from time to time.

SUBCHAPTER III. NARRATIVE WATER QUALITY STANDARDS

Section 301. General Standards.

A. All Penobscot Waters shall be free from pollution in amounts or combinations that, for any duration, may with reasonable probability:

(1) Injure or otherwise adversely affect human health, public safety, or the public welfare;

(2) Injure or otherwise adversely affect the habitation, growth, or propagation of indigenous aquatic plant and animal communities or any individual member of these communities, of any desirable non-indigenous member of these communities, or of waterfowl accessing the water body; or otherwise adversely affect the physical, chemical, or biological conditions upon which these communities and their indigenous or desirable non-indigenous members depend;

(3) Settle to form bottom deposits that injure or adversely affect the habitation, growth, or propagation of indigenous aquatic plant and animal communities or any member of these communities, of any desirable non-indigenous member of these communities, or of waterfowl accessing the water body; or otherwise adversely affect the physical, chemical, or biological conditions on which these communities and their members depend;

(4) Cause physical, chemical, or biological conditions that promote the habitation, growth, or propagation of undesirable, non-indigenous species of plant or animal life in the water body;

(5) Cause solids, oils, grease, foam, scum, or other objectionable floating materials and suspended substances of a persistent nature to collect on the surface of the water body, including in the form of a film or iridescence, or cause a deposit on a shoreline, bank, or on aquatic vegetation.

(6) Cause objectionable or aesthetically undesirable color in the water body. Color-producing substances from a single discharge other than natural sources may not increase the color of any water body from background levels by more than 20 color pollution units. The total increase in color pollution units caused by all waste discharges to the water body must be less than 40 color pollution units from background levels;

(7) Cause objectionable odor in or in the area of the water body that would impair any of the designated uses. The criteria adopted to prevent organoleptic effects are found in Appendix I;

(8) Cause objectionable taste in the water body or in edible plant, fish or animal life, including waterfowl, that reside in, on, or adjacent to the water body. The criteria adopted to prevent organoleptic effects are found in Appendix I;

(9) Cause objectionable turbidity. Turbidity shall not reduce light transmission to a point where aquatic biota are inhibited or to a point that causes an unaesthetic and substantial visible contrast with the natural appearance of the water. Specifically, turbidity shall not exceed 5 NTU over background when background turbidity is 50 NTU or less, with no more than a 10% increase when background turbidity is more than 50 NTU;

(10) Cause the growth of algae or aquatic plants that inhibit or prohibit the habitation, growth, or propagation of other aquatic life or that impair the Cultural and Ceremonial Use or other designated uses.

B. Penobscot Waters shall be virtually free from pathogens. Water used for irrigation of table crops (for example, lettuce, peppers, or onions) shall be virtually free of Salmonella and Shigella species.

C. Toxic substances from other than natural sources and from algal toxins due to the growth of algae caused by pollution shall not be present in Penobscot Waters in quantities, concentrations, or combinations that are toxic to human, animal, plant, or aquatic life; that interfere with the normal propagation, growth, and survival of sensitive indigenous aquatic biota; or that will or are reasonably expected to bioaccumulate in tissues of fish, shellfish, or other aquatic organisms to levels that will impair the health of aquatic organisms or wildlife or result in unacceptable tastes, odors, or health risks to humans. There shall be no acute toxicity and no significant chronic toxicity in any Penobscot Waters. For toxic substances lacking EPA-published criteria, biomonitoring data may be used to determine compliance with this standard in accordance with EPA standard acute and chronic biological test protocols, as listed in Section 305. Human health criteria shall be based on an ingestion rate of 286 grams per day of fish and other aquatic organisms (derived from the Wabanaki Traditional Cultural Lifeways Exposure Scenario 2009 - *Resident fish and Aquatic life from Inland Non-Anadromous diet*), and a cancer risk level of 1×10^{-6}.

D. No person shall place into Penobscot Waters or onto their banks in such a way as would allow the materials to enter Penobscot Waters the following or similar materials: refuse, rubbish, demolition or construction debris, trash, garbage, motor vehicles, motor vehicle parts, batteries, appliances, tires, other non-ceremonial waste, or fill, sand or similar material except when used

for the purpose of nonpoint source pollution control such as bank stabilization or as authorized by a permit issued under CWA § 404, 33 U.S.C. § 1344, as amended.

Section 302. Temperature.

A. Normal, seasonal variations of temperature in surface waters shall be maintained. However, high water temperatures caused by unusually high ambient air temperatures are not violations of these standards.

B. In a stream, the introduction of heat by other than natural causes shall not increase the temperature, as measured upstream from the point of introduction, by more than 2.7° C (5° F), based on the weekly average of the maximum daily temperatures measured at mid-depth or three feet, whichever is less.

C. In no event shall any discharge cause the receiving water to exceed a weekly average temperature of 66° F or a daily maximum temperature of 73° F. When the ambient temperature of the stream naturally exceeds the limits set forth in this section, no discharge alone or combined with others shall cause the in-stream temperature increase to exceed 0.5° F above the receiving water temperature.

Section 303. Minerals.

The existing mineral content of Penobscot Waters shall not be altered by municipal, industrial, or in-stream activities or other waste discharges so as to interfere with their designated uses. Generally, increases exceeding one-third over naturally occurring levels will not be allowed.

Section 304. Radioactive Materials.

Concentrations of radioactive constituents shall not exceed EPA Safe Drinking Water Act (SDWA) standards except when concentrations caused by naturally occurring materials exceed those standards, in which case the latter concentrations shall apply. Notwithstanding the foregoing sentence, if a standard more stringent than the SDWA standard is indicated for a designated use, the more stringent standard will apply for that designated use.

Section 305. Determining Compliance with Narrative Standards.

Biomonitoring testing following current EPA test methods shall be used to determine compliance with the narrative criteria in §§ 301 through 303, provided that adequate funding is available. These protocols can be found in the publication, Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, 4th Ed. (October 2002), EPA No. 821-R-02-013, or the most current edition. Additionally, the Nation will rely on the following references:

• EPA, Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, 5th Ed. (October 2002), EPA No. 821-R-02-012, or the most current edition.

• EPA, Technical Support Document For Water Quality-based Toxics Control (March 1991), EPA 505/2-90-001, or the most current edition.

• EPA, Quality Criteria for Water (The Gold Book) (May 1986), EPA 440/5-86-001, or the most current edition.

Section 306. Biological Criteria.

A. All Penobscot Waters shall be of sufficient quality to support aquatic species without detrimental changes in the resident biological communities.

B. The Nation's goal is that all Penobscot Waters will be free from substances, whether attributable to point source discharges, nonpoint sources, or in-stream activities, in concentrations or combinations which impair the structure or limit the function of the resident aquatic community as it naturally occurs.

C. The structure and function of the resident aquatic community shall be measured by biological assessment methods approved by the Program Manager, which may include Maine DEP Chapter 579 Classification Attainment Evaluation Using Biological Criteria for Rivers and Streams.

D. Determination of impairment or limitation of the resident aquatic community shall be based on a comparison with the aquatic community found at an appropriate reference site or region.

Section 307. Mixing Zones.

A. A mixing zone is a defined and limited part of a water body adjacent to a point source of pollution in which initial dilution of wastewater occurs and in which certain numeric water quality standards may be exceeded provided that all the following requirements are met:

(1) Mixing zones shall be limited to perennial streams;

(2) All mixing zones shall have defined boundaries, beyond which applicable water quality standards shall be met;

(3) In no instance shall the narrative water quality standards in § 301 be violated;

(4) In no instance shall the concentration of any toxic pollutant exceed the aquatic habitat acute numeric standard for that pollutant. The aquatic habitat acute numeric standard for all toxic pollutants shall be met at the point of discharge;

(5) In perennial streams, a continuous zone of passage around a mixing zone shall be maintained in which all applicable water quality standards are met and which provides for migration of aquatic life without exposure to pollutant concentrations that exceed chronic toxicity for aquatic habitat numeric standards. The mixing zone shall be no larger than 25% of the cross-sectional area or volume of low flow and no wider than 50% of stream width;

(6) Mixing zones are prohibited for the following persistent bioaccumulative toxic pollutants:

(a) Aldrin/Dieldrin
(b) Benzo(a)pyrene
(c) Benzoperylene
(d) Chlordane
(e) DDT and its metabolites (DDD and DDE)
(f) Dioxin
(g) Furan
(h) Endrin,
(i) Endrin aldelhyde
(j) Heptachlor
(k) Heptachlor epoxide
(l) Hexachlorobenzene
(m) Isodrin
(n) Lead and lead compounds
(o) Lindane
(p) Mercury
(q) Methoxychlor
(r) Mirex
(s) Octachlorostyrene(u) PCBs,
(t) Pendimethalin
(u) Pentachlorobenzene
(v) Tetrabromobisphenol A
(w) Toxaphene, and
(x) Trifluralin

B. The Penobscot Nation will consider the requirements in subsection (A)(1)-(5) of this section in determining whether to grant a mixing zone.

C. The water quality criteria in these PWQS shall apply within a mixing zone unless specific alternative criteria have been determined by the Director, pursuant to the provisions of Section 105(B), and approved by the Penobscot Nation Chief and Tribal Council and U.S. EPA

Region 1. Mixing zones shall not be granted in lieu of reasonable control measures to reduce point source pollutant discharges but will be granted to complement such control measures. A limited mixing zone, serving as a zone of initial dilution in the immediate area of a point source of pollution, may be allowed if the conditions set out in this section are met.

Section 308. Wetlands.

All wetlands within the Penobscot Nation are Penobscot Waters and are subject to narrative criteria and applicable antidegradation provisions unless site-specific numerical criteria have been assigned. It shall be a goal of the Nation to maintain the water quality of wetlands at natural background levels, within the natural range of variation for the particular wetland. For substances that are not naturally occurring, water quality requirements shall be based upon protecting existing uses of the wetland consistent with antidegradation requirements, the Nation's narrative water quality criteria, or appropriate criteria guidance issued by the EPA. Wetlands shall not be considered as repositories or treatment systems for wastes from human sources.

Section 309. Lakes and Ponds.

A. All lakes and ponds within the Penobscot Nation are Penobscot Waters and are subject to these Standards, except that no permits may be issued under CWA Section 402 for discharges into lakes and ponds within the Penobscot Nation.

B. All water bodies identified as either lakes or ponds in Section 403, Table 1 of these Standards are described by their trophic state based on measures of the chlorophyll ā content, secchi disk transparency, total phosphorous content and other appropriate criteria. These waters must have stable or decreasing trophic state, subject only to natural fluctuations, and must be free from culturally induced algal blooms that impair their use and enjoyment.

SUBCHAPTER IV. DESIGNATED USES AND ASSOCIATED NUMERIC WATER QUALITY STANDARDS

Section 401. List of Designated Uses and Associated Standards.

The following are the designated uses for Penobscot Waters:

A. *Domestic Water Supply*. The water body is used as a potable water supply for drinking or cooking. Disinfection or other processing may be required. Standards specific to this use, expressed in mg/L unless otherwise indicated and for dissolved state only, are listed in Appendix I and IV. This use is the same as Maine's "drinking water after treatment" use.

B. *Primary Human Contact/Cultural and Ceremonial*. The water body is used for activities that may cause the human body to come into direct contact with the water, typically to the point of submergence, including probable ingestion, inhalation of vapor, or contact with membrane

material of the body. Examples include swimming and cultural and ceremonial use. Criteria specific to this use are in Appendices I and IV (Human Health Criteria). In addition, the following standards shall apply:

(1) Bacteria

Geometric mean maximum Escherichia coli (E. coli) may not exceed 100 colonies/100 ml during any 30-day interval, or may not exceed a Statistical Threshold Value (STV) of 320 colonies/100 ml with a frequency of more than 10% during the same 30-day interval.

(2) The open water shall be free from algae in concentrations causing a nuisance condition or causing gastrointestinal or skin disorders or other adverse health effects. Water column chlorophyll ā concentrations shall not exceed 8 µg/L.

(3) Concentrations of the following substances shall not exceed the following (where "Substance" means total unless otherwise indicated):

Substance	**Criterion**	**Substance**	**Criterion**
Diazinon	2.0 µg/L	Barium(dissolved)	2.0 mg/L
Ethylbenzene	0.7 mg/L	Beryllium (dissolved)	4.0 µg/L
Methoxychlor	40.0 µg/L	Cadmium (dissolved)	5.0µg/L
2,4-Dicholorphen-oxyacetic acid	70.0 µg/L	Chromium (dissolved)	0.1mg/L
Toluene	1.0 mg/L	Cyanide (amenable to chlorination)	0.2 mg/L
Trihalomethanes (total)	80.0 µg/L	Fluoride	4.0 mg/L
Trichloroethylene	5.0 µg/L	Total inorganic Nitrogen[1]	10.0 mg/L
1,1,1-Trichloro-ethane	0.20 mg/L	Mercury	~~1.7~~2.0µg/L ~~acute 0.91µg/L chronic~~
Xylenes (total)	10.0 mg/L	Selenium (total recoverable)	50.0 µg/L
Antimony (dissolved)	6.0 µg/L	Thallium (dissolved)	2.0 µg/L

[1] Total Inorganic Nitrogen shall be calculated as Ammonia (NH3) + Ammonium (NH4) + Nitrate (N03) + Nitrite (N02).

(4) pH range: 6.5 – 9.0

C. *Secondary Human Contact*. The water body is used for activities, such as recreation, that may cause the water to come into direct contact with human skin but normally not to the point of submergence, ingestion, or contact with human membrane material; such contact would occur

only incidentally and infrequently. Examples include fishing and boating. Standards specific to this use are as follows:

(1) Bacteria

Geometric mean maximum Escherichia coli (E. coli) may not exceed 100 colonies/100 ml during any 30-day interval, or may not exceed a Statistical Threshold Value (STV) of 320 colonies/100 ml with a frequency of more than 10% during the same 30-day interval.

(2) pH range: ~~6.0 8.5~~ 6.5 – 9.0.

(3) The open water shall be free from algae in concentrations causing a nuisance condition or causing gastrointestinal or skin disorders.

D. *Aquatic Life and Wildlife Habitat*. The water body is used by non-domesticated plants and animals, including fish and aquatic insects, that are not considered pathogens, vectors for pathogens, or intermediate hosts for the pathogens of humans or domesticated livestock and plants. The water is used for direct consumption, foraging, habitat, cover, or propagation, and the aquatic ecosystem supports healthy aquatic life, including sensitive indigenous species in all of their life cycles. Waters designated for this use shall not contain any substance at concentrations that would be deleterious to any non-domesticated plant or animal that could bioaccumulate or biomagnify to deleterious levels. The acute and chronic criteria for aquatic life listed in Appendices II and III apply. Additionally, the following criteria shall not be exceeded:

Substance	**Criterion**	**Substance**	**Criterion**
DDT and metabolites	11 ng/L	Mercury	1.1 ng/L
PCBs (total of all forms)	74 ng/L	Selenium (total recoverable)	2 µg/L

Note: Substances are totals unless otherwise indicated.

E. *High-Quality Coldwater Fishery*. The water body contains adequate water flow, water chemistry (DO, pH, etc.), temperature, and biological characteristics that are suitable for the support and spawning of indigenous coldwater fish such as Brook trout, landlocked salmon, and Atlantic salmon or their hybrids. Standards specific to this use are as follows:

(1) Dissolved oxygen minimum: 7 mg/l or 75% of saturation, whichever is higher

Spawning season (October 1 – May 14) – to ensure spawning and egg incubation of indigenous cold water species.

Dissolved oxygen 7-day mean: 9.5 mg/L

Dissolved oxygen 1-day minimum: 8.0 mg/L

(2) Daily maximum temperature: 23°C (73°F)

Weekly average temperature: 19° C (66° F)

(3) pH range: ~~6.6 8.8~~ 6.5 – 9.0

(4) Turbidity: 10 NTU

(5) Conductivity (at 25° C): 300 µmhos/cm (unless natural background is higher)

(6) Chlorine: 2 µg/L

In addition, the acute and chronic criteria for aquatic life listed in Appendices II and III apply.

F. *Coldwater Fishery*. The water body has a water temperature and other characteristics that are suitable for the support of coldwater fish such as Brook trout, landlocked salmon, Atlantic salmon, or their hybrids. Standards specific to this use are as follows:

(1) Dissolved oxygen minimum: 5 mg/l, or 60% of saturation, whichever is higher

(2) Daily maximum temperature: 23°C (73°F)

(3) Weekly average temperature: 19° C (66° F)

(4) pH range: ~~6.6 8.8~~ 6.5 – 9.0

(5) Total ammonia (as N) shall not exceed at any time EPA's national recommended Acute Criteria or exceed more than once in any three-year period the Chronic Criteria contained in Appendix III.

(6) Total residual chlorine maximum: 11µg/L

In addition, the acute and chronic criteria for aquatic life listed in Appendices II and III apply.

H. *Fish Culture*. Water from the water body is used for production of coldwater or warmwater fish in a hatchery or rearing station. There are no numeric water quality standards specific to this use. The General Standards in § 301 apply.

I. *Sustenance Fishing*. The water body is used for carrying out sustenance fishing and is necessary to provide a sufficient diet of fish to sustain a healthy population of members of the Penobscot Nation. Criteria specific to this use are in Appendices I and IV (Human Health Criteria).

J. *Irrigation*. The water body is used for watering agricultural crops and other plants by means of ditches, pipes, sprinkler systems, water-spreading berms, or other artificial means, whether traditional, historical, or contemporary. This use is similar to Maine's "agriculture" use. Concentrations of the following substances shall not exceed the following criteria:

Substance	Criterion	Substance	Criterion
Aluminum (dissolved)	5.0 mg/L	Lithium (dissolved)	2.5 mg/L
Boron (dissolved)	0.75 mg/L	Molybdenum (dissolved)	0.01 mg/L
Cobalt (dissolved)	0.05 mg/L	Vanadium (dissolved)	0.1 mg/L
Fluoride (dissolved)	1.0 mg/L	Uranium	See § 11-2-34

K. *Livestock and Wildlife Watering*. The water body is consumed by livestock, non-domestic animals (including migratory birds), or both for water supply, habitation, growth, or propagation. Concentrations of the following substances shall not exceed the following criteria:

Substance	Criterion	Substance	Criterion
Aluminum (dissolved)	5.0 mg/L	Copper (dissolved)	0.5 mg/L
Arsenic (dissolved)	0.2 mg/L	Fluoride (dissolved)	2.0 mg/L
Boron (dissolved)	5.0 mg/L	Total Mercury	0.01 mg/L
Cadmium (dissolved)	0.05 mg/L	Selenium (total recoverable)	0.05 mg/L
Chromium (dissolved)	1.0 mg/L		
Cobalt (dissolved)	1.0 mg/L	Vanadium (dissolved)	0.1 mg/L

L. *Industrial Process and Cooling Water Supply*. The water body is used in conjunction with the production of goods or services for profit. There are no numeric water quality standards specific to this use. The General Standards in Section 301 apply.

M. *Hydroelectric power generation*. The water body is used in conjunction with the generation of hydroelectric power. There are no numeric water quality standards specific to this use. The General Standards in Section 301 apply.

N. *Outstanding Tribal Resource Waters*. These waters represent a unique sacred and cultural resource of the Penobscot Nation, due for example to their use, their being part of the traditional value system of the Penobscot Indian Nation, or their uncharacteristic beauty. They are therefore given this most protective status to ensure their preservation. Other waters whose high quality makes them an exceptional recreational, cultural, or ecological resource of the Nation may also be designated Outstanding Tribal Resource Waters pursuant to the procedures in Section 105. The standards in Appendix IV shall apply to this use.

Section 402. Designated Use Modifications.

Modifications to designated uses, including the addition or removal of a designated use or establishment of a use subcategory, may be made pursuant to the provisions of Section 105(B) and consistent with the requirements of 40 C.F.R. § 131.10, as may be revised from time to time.

Section 403. Designated Use Table.

Table 1 identifies the designated uses for Penobscot Waters.

Table 1

	Designated Uses →	Domestic Water Supply	Primary Human Contact /Cultural and Ceremonial	Secondary Human Contact	Aquatic Life and Wildlife Habitat	High-Quality Coldwater Fishery	Coldwater Fishery	Fish Culture	Sustenance Fishing	Irrigation	Livestock and Wildlife Watering	Industrial Process and Cooling Water Supply	Hydroelectric power generation	Outstanding Tribal Resources Waters
Location	**Surface Water ↓**													
Penobscot Indian Reservation	Penobscot River - Confluence of East & West Branch to Mattawamkeag River	X	X	X	X		X	X	X	X	X	X	X	
	Penobscot River - Confluence of Mattawamkeag River to Milford Dam	X	X	X	X	X	X	X	X	X	X	X	X	
	East Branch Penobscot River, adjacent to Reservation, parcel in T6R8 WELS	X	X	X	X	X	X		X	X	X			X
Trust Land T2 R9/T3 R9/T3 R8	Mattamiscontis Stream, and tributaries	X	X	X	X	X	X	X	X	X	X			X

	Designated Uses →	Domestic Water Supply	Primary Human Contact /Cultural and Ceremonial	Secondary Human Contact	Aquatic Life and Wildlife Habitat	High-Quality Coldwater Fishery	Coldwater Fishery	Fish Culture	Sustenance Fishing	Irrigation	Livestock and Wildlife Watering	Industrial Process and Cooling Water Supply	Hydroelectric power generation	Outstanding Tribal Resources Waters
Location	**Surface Water ↓**													
	East Branch Seboeis Stream	X	X	X	X	X	X		X	X	X			
	Trout Brook	X	X	X	X	X	X		X	X	X			
	Mountain Brook, and tributaries	X	X	X	X	X	X		X	X	X			
	Squirrel Brook	X	X	X	X	X	X		X	X	X			
	East Branch Lake	X	X	X	X				X	X	X			
	Mattamiscontis Lake	X	X	X	X				X	X	X			X
	Little Mattamiscontis Lake	X	X	X	X				X	X	X			
	South Branch Lake	X	X	X	X				X	X	X			X
Trust Land T1 R6	Hay Brook	X	X	X	X	X	X		X	X	X			
	Mud Brook	X	X	X	X	X	X		X	X	X			
	Salmon Stream and tributaries	X	X	X	X	X	X		X	X	X			

	Designated Uses →	Domestic Water Supply	Primary Human Contact /Cultural and Ceremonial	Secondary Human Contact	Aquatic Life and Wildlife Habitat	High-Quality Coldwater Fishery	Coldwater Fishery	Fish Culture	Sustenance Fishing	Irrigation	Livestock and Wildlife Watering	Industrial Process and Cooling Water Supply	Hydroelectric power generation	Outstanding Tribal Resources Waters
Location	**Surface Water ↓**													
	Little Salmon Stream Lake	X	X	X	X				X	X	X			
Trust Land T6 R8	East Branch Penobscot River	X	X	X	X	X	X		X	X	X			X
	Wadleigh Brook	X	X	X	X	X	X		X	X	X			
	Mountain Catcher Brook	X	X	X	X	X	X		X	X	X			
	Mountain Catcher Pond	X	X	X	X				X	X	X			
	Grand Lake Matagamon	X	X	X	X				X	X	X			X
	Morrell Pond	X	X	X	X				X	X	X			
Trust Land Williamsburg	Merill Brook	X	X	X	X	X	X		X	X	X			
	West Branch Pleasant River	X	X	X	X	X	X		X	X	X			X

	Designated Uses →	Domestic Water Supply	Primary Human Contact /Cultural and Ceremonial	Secondary Human Contact	Aquatic Life and Wildlife Habitat	High-Quality Coldwater Fishery	Coldwater Fishery	Fish Culture	Sustenance Fishing	Irrigation	Livestock and Wildlife Watering	Industrial Process and Cooling Water Supply	Hydroelectric power generation	Outstanding Tribal Resources Waters
Location	**Surface Water ↓**													
	West Branch Pleasant River and tributaries	X	X	X	X	X	X		X	X	X			
	Whetstone Brook and tributaries	X	X	X	X		X		X	X	X			
Trust Land Argyle	Birch Stream and tributaries	X	X	X	X	X	X		X	X	X			X
	Hemlock Stream	X	X	X	X	X	X		X	X	X			
	Ephriam Brook	X	X	X	X		X		X	X	X			
Trust Land Lakeville	E. Branch Passadumkeag River and tributaries	X	X	X	X	X	X		X	X	X			
	Cranberry Brook	X	X	X	X		X		X	X	X			
	Upper Sysladobsis Stream	X	X	X	X		X		X	X	X			
	Taylor Brook and tributaries	X	X	X	X	X	X		X	X	X			
	Upper Sysladobsis Lake	X	X	X	X				X	X	X			
	Sysladobsis Lake	X	X	X	X				X	X	X			

	Designated Uses →	Domestic Water Supply	Primary Human Contact/Cultural and Ceremonial	Secondary Human Contact	Aquatic Life and Wildlife Habitat	High-Quality Coldwater Fishery	Coldwater Fishery	Fish Culture	Sustenance Fishing	Irrigation	Livestock and Wildlife Watering	Industrial Process and Cooling Water Supply	Hydroelectric power generation	Outstanding Tribal Resources Waters
Location	**Surface Water ↓**													
Trust Land Lee	E. Branch Passadumkeag River and tributaries	X	X	X	X	X	X		X	X	X			
Trust Land Alder Stream Twp	Nash Brook	X	X	X	X	X	X		X	X	X			
	North Branch Dead River	X	X	X	X	X	X		X	X	X			
	Little Alder Stream and tributaries	X	X	X	X	X	X		X	X	X			
	Alder Stream and tributaries	X	X	X	X	X	X		X	X	X			
	Snow Mountain Pond	X	X	X	X				X	X	X			X
	Round Mountain Pond	X	X	X	X				X	X	X			X
	Blanchard Pond	X	X	X	X				X	X	X			

Section 404. Application and Construction.

A. The criteria assigned to a water body are those required to sustain all designated uses of the water body and, with regard to bacteria, the water body class. When a Penobscot Water has more than one designated use, as listed in Table 1, the applicable numeric standards for each parameter shall be those necessary to maintain all the designated uses of that water body, that is, the most stringent of those established for that body of water (taking into consideration its water body class in the case of Primary Human Contact/Cultural and Ceremonial designated use).

B. The criteria specific to a designated use shall be maintained at all times for narrative criteria and for persistent bioaccumulative toxic pollutants, including those listed in §307(A)(6), and at all times for all other pollutants except when flows are below critical low flow rates. For human health criteria, the critical low flow rate is the harmonic mean flow or, for ephemeral waters, the modified harmonic mean. For aquatic life, the critical low flow for acute criteria is 1Q10 and for chronic criteria is 7Q10. For all other numeric criteria, the critical low flow is 7Q10.

"Harmonic mean flow" is the number of daily flow measurements divided by the sum of the reciprocals of the flows; that is, it is the reciprocal of the mean of reciprocals. "Modified harmonic mean" is based upon the nonzero flow intervals and modified by including a factor to adjust for the proportion of intervals with zero flow. The equations are as follows:

Harmonic Mean = $\frac{n}{\sum 1/Q}$

where n = number of flow values
and Q = flow value

Modified Harmonic Mean = $\left[\frac{\sum_{i=1}^{Nt-No} \frac{1}{Qi}}{Nt - No}\right]^{-1} x \left[\frac{Nt - No}{Nt}\right]$

where Qi = nonzero flow
Nt = total number of flow values
And N_0 = number of zero flow values

C. Water quality standards established for the attainment and maintenance of upstream designated uses shall be sufficient to protect the attainment and maintenance of downstream designated uses.

D. These PWQS provide the basis for managing discharges attributable to point and nonpoint sources of pollution, including in-stream activities. These PWQS are not used to control natural background phenomena.

E. These PWQS are intended to protect the water quality of Penobscot Waters in a manner that is at least as protective as would be provided by the law of the State of Maine. Thus, if any of these Standards is less protective of water quality than would be provided by the law of the State of Maine, the standard provided by Maine law shall apply.

Section 405. Additional Numeric Water Quality Criteria.

Tables listing additional numeric water quality criteria may be found in Appendices I through IV of these Standards.

SUBCHAPTER V. SAMPLING AND ANALYSIS, VARIANCES AND EXCEEDANCES

Section 501. Sampling and Analysis.

Sample collection, preservation, and analysis used to determine water quality and to maintain these Standards shall be performed in accordance with the Penobscot Nation's Quality Assurance Plan and procedures prescribed by the latest EPA analytical references, including but not limited to the latest editions of any of the following authorities:

(1) American Public Health Association, Standard Methods for the Examination of Water and Wastewater, 22nd Ed. (2012), or the most current edition;

(2) EPA, Methods for Chemical Analysis of Water and Wastes, 3rd Ed. (March 1983), EPA No. 600/4-79-020, or the most current edition; or

(3) Guidelines Establishing Test Procedures for the Analysis of Pollutants, 40 CFR Part 136.

Section 502. Variances.

A. The Director, with the approval of the Penobscot Nation Chief and Tribal Council and EPA, pursuant to subsection H of this section, may grant a variance from a water quality standard for a point source discharge provided that the discharger demonstrates that treatment more advanced than that required to comply with technology-based effluent limitations is necessary to comply with the water quality standard and:

(1) It is not technically feasible to achieve compliance within the next three years, or

(2) The cost of treatment would result in substantial and widespread economic and social impact.

B. A variance may be granted on a pollutant-specific basis only. A point source discharge is required to comply with all other applicable PWQS for which a variance is not granted. No variances may be granted for point source discharges to Outstanding Tribal Resource Waters.

C. A variance applies only to a specific point source discharge. The granting of a variance does not modify a water quality standard. Other point source discharges to the water body shall comply with all applicable Standards, including any Standard for which a variance has been granted for a specific point source discharge.

D. A variance is for a fixed term not to exceed three years. Variances are not renewable but, upon adequate justification, may be reissued by the Director, with the approval of the Penobscot Nation Chief and Tribal Council and of EPA, pursuant to subsection H of this section. In addition, the Director shall reevaluate a variance upon the issuance, reissuance, or modification of the discharge permit for the point source discharge.

E. A person who seeks a variance from a water quality standard shall submit a letter to the Director requesting a variance. The request shall include the following information:

(1) Identification of the specific pollutant and water quality standard for which the variance is sought;

(2) Identification of the receiving water;

(3) For an existing point source discharge, a detailed description of the existing discharge control technologies that are used to achieve compliance with applicable water quality standards. For a new point source discharge, a detailed description of the proposed discharge control technologies that will be used to achieve compliance with applicable water quality standards;

(4) Documentation that the existing or proposed discharge control technologies will comply with applicable technology-based effluent limitations and that more advanced treatment technology is necessary to achieve compliance with the water quality standard for which a variance is sought;

(5) A detailed discussion of why compliance with the water quality standard cannot be achieved;

(6) A detailed discussion of the discharge control technologies that are available for achieving compliance with the water quality standard for which a variance is sought;

(7) Documentation of one or both of the following:

(a) That it is not technically feasible to install and operate any of the available discharge control technologies to achieve compliance with the water quality standard for which a variance is sought, or

(b) That installation and operation of each of the available discharge technologies to achieve compliance with the water quality standard would result in substantial and widespread economic and social impact;

(8) Documentation that the point source discharger has reduced, to the maximum extent practicable, the discharge of the pollutant for which a variance is sought through implementation of pretreatment, source reduction, or a waste minimization program;

(9) A detailed description of proposed interim discharge limitations that represent the highest level of treatment achievable by the point source discharge during the term of the variance. Interim discharge limitations shall not be less stringent than technology-based effluent limitations.

F. In determining whether to recommend that the Penobscot Nation Chief and Tribal Council grant or deny the request for a variance, the Director shall consider the following factors: bioaccumulation, bioconcentration, predicted exposure on biota and the likelihood that resident biota will be adversely affected, the known or predicted safe exposure levels for the pollutant of concern, and the likelihood of adverse human health effects.

G. The Director shall issue public notice and shall provide an opportunity for a public hearing on whether the request for a variance should be granted or denied, pursuant to the procedures in § 105(B).

H. A variance is subject to review and approval by the Penobscot Nation Chief and Tribal Council and the EPA.

I. The final decision on a request for a variance is subject to judicial review pursuant to Section 105(C).

Section 503. Compliance Schedules.

The Penobscot Nation Chief and Tribal Council may allow, on a case-by-case basis, inclusion of a compliance schedule in a National Pollutant Discharge Elimination System ("NPDES") permit that is issued to an existing facility if it is determined by the permitting authority that more time is required to meet the NPDES permit requirements based on new or revised water quality standards. The compliance schedule shall require compliance at the earliest practicable time and shall specify milestones and their anticipated dates in order to track a permittee's progress towards compliance. Notwithstanding the forgoing, a compliance schedule

shall not be issued for NPDES permit requirements designed to meet water quality standards for Outstanding Tribal Resource Waters.

APPENDICES

APPENDIX I: ORGANOLEPTIC EFFECT CRITERIA

(Organoleptic Effect Criteria are contaminants whose presence causes adverse taste or odors in water or fish.)

Pollutant	**Organoleptic Effect Criteria**
	(µg/L)
Acenaphthene	20
Color	
Iron	300
Monochlorobenzene	20
Tainting Substance	
3-Chlorophenol	0.1
4-Chlorophenol	0.1
2,3-Dichlorophenol	0.04
2,5-Dichlorophenol	0.5
2,6-Dichlorophenol	0.2
3,4-Dichlorophenol	0.3
2,4,5-Trichlorophenol	1
2,4,6-Trichlorophenol	2
2,3,4,6-Tetrachlorophenol	1
2-Methyl-4-Chlorophenol	1800
3-Methyl-4-Chlorophenol	3000
3-Methyl-6-Chlorophenol	20
2-Chlorophenol	0.1
Copper	1000

APPENDIX I: ORGANOLEPTIC EFFECT CRITERIA (continued)

Pollutant	**Organoleptic Effect Criteria (µg/L)**
2,4-Dichlorophenol	0.3
2,4-Dimethylphenol	400
Hexachlorocyclopentadiene	1
Manganese	
Nitrobenzene	30
Pentachlorophenol	30
Phenol	300
Zinc	5000

APPENDIX II: AQUATIC LIFE CRITERIA

Pollutant	**CMC 1 (acute) (µg/L)**	**CCC 1 (chronic) (µg/L)**
Acrolein	3ug/L	3ug/L
Aesthetic Qualities	NARRATIVE STATEMENT—SEE DOCUMENT	
Aldrin	3.0	
Alkalinity		20000
alpha-Endosulfan	0.22 A	0.056 A
Aluminum pH 6.5 – 9.0	750 B	87 B
Ammonia	FRESHWATER CRITERIA ARE pH, Temperature and Life-stage DEPENDENT	
Arsenic	340 C,D	150 C,D
Bacteria	FOR PRIMARY RECREATION AND SHELLFISH USES	
beta-Endosulfan	0.22 A	0.056 A
Boron	NARRATIVE STATEMENT	
Carbaryl	2.1	2.1
Cadmium	2.0 D,E	0.25 D,E
Chlordane	2.4	0.0043
Chloride	860000	230000
Chlorine	19	11
Chloropyrifos	0.083	0.041
Chromium (III)	570 D,E	74 D,E
Chromium (VI)	16 D	11 D
Color	NARRATIVE STATEMENT	
Copper	13.4 D,E	8.96 D,E
Cyanide	22 F	5.2 F
Demeton		0.1
Diazinon	0.17ug/L	0.17ug/L
Dieldrin	0.24	0.056
Endrin	0.086	0.036
gamma-BHC (Lindane)	0.95	

APPENDIX II (continued)

Pollutant	**CMC 1 (acute) (µg/L)**	**CCC 1 (chronic) (µg/L)**
Gases, Total Dissolved	NARRATIVE STATEMENT	
Guthion		0.01
Hardness	NARRATIVE STATEMENT	
Heptachlor	0.52	0.0038
Heptachlor Epoxide	0.52	0.0038
Iron		1000
Lead	65 D,E	2.5 D,E
Malathion		0.1
Mercury Methylmercury	1.4 D	0.77 D
Methoxychlor		0.03
Mirex		0.001
Nickel	470 D,E	52 D,E
Nonylphenol	28ug/L	6.6ug/L
Nutrients	NARRATIVE STATEMENT and trophic status for lakes and ponds	
Oil and Grease	See Subchapter III, Section ~~11-2-31~~ 301-A(5)on General Standards	
Oxygen, Dissolved Freshwater	See Subchapter IV, Section ~~11-2-41~~401-E(1) and F (1) on Designated Uses and Associated Standards	
Parathion	0.065 B	0.013 B
Pentachlorophenol	19 G	15 G
pH		6.5 – 9
Phosphorus Elemental		

APPENDIX II (continued)

Pollutant	**CMC 1 (acute) (µg/L)**	**CCC 1 (chronic) (µg/L)**
Polychlorinated Biphenyls (PCBs)		0.014 H
Selenium	I	5
Silver	3.2 D,E	
Solids Suspended and Turbidity	See Subchapter III, Section ~~11-2-31~~ 301-A(5) and (9)on General Standards	
Sulfide-Hydrogen Sulfide		2.0
Tainting Substances	See Subchapter III, Section ~~11-2-31~~ 301-A(7-8) on General Standards	
Temperature	See Subchapter III~~V~~, Section ~~11-2-41~~302 on Temperature, and Subchapter IV, Section 401-E(2) and F(2) on Designated Uses and Associated Standards	
Toxaphene	0.73	0.0002
Tributyltin (TBT)	0.46	0.072
Zinc	120 D,E	120 D,E
4,4'-DDT	1.1 J	0.001 J

A This value applies to the sum of alpha-endosulfan and beta-endosulfan.

B This value for aluminum is expressed in terms of total recoverable metal in the water column.

C This water quality criterion applies to total arsenic.

D Freshwater criteria for metals are expressed in terms of the dissolved metal in the water column.

E The freshwater criterion for this metal is expressed as a function of hardness (mg/L) in the water column. The value given here corresponds to a hardness of 100 mg/L. Criteria values for other hardness may be calculated per the factors and equations for calculating hardness-dependent metals' criteria that are included in this Appendix.

F This recommended water quality criterion is expressed as ug free cyanide (as CN)/L.

G Freshwater aquatic life values for pentachlorophenol are expressed as a function of pH. Values displayed in table correspond to a pH of 7.8.

H This criterion applies to total PCBs (e.g., the sum of all congener or all isomer or homolog or Aroclor analyses.)

I The CMC = 1/[(f1/CMC1) + (f2/CMC2)] where f1 and f2 are the fractions of total selenium that are treated as selenite and selenate, respectively, and CMC1 and CMC2 are 185.9 ug/l and 12.82 ug/l, respectively.

J This criterion applies to DDT and its metabolites (i.e., the total concentration of DDT and its metabolites should not exceed this value).

1 Criteria Maximum Concentration (CMC) is an estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed briefly without resulting in an unacceptable effect.

2 The Criterion Continuous Concentration (CCC) is an estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed indefinitely without resulting in an unacceptable effect.

APPENDIX II: AQUATIC LIFE CRITERIA (continued)

Parameters for Calculating Freshwater Dissolved Metals Criteria That Are Hardness-Dependent						
Chemical	**mA**	**bA**	**mC**	**bC**	**Freshwater Conversion Factors (CF)**	
					CMC	**CCC**
Cadmium	1.0166	-3.924	0.7409	-4.719	1.136672-[(*ln*hardness)(0.041838)]	1.101672-[(*ln*hardness)(0.041838)]
Chromium III	0.819	3.7256	0.819	0.6848	0.316	0.86
Copper	0.9422	-1.7	0.8545	-1.702	0.96	0.96
Lead	1.273	-1.46	1.273	-4.705	1.46203-[(*ln*hardness)(0.145712)]	1.46203-[(*ln*hardness)(0.145712)]
Nickel	0.846	2.255	0.846	0.0584	0.998	0.997
Silver	1.72	-6.59	—	—	0.85	—
Zinc	0.8473	0.884	0.8473	0.884	0.978	0.986

Hardness-dependant metals' criteria may be calculated from the following:

CMC (dissolved) = exp{mA [*ln*(hardness)]+ bA} (CF)
CCC (dissolved) = exp{mC [*ln*(hardness)]+ bC} (CF)

Appendix III.A: Temperature and pH-Dependent Values of the CMC (Acute Criterion Magnitude) in mg/L Total Ammonia Nitrogen – *Oncorhynchus spp.* Present

pH	Temperature (°C)																
	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

Appendix III.B: Temperature and pH-Dependent Values of the CMC (Acute Criterion Magnitude) in mg/L Total Ammonia Nitrogen – *Oncorhynchus spp.* Absent

pH	**Temperature (°C)**																				
	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	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	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

Appendix III.C: Temperature and pH-Dependent Values of the CCC (Chronic Criterion Magnitude) in mg/L Total Ammonia Nitrogen

pH	Temperature (°C)																							
	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

APPENDIX IV: HUMAN HEALTH CRITERIA

When calculating ambient water quality criteria to protect human health, criteria shall be based on a fish ingestion rate of 286 grams per day (derived from the Wabanaki Traditional Cultural Lifeways Exposure Scenario 2009 (Resident fish and Aquatic life from Inland Non-Anadromous diet), and for carcinogenic compounds a cancer risk level of 1×10^{-6}.

		Human Health For Consumption of:			
Pollutant	**CAS Number**	**Water + Organism**	**Organism Only**		**Publication Year**
		(µg/L)	**(µg/L)**		
Acenaphthene	83329	59 G	61 G		2002
Acrolein	107028	0.6	0.6		2009
Acrylonitrile	107131	0.012	0.02		2002
Aldrin	309002	0.000003	0.000003		2002
alpha-BHC	319846	0.0003	0.0003		2002
alpha-Endosulfan	959988	5	5		2002
Anthracene	120127	1985	2448		2002
Antimony	7440360	4.9	39.2		2002
Arsenic	7440382	0.009 A	0.02 A		1992
Asbestos	1332214	7 million fibers/L B			1991
Barium	7440393	1000			1986
Benzene	71432	0.3650	0.8558		2002
Benzidine	92875	0.000011	0.00001		2002
Benzo(a) Anthracene	56553	0.0009	0.001		2002
Benzo(a) Pyrene	50328	0.0009	0.001		2002
Benzo(b) Fluoranthene	205992	0.0009	0.001		2002
Benzo(k) Fluoranthene	207089	0.0009	0.001		2002
Beryllium	7440417	H			
beta-BHC	319857	0.0010	0.001		2002
beta-Endosulfan	33213659	5.30	5.44		2002
Bis(2-Chloroethyl) Ether	111444	0.016	0.03		2002
Bis(2-Chloroisopropyl) Ether	108601	1035	3964		2002
Bis(2-Ethylhexyl) Phthalate	117817	0.128	0.13		2002
Bromoform	75252	2.9	8		2002
Butylbenzyl Phthalate	85687	116	118		2002
Cadmium	7440439	H			
Carbon Tetrachloride	56235	0.07	0.10		2002
Chlordane	57749	0.00005	0.00005		2002
Chlorobenzene	108907	57 G	95 G		2003

APPENDIX IV (continued)

		Human Health For Consumption of:			
Pollutant	**CAS Number**	**Water + Organism**	**Organism Only**		**Publication Year**
		(µg/L)	**(µg/L)**		
Chlorodibromomethane	124481	0.27	1		2002
Chloroform	67663	3.7	11		2002
Chlorophenoxy Herbicide (2,4-D)	94757	100 H			1986
Chromium (III)	16065831	H Total			
Chromium (VI)	18540299	H Total			
Chrysene	218019	0.0009	0.001		2002
Copper	7440508	1,300 G			1992
Cyanide	57125	122 C	122 C		2003
Dibenzo(a,h)Anthracene	53703	0.0009	0.001		2002
Dichlorobromomethane	75274	0.37	1.1		2002
Dieldrin	60571	0.000003	0.000003		2002
Diethyl Phthalate	84662	2448	2682		2002
Dimethyl Phthalate	131113	56929	67988		2002
Di-n-Butyl Phthalate	84742	255	275		2002
Dinitrophenols	25550587	58	324		2002
Endosulfan Sulfate	1031078	5	5		2002
Endrin	72208	0.0037	0.0037		2003
Endrin Aldehyde	7421934	0.018	0.018		2002
Ether, Bis(Chloromethyl)	542881	0.000016	0.000018		2002
Ethylbenzene	100414	110	131		2003
Fluoranthene	206440	8	9		2002
Fluorene	86737	265	326		2002
gamma-BHC (Lindane)	58899	0.107	0.113		2003
Heptachlor	76448	0.0000049	0.0000049		2002
Heptachlor Epoxide	1024573	0.0000024	0.0000024		2002
Hexachlorobenzene	118741	0.000018	0.000018		2002
Hexachlorobutadiene	87683	0.32	1.13		2002
Hexachlorocyclo-hexane-Technical	608731	0.0123	0.0414		
Hexachlorocyclopentadiene	77474	26 G	68 G		2003
Hexachloroethane	67721	0.19	0.20		2002

APPENDIX IV (continued)

		Human Health For Consumption of:			
Pollutant	**CAS Number**	**Water + Organism**	**Organism Only**		**Publication Year**
		(µg/L)	**(µg/L)**		
Ideno(1,2,3-cd)Pyrene	193395	0.0009	0.0011		2002
Isophorone	78591	23	59		2002
Manganese	7439965	50 D	100		
Methylmercury	22967926		0.2 mg/kg E	See Title 38 MRSA §420(1-B) and 413(11)	2001
Methoxychlor	72435	100 H			1986
Methyl Bromide	74839	32	91		2002
Methylene Chloride	75092	4.1	36		2002
Nickel	7440020	91	104		1998
Nitrates	14797558	10,000			1986
Nitrobenzene	98953	12	42 G		2002
Nitrosamines	—	0.0008	1.24		1980
Nitrosodibutylamine, N	924163	0.0043	0.013		2002
Nitrosodiethylamine, N	55185	0.0008	1.24		2002
Nitrosopyrrolidine, N	930552	0.016	2.1		2002
N-Nitrosodimethylamine	62759	0.00068	0.18		2002
N-Nitrosodi-n-Propylamine	621647	0.0043	0.03		2002
N-Nitrosodiphenylamine	86306	0.35	0.37		2002
Pentachlorobenzene	608935	0.09	0.09		2002
Pentachlorophenol	87865	0.11	0.19		2002
pH	—	6.5~~0~~ – 9.0~~8.5~~			1986
Phenol	108952	8749 G	52448 G		2009
Polychlorinated Biphenyls (PCBs)		0.0000039 F	0.0000039 F		2002
Pyrene	129000	198	245		2002
Selenium	7782492	104	255		2002
Solids Dissolved and Salinity	—				1986
Tetrachlorobenzene,1,2,4,5-	95943	0.06	0.07		2002
Tetrachloroethylene	127184	0.16	0.20		2002
Thallium	7440280	0.027	0.029		2003
Toluene	108883	553	915		2003
Toxaphene	8001352	0.000017	0.000017		2002

Trichloroethylene	79016	1.10	1.83		2002

APPENDIX IV (continued)

		Human Health For Consumption of:			
Pollutant	**CAS Number**	**Water + Organism**	**Organism Only**		**Publication Year**
		(µg/L)	**(µg/L)**		
Trichlorophenol,2,4,5-	95954	209	223		2002
Vinyl Chloride	75014	0.021	0.15		2003
Zinc	7440666	1360 G	1562 G		2002
1,1,1-Trichloroethane	71556	H			
1,1,2,2-Tetrachloroethane	79345	0.102	0.24		2002
1,1,2-Trichloroethane	79005	0.374	0.95		2002
1,1-Dichloroethylene	75354	194	437		2003
1,2,4-Trichlorobenzene	120821	4	4		2003
1,2-Dichlorobenzene	95501	70	79		2003
1,2-Dichloroethane	107062	0.33	2.2		2002
1,2-Dichloropropane	78875	0.33	0.9		2002
1,2-Diphenylhydrazine	122667	0.010	0.012		2002
1,2-Trans-Dichloroethylene	156605	114	620		2003
1,3-Dichlorobenzene	541731	52	59		2002
1,3-Dichloropropene	542756	0.28	1.3		2003
1,4-Dichlorobenzene	106467	10	12		2003
2,3,7,8-TCDD (Dioxin)	1746016	3.1E-10	3.1E-10	See also Title 38 MRSA §420(2)	2002
2,4,6-Trichlorophenol	88062	0.14	0.15		2002
2,4-Dichlorophenol	120832	15 G	18 G		2002
2,4-Dimethylphenol	105679	49	52 G		2002
2,4-Dinitrophenol	51285	58	326		2002
2,4-Dinitrotoluene	121142	0.073	0.21		2002
2-Chloronaphthalene	91587	94	97		2002
2-Chlorophenol	95578	8.7 G	9.1 G		2002
2-Methyl-4,6-Dinitrophenol	534521	8	17		2002
3,3'-Dichlorobenzidine	91941	0.0017	0.0017		2002
3-Methyl-4-Chlorophenol	59507	G	G		
4,4'-DDD	72548	0.000019	0.000019		2002
4,4'-DDE	72559	0.000013	0.000013		2002
4,4'-DDT	50293	0.000013	0.000013		2002

A This water quality criterion for arsenic refers to the inorganic form only.

B This criterion for asbestos is the Maximum Contaminant Level (MCL) developed under the Safe Drinking Water Act (SDWA).

C This water quality criterion is expressed as total cyanide.

D This criterion for manganese is not based on toxic effects, but rather is intended to minimize objectionable qualities such as laundry stains and objectionable tastes in beverages.

E This criterion applies to methyl mercury concentration in fish tissue.

F This criterion applies to total PCBs (e.g., the sum of all congener or all isomer or homolog or Aroclor analyses).

G The organoleptic effect criterion is more stringent than the value for priority toxic pollutants.

H A more stringent Maximum Contaminant Level (MCL) has been issued by EPA under the Safe Drinking Water Act. Please refer to the drinking water regulations in 40 CFR Part 141 or call the Safe Drinking Water Hotline (1-800-426-4791) for values.