Water Quality Standards

for the

Walker River Paiute Tribe

Schurz, Nevada

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(a) **Introduction.**

These water quality standards apply to all fresh surface waters of the Walker River, home of the Walker River Paiute Tribe (WRPT) Reservation, including associated floodplains and wetlands. The reservation was established in 1874 by Executive Order and is under the General Allotment Act of 1887. The Walker River Paiutes were originally known as the Agai-Dicutta “Trout Eaters”.

(b) Definitions

(1) “Acute” refers to a stimulus severe enough to rapidly induce an effect; in aquatic toxicity tests, an effect observed in 96- hours or less is typically considered acute. When referring to aquatic toxicology or human health, an acute affect is not always measured in terms of lethality.

(2) “Aquatic community” is an association of interacting populations of aquatic organisms in a given water body or habitat.

(3) “Averaging period” is the period of time over which the receiving water concentration is averaged for comparison with criteria concentrations. This specification limits the duration of concentrations above the criteria.

(4) “Best management practices” or “BMP” means physical, structural, and/or managerial practices that, when used singularly or in combination, prevent or reduce pollution.

(5) “Bioaccumulation” is the process by which a compound is taken up by an aquatic organism, both from water and through food.

(6) “Biological integrity” is the condition of the aquatic community inhabiting unimpaired water bodies of a specified habitat as measured by community structure and function.

(7) “Chronic” defines a stimulus that lingers or continues for a relatively long period of time, often one tenth of the life span or more. Chronic should be considered a relative term depending on the life span of an organism. The measurement of a chronic effect can be reduced growth, reduced reproduction, etc., in addition to lethality.

(8) “Clean Water Act” or “CWA” means the federal Clean Water Act, 33 U.S.C. §§ 1251-1387, as amended.

(9) “Compliance schedule” means a schedule of remedial measures, including an enforceable sequence of actions or operations, leading to compliance with an effluent limitation or other limitation, prohibition or standard.

(10) “Criteria” are elements of the WRPT’s water quality standards, expressed as constituent concentrations, levels, or narrative statements, representing a quality of water that supports a particular use. When criteria are met, water quality will generally protect the designated use.

(11) “Criteria continuous concentration” (CCC) is the highest instream concentration of a toxicant or an effluent to which organisms can be exposed indefinitely without causing unacceptable effect.

(12) “Criteria maximum concentration” (CMC) is the highest instream concentration of a toxicant or an effluent to which organisms can be exposed for a brief period of time without causing an acute effect.

(13) “Cyanotoxins” are toxins produced by cyanobacteria. Cyanobacteria, a type of phytoplankton also known as blue-green algae, are often the cause of algal blooms in fresh water and occasionally in marine water. Their toxins can harm people, animals, aquatic ecosystems, the economy, drinking water supplies, property values, cultural activities, and recreational activities, including swimming and fishing.

(14) “Design flow" is the flow used for steady-state waste load allocation modeling.

(15) “Designated uses” are those uses specified in water quality standards for each water body or segment whether or not they are being attained.

(16) “Diversity” is the number and abundance of biological taxa in a specified location.

(17) “E. coli or Escherichia coli” is the name of a specific bacterium used as an indicator of fecal (pathogen) pollution in fresh water environments and is expressed as colony forming units (cfu) per 100 milliliters or most probable number (mpn) per 100 milliliters. Analytic procedures include multiple-tube fermentation and membrane filter techniques. Elevated levels can be an indicator of the presence of pathogens that can cause human health problems.

(18) “Existing uses” are those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards.

(19) “Federal Indian Reservation,” “Indian Reservation,” or “Reservation” is defined as all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and including rights-of-way running through the reservation.

(20) “Frequency” is how often criteria can be exceeded without unacceptably affecting the community.

(21) “Geometric mean” (GM) refers to the Nth root of the product of N numbers. Alternatively, the geometric mean can be calculated by adding the logarithms of N numbers, dividing the sum by N, and taking the antilog of the quotient. The geometric mean of two numbers is the square root of the product of the two numbers, and the geometric mean of one number is that number. Either natural (base e) or common (base 10) logarithms can be used to calculate geometric means as long as they are used consistently within each set of data, i.e., the antilog used must match the logarithm used.

(22) “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.

(23) “Indian Tribe” or “Tribe” describes any Indian Tribe, band, group, or community recognized by the Secretary of the Interior and exercising governmental authority over a Federal Indian reservation. The use of the word Tribe herein is meant to refer to the Walker River Paiute Tribe (WRPT).

(24) “Magnitude” is how much of a pollutant (or pollutant parameter such as toxicity), expressed as a concentration or toxic unit is allowable.

(25) "Nonpoint source" means any dispersed land-based or water-based activity rather than a point source that contributes to water quality degradation, including but not limited to, atmospheric deposition; surface water runoff from agricultural, urban, forest, construction and mining lands; subsurface or underground sources; or discharges from boats or marine vessels not otherwise regulated under the National Pollutant Discharge Elimination System program.

(26) “NPDES” means National Pollutant Discharge Elimination System, the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under CWA § 307, 318, 402, and 405 of the CWA.

(27) “Outstanding National Resource Water” is a high quality water that constitutes an outstanding Tribal resource due to its extraordinary water quality or ecological values, or where special protection is needed to maintain critical habitat areas.

(28) “Permit” means a document issued pursuant to Tribal code or federal laws (such as CWA §§ 401, 402 and 404) specifying waste treatment and control requirements or discharge conditions.

(29) “Point source” means any discernible, confined or discrete conveyance, including, but not limited to, any pipe, ditch, channel, sewer, tunnel, conduit, well, discrete fissure, container, confined animal feeding operation, vessel, or other floating craft, from which pollutants are or may be discharged.

(30) “Pollutant” means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.

(31) “Pollution” is defined as the man-made or man-induced alteration of the chemical, physical, biological and radiological integrity of water.

(32) “Practicable” means technologically possible, able to be put into practice, and economically viable.

(33) “Priority pollutants” are those pollutants listed under section 307(a) of the CWA.

(34) “Site-specific criterion” is a water quality criterion that has been derived to be specifically appropriate to the water quality characteristics and/or species composition at a particular location.

(35) “Statistical threshold value” (STV) refers to the approximation of the 90th percentile of the water quality distribution and is intended to be a value that should not be exceeded by more than 10 percent of the samples taken.

(36) “Total maximum daily load” (TMDL) is the sum of the individual waste load allocations (WLAs) and load allocations (LAS); a margin of safety is included with the two types of allocations so that any additional loading, regardless of source, would not produce a violation of water quality standards.

(37) “Toxicity test” is a procedure to determine the toxicity of a chemical or an effluent using living organisms. A toxicity test measures the degree of effect on exposed test organisms of a specific chemical or effluent.

(38) “Toxic pollutant” refers to those pollutants, or combination of pollutants, including disease-causing agents, which after discharge and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will, or on the basis of information available to the administrator, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions in reproduction) or physical deformations, in such organisms or their offspring.

(39) “Turbidity” means the clarity of water expressed as nephelometric turbidity units (NTU) and measured with a calibrated turbidity meter.

(40) “Use attainability analysis” (UAA) is a structured scientific assessment of the factors affecting the attainment of the use which may include physical, chemical, biological, and economic factors as described in 40 CFR section 131.10(g).

(41) “Whole effluent toxicity” (WET) means the aggregate toxic effect of an effluent measured directly by a toxicity test.

(c) *Designated uses:*

The following designated uses shall apply to all waters included in paragraph (a), except wetlands as defined in paragraph (h):

(1) Aquatic life, including organism consumption - Water quality must provide for the protection and propagation of fish shellfish and wildlife;

(2) Recreation - Water quality must provide for recreation in and on the water;

(3) Cultural and traditional - Water quality must provide for cultural and traditional uses of the reservation waters; and

(4) Water supply - Water quality must provide for use of the water as a drinking water source.

(d) *Narrative water quality criteria*

(1) *General requirements.* All waters included in paragraph (a) shall be free from toxic, radioactive, conventional, non-conventional, deleterious or other polluting substances in amounts that will prevent attainment of the designated uses specified in paragraph (c).

(2) *Aesthetic qualities and protection of aquatic life and human health.* All waters included in paragraph (a) must be capable of supporting aquatic life uses identified in paragraph (c), and shall be free from substances, attributable to wastewater discharges or any other pollutant sources, that:

(i) Settle to form objectionable deposits;

(ii) Float as debris, scum, oil, or other matter forming nuisances;

(iii) Produce objectionable color, odor, taste, or turbidity;

(iv) Cause injury to, are toxic to, or produce adverse physiological responses in humans, animals, or plants; and/or

(v) Produce undesirable or nuisance aquatic life.

(3) *Protection of cultural and traditional uses.* All waters with the cultural and traditional designated use specified in paragraph (c)(3) shall be free from contaminants at levels that cause or contribute to an impairment in water-based activities essential to maintaining the Tribe's cultural and traditional practices.

(4) *Downstream protection.* All waters designated in paragraph (a) shall maintain a level of water quality that provides for the attainment and maintenance of the water quality standards of downstream waters, including the downstream waters of a state or another federally-recognized tribe.

(e) *Numeric water quality criteria*

(1) *Aquatic life criteria*. The aquatic life criteria for these water quality standards are contained in Tables 1, 1a, 1b, 2, 3, and 4. The aquatic life criteria apply as follows:

(i) The aquatic life criteria in Tables 1, 1a, 1b, 2, 3, and 4 apply to all waters designated for the protection and propagation of fish shellfish and wildlife in paragraph (c).

(2) *Human health criteria*. The human health criteria for these water quality standards are contained in Table 5.

(i) The human health criteria for carcinogens in Table 5 were calculated based on an excess lifetime cancer risk level of 1 in 1,000,000.

(ii) The human health criteria in these standards were calculated using a fish consumption rate of 22 grams per day (gpd).

(iii) For all waters with the Water Supply designated use specified in paragraph (c) (water supply use), the human health criteria for "Water Plus Organisms" and the methylmercury "Organisms Only" criterion as presented in Table 5 apply.

(iv) For all waters with the Aquatic Life designated use specified in paragraph (c) (aquatic life, including organism consumption), but without the designated use Water Supply specified in paragraph (c) (water supply), the human health criteria for "Organisms Only" as presented in Table 5 apply.

(3) *Recreational water quality criteria.* For all waters with the Recreation designated use specified in paragraph (c) (recreation in and on the waters), the criteria in Table 6 shall apply.

Additionally, the concentration of total microcystins shall not exceed 8 µg/L in more than three ten-day periods per recreational season, for more than one recreational season, over a five-year period and the concentration of total cylindrospermopsin shall not exceed 15 µg/L in more than three ten-day periods per recreational season, for more than one recreational season, over a five-year period.

(4) *Temperature Criteria. Between November to March the temperature should be less than or equal to 13 degrees centigrade. Between April and June the temperature should be less than or equal to 23 degrees centigrade. Between July through October the temperature should be less than or equal to 28 degrees centigrade.*

(5) *Design flows.* The design flows in Table 7 shall be used to implement the aquatic life and human health criteria in paragraph (e).

(f) *Antidegradation policy*

(1) Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.

(2) Where the quality of the waters exceeds levels necessary to support the protection and propagation of fish, wildlife, and recreation in and on the water, that quality shall be maintained and protected unless the WRPT finds, after full opportunity for intergovernmental coordination and public involvement, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the WRPT shall assure water quality adequate to protect existing uses fully. Further, the WRPT shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control.

(i) Identification of reservation waters for the protections described in paragraph (f)(2) will be made on a parameter by parameter basis.

(ii) Before allowing any lowering of high quality water, pursuant to paragraph (f)(2), the Tribe shall find, after an analysis of alternatives, that such a lowering is necessary to accommodate important economic or social development in the area in which the waters are located. The analysis of alternatives shall evaluate a range of practicable alternatives that would prevent or lessen the degradation associated with the proposed activity. When the analysis of alternatives identifies one or more practicable alternatives, the Tribe shall only find that a lowering is necessary if one such alternative is selected for implementation.

(3) Where high quality waters constitute an outstanding Tribal resource, such as waters of National and Tribal parks and wildlife refuges and waters of exceptional recreational, ecological, or cultural significance, that water quality shall be maintained and protected.

(4) In those cases where potential water quality impairment associated with a thermal discharge is involved, the decision to allow such degradation shall be consistent with section 316 of the Clean Water Act.

(g) *Antidegradation implementation methods within the WRPT Reservation*

(1) *Applicability.* The antidegradation policy in paragraph (f) and these antidegradation implementation methods shall be applied to all reservation waters of the United States included in paragraph (a).

(i) The requirements of paragraphs (f) and (g) shall be followed when considering all requests to authorize new or expanded regulated activities. Regulated activities include, but are not limited to, any activity that requires a permit, license, or water quality certification pursuant to sections 401, 402, and 404 of the CWA.

(ii) Antidegradation protections will be addressed in new or reissued general permits authorized, implemented, or administered by the permitting authority either at the time the permitting authority develops and issues the general permit or upon review of an applicant's request to be covered by a general permit. The permitting authority will describe, in writing in the permit fact sheet, how the general permit is consistent with the antidegradation requirements of this paragraph and the antidegradation policy in paragraph (f).

(2) *Existing instream use protection consistent with paragraph (f)(1).* For all waters, the Tribe shall ensure that the level of water quality necessary to protect existing uses is maintained. In order to achieve this requirement, the Tribe shall consider whether a regulated activity would lower the water quality to the extent that it would no longer be sufficient to protect and maintain the existing uses of that water body. If the lowering of water quality would not protect and maintain the existing uses of that water body, then the Tribe will not allow the lowering of water quality. Such consideration shall be based on all existing and readily available water quality-related data and information, as well as any additional water-quality related data and information submitted during the public comment period for the authorization.

(3) *High Quality Water Protection consistent with paragraph (f)(2) of this section.* In determining which waters will receive high quality water protection consistent with paragraph (f)(2), the Tribe will identify high quality water on a parameter-by-parameter basis. Each parameter that is determined to be high quality shall be considered and evaluated independently, consistent with this paragraph (g)(3), at the time an applicant requests authorization to lower high water quality. A parameter is high quality if its water quality level exceeds its water quality criterion in paragraph (d) and (e). The Tribe shall ensure that no regulated activity that results in a lowering of water quality occurs unless the components outlined in paragraph (g)(3)(i) are available to the Tribe and the Tribe has made a finding consistent with paragraph (g)(3)(ii).

(i) When determining whether to authorize a lowering of water quality for one or more parameters that exceeds levels necessary to support the protection and propagation of fish, and wildlife and recreation in and on the water, the Tribe will consider the following components and information:

(1) Identifying Information. Name of the applicant, a description of the nature of the applicant's business and the pollutants to be discharged, location of the discharge, the name of and any water quality data for the receiving water body, daily maximum and average flow to be discharged, and effluent characterization.

Alternatives to consider include (only if warranted and as applicable):

- Alternative methods of production or operation;
- Water conversation practices;
- Wastewater minimization technologies;
- Improved wastewater treatment facility operation;
- Alternative methods of treatment, including advanced treatment beyond applicable technology requirements of the Clean Water Act;
- Relocation or configuration of outfall or diffuser;
- Process changes/improved efficiency that reduces pollutant discharge;
- Seasonal discharge to avoid critical time period for water quality;
- Non-discharge alternatives such as land application; and,
- Offsets to the activity or discharge's effect on water quality.

(2) Analysis of alternatives. Identification and evaluation of a range of practicable (as defined at (b)(34)) alternatives that would prevent or lessen the degradation associated with the proposed activity to determine whether the degradation of water quality is necessary. When the analysis of alternatives identifies one or more practicable alternatives, the Tribe shall only find that a lowering of high water quality is necessary, consistent with paragraph (f)(2)(ii), if one such alternative is selected for implementation.

(3) Socio-economic analysis. Identification and evaluation of the social and economic development benefits to the area in which the waters are located that will be foregone if the lowering of water quality is not allowed. Along with the analysis of alternatives, the socio-economic analysis is used to determine whether the lowering of high water quality will accommodate important economic and social development in the area in which the water is located. The "area in which the waters are located" shall be determined on a case-by-case basis and shall include all areas directly impacted by the proposed regulated activity. Factors that must be considered in the socio-economic analysis include, but are not limited to, the ecological and economic importance of the affected waters, the importance of the development to the affected community, and the socio-economic health of the affected community as determined by appropriate analytical methods.

(4) Any additional documentation requested by the Tribe which, in the judgment of the Tribe, is needed to decide whether to find that a lowering of water quality is necessary to accommodate important economic and social development in the area in which the water is located.

(ii) Once the Tribe has the components and information required in paragraph (g)(3)(i), the Tribe shall use that information to make a finding as to whether the lowering of water quality is necessary to accommodate important social and economic development in the area in which the water is located.

(1) If the proposed lowering of high water quality is either not necessary, or not important to accommodate social and economic development, the Tribe shall deny the request to lower water quality.

(2) If the lowering of high water quality is necessary to accommodate important social and economic development goals, the Tribe may allow a lowering to the high quality water as long as one of the alternatives identified in paragraph (g)(3)(i)(*2*) is selected for implementation and incorporated into the authorization for the activity. If no practicable alternative was identified by the analysis of alternatives, but the lowering of high water quality will accommodate important social or economic development the Tribe may allow the lowering of high water quality. If a non-degrading practicable alternative is selected, no lowering of the high quality water will occur, and the Tribe does not need to allow the lowering.

(3) In no event will the Tribe allow water quality to be lowered below the level required to fully protect existing and designated uses.

(4) To ensure the opportunity for public involvement, the Tribe shall provide public notice and request public comment on the preliminary decision to allow a lowering of high water quality. The preliminary decision will provide relevant information regarding the lowering of high water quality, including the alternatives analysis, socio-economic analysis, the estimated amount of assimilative capacity available in the water body, and the estimated amount of assimilative capacity to be utilized by the proposed activity. To the extent possible, public notice regarding the finding to allow a lowering of water quality will be coordinated with other required notices for public review.

(5) To fulfill intergovernmental coordination, the Tribe shall notify local, state, and federal agencies that operate in the area impacted by the activity and request comment on the preliminary decision to allow a lowering of water quality in a high quality water based on whether it is necessary to accommodate important social and economic development in the area of the waters impacted by the activity.

(6) Before allowing any degradation of water quality, the Tribe shall identify point sources and tribal-regulated nonpoint sources that discharge to, or otherwise impact, the receiving water. The Tribe shall coordinate with other agencies, as necessary, to assure compliance with the highest statutory and regulatory requirements for all new and existing point sources and/or all tribal required cost-effective and reasonable best management practices for non-point source control. If compliance with the highest statutory and regulatory requirements for all new and existing point sources and all tribal-regulated cost-effective and reasonable best management practices for non-

point sources cannot be assured, the Tribe will not allow a lowering of high water quality.

(4) *Outstanding Tribal resource water protection consistent with paragraph (f)(3).* For reservation waters assigned as outstanding Tribal resource waters, the Tribe shall ensure, through the application of appropriate controls on point and tribal regulated nonpoint pollutant sources, that water quality is maintained and protected. No new or expanded point source discharges will be allowed to outstanding Tribal resource waters unless it is on a short term and temporary basis, consistent with paragraph (g)(4)(iii).

(i) Any person or entity may nominate a specific reservation water to be assigned as an outstanding Tribal resource water. The person or entity may transmit a written nomination to the Tribe, at any time, including why the reservation water warrants outstanding Tribal resource protection. The Tribe shall determine whether the nominated water qualifies as an outstanding Tribal resource water as described in paragraph (g)(4).

(ii) The tribe shall issue a public notice regarding the decision to assign a water as an outstanding Tribal resource water. The Tribe will maintain a comprehensive list of the reservation waters that have been assigned as an outstanding Tribal resource waters consistent with paragraph (f)(3).

(iii) The Tribe may allow short-term, temporary water quality degradation in an outstanding Tribal resource water only if the short-term, temporary degradation is limited to the shortest possible time, does not impact existing uses, and does not alter the essential or special characteristics that make the reservation water an outstanding Tribal resource water. Short-term shall be considered any period that is measured in the context of weeks to months, not years.

(h) *Wetlands designated uses, narrative and numeric water quality criteria, and antidegradation requirements:*

(1) *Definition:* Wetlands within the WRPT Reservation were classified utilizing the Cowardin classification system. There are 10,223.1 acres of wetlands classified according to the USFWS National Wetlands Inventory (NWI) database defined as freshwater emergent, freshwater forested, freshwater scrub shrub, freshwater ponds, including lakes and reservoirs. Freshwater Emergent Wetlands include 1,460.2 acres. Freshwater Forested and Scrub/Shrub Wetlands include 1,239.79 acres. Freshwater Ponds include 522.48 acres. Lakes-Reservoirs include 2,690.35 acres.

(2) *Designated Uses*. For waters designated in paragraph (a) that constitute wetlands, as defined by the Cowardin classification scheme, the designated uses are: base flow discharge, cultural and traditional uses, flood flow attenuation, groundwater recharge, indigenous floral and faunal diversity and abundance, nutrient cycling, organic carbon export/cycling, protection of downstream water quality, recreation, resilience against climatic effects, sediment/shoreline stabilization, surface water storage, and water-dependent wildlife.[1]

(3) *Narrative criteria*. All waters included in paragraph (a) that constitute wetlands, as defined by the Cowardin classification scheme, shall maintain the biological, physical, and chemical conditions of reference wetlands[2], specifically: base flow, flow regime, wetland hydroperiod; chemical, nutrient, dissolved oxygen regime of the wetland; conditions favorable to protection and propagation of threatened, endangered, and at-risk species; conductivity; floristic quality; integrity of species diversity, abundance, zonation; normal movement of fauna; pH of wetland waters; salinity; size and shape of the wetland; soil type horizon structure; water currents; erosion and sedimentation patterns; water levels or elevations; and water temperature variations.

(4) *Numeric criteria*. For all waters included in paragraph (a) that constitute wetlands, numeric criteria identified in Table 1, 1a, 1b, Table 2, Table 3, Table 4, and the "Organism Only" column of Table 5, apply.

(5) *Recreational water quality criteria.* For all waters included in paragraph (a) that constitute wetlands, numeric criteria identified in Table 6 shall apply.

Additionally, the concentration of total microcystins shall not exceed 8 µg/L in more than three ten-day periods per recreational season, for more than one recreational season, over a five-year period and the concentration of total cylindrospermopsin shall not exceed 15 µg/L in more than three ten-day periods per recreational season, for more than one recreational season, over a five-year period.

[1] These wetlands-specific designated uses represent the uses specified in 101(a)(2) of the Clean Water Act.

[2] Note: A "reference wetland" is a specific locality on a water body which is unimpaired or minimally impaired and is representative of the expected biological integrity of other localities on the same water body or nearby water bodies.

(6) *Antidegradation requirements.* For waters designated in paragraph (a) that constitute wetlands, as defined by the Cowardin classification scheme, the following antidegradation requirements shall apply:

(i) Maintenance and protection of existing instream water uses and the level of water quality necessary to protect the existing uses consistent with paragraphs (f) and (g);

(ii) No net loss to the water quality, functions, values, area, or ecological integrity of high quality wetlands, unless, after satisfying applicable antidegradation provisions including avoidance, minimization, and mitigation/replacement requirements, the WRPT determines that allowing degradation is necessary to accommodate important social or economic development in the area in which the wetlands are located consistent with paragraphs (f) and (g); and

(iii) No loss to the water quality, functions, values, area, or ecological integrity of wetlands assigned as Outstanding National Resource Waters consistent with paragraphs (f) and (g).

(i) Mixing Zone Policy (Reserved)

(j) *Compliance schedule authorizing provision*

The WRPT authorizes the use of compliance schedules, on a case-by-case basis, for water quality-based effluent limits in National Pollutant Discharge Elimination System (NPDES) permits, when appropriate, and consistent with 40 CFR 122.47, for new, recommencing, or existing dischargers to require compliance as soon as possible with water quality-based effluent limitations calculated to meet water quality standards issued or revised after July 1, 1977.

(k) *WQS variance authorizing provision*

The WRPT may consider issuing WQS variances per this section. Any WQS variances adopted subsequent to the adoption of this section must be consistent with the regulation at 40 CFR 131.14. A WQS variance is not effective for CWA purposes and thus cannot be implemented for purposes of NPDES permitting or CWA section 401 certification until EPA has approved it under CWA section 303(c).

(l) *Water Body-Specific designated uses, criteria, and WQS variances*

Paragraph l will catalog any variances adopted in the future and is intentionally left blank until such time as it is needed.

(m) **Tables**

Table 1. Aquatic Life Criteria

Aquatic Life Criteria			
A		B Freshwater	
Compound	CAS Number	Criterion Maximum Concentration (CMC) (µg/L) B1	Criterion Continuous Concentration (CCC) (µg/L) B2
Acrolein	107028	3	3
Aldrin[a]	309002	1.5	-
Alkalinity[b]		-	20000
alpha-Endosulfan[a,c]	959988	0.11	0.056
Aluminum pH 5.0 – 10.5	7429905	Acute (CMC) and chronic (CCC) freshwater aluminum criteria values for a site shall be calculated using the 2018 Aluminum Criteria Calculator (*Aluminum Criteria Calculator V.2.0.xlsx*, or a calculator in R or other software package using the same 1985 Guidelines calculation approach and underlying model equations as in the *Aluminum Criteria Calculator V.2.0.xlsx*) as established in EPA's Final Aquatic Life Ambient Water Quality Criteria for Aluminum 2018 (EPA 822–R–18–001). Where required by federal regulations, measurements of total recoverable aluminum shall be used. *To apply the aluminum criteria for Clean Water Act purposes, criteria values based on ambient water chemistry conditions must protect the water body over the full range of variability, including during conditions when aluminum is most toxic.*	
Ammonia	7664417	See Table 4	
Arsenic[d,e]	7440382	340	150
beta-Endosulfan[a,c]	33213659	0.11	0.056
Cadmium[e]	7440439	See Table 1b	
Carbaryl	63252	2.1	2.1
Chlordane[a]	57749	1.2	0.0043
Chloride	16887006	860000	230000
Chlorine	7782505	19	11
Chlorpyrifos	2921882	0.083	0.041
Chromium (III)[e]	16065831	See Table 1b	
Chromium (VI)[e]	18540299	16	11
Copper[e]	7440508	See Table 2	
Cyanide[g]	57125	22	5.2
Demeton	8065483	-	0.1

Aquatic Life Criteria			
A		B Freshwater	
Compound	CAS Number	Criterion Maximum Concentration (CMC) (µg/L) B1	Criterion Continuous Concentration (CCC) (µg/L) B2
Diazinon	333415	0.17	0.17
Dieldrin	60571	0.24	0.056
Endrin	72208	0.086	0.036[h]
gamma-BHC (Lindane)	58899	0.95	-
Guthion	86500	-	0.01
Heptachlor[a]	76448	0.26	0.0038
Heptachlor Epoxide[a,i]	1024573	0.26	0.0038
Iron[e]	7439896	-	1000
Lead[e]	7439921	See Table 1b	
Malathion	121755	-	0.1
Mercury[e,j]	7439976	Reserved	Reserved
Methoxychlor	72435	-	0.03
Mirex	2385855	-	0.001
Nickel[e]	7440020	See Table 1b	
Nonylphenol	84852153	28	6.6
Oxygen, Dissolved[k]	7782447	June-October ≥5.0 mg/l; November-May ≥6.0 mg/l	
Parathion	56382	0.065	0.013
Pentachlorophenol	87865	19[l]	15[l]
pH[m]		-	6.5 – 9
Polychlorinated Biphenyls (PCBs)			0.014
Selenium[e]	7782492	See Table 3	
Silver[a,e,o]	7440224	See Table 1b	
Sulfide-Hydrogen Sulfide	7783064	-	2
Toxaphene	8001352	0.73	0.0002
Tributyltin (TBT)		0.46	0.072
Zinc[e]	7440666	See Table 1b	
4,4'-DDT[a]	50293	0.55	0.001

Notes to Table 1

1. The CMC is the highest allowable one-hour average instream concentration of a pollutant and is not to be exceeded more than once every three years. Except where noted otherwise, the CCC is the highest allowable four-day average instream concentration of a pollutant and is not to be exceeded more than once every three years.

2. Because of variations in chemical nomenclature systems, this listing of toxic pollutants does not duplicate the listing in Appendix A to 40 CFR Part 423 - 126 Priority Pollutants. The Chemical Abstracts Services (CAS) registry numbers provide a unique identification for each chemical.

Footnotes to Table 1:

a. **Footnotes to Table 1:**

a. These criteria are based on the 1980 criteria, which used different Minimum Data Requirements and derivation procedures from the 1985 Guidelines. The CMC derived using the 1980 Guidelines was derived to be used as an instantaneous maximum. Therefore, in order to treat these in a similar manner to more recent criteria developed using the 1985 Guidelines, the CMC values given are the result of dividing by 2 to obtain a value that is more comparable to a CMC derived using the 1985 Guidelines.

b. The CCC of 20mg/L is a minimum value except where alkalinity is naturally lower, in which case the alkalinity cannot be lower than 25% of the natural level.

c. This value was derived from data for endosulfan and is most appropriately applied to the sum of alpha-endosulfan and beta-endosulfan.

d. This recommended water quality criterion was derived from data for arsenic (III), but is applied here to total arsenic.

e. Freshwater criteria for these metals are expressed in terms of the dissolved metal in the water column. See Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria. See Table 1a for conversion factors to convert between total recoverable and dissolved measurements.

g. These recommended water quality criteria are expressed as µg free cyanide per liter.

h. The derivation of the CCC for this pollutant did not consider exposure through the diet, which is probably important for aquatic life occupying upper trophic levels.

i. This value was derived from data for heptachlor and there was insufficient data to determine relative toxicities of heptachlor and heptachlor epoxide.

j.

k. For fresh waters, see Quality Criteria for Water, 1986 ("Gold Book"). The duration and the frequency designated for impairment is one that protects the highest designated use for aquatic life for the protection of aquatic life in freshwaters (mg/L of DO) for the 30-day mean. Also see the EPA DO Fact sheet. https://www.epa.gov/system/files/documents/2021-07/parameter-factsheet_do.pdf

l. Freshwater aquatic life values for pentachlorophenol are expressed as a function of pH and values displayed in table correspond to a pH of 7.8. CCC = $e^{1.005(pH) - 5.134}$, CMC = $e^{1.005\,(pH) - 4.869}$

m. Reserved

o. The result of the equation given in Table 1b for silver must be divided by 2 to obtain a value that is more comparable to a CMC derived using the 1985 Guidelines.

Table 1a: Conversion Factors for Dissolved Metals Criteria

Metal	Freshwater CMC	Freshwater CCC
Arsenic	1.000	1.000
Cadmium	1.136672-[(ln hardness)(0.041838)]	1.101672-[(ln hardness)(0.041838)]
Chromium III	0.316	0.860
Chromium VI	0.982	0.962
Copper	0.960	0.960
Lead	1.46203-[(ln hardness)(0.145712)]	1.46203-[(ln hardness)(0.145712)]
Mercury	0.85	—
Nickel	0.998	0.997
Selenium	—	—
Silver	0.85	—
Zinc	0.978	0.986

Table 1b: Parameters for Calculating Freshwater Dissolved Metals Criteria That Are Hardness-Dependent

Chemical	mA	bA	mC	bC	Freshwater Conversion Factors (CF)	
					CMC	CCC
Cadmium	0.9789	-3.866	0.7409	-4.719	1.136672-[(*ln*hardness)(0.041838)]	1.101672-[(*ln*hardness)(0.041838)]
Chromium III	0.8190	3.7256	0.8190	0.6848	0.316	0.860
Lead	1.273	-1.460	1.273	-4.705	1.46203-[(*ln*hardness)(0.145712)]	1.46203-[(*ln*hardness)(0.145712)]
Nickel	0.8460	2.255	0.8460	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-dependent metals criteria are calculated using the following equations:

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

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

Table 2. Copper Aquatic Life Criteria for Fresh Waters

Metal	CAS No.	Criterion Maximum Concentration (CMC) [a] (µg/L)	Criterion Continuous Concentration (CCC) [b] (µg/L)
Copper	7440508	Acute (CMC) and chronic (CCC) freshwater copper criteria shall be developed using EPA's 2007 *Aquatic Life Ambient Freshwater Quality Criteria—Copper* (EPA–822–R–07–001), which incorporates use of the copper biotic ligand model (BLM). Where sufficiently representative ambient data for DOC, calcium, magnesium, sodium, potassium, sulfate, chloride, or alkalinity are not available, the WRPT shall use the 10th percentile values from publicly available peer-reviewed datasets such as the US Geological Survey National Waters Information System (NWIS) and EPA's Storage and Retrieval Data Warehouse.	

[a] The CMC is the highest allowable one-hour average instream concentration of copper. The CMC is not to be exceeded more than once every three years.
[b] The CCC is the highest allowable four-day average instream concentration of copper. The CCC is not to be exceeded more than once every three years.

Table 3. Selenium Aquatic Life Criteria for Fresh Waters

Criterion Element	Magnitude	Duration	Frequency
Fish Tissue[a] (Egg-Ovary)[b]	15.1 mg/kg dw	Instantaneous measurement[c]	Not to be exceeded
Fish Tissue[a] (Whole Body or Muscle)[d]	8.5 mg/kg dw or 11.3 mg/kg dw muscle (skinless, boneless filet)	Instantaneous measurement[c]	Not to be exceeded
Water Column[e] (Monthly Average Exposure)	1.5 µg/L in lentic aquatic systems 3.1 µg/L in lotic aquatic systems	30 days	Not more than once in three years on average
Water Column[e] (Intermittent Exposure)[f]	$WQC_{int} = \frac{WQC_{30\text{-}day} - C_{bkgrnd}(1 - f_{int})}{f_{int}}$	Number of days/month with an elevated concentration	Not more than once in three years on average

[a] Fish tissue elements are expressed as steady-state.
[b] Egg/ovary supersedes any whole-body, muscle, or water column element when fish egg/ovary concentrations are measured, except as noted in footnote d below.
[c] Fish whole-body or muscle tissue supersedes water column element when both fish tissue and water concentrations are measured, except as noted in footnote d below.
[d] Water column values are based on dissolved total selenium in water and are derived from fish tissue values via bioaccumulation modeling. When selenium inputs are increasing, water column values are the applicable criterion element in the absence of steady-state condition fish tissue data.
[e] Where $WQC_{30\text{-}day}$ is the water column monthly element for either lentic or lotic waters; C_{bkgrnd} is the average background selenium concentration; and f_{int} is the fraction of any 30-day period during which elevated selenium concentrations occur, with f_{int} assigned a value ≥ 0.033 (corresponding to 1 day).
[f] Fish tissue data provide instantaneous point measurements that reflect integrative accumulation of selenium over time and space in fish population(s) at a given site.

Table 4. Ammonia Aquatic Life Criteria for Fresh Waters

mg Total Ammonia Nitrogen (TAN)/L	
Acute (CMC) equation (1 hour average)	$CMC = MIN\left(\left(\frac{0.275}{1+10^{7.204-pH}}+\frac{39.0}{1+10^{pH-7.204}}\right),\left(0.7249\times\left(\frac{0.0114}{1+10^{7.204-pH}}+\frac{1.6181}{1+10^{pH-7.204}}\right)\times\left(23.12\times 10^{0.036\times(20-T)}\right)\right)\right)$
Chronic (CCC) equation (30-day rolling average)*	$CCC = 0.8876\times\left(\frac{0.0278}{1+10^{7.688-pH}}+\frac{1.1994}{1+10^{pH-7.688}}\right)\times\left(2.126\times 10^{0.028\times(20-MAX(T,7))}\right)$
Note: Ammonia criteria are a function of pH and temperature. At the standard normalized pH of 7.0 and temperature of 20 °C, the acute criterion would be 17 mg TAN/L and the chronic criterion would be 1.9 mg TAN/L. Criteria duration: the acute criterion is a one-hour average and the chronic criterion is a thirty-day rolling average. Criteria frequency: Not to be exceeded more than once in 3 years. * Not to exceed 2.5 times the CCC as a 4-day average within the 30-days, *i.e.* 4.8 mg TAN/L at pH 7 and 20 °C. more than once in 3 years on average.	

Note to Table 4: Acute (CMC) and chronic (CCC) freshwater ammonia criteria were developed using EPA's 2013 *Aquatic Life Ambient Water Quality Criteria for Ammonia - Freshwater* (EPA–822–R–13–001), which is hereby incorporated by reference. Illustrations, tables, and formulae used in the development of these equations can be found on pages 40-52 of the criteria document. Alternative equations for the presence or absence of *Oncorhynchus sp.* (rainbow trout) can be found on pages 41-42 of the document.

Table 5. Human Health Criteria

Calculated Human Health Criteria based on a Fish Consumption Rate of 22 grams/day and Cancer Risk Level of 1 in 1,000,000 people (10^{-6})			
Pollutant	**CAS Number**	**Water + Organism (µg/L)**	**Organism Only (µg/L)**
1,1,1-Trichloroethane [a]	71556	10000	200000
1,1,2,2-Tetrachloroethane	79345	0.2	3
1,1,2-Trichloroethane [a]	79005	0.55	8.6
1,1-Dichloroethylene [a]	75354	300	20000
1,2,4,5-Tetrachlorobenzene	95943	0.03	0.03
1,2,4-Trichlorobenzene [a]	120821	0.069	0.073
1,2-Dichlorobenzene [a]	95501	1000	3000
1,2-Dichloroethane [a]	107062	9.9	630
1,2-Dichloropropane	78875	0.9	30
1,2-Diphenylhydrazine	122667	0.03	0.2
1,2-Trans-Dichloroethylene [a]	156605	100	4000
1,3-Dichlorobenzene	541731	7	10
1,3-Dichloropropene	542756	0.27	11
1,4-Dichlorobenzene [a]	106467	300	900
2,4,5-Trichlorophenol [b]	95954	300	600
2,4,6-Trichlorophenol [b]	88062	1.4	2.7
2,4-Dichlorophenol [b]	120832	10	60
2,4-Dimethylphenol [b]	105679	100	2000
2,4-Dinitrophenol	51285	10	300

Calculated Human Health Criteria based on a Fish Consumption Rate of 22 grams/day and Cancer Risk Level of 1 in 1,000,000 people (10^{-6})			
Pollutant	**CAS Number**	**Water + Organism (µg/L)**	**Organism Only (µg/L)**
2,4-Dinitrotoluene	121142	0.048	1.6
2-Chloronaphthalene	91587	800	1000
2-Chlorophenol [b]	95578	30	800
2-Methyl-4,6-Dinitrophenol	534521	2	30
3,3'-Dichlorobenzidine	91941	0.049	0.14
3-Methyl-4-Chlorophenol [b]	59507	500	2000
4,4'-DDD	72548	0.00012	0.00012
4,4'-DDE	72559	0.000017	0.000017
4,4'-DDT	50293	0.00003	0.00003
Acenaphthene [b]	83329	70	90
Acrolein	107028	3	400
Acrylonitrile	107131	0.061	6.7
Aldrin	309002	7.4e-7	7.4e-7
alpha-BHC	319846	0.00035	0.00038
alpha-Endosulfan	959988	20	30
Anthracene	120127	300	400
Antimony [a,c,d]	7440360	5.3	580
Arsenic [c, j]	7440382	0.014	0.047
Asbestos [a,c,e]	1332214	7 million fibers/L	--

Calculated Human Health Criteria based on a Fish Consumption Rate of 22 grams/day and Cancer Risk Level of 1 in 1,000,000 people (10^{-6})			
Pollutant	**CAS Number**	**Water + Organism (µg/L)**	**Organism Only (µg/L)**
Barium [a,c,e,f]	7440393	1000	--
Benzene [a]	71432	0.58	15
Benzidine	92875	0.00014	0.01
Benzo(a) Anthracene	56553	0.0012	0.0013
Benzo(a) Pyrene [a]	50328	0.00012	0.00013
Benzo(b) Fluoranthene	205992	0.0012	0.0013
Benzo(k) Fluoranthene	207089	0.012	0.013
beta-BHC (beta-HCH)	319857	0.0079	0.014
beta-Endosulfan	33213659	20	40
Bis(2-Chloro-1-Methylethyl) Ether	108601	200	3000
Bis(2-Chloroethyl) Ether	111444	0.03	2.1
Bis(2-Ethylhexyl) Phthalate [a]	117817	0.32	0.37
Bis(Chlormethyl) Ether	542881	0.00015	0.017
Bromoform [a]	75252	7	110
Butylbenzyl Phthalate	85687	0.1	0.1
Carbon Tetrachloride [a]	56235	0.4	5
Chlordane [a]	57749	0.0003	0.00031
Chlorobenzene [a,b]	108907	100	800
Chlorodibromomethane [a]	124481	0.8	20

Calculated Human Health Criteria based on a Fish Consumption Rate of 22 grams/day and Cancer Risk Level of 1 in 1,000,000 people (10^{-6})			
Pollutant	**CAS Number**	**Water + Organism (µg/L)**	**Organism Only (µg/L)**
Chloroform [a]	67663	60	2000
Chlorophenoxy Herbicide (2,4,5-TP) [Silvex] [a]	93721	100	400
Chlorophenoxy Herbicide (2,4-D) [a]	94757	1300	12000
Chrysene [a]	218019	0.12	0.13
Copper [a,b,c,e]	7440508	1300	--
Cyanide [a]	57125	4	400
Di-n-Butyl Phthalate	84742	20	30
Dibenzo(a,h) Anthracene	53703	0.00012	0.00013
Dichlorobromomethane [a]	75274	0.94	26
Dieldrin	60571	0.0000012	0.0000012
Diethyl Phthalate	84662	600	600
Dimethyl Phthalate	131113	2000	2000
Dinitrophenols	25550587	10	1000
Dioxin [c]	1746016	4.6e-9	4.7e-9
Endosulfan Sulfate	1031078	20	40
Endrin	72208	0.03	0.03
Endrin Aldehyde [a]	7421934	1	1
Ethylbenzene [a]	100414	67	120
Fluoranthene	206440	20	20

Calculated Human Health Criteria based on a Fish Consumption Rate of 22 grams/day and Cancer Risk Level of 1 in 1,000,000 people (10^{-6})			
Pollutant	**CAS Number**	**Water + Organism (µg/L)**	**Organism Only (µg/L)**
Fluorene	86737	50	70
Gamma-BHC (HCH); Lindane [a]	58899	4.1	4.3
Heptachlor [a]	76448	0.0000057	0.0000057
Heptachlor Epoxide [a]	1024573	0.000031	0.000031
Hexachlorobenzene [a]	118741	0.000076	0.000077
Hexachlorobutadiene [a]	87683	0.009	0.009
Hexachlorocyclohexane (HCH) - Technical	608731	0.0064	0.0098
Hexachlorocyclopentadiene [a,b]	77474	3	4
Hexachloroethane	67721	0.1	0.1
Indeno(1,2,3-cd) Pyrene	193395	0.0012	0.0013
Isophorone	78591	34	1800
Manganese [b,c,e,g]	7439965	50	100
Methoxychlor [a]	72435	0.02	0.02
Methyl Bromide	74839	100	10000
Methylene Chloride [a]	75092	20	1000
Methylmercury [c,h]	22967926	N/A	0.3 *mg/kg*
N-Nitrosodi-n-Propylamine [c]	621647	0.0047	0.46
N-Nitrosodimethylamine [c]	62759	0.00065	2.7
N-Nitrosodiphenylamine [c]	86306	3	5.5

Calculated Human Health Criteria based on a Fish Consumption Rate of 22 grams/day and Cancer Risk Level of 1 in 1,000,000 people (10^{-6})			
Pollutant	**CAS Number**	**Water + Organism (µg/L)**	**Organism Only (µg/L)**
Nickel [c,d]	7440020	93	310
Nitrates [a,c,e]	14797558	10000	--
Nitrobenzene [b]	98953	10	500
Nitrosamines [c]	--	0.000766	0.418
Nitrosodibutylamine [c]	924163	0.006	0.2
Nitrosodiethylamine [c]	55185	0.000766	0.418
Nitrosopyrrolidine [c]	930552	0.016	31
Pentachlorobenzene	608935	0.1	0.1
Pentachlorophenol (PCP) [a,b]	87865	0.02	0.04
pH [c,e]	--	5-9	--
Phenol [b]	108952	4000	300000
Polychlorinated Biphenyls (PCBs) [a,c,i]	1336363	0.000058	0.000058
Pyrene	129000	20	30
Selenium [a,c]	7782492	32	760
Solids Dissolved and Salinity [c,e]	--	250000	--
Tetrachloroethylene [a]	127184	10	28
Thallium [c]	7440280	0.22	0.43
Toluene [a]	108883	57	500
Toxaphene [a]	8001352	0.00068	0.00069

Calculated Human Health Criteria based on a Fish Consumption Rate of 22 grams/day and Cancer Risk Level of 1 in 1,000,000 people (10^{-6})			
Pollutant	**CAS Number**	**Water + Organism (µg/L)**	**Organism Only (µg/L)**
Trichloroethylene [a]	79016	0.6	7
Vinyl Chloride [a]	75014	0.022	1.6
Zinc [b,c]	7440666	1400	4600

Footnotes:

a. EPA has issued a Maximum Contaminant Level (MCL) for this chemical which may be more stringent. Refer to EPA's National Primary Drinking Water Regulations.

b. The criterion for organoleptic (taste and odor) effects may be more stringent. Refer to National Recommended Water Quality Criteria - Organoleptic Effects.

c. EPA did not update its National Recommended Human Health Water Quality Criteria for this pollutant in 2015. This table's criteria values are calculated using the 2015 revised inputs for body weight, drinking water intake rate, and a fish consumption rate of 22 g/day (refer to 2015 EPA Updated Ambient Water Quality Criteria for the Protection of Human Health). The criteria values in this table therefore may not match the values in (cite to EPA's 304a) which are based on pre-2015 inputs.

d. This criterion was revised to reflect EPA's q1* or RfD as contained in the Integrated Risk Information System (IRIS) as of May 17, 2002. The fish tissue bioconcentration factor (BCF) is from the 1980 Ambient Water Quality Criteria document.

e. Criteria for these pollutants are from the National Recommended Water Quality Criteria - Human Health Criteria Table. They are not calculated based on this table's inputs for fish consumption rate and cancer risk level.

f. This human health criterion is the same as originally published in the Quality Criteria for Water, 1976 ("Red Book") which predates the 1980 methodology and did not utilize the fish ingestion BCF approach. This same criterion value is published in the Quality Criteria for Water, 1986 ("Gold Book").

g. The Human Health for the consumption of Water + Organism 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.

h. This fish tissue residue criterion for methylmercury is based on the total fish consumption rate.

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

j. This criterion for arsenic refers to the inorganic form only.

Table 6. Recreational Water Quality Criteria

	Estimated Illiness Rate: 36 per 1,000 primary contact recreators	
Criteria Elements	Magnitude	
Indicator	GM (cfu/100 mL)[a]	STV (cfu/100 mL)
E. coli (fresh water)	126	410
[a] *EPA Method 1600*, or another equivalent method, shall be used to measure culturable enterococci. *EPA Method 1603* (U.S. EPA, 2002b), or another equivalent method, shall be used to measure *E. coli*.		
Duration and Frequency: The water body GM should not be greater than the selected GM magnitude in any 30-day interval. There should not be greater than a ten percent excursion frequency of the selected STV magnitude in the same 30-day interval.		

Table 6. Design Flows

Criteria	Design Flow
Aquatic Life Acute Criteria (CMC)	1 Q 10 or 1 B 3
Aquatic Life Chronic Criteria (CCC)	7 Q 10 or 4 B 3
Human Health Criteria	Harmonic Mean Flow

Notes to Table 7:

1. CMC (Criteria Maximum Concentration) is the water quality criterion to protect against acute effects in aquatic life and is the highest instream concentration of a priority pollutant consisting of a short term- average not to be exceeded more than once every three years on the average;
2. CCC (Continuous Criteria Concentration) is the water quality criterion to protect against chronic effects in aquatic life and is the highest in stream concentration of a priority pollutant consisting of a 4-day average not to be exceeded more than once every three years on the average;
3. 1 Q 10 is the lowest one-day flow with an average recurrence frequency of once in 10 years determined hydrologically;
4. 1 B 3 is biologically based and indicates an allowable exceedance of once every 3 years. It is determined by EPA's computerized method (DFLOW model);
5. 7 Q 10 is the lowest average 7 consecutive day low flow with an average recurrence frequency of once in 10 years determined hydrologically;
6. 4 B 3 is biologically based and indicates an allowable exceedance for 4 consecutive days once every 3 years. It is determined by EPA's computerized method (DFLOW model).