TITLE XV - HEALTH AND ENVIRONMENT

CHAPTER 86 — WATER QUALITY CODE

Sec. 86.1 Introduction, Authority and Applicability

A. Purposes. Pursuant to the inherent sovereign authority of the Pueblo of Santa Clara ("Pueblo"), as recognized in Section 518 of the Clean Water Act, enacted February 4, 1987 (33 U.S.C. Section 1377), the Tribal Council hereby enacts this Water Quality Code ("Code") for the Pueblo.

The purposes of this Code and the standards contained herein are as follows:

1. to designate the existing and attainable uses for which the surface water of the Pueblo shall be protected;

2. to prescribe water quality standards (narrative and numeric) to sustain the designated uses;

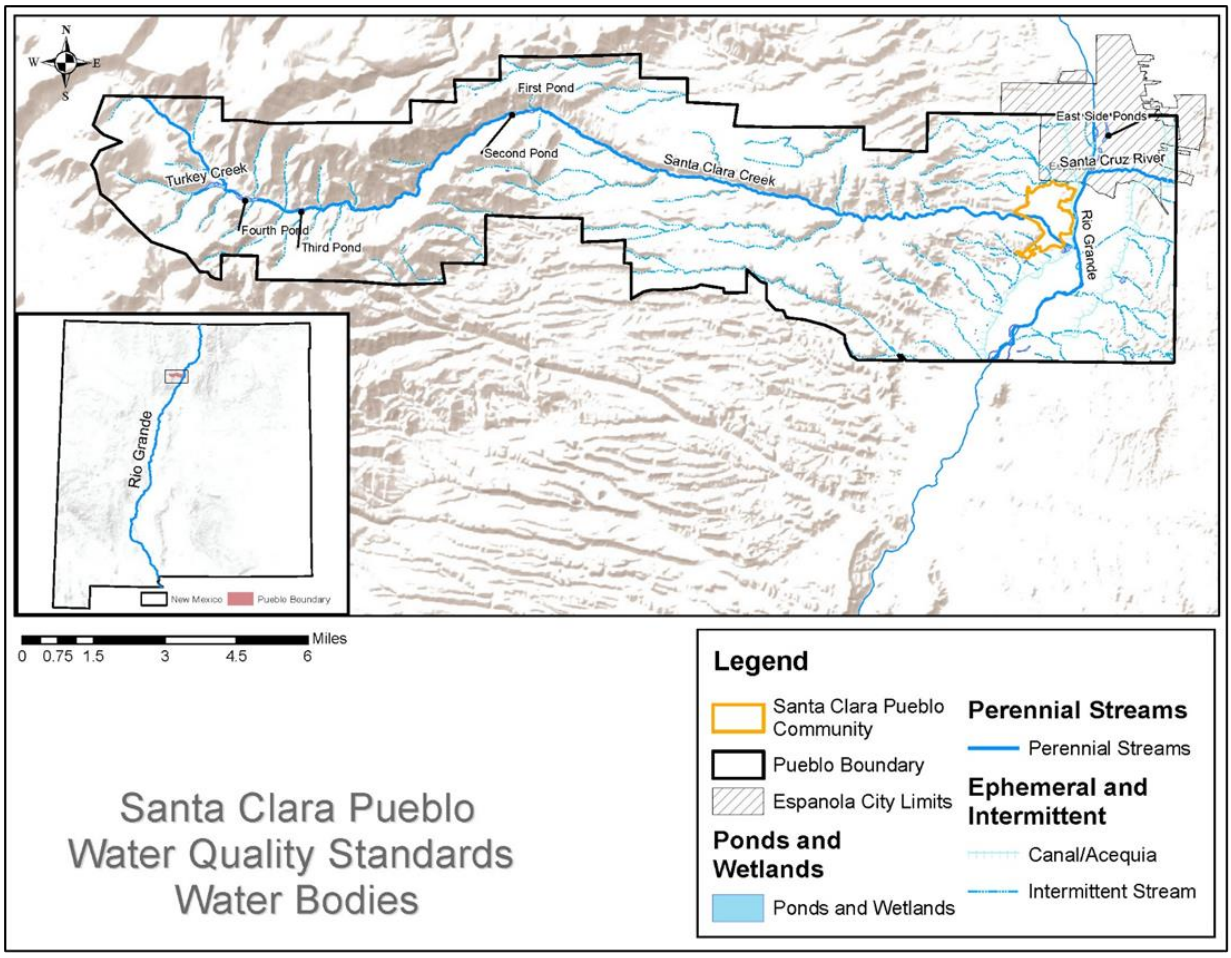
3. to assure that degradation of existing water quality does not occur; and

4. to promote the health, social welfare, and economic well-being of the Pueblo, its people, and all the residents of the Pueblo Lands.

The standards contained herein are intended and shall be construed to be consistent with Section l0l(a)(2) of the Clean Water Act (33 U.S.C. Section 1251(a)(2)). which declares that "it is the national goal that, wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983." Agricultural, primary contact (recreational and ceremonial use), groundwater recharge of domestic water supply (or municipal and industrial uses) and fish culture are other beneficial uses of the Tribal waters intended to be protected by this Code, provided that contamination that may result from such uses shall not lower the quality of the water below what is required for recreation and protection and propagation of fish, shellfish, and wildlife.

B. Applicability. The Code applies to all tribal waters as defined in Section 86.6 **(Figure 1)**. The standards apply to the receiving bodies of water impacted by the effluent from such reservoirs and treatment lagoons. The specified criteria apply to substances attributable to discharges nonpoint sources, or instream activities. The Pueblo of Santa Clara Water Quality Code shall not apply to natural phenomena not brought about by human activity.

Figure 1. Santa Clara Pueblo Water Bodies.



C. General Standards. The general standards in Section 86.3 of this code shall be maintained at all times and apply to all perennial, ephemeral, and intermittent streams, to all ponds, lakes, standing waters, wetlands, canals, drains, and springs. The criteria assigned to a water body are the ones required to sustain all designated uses of the waterbody. When a Tribal Water has more than a single existing, attainable, or designated use, the applicable numeric standards shall be the most stringent of those established for such water body. The Tribal Council shall issue and approve surface water designations for Tribal waters and shall determine the suitability of bodies of water for primary contact purposes. The numeric and narrative criteria contained in this Code will be part of the permitting and management process for all dischargers who are subject to federal, state, or Pueblo regulations. The standards shall be used in existing permitting and management processes, or new processes as may be created, in order to determine when a designated use is threatened. If standards are exceeded, and if it is determined that such exceedance would impair a designated use, then the permitting or management processes will be expected to require advanced treatment technologies for regulated point sources and to implement such best management practices as are applicable for regulated nonpoint sources.

D. Antidegradation and Implementation Plan. The antidegradation plan for Tribal Waters and the procedures for implementing it are set forth in Section 86.2 of this Code.

E. Office of Environmental Affairs (OEA). The OEA shall serve under the direction of the Governor of the Pueblo and shall work in cooperation with the U.S. Environmental Protection Agency ("EPA") and other federal, tribal or state agencies. The duties of the OEA are detailed in the Implementation Plan of Section II in this Code.

F. Adoption and Revisions. The Tribal Council has exclusive authority to adopt and modify this Code. The Tribal Council also may revise the standards from time to time if deemed necessary by use-attainability analyses and as the need arises or as a result of updated scientific information.

G. Public Hearing. Pursuant to Section 303(c) of the Clean Water Act (33 U.S.C. Section 1313(c)), the Pueblo shall hold public hearings at least once each three-year period for the purpose of reviewing and, as appropriate, modifying and adopting water quality standards. Revisions shall incorporate relevant scientific and engineering advances with respect to water quality and wastewater treatment. The Pueblo shall hold public hearings before modifying or amending this Code or incorporating, by reference, any regulations into this Code. Errors resulting from inadequate erroneous data, human or clerical oversight will be subject to correction by the Tribal Council. The discovery of such errors does not render the remaining and unaffected standards invalid. Public hearings will be held in accordance with Santa Clara Pueblo law, 40 C.F.R. Part 130 (EPA's Water Quality Management Regulation), and 40 C.F.R. Part 25 (EPA's Public Participation Regulation). In the event that monitoring of water quality identifies reaches where attainable quality is less than existing water quality standards, the said standards may be modified to reflect attainability. Modification thereof shall be carried out in accordance with applicable procedures (such as use-attainability analysis procedures (40 C.F.R. 131.10 (j)-(k)) or other appropriate methods.)

H. Separability. If any provision of this Code or the application of any provision of this Code to any person or circumstances should be held to be invalid, the application of such provision to other persons and circumstances and the remainder of this Code shall not be affected thereby.

I. Compliance Schedules. It shall be the policy of the Pueblo of Santa Clara to allow on a case -by-case basis the inclusion of a compliance schedule in a National Pollutant Discharge Elimination System ("NPDES") permit issued to an existing facility. Such a schedule of compliance will be for the purpose of providing a permittee with adequate time to make treatment facility modifications necessary to comply with water-quality based permit limitations determined to be necessary to achieve stream standards. Compliance schedules may be included in NPDES permits at the time of permit reissuance or modification and shall require compliance at the earliest practicable time. Compliance schedules also shall specify milestone dates so as to measure progress towards final project completion.

J. Variances. The Tribal Council may allow variances from this code and the standards herein on a case-by-case basis. A variance from the Pueblo's criteria may be allowed in certain cases where the attainability of the specific criteria is questionable. The variance provides a period of time during which issues concerning the attainability of the criteria may be resolved.

Variances are not renewable but may be reissued again upon adequate justification. A variance shall be granted only after appropriate public participation and review and approval from the Environmental Protection Agency. Variances from criteria will be allowed for anticipated non-attainment of water quality standards due to one or more of the reasons listed in 40 C.F.R. 131.10 (g) or where restoration or reconfiguration are necessary. Variances from criteria shall be for specific pollutants, time-limited, and shall not forego the current designated use. Variances are to be issued instead of removing a designated use for a water body where such use is not now attainable but can be expected with reasonable progress towards improved water quality. All variances must comply with the requirements of 40 C.F.R. 131.14.

K. Short Term Exceedances. The OEA, with consent from the Tribal Council, may authorize short-term activities that may cause temporary violations of the water quality standards if the Pueblo determines said activities are necessary to accommodate legitimate uses or emergencies or to protect the public health and welfare. A short-term exceedance will only be allowed for activities that are not likely to cause permanent or long-term impairment of beneficial uses. They will be allowed for activities such as, but not limited to, bank stabilization, mosquito abatement, algae and weed control, tracers used in hydrological studies or activities which result in overall enhancement or maintenance of beneficial uses. Such authorization shall not be granted for activities which could result in the adverse impact on any federally endangered or threatened species or on the critical habitat of such species. The OEA shall specify the degree of variance, the time limit and restoration procedures where applicable. Nothing herein shall be intended to supersede existing Pueblo and federal permitting processes or requirements.

L. Dispute Resolution Mechanism. Should a dispute due to differing water quality standards arise between the Pueblo and the state or an Indian tribe approved by EPA to administer the Water Quality Standards program and have approved water quality standards the Pueblo shall follow the Dispute Resolution Mechanism promulgated by the EPA in 40 C.F.R. Section 131.7.

M. Implementation of Numeric Criteria. The most stringent numeric criteria specific to a use shall be maintained in any perennial stream any time the flow equals or exceeds the four-day three-year low flow value (4Q3). Human health criteria shall be implemented through the harmonic mean flow. When intermittent and ephemeral streams have a low flow value of zero, all discharges shall meet standards for the designated uses.

For use in implementation of human health criteria, the harmonic mean flow will be used. The harmonic mean flow is the number of daily flow measurements divided by the sum of the reciprocals of the flows (i.e., the reciprocal of the mean of reciprocals). In ephemeral waters, the calculation shall be 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:

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

Where: n = number of flow values

and Q = flow value (cfs)

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

Where: Qi = nonzero flow
Nt = total number of flow values
and N0 = number of zero flow values

Enacted February 13,1995; amended March 24,1995; revised and adopted by Res. No. 03-27, November 5, 2002; approved by Sec'y August 5, 2003; amended by Res. No. 2023-066; approved by Sec'y March 4, 2024.

Sec. 86.2 Antidegradation Policy and Implementation Plan

A. Antidegradation Policy. The Antidegradation Policy of the Pueblo, applicable to all tribal waters and wetlands, is illustrated in **Figure 2** as follows:

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

2. In high quality waters, where water quality exceeds levels necessary to support propagation of fish and wildlife and recreation in and on the water, the said water quality shall be maintained and protected unless it is found, after full satisfaction of governmental and public participation requirements, 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 of water quality, the Pueblo shall assure water quality adequate to protect existing uses fully. Further, the Pueblo 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. The Pueblo of Santa Clara will evaluate high quality waters on a parameter-by-parameter basis. Alternatives to the proposed discharge that could impair water quality shall be presented, such as reduced discharge, or water treatment, that would eliminate or significantly reduce the extent to which the increased loading results in a lowering of water quality. When analysis of alternatives to the proposed discharge is conducted, and practicable alternatives are identified, then one of those alternatives needs to be selected in order for the lowering of the high-quality water to be allowed, but nothing herein requires the selection of the least degrading alternative.

3. No permanent degradation shall be allowed in outstanding national or tribal resource waters (ORW) or waters of exceptional recreational, cultural or ecological significance. Water quality and uses in such segments shall be maintained and protected by water quality controls, maintenance of natural flow regimes, protection of instream habitats, and land use practices protective of the watershed.

4. In those cases where potential water quality impairments associated with

thermal discharge are involved, the Antidegradation Policy and implementing methods shall be consistent with Section 316 of the Clean Water Act, as amended (33 U.S.C. Section 1326 (1987)).

5. Degradation of tribal waters through direct, indirect, or cumulative impacts shall not result in the net loss of wetland acreage or wetland functions.

B. Implementation. Antidegradation requirements are triggered whenever a regulated activity is proposed that may have some effect on tribal surface waters. Such proposals shall be reviewed to determine whether the activity should be authorized, based on the level of antidegradation protection afforded the affected water body segment. Implementation procedures are as follows:

1. Proposed activities shall be reviewed to ensure compliance with the following:

(a) A proposed activity shall not eliminate any existing uses or the water quality needed to maintain and protect those uses.

(b) Degradation of high-quality waters shall be allowed only if the applicant can demonstrate to the Pueblo that allowing the water quality degradation is necessary to accommodate important economic or social development in the area in which the receiving waters are located and that no reasonable alternatives exist.

(c) Only activities which result in no more than temporary and short-term changes in water quality may be allowed in ORW or waters of exceptional recreational, cultural or ecological value to the Pueblo. Such activities shall not permanently degrade water quality or result at any time in water quality lower than that necessary to protect the existing and designated uses of the water body or segment thereof.

(d) Any proposed activity that would result in the net loss of wetland acreage or wetland functions is prohibited.

2. The OEA shall implement this Code, including but not limited to the water quality standards and Antidegradation Policy, by establishing and maintaining controls on the discharge of pollutants to tribal waters. The Pueblo may adopt additional regulations and ordinances for enforcement of the water quality standards. Unless and until the EPA delegates to the Pueblo primary responsibility for NPDES permitting, the EPA will develop and issue the permits for dischargers within the Pueblo Lands, and these permits shall comply with this Code. Enforcement of the standards set forth in this Code shall be through the implementation of the National Pollutant Discharge Elimination System (NPDFS). In addition, the Tribal Council may adopt additional regulations for enforcement of its water quality standards.

3. To the extent required to ensure compliance with this Code, and working in conjunction with federal and state agencies as appropriate, the OEA shall be authorized to:

(a) monitor water quality (chemical, physical, and biological) to assess the effectiveness of pollution controls and to determine whether water quality standards are being attained;

(b) evaluate the impact of effluents on receiving waters, with respect to existing, designated or attainable uses and numeric and narrative standards;

(c) advise any prospective discharger of discharge requirements;

(d) review the adequacy of existing data bases and obtain additional data when required;

(e) require the highest and best degree of wastewater treatment practicable to protect and maintain designated uses and existing water quality of receiving waters, consistent with long-term environmental protection objectives;

(f) follow EPA approved procedures to develop water quality-based effluent limitations and comments on technology-based effluent limitations, as appropriate, for inclusion in any federal permit issued to a discharger pursuant to Section 402 of the Clean Water Act (33 U.S.C. Section 1342);

(g) require that effluent limitations developed by the Pueblo be included in any such permit as a condition for Tribal certification pursuant to Section 401 of the Clean Water Act, (33 U.S.C. Section 1341), provided that a reasonable time, not to exceed three years, for compliance shall be duly considered in determining whether certification is proper, and provided further that effluent limitations more stringent than those contained in existing NPDES permits shall not be imposed without providing an applicant an opportunity to demonstrate that existing permit limitations are adequate to protect existing and designated uses of receiving waters;

(h) coordinate water pollution control activities with other constituent agencies and other local, state, and federal agencies, as appropriate;

(i) develop and pursue inspection and enforcement programs to ensure that dischargers comply with requirements of this Code, satisfy the requirements of any regulations the Pueblo may enact subsequent to the adoption of this Code, and complement EPA's enforcement of federal permits;

(j) provide continuing technical training for wastewater treatment facility operators through training and certification programs;

(k) encourage, in conjunction with other agencies, voluntary implementation of best management practices to control nonpoint sources of pollutants to achieve compliance with this Code;

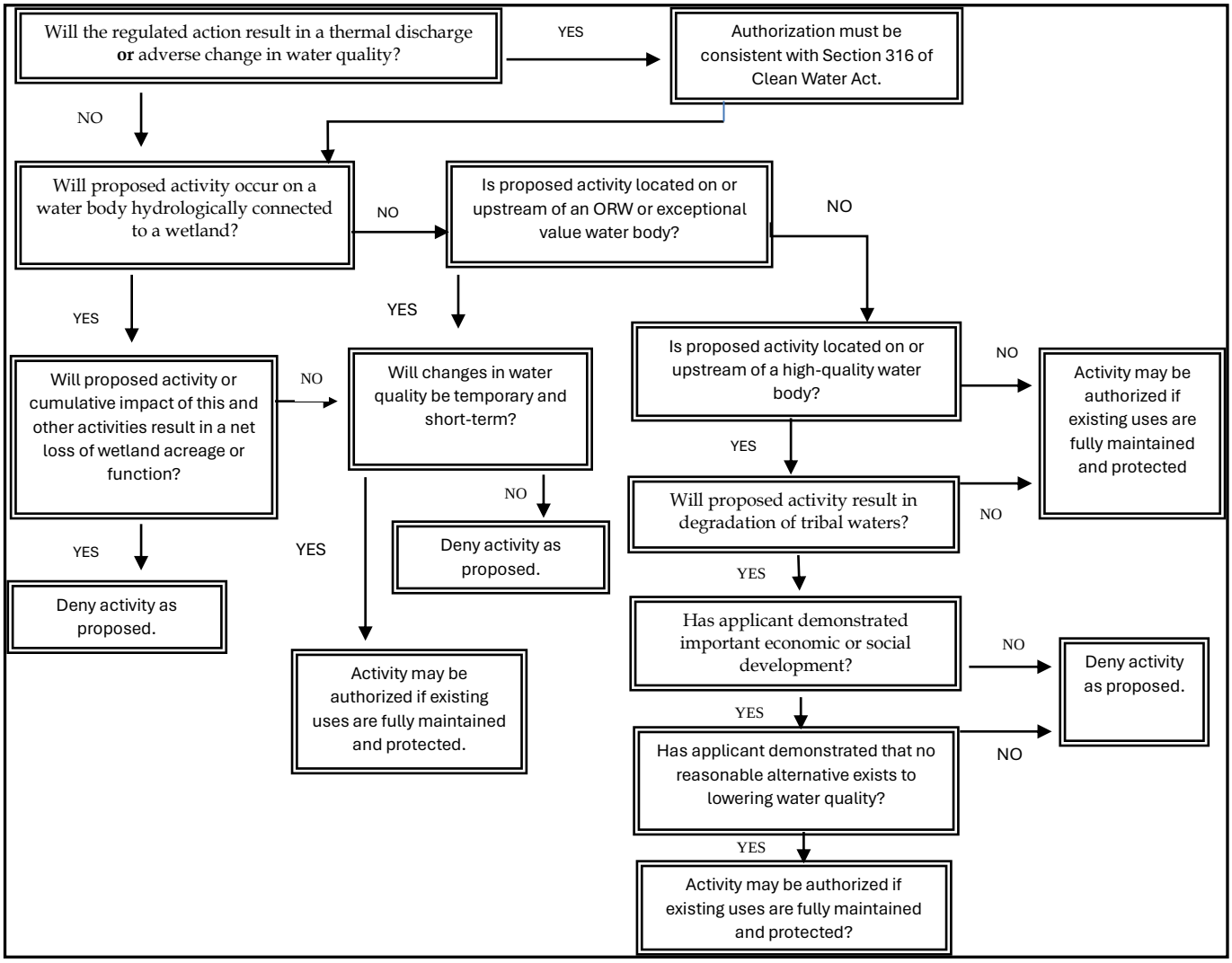
(1) ensure that the provisions for public participation required by this Code and the Clean Water Act are followed;

(m) if necessary, the OEA, subject to the approval of the Tribal Council, shall designate streams as perennial, intermittent, or ephemeral in accordance with this Code and determine low flow numeric values; and

(n) provide such other technical support as is required to accomplish the objectives of this Code, including recommendations to the Tribal Council of any permitting or management regulations which would be consistent with the purposes of this Code.

Enacted February 13,1995; amended March 24,1995; revised and adopted by Res. No. 03-27, November 5, 2002; approved by Sec'y August 5, 2003; amended by Res. No. 2023-066; approved by Sec'y March 4, 2024.

Figure 2. Antidegradation Implementation Flow Chart



Sec. 86.3 General Standards

Tribal waters shall be free of any water contaminant in such quantity and of such duration as may with reasonable probability injure human health, animal or plant life, or property, or unreasonably interfere with the public welfare or the use of property. In addition, the following narrative standards apply to all Tribal Waters, including wetlands, unless stricter standards are imposed in Sections 86.4 and/or 86.5.

A. Stream Bottom Deposits. All tribal waters shall be free from water contaminants from other than natural causes that will settle and cause deleterious effects to the aquatic biota or significantly alter the physical or chemical properties of the water or bottom sediments.

B. Floating Solids, Oil, and Grease. All tribal waters shall be free from objectionable oils, scum, foam, grease, and other floating materials and suspended substances resulting from other than natural causes including but not limited to visible films of oil, globules of oil, grease, or solids in or on the water, or coatings on stream banks.

C. Color. Materials producing true color resulting from other than natural causes shall not create an aesthetically undesirable condition; nor shall color impair the attainable uses of the water or harm aquatic life.

D. Odor and Taste. Water contaminants from other than natural causes shall be limited to concentrations that will not impart unpalatable flavor to fish, result in offensive odor or taste arising from the water, or otherwise interfere with the existing and attainable uses of the water, nor shall taste and odor-producing substances of other than natural origin interfere with the production of a potable water supply by modern treatment methods.

E. Nuisance Conditions. Plant nutrients or other substances stimulating algal growth from other than natural causes shall not be present in concentrations that will produce objectionable algal densities, or nuisance aquatic vegetation, result in a dominance of nuisance species instream, or otherwise cause nuisance conditions. When stricter requirements are not established elsewhere in this Code, dissolved oxygen shall be no less than 2 mg/liter in order to prevent nuisance conditions from other than natural causes. Phosphorus and nitrogen concentrations shall not be increased to levels that result in man-induced eutrophication problems. The Tribal Council may establish nutrient limitation for lakes, reservoirs, and streams and shall incorporate such limitations into appropriate water quality management plans.

F. Pathogens. Tribal waters shall be free of pathogens from other than natural causes in sufficient quantity to impair public health or the designated, existing, or attainable uses of surface water on the Pueblo. Pathogens include bacteria, viruses or parasites. In particular, waters used for irrigation of food crops such as lettuce, corn, chile, melons, and squash shall he virtually free of *Salmonella* and *Shigella* species.

G. Turbidity. Turbidity attributable to other than natural causes shall not reduce light transmission to the point that the aquatic biota is inhibited or that will cause 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; there shall not be more than a 10% increase in turbidity when background turbidity is more than 50 NTU.

H. Mixing Zones. In any perennial waters receiving a waste discharge, a continuous zone shall be maintained where the water is of adequate quality to allow the migration of aquatic life with no significant effect on their population. The size of a mixing zone shall generally be less than one-third of the cross-sectional area or one-third of critical low flow (4Q3) conditions of the receiving stream. At flows greater than the 4Q3 value, the size of the mixing zone will be a smaller proportion than the above limitation. In intermittent or ephemeral streams, discharges shall meet all applicable numeric and narrative criteria at the point of discharge. There shall be no acute toxicity in the mixing zone. Numeric acute criteria shall be attained at the point of discharge. There shall be no chronic toxicity at the edge of the mixing zone. Mixing zones are not allowed for discharges to publicly owned lakes or reservoirs; these effluents shall meet all applicable numeric narrative criteria at the point of discharge. Mixing zones shall not overlap sites of primary contact. Requirements for mixing zones shall be consistent with those established in the water quality management plans and implementation plans developed by the Pueblo or regulations issued by the EPA.

I. Radioactive Materials. The radioactivity of surface water shall not exceed the maximum natural background concentrations in Tribal Waters.

J. Temperature. The introduction of heat by other than natural causes shall not increase the temperature outside the mixing zone by more than 2.7° C (5° F) in a stream, based upon the monthly average of the maximum daily temperatures measured at mid-depth or three feet (whichever is less) outside the mixing zone. In lakes, the temperature of the water column or epilimnion (if thermal stratification exists) shall not be raised more than 1.7° C (30 F) above that which existed before the addition of heat of artificial origin, based upon the average of temperatures taken from the surface to the bottom, or the surface to the bottom of the epilimnion (if stratified). The normal daily and seasonal variations that were present before the addition of heat from other than natural sources shall be maintained. In no case shall heat of artificial origin be permitted when the maximum temperature specified for the reach (20°C/68°F for high quality cold-water fisheries, 25° C/77o F for marginal cold-water fisheries and 32.2 °C/90° F for warm water fisheries) would thereby be exceeded. High water temperatures caused by unusually high ambient air temperatures are not violations of these standards.

K. Salinity/Mineral Quality (total dissolved solids, chlorides, and sulfates). Existing mineral quality shall not be altered by municipal, industrial, or instream activities, or other wastes discharges so as to interfere with designated uses for a water body. No increase exceeding naturally occurring levels by greater than one-third shall be permitted. Numeric criteria for chlorides at 250 mg/L, for sulfates at 250 mg/L and for total dissolved solids at 500 mg/L shall not be exceeded.

L. pH. The pH of a stream or a lake shall not fluctuate in excess of 1.0 pH unit over a period of 24 hours for other than natural causes.

M. Dissolved oxygen. If a water body is capable of supporting aquatic life, the dissolved oxygen standard will be a minimum of 5 mg/L.

N. Dissolved Gases. Surface water shall be free of nitrogen and other dissolved gases at levels above 110% saturation when this supersaturation is attributable to municipal, industrial, or other discharges.

O. Biological criteria. Tribal waters shall be free from activities that would impair the biological community as it naturally occurs due to physical, chemical and hydro logic conditions. Tribal waters shall support and maintain a balanced, integrated, and adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of similar natural habitats of a region. Differences from appropriate reference site or ecoregion conditions shall be limited to non-detrimental differences in community structure and function.

P. Protection of Downstream Waters. All waters shall maintain a level of water quality to provide attainment and maintenance of the water quality standards of downstream waters.

Q. Hydrologic Criteria. Natural hydrological conditions necessary to support the biological and physical characteristics naturally present in wetlands within Santa Clara boundaries shall be protected to prevent significant adverse impacts.

All wetlands shall maintain biological, physical, chemical, and hydrological conditions as determined by least-impacted wetlands including, but not limited to: base flow, flow regime, wetland hydroperiod, chemical, nutrient, dissolved oxygen regime of wetland; conditions favorable to protection propagation of threatened, endangered, at-risk species; conductivity; floristic quality; integrity of species diversity, abundance, zonation; normal movement of fauna; pH of wetland waters; salinity; size shape; soil type horizon structure; water currents, erosion, or sedimentation patters; water levels or elevations; and water temperature variations.

R. Toxic Substances.

1.Toxic substances, including but not limited to pesticides, herbicides, heavy metals, and organic chemicals, shall not be present in receiving waters in such quantities as to be toxic to human, animal, plant, or aquatic life, or to interfere with the normal propagation, growth, and survival of the indigenous aquatic biota. There shall be no acute toxicity. At the edge of the mixing zone there shall be no chronic toxicity.

2. Biomonitoring following current EPA test methods shall be used to determine compliance with the narrative criteria. These protocols can be found in EPA's Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, EPA/821/R-02/013, October, 2002, or the most current revision thereof. Other references are Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, EPA/821/R-02/012, October, 2002, or the most current revision thereof; Post Third Round NPDES Permit Implementation Strategy, adopted October 1, 1992, or the most current revision thereof; and Technical Support Document for Water Quality-

based Toxics Control, EPA/505/2-90-001, March 1991 or the most current revision thereof. Should the Pueblo need to derive numeric criteria, without actually conducting toxicity tests, it shall use the ECOTOX (Ecotoxicology Knowledgebase) database and EPA's guidance, Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses, to calculate any criteria. In the event that sufficient data is not available to derive a numeric criterion following the above guidance, the Pueblo may use the results of toxicological studies to calculate a criterion based on the following methods:

(a) concentrations of non-persistent toxic materials shall not exceed concentrations which are chronically toxic (as determined from appropriate chronic toxicity data or calculated as 10% of LC_{50} values) to representative, sensitive, aquatic organisms;

(b) concentrations of persistent toxic materials that do not bioaccumulate shall not exceed concentrations which are chronically toxic (as determined from appropriate chronic toxicity data or calculated as 5% of LC_{50} values) to representative, sensitive aquatic organisms; and

(c) concentrations of toxic materials that bioaccumulate shall not exceed concentrations which are chronically toxic (as determined from appropriate chronic toxicity data or calculated as 1 % of LC 50 values) to representative, sensitive, aquatic organisms.

Toxicants in the receiving water known to be persistent, bio-accumulative, carcinogenic, and/ or synergistic with other waste stream components may be addressed on a case-by-case basis. Sources of information for establishing numeric criteria may include final or draft MCLs and current Health Advisories (HAs) for organic and inorganic chemicals, radionuclides and microorganisms. HAs shall be based upon criteria contained in 2018 Edition of the Drinking Water Standards and Health Advisories (EPA-822-F-18-001) or the most current revision thereof.

The numerical water quality standards that apply for toxic substances for specific uses to protect human health are listed in **Appendix B** of this Code. Human health standards for consumption of organisms only shall apply to those waters with a designated, existing, or attainable fishery use; and all tributaries of those waters. Human health criteria for consumption of water and organisms shall apply to those waters with a designated, existing, or attainable groundwater recharge or domestic, municipal and industrial water supply use.

The Pueblo of Santa Clara will take into consideration EPA guidance for new and updated criteria for toxic substances during the Santa Clara water quality standards triennial review and as such guidance becomes readily available. Numeric criteria for carcinogens will reflect a risk level of one in one million (10^{-6}).

For specific segments where the above criteria may need to be recalculated using appropriate species or water quality factors, Santa Clara Pueblo may, after public participation and EPA approval, adopt site-specific criteria modifications. Because pesticides and polychlorinated biphenyls (PCBs) can accumulate in bottom sediments and tissues of aquatic organisms, sediment and tissue analyses shall be used when appropriate to complement water analyses.

Chemical concentration levels in tissues of aquatic organisms that exceed U.S. Food and Drug Administration (FDA) action levels or risk-based tissue criteria shall require investigation under the direction of Santa Clara Pueblo Environment Department.

Appendix B also includes aesthetic standards for taste and odor that are often more stringent than the human health criteria. Aesthetic standards apply to all those waters with a designated, existing, or attainable fishery use; and all tributaries of waters with a designated, existing, or attainable groundwater recharge or domestic, municipal and industrial water supply use.

3.The numeric criteria listed in **Table 1** and **Table 2** shall apply to all Tribal Waters, including wetlands, unless more stringent criteria are listed elsewhere in this Code.

Table 1. Numeric criteria for aquatic life.

Substance	CAS #	FRESH WATER AQUATIC LIFE CRITERIA (µg/L)		
		Chronic toxicity	Acute toxicity	
		--	--	20 [i]
Acrolein	107-02-8	3.0	3.0	400
	107-13-1	--	--	7.0
Aldrin	309-00-2	--	3.0	0.00000077
Alkalinity [m]	--	20,000		
Aluminum [a]	7429-90-5	748 h 748 h		--
		--	--	400
		--	--	640
Arsenic [a]	7440-38-2	150	340	20.5
				00039
				0.014
Gamma-BHC (lindane) [c]	58-89-9	--	0.95	4.4
				16
				0.011
				0.0013
				0.00013
				0.0013
				0.13
Beryllium [a]	7440-41-7	5.3 l	130 l	--
				120
				0.10
Cadmiuma, [e, f]	7440-43-9	e(0.7977*ln hardness--3.909)*cf	e(0.9789*ln hardness-3.866)*cf	--
Carbaryl	63-25-2	2.1	2.1	
			--	5

Substance	CAS #	FRESH WATER AQUATIC LIFE CRITERIA (µg/L)		
		Chronic toxicity	Acute toxicity	
Chlordane	57-74-9	0.0043	2.4	0.00032
Chloride	16887-00-6	230,000	860,000	--
Chlorine, total residual	7782-50-5	11	19	--
				800
				21
				2.2
				2,000
				.017
				1,000
				0.1 [i]
				0.1 [i]
				0.1 [i]
Chlorpyrifos	2921-88-2	0.041	0.083	--
Chromium (III) [a]	16065-83-1	e(0.819*ln hardness +0.6848)*$_{0.86}$	e(0.819*ln hardness +3.7256*0.316	--
Chromium (VI) [a]	18540-29-9	10.6 g	15.7 g	--
				0.13
Copper [a]	7440-50-8	e(0.8545*ln hardness-1.702)*(0.960)	e(0.9422*ln hardness-1.700)$_{*(0.960)}$	1,000 [i]
Cyanide [i]	57-12-5	5.2	22	400
				0.00012
				0.000018
4,4’ DDT	50-29-3	0.001	1.1	0.00003
Demeton	8065-48-3	0.1	--	--
Diazinon	333-41-5	0.17	0.17	
				0.00013

Substance	CAS #	FRESH WATER AQUATIC LIFE CRITERIA (µg/L)		
		Chronic toxicity	Acute toxicity	
				3,000
				10
				900
				0.15
				27
				650
				20,000
				4,000
				0.04 [i]
				0.3 [i]
				0.5 [i]
				0.2 [i]
				0.3 [i]
				12
Dieldrin	60-57-1	0.056	0.24	0.0000012
				600
				3000
				2000
				30
				300
				1.7
				5.1e-9
				0.2
alpha-Endosulfan	959-98-8	0.056 [k]	0.22 [k]	30
beta-Endosulfan	33213-65-9	0.056 [k]	0.22 [k]	40

Substance	CAS #	FRESH WATER AQUATIC LIFE CRITERIA (µg/L)		
		Chronic toxicity	Acute toxicity	
				40
Endrin	72-20-8	0.036	0.086	0.03
				1
				130
			--	3.7
			--	20
			--	70
Guthion	86-50-0	0.01	--	--
Heptachlor	76-44-8	0.0038	0.52	0.0000059
Heptachlor epoxide	1024-57-3	0.0038	0.52	0.0000032
			--	0.000079
			--	0.01
				1 [i]
				0.1
				0.0013
Iron	7439-89-6	1000	--	--
				1800
Lead [a, f]	7439-92-1	e(1.273*(ln hardness)-4.705)*cf	e(1.273*(ln hardness)-1.460)*cf	--
Malathion	121-75-5	0.1	--	--
				50
Mercury [b]	7439-97-6	0.012	2.4	
Methoxychlor	72-43-5	0.03	--	--0.02
				10,000
				1,800 [i]
				30

Substance	CAS #	FRESH WATER AQUATIC LIFE CRITERIA (µg/L)		
		Chronic toxicity	Acute toxicity	
				2000[i]
				[i]
				1000
Mirex	2385-85-5	0.001	--	--
				800 [i]
Nickel [a]	7440-02-0	e(0.846*(ln hardness) +0.0584)*(0.997)	e(0.8460*(ln hardness) +2.255)*(0.998)	4600 ug
				30 [i]
				0.22
				1.24
				3
				6
				0.51
				34
Nonylphenol	84852-15-3 25154-52-3	6.6	28	
Parathion	56-38-2	0.013	0.065	--
				0.1
Pentachlorophenol	87-86-5	e(1.005(pH) –5.134)	e(1.005(pH)—4.869)	0.04
				300 [i]
Polychlorinated Biphenlyls (PCBs) [j]	1336-36-3 d	0.014	--	.00064 [j]
				30
Selenium [b]	7782-49-2	See Table 2		4200
Silver [a]	7440–22-4	--	e(1.72*(ln hardness)-6.59)*(0.85)	--
Sulfide	7783-06-4	2	--	

Substance	CAS #	FRESH WATER AQUATIC LIFE CRITERIA (µg/L)		
		Chronic toxicity	Acute toxicity	
				0.03
				3
				29
				[i]
				520
Toxaphene	8001-35-2	0.0002	0.73	0.00071
Tributyltin (TBT)	56573-85-4	0.072	0.46	--
				0.076
				8.9
				7
				1 [i]
				1.5 [i]
				1.6
Zinc [a]	7440-66-6	e(0.8473*(ln hardness) +0.884)*(0.986)	e(0.8473 *(Ln hardness) +0.884)*(0.978)	26,000 [i]

Notes:
a = Expressed as dissolved metal in the water column.
b = Expressed as total recoverable metal in the water column.
c = reserved
d = CAS #'s for specific PCB's are as follows. PCB-1016: 12674-11-2; PCB-1221: 11104-28-2; PCB-1232: 11141-16-5; PCB-1242: 5346-92-19; PCB-1248: 12672-29-6; PCB-1254: 11097-69-1; PCB-1260: 11096-82-5.
e = The hardness-dependent formulae for cadmium must be multiplied by conversion factors (cf) to be expressed as dissolved values. The acute cf for cadmium is cf = 1.136672 – (ln hardness*0.041838); the chronic cf for cadmium is cf = 1.101672 – (ln hardness*0.041838).
f = The hardness-dependent formulae for lead must be multiplied by a conversion factor (cf) to be expressed as a dissolved value. The acute and chronic cf for lead is cf = 1.46203 – (ln hardness*0.145712).
g = Acute and chronic criteria for chromium VI have been multiplied by conversion factors of 0.982 and 0.962, respectively.
h = Acute and chronic criteria for aluminum based on EPA Regional guidance.
i = Expressed as free cyanide in the water column. May be determined using analytical methods for total cyanide, cyanide amenable to chlorination, or weak acid dissociable cyanide.
j = Criterion applies to total PCBs, i.e., the sum of all congeners or all isomer analyses.
k = This value was derived from data for endosulfan and is most appropriately applied to the sum of alpha-endosulfan and beta-endosulfan.
l = Insufficient data to develop criteria. Value presented is the lowest observed effect level ("L.O.E.L"). Site- specific information may be used to modify this L.O.E.L.
m = The CCC of 20mg/L is a minimum value except where alkalinity is naturally lower, in which case the criterion is the natural alkalinity of the water in question. Where natural alkalinity is > 20 mg/L, the criterion cannot be lower than 25% of the natural level, or 20 mg/L whichever is higher.
Ln hardness = Natural logarithm of value of hardness observed at time of sampling. Hardness will be measured as mg of $CaCO_3$ /L.
µg/L = micrograms per liter.

Table 2. 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.
[c] Fish tissue data provide point measurements that reflect integrative accumulation of selenium over time and space in fish population(s) at a given site.
[d] Fish whole-body or muscle tissue supersedes water column element when both fish tissue and water concentrations are measured.
[e] Water column values are based on dissolved total selenium in water and are derived from fish tissue values via bioaccumulation modeling. Water column values are the applicable criterion element in the absence of steady-state condition fish tissue data.
[f] Where $WQC_{30\text{-}day}$ is the water column monthly element, for either a 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).

Enacted February 13,1995; amended March 24, 1999, revised and adopted by Res. No. 03-27, November 5, 2002; approved by Sec'y August 5, 2003; amended by Res. No. 2023-066; approved by Sec'y March 4, 2024.

Sec. 86.4 Standards Applicable to Existing, Attainable or Designated Uses

A. Stream Use Designations. The following designations and those presented in **Table 3** apply:

1. The following water body uses and the standards pertaining thereto shall apply to Santa Clara Creek (from its western boundary, east until the water is diverted for irrigation), perennial tributaries to Santa Clara Creek, wetlands along Santa Clara Creek and its perennial tributaries, and any perennial standing waters along Santa Clara Creek and their perennial tributaries (including but not limited to Pin Dee or First Pond, Wen Povi or Second Pond, Nana Ka or Third Pond, Tsi Kumu Pond or Fourth Pond,): fish culture, high quality cold-water fishery, irrigation, livestock and wildlife, groundwater recharge, domestic, municipal and industrial water supply, and primary contact.

2. The following water body uses and the standards pertaining thereto shall apply to the Santa Clara Creek (below the irrigation diversion, near the intersection of BIA Roads 601 and 602 east until it meets the Rio Grande), the Rio Grande, the Rio Santa Cruz, and any other stream segment which is determined to be perennial, including any standing waters and wetlands (including Bosque Wetlands) associated with said streams, other than those listed in item 4 below: marginal cold-water fishery, warm water fishery, irrigation, groundwater recharge, livestock and wildlife, and primary contact.

3. The following water body uses and the standards pertaining thereto shall apply to all intermittent or ephemeral streams, including any associated standing water and wetlands: livestock and wildlife, groundwater recharge, primary contact

4. The following water body uses and the standards pertaining thereto shall apply to all wetlands under the jurisdiction of the Pueblo located in the area defined as east of the Rio Grande (Bosque Wetlands), west of State Road 68, south of Fairview Lane and north of Onate Street: marginal cold-water fishery, warm water fishery, groundwater recharge, livestock and wildlife, and primary contact.

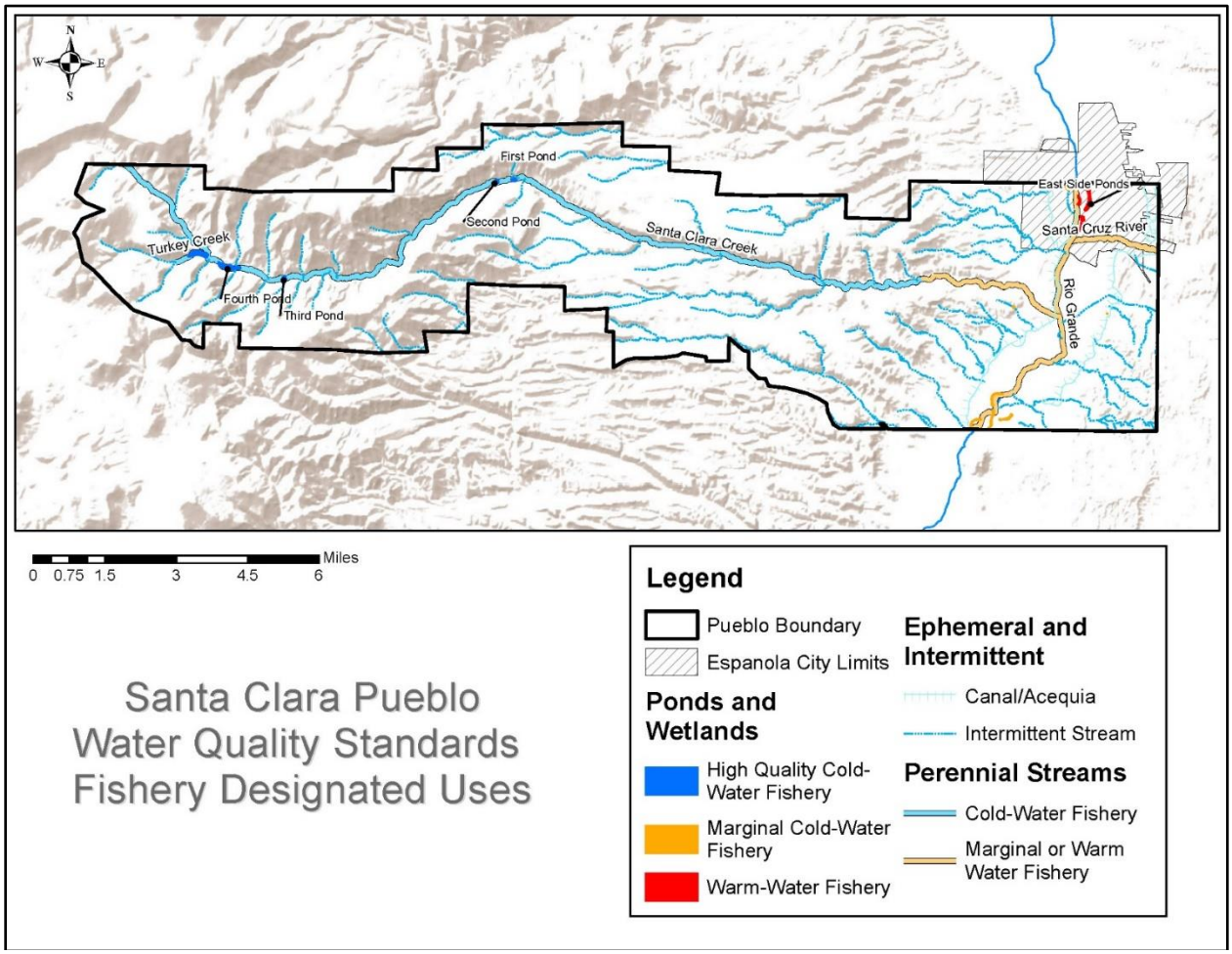
Table 3. Specific water bodies and designated uses.

Water Bodies	Fish culture and high quality cold-water fishery	Marginal cold-water fishery	Warm water fishery	Irrigation	Livestock and Wildlife	Groundwater recharge or domestic, municipal, and industrial water supplies	Primary contact use
Santa Clara Creek (Upper Reach)[1]	■			■	■	■	■
Santa Clara Creek Wetlands (Upper Reach)[1]	■			■	■	■	■
Tributaries to Santa Clara Creek (Upper Reach)	■			■	■	■	■
Ponds along the Upper Reach[1] of Santa Clara Creek	■			■	■	■	■
Santa Clara Creek (Lower Reach)[1]		■	■	■	■	■	■
Rio Grande		■	■	■	■	■	■
Rio Santa Cruz		■	■	■	■	■	■
Bosque Wetlands (Rio Grande)		■	■	■	■	■	■
Intermittent and Ephemeral					■	■	■

[1] Upper Reach is defined as reach above check point area on Santa Clara Creek (located at intersection of BIA roads 601 and 602) where the stream is diverted for irrigation. The Lower Reach is defined as the reach below the check point.

B. Water Body Uses and Specific Standards. The fresh-water fishery uses of perennial and ephemeral streams of the Pueblo range from High Quality Cold-Water to Marginal Cold-Water to Warm Water Fisheries as shown in **Error! Reference source not found.**. Santa Clara Creek is the primary perennial stream which extends from the western boundary, flows downstream through Santa Clara Pueblo to the confluence with the Rio Grande.

Figure 3. Designated fishery uses of Santa Clara Pueblo Surface Water Bodies.



C. Fish Culture and High-Quality Cold-Water Fisheries. The following standards are applicable for protection of fish culture and high-quality cold-water fisheries.

1. The dissolved oxygen shall not be less than 6 mg/L.
2. The temperature shall not exceed 20℃ (68℉).
3. pH shall be within the range of 6.6 to 8.8.
4. Total phosphorus (as P) shall be less than 0.1 mg/L.

5.Turbidity shall be less than 10 NTU, except in certain reaches where natural background conditions prevent attainment of lower turbidity. In that instance, turbidity shall be less than 25 NTU.

6.Conductivity (at 25°C) shall not exceed a limit of 400 µmhos/cm.

7.Total ammonia standards shall be based in accordance with Appendix A to this code.

8.Toxic substances shall not be present in amounts exceeding the levels set forth in Section 86.3 (R) of this Code.

9.Total chlorine residual shall be less than or equal to 2 ug/L at the point of discharge for high-quality cold- water fisheries

D. Marginal Cold-Water Fisheries. All standards set forth in Subsection C of this section apply to the protection of marginal cold-water fisheries, with the following exceptions.

1. The temperature shall not exceed 25° C (77° F).

2. pH may range from 6.6 - 9.0.

3. Total chlorine residual shall be less than or equal to 3 ug/L at the point of discharge for marginal cold-water fisheries.

E. Warm Water Fisheries. All standards set forth in Subsection C of this section apply to the protection of warm water fisheries, with the following exceptions.

1. The temperature shall not exceed 32.2°C (90°F).

2. Dissolved oxygen shall not be less than 5 mg/L.

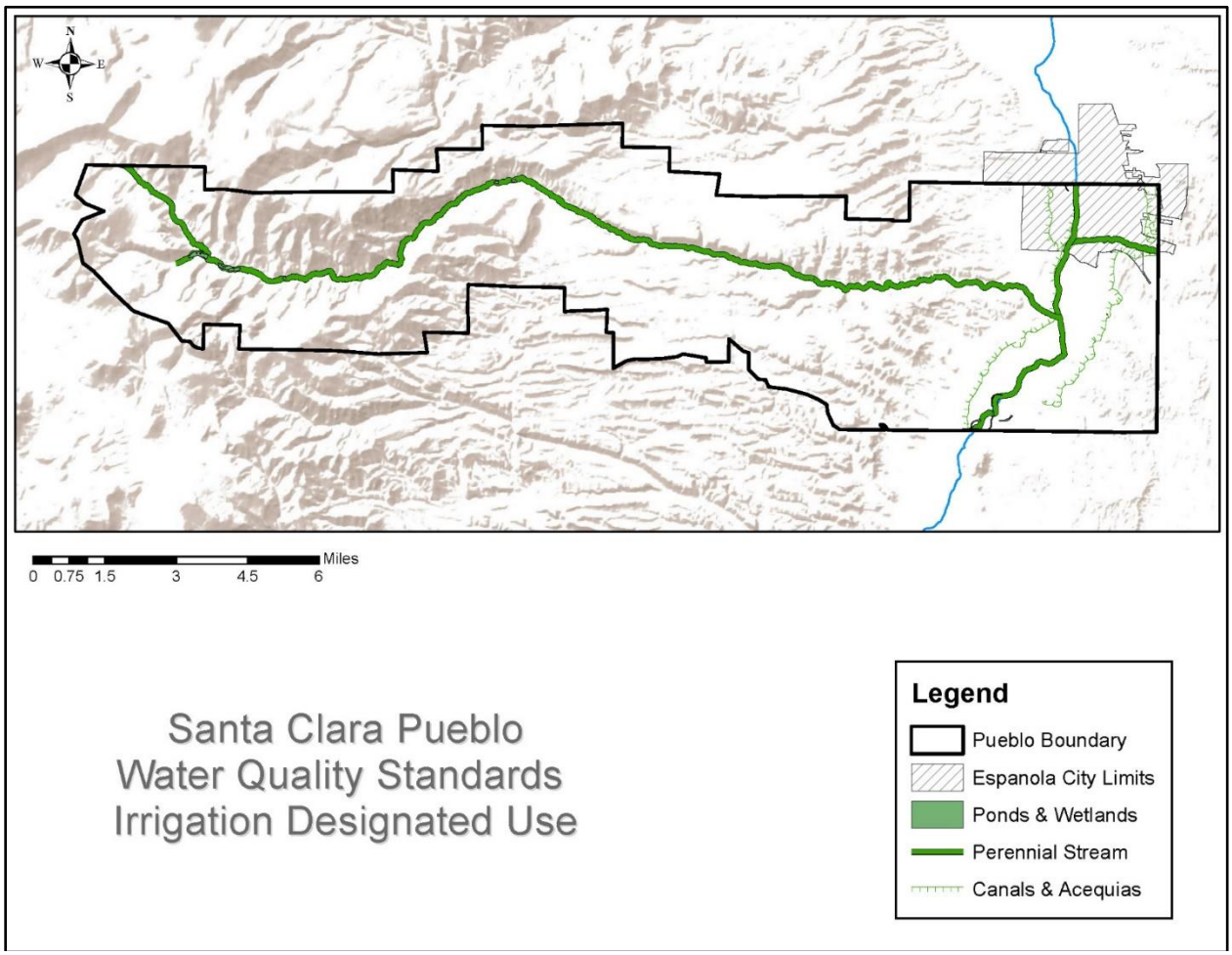
3. pH shall be within the range of 6.5 - 9.0.

4. Standards for phosphorous do not apply.

5.Total chlorine residual shall be less than or equal to 3 ug/L at the point of discharge for warm water fisheries.

F. Irrigation. The following standards are applicable in order to protect irrigation water use **(Figure 4)**.

Figure 1. Designated irrigation uses of Santa Clara Pueblo water bodies.



1.The following numeric standards **(Table 4)** shall not be exceeded:

Table 4. Numeric criteria for irrigation use

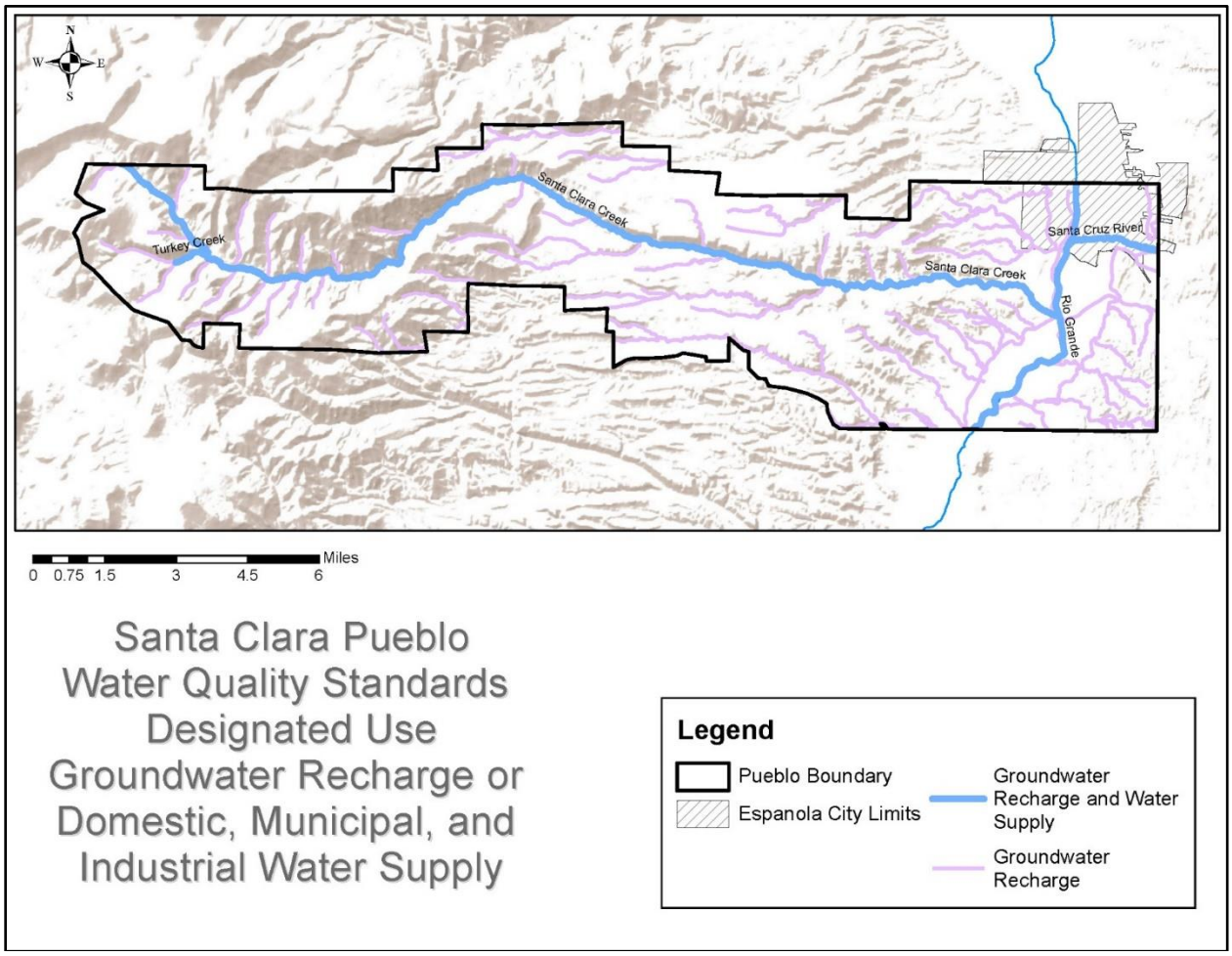
Analyte	Concentration
Dissolved aluminum	5.0 mg/L
Dissolved arsenic	0.10 mg/L
Dissolved boron	0.75 mg/L
Dissolved cadmium	0.01 mg/L
Dissolved chromium *	0.10 mg/L
Dissolved cobalt	0.05 mg/L
Dissolved copper	0.20 mg/L
Dissolved lead	5.0 mg/L

Dissolved molybdenum	1.0 mg/L
Dissolved selenium	0.13 mg/L
Dissolved vanadium	0.1 mg/L
Dissolved zinc	2.0 mg/L

*The standards for chromium shall be applied to an analysis which measures both the trivalent and hexavalent ions.

G. Groundwater Recharge or Domestic, Municipal, and Industrial Water Supply. The following standards in **Table 5** and **Appendix B** are applicable in order to protect groundwater recharge, and domestic, municipal and industrial water supply uses shown in **Figure 5**:

Figure 2. Designated groundwater recharge and domestic, municipal, and industrial water supplies of Santa Clara Pueblo water bodies.



1. The following numeric standards shall not be exceeded:

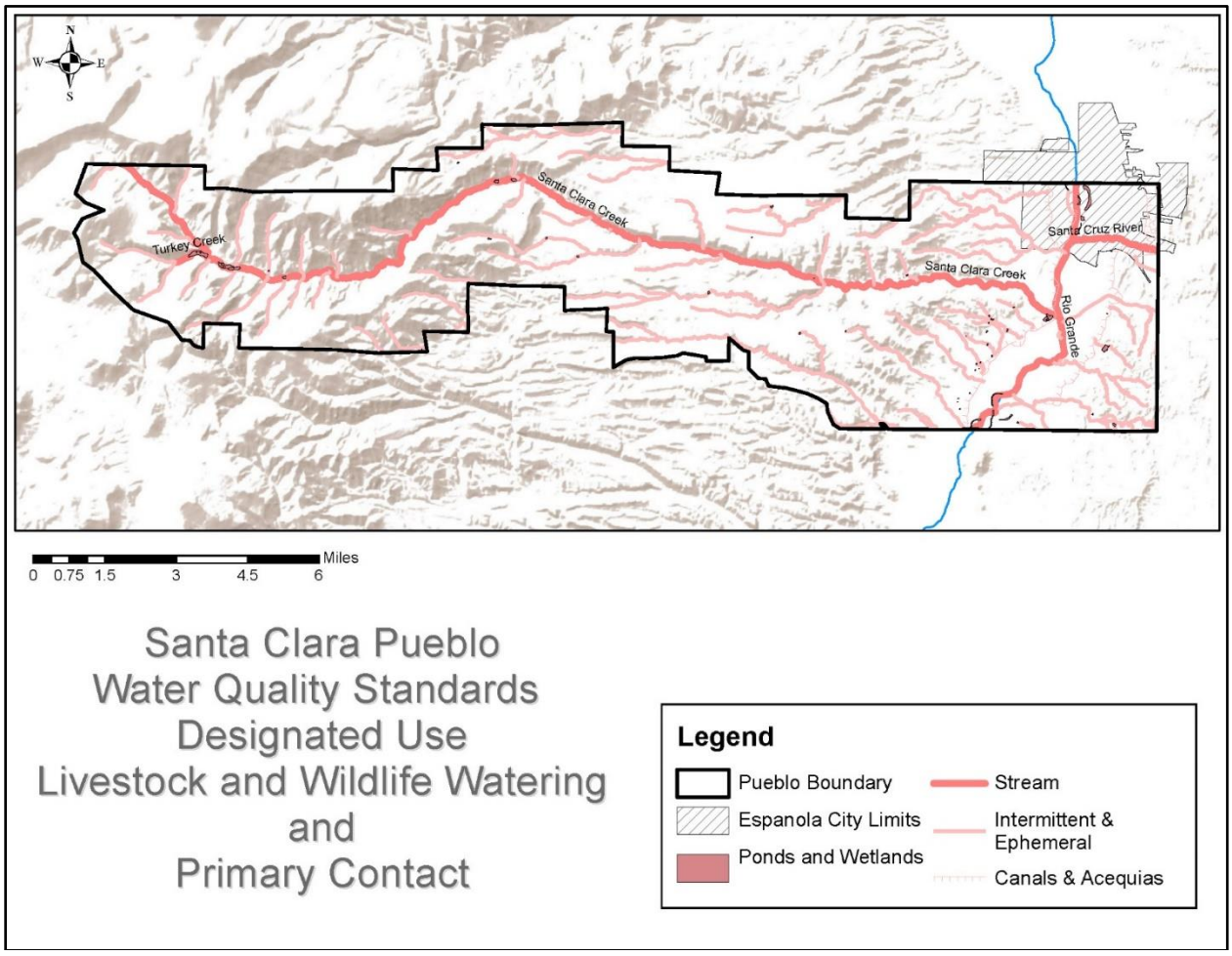
Table 5. Numerical criteria for waters groundwater recharge, and domestic, municipal, and industrial water supply uses.

Analyte	**Concentration**
Dissolved aluminum **	0.2 mg/L
Dissolved antimony	0.006 mg/L
Dissolved arsenic	0.01 mg/L
Dissolved barium	2.0 mg/L
Benzene	0.005 mg/L
Dissolved beryllium	0.004 mg/L
Dissolved cadmium	0.005 mg/L
1,1 dichloroethylene	0.007 mg/L
1,2-cis dichloroethylene	0.07 mg/L
1,2-trans dichloroethylene	0.1 mg/L
Dissolved chromium *	0.1 mg/L
Dissolved copper **	1.0 mg/L
Dissolved cyanide	0.2 mg/L
Ethylbenzene	0.7 mg/l
Fluoride **	2.0 mg/L
Dissolved iron **	0.3 mg/L
Dissolved lead **	0.015 mg/L
Dissolved manganese **	0.05 mg/L
Total mercury	0.002 mg/L
Dissolved nickel	0.1 mg/L
Total nitrate	10.0 mg/L
Radium-226 + radium-228	5.0 pCi/L
Dissolved selenium	0.05 mg/L
Dissolved silver **	0.1 mg/L
Strontium-90	8 pCi/L
Dissolved thallium	0.002 mg/L
Tetrachloroethylene	0.005 mg/L
Toluene	1 mg/L
Trichloroethylene	0.005 mg/L
Tritium	20,000 pCi/L
Dissolved uranium	0.03 mg/L
Vinyl Chloride	0.002 mg/L
Xylenes	10 mg/L
Gross alpha	15 pCi/L

* The standard for chromium shall be applied to an analysis which measures both the trivalent and hexavalent ions.
** Standard based on Secondary Drinking Water Standard or Safe Drinking Water Act action level.

H. Livestock and Wildlife. Waters designated for livestock watering and wildlife habitat uses **(Figure 6)** shall not exceed the numeric criteria listed in **Table 6**.

Figure 3. Designated livestock and wildlife watering and primary contact uses of Santa Clara Pueblo water bodies.



The following standards are applicable in order to protect livestock and wildlife uses:

Table 6. Numeric water quality criteria for livestock and wildlife uses.

Analyte	Concentration
Dissolved aluminum	5.0 mg/L
Dissolved arsenic	0.2 mg/L
Dissolved boron	5.0 mg/L
Dissolved cadmium	0.05 mg/L
Dissolved chromium *	1.0 mg/L

Dissolved cobalt	1.0 mg/L
Dissolved copper	0.5 mg/L
Dissolved lead	0.1 mg/L
Total mercury	0.0012 ug/L
Total selenium	0.002 mg/L
Dissolved vanadium	0.1 mg/L
Dissolved zinc	25.0 mg/L
Radium-226 + radium-228	30.0 pCi/L
Tritium	20,000 pCi/L
Gross alpha **	15 pCi/L

* The standard for chromium shall be applied to an analysis which measures both the trivalent and hexavalent ions

** Gross alpha includes radium-226, but excludes radon and uranium.

I. Primary Contact. The following standards are applicable in order to protect primary contact uses **(Figure 6)**:

1. The results for E. Coli may be reported as either colony forming units (CFU) or the most probable number (MPN) depending on the analytical method use. The geometric mean of E. Coli bacteria shall not exceed 126 colonies/100 ml and a single sample maximum of 410 CFU/100 ml **(Table 7)**.

2. In any single sample, pH shall be within the range of 6.6 to 8.8.

3. The total dissolved solids of mineral constituents shall be less than 500 mg/L.

4. Turbidity shall not exceed 25 NTUs.

5. All waters shall be free of algae in concentrations causing a nuisance condition or causing gastrointestinal or skin disorders.

6. Microcystin concentrations shall be less than 8 micrograms (µg)/L with no more than three exceedances within a 12-month period.

7. Cylindrospermopsin concentrations shall be less than 15 µg/L with no more than three exceedances within a 12-month period.

Table 7. Recreational water quality criteria

Criteria Element	Estimated Illiness Rate (NGI): 36 per 1,000 primary contact recreators	
	Magnitude	
Indicator	GM (cfu/100 mL)[a]	STV (cfu/100 mL)
Enterococci	35	130
E. coli	126	410
[a] EPA recommends using *EPA Method 1600* (U.S. EPA, 2002a) to measure culturable enterococci, or another equivalent method that measures culturable enterococci. EPA recommends using *EPA Method 1603* (U.S. EPA, 2002b), or any other equivalent method that measures culturable *E. coli*. The results for E. coli may be reported as either colony forming units (cfu) or the most probable number (MPN), depending on the analytical method used.		
Duration and Frequency: The water body GM should not be greater than the selected GM magnitude in any 90-day interval. There should not be greater than a ten percent excursion frequency of the selected STV magnitude in the same 90-day interval.		
Office of Water 820-F-12-058, *Recreational Water Quality Criteria*		

Enacted February 13,1995; amended March 24,1995; revised and adopted by Res. No. 03-27, November 5, 2002; approved by Sec'y August 5, 2003; amended by Res. No. 2023-066; approved by Sec'y March 4, 2024.

Sec. 86.5 Sampling and Analyses

A. Methodology. All methods of sample collection, preservation, and analysis used in monitoring compliance with these standards shall be performed in accordance with procedures prescribed by the latest edition of EPAs "Guidelines Establishing Test Procedures for the Analysis of Pollutants" (40 C.F.R. Part 136). Other methods, which may not be EPA-approved, may be used as determined to be appropriate by the OEA to monitor ambient water quality.

B. Bacteriological Surveys. In conducting such surveys, the geometric mean shall be used in assessing attainment of standards based on an approved Quality Assurance Project Plan or other document that establishes the number of samples required in a rolling 90-day period. Less than 10% of samples shall exceed the STV for bacterial density, as set forth in Section 86.4 when a sufficient number of samples is collected in a rolling 90-day period.

C. Sampling Procedures. The following sampling procedures shall be used:

1. Stream monitoring stations below waste discharges shall be located outside the mixing zone.

2. Sampling in lakes, including artificial lakes, shall be located where the attainment of a water quality standard is to be assessed. Water quality measurements may be taken at intervals in the water column at a sampling station. For toxic substances and nutrients,

the entire water column shall be monitored. For dissolved oxygen in stratified lakes, measurements shall be made in the epilimnion. In non-stratified lakes, measurements will be made at intervals throughout the entire water column.

D. Biological Surveys. Biological monitoring may be conducted in accordance with EPA's "Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers" or other procedures, including those established by organizations as the River Watch Network. Biological integrity shall be determined from measures of the physical, chemical, microbial and or biological characteristics of a surface water body, in comparison to upstream conditions or to appropriate reference sites in the same ecoregion. Such reference sites or segments of water bodies shall be those observed to support the greatest variety and abundance of aquatic life in the region as is expected to be or has been observed during past surveys in natural settings essentially undisturbed by human impacts, development, or discharges.

Water Quality Code of the Pueblo of Santa Clara, enacted February 13,1995; amended March 24,1995 revised and adopted by Res. No. 03-27, November 5, 2002; approved by Sec'y August 5, 2003; amended by Res. No. 2023-066; approved by Sec'y March 4, 2024.

Sec. 86.6 Definitions

The following terms shall have the following definitions when used in this Code:

"4Q3": The minimum average four consecutive day flow which occurs with a frequency of once in three years.

"Abundance": Measure of the population of one species in an ecosystem as compared to other species within that same ecosystem.

"Action level": The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. For lead or copper, it is the level which, if exceeded in over 10% of homes tested, triggers treatment.

"Acute toxicity": Toxicity that exerts short term lethal impacts on representative organisms with a duration of exposure generally less than or equal to 48 hours. Acute toxicity shall be determined in accordance with procedures specified in EPA/821/R-02/012, "Methods for measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms." Other methods may be used as appropriate to determine acute effects other than lethality such as, but not limited to, behavioral changes and immobilization.

"Agricultural water supply use": The use of water for irrigation.

"Algae": Simple rootless plants that grow in sunlit waters in relative proportion to the amounts of nutrients available. They can affect adversely water quality by lowering the dissolved oxygen in the water and are food for fish and small aquatic animals.

"Alkalinity": The property of water that resists or buffers against changes in pH upon addition of acid or base.

“Ambient”: Environmental or surrounding conditions.

“Antidegradation”: The policy set forth in the Pueblo of Santa Clara Water Quality Code, whereby existing uses, and the level of water quality necessary to protect those uses is maintained and protected (See 40 C.F.R. Section 131.12 (1987)).

“Appropriate reference site or ecoregion”: Means a site on the same water body, or within the same ecoregion, that has similar habitat conditions and represents the water quality and biological community attainable within the area of concern.

“Aquatic biota”: Animal and plant life in the water.

“Aquatic life criteria”: Constituent concentrations, levels, or narrative statements, representing a quality of water that is protective of aquatic life.

“Attainable use”: A use of surface water having water quality and all other characteristics necessary to support and maintain the use, as specified in Section 86.4 of this Code, or which would support and maintain the use after the implementation of water quality standards as set forth in this Code.

“Baseflow”: Sustained flow of a stream in the absence of direct runoff. It includes natural and human-induced stream flows. Natural base flow is sustained largely by groundwater discharge.

“Benthic”: The organisms living on river or lake bottoms.

“Best management practices”: Practices undertaken to control, restrict, and diminish nonpoint sources of pollution, that are consistent with the purposes of this Code and with the narrative and numeric standards contained herein; and measures, sometimes structural, that are determined to be the most effective practical means of preventing or reducing pollution of water bodies from nonpoint sources.

“Bioaccumulation”: The process by which a compound is taken up by an aquatic organism, both from water and through food.

“Bioconcentration”: Uptake and retention of a substance by an aquatic organism from the surrounding water through gill membranes or other external body surfaces.

“Biological community”: An association of interacting populations of organisms in a given water body or habitat.

“Biomagnification”: The process by which the concentration of a compound increases in species occupying successive trophic levels.

“CAS Number”: Chemical abstract service number; each chemical has a specific

identification number.

"Carcinogenic": Cancer producing.

"Ceremonial use": See "Primary Contact."

"CCC": Criterion Continuous Concentrations or chronic criterion

"cfs": Cubic feet per second.

"Chronic toxicity": Toxicity which exerts sublethal effects, such as impairment of growth or reproduction, or which becomes lethal after long term exposure, generally measured in a 7-day test on representative organisms. Chronic toxicity shall be determined in accordance with procedures specified in EPA/821/R-02/013, "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms."

"CMC": Criterion Maximum Concentrations or acute criterion

"Cold-water fishery": A stream reach, lake, or impoundment where the water temperature and other characteristics are suitable for the support and propagation of cold-water fish such as brown, cutthroat, brook and rainbow trout and native fish species such as but not limited to the longnose dace, Rio Grande chub, Rio Grande sucker, and native Rio Grande cutthroat trout.

"Color": Color as used herein means true color as well as apparent color. True color is the color of the water from which turbidity has been removed. Apparent color includes not only the color due to substances in solution (true color), but also that color due to suspended matter.

"Criteria": Elements of 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.

"Cumulative": Increasing by successive additions.

"Designated uses": Those uses set forth in this Code, whether or not they are being attained.

"Diversity": An ecological measure of the variety of organisms present in a habitat.

"Dissolved oxygen (DO)": The amount of oxygen dissolved in water or the amount of oxygen available for biochemical activity in water, commonly expressed as a concentration in milligrams per liter.

"Domestic, municipal and industrial water supply": Water that is used by individuals, communities and private corporations and requires disinfection in order to be usable for drinking or cooking.

“dw”: Dry Weight

“e”: A transcendental constant equal to 2.7182818 which is used as the base of natural logarithms; it is the limit of the expression $[(1 +1/n)^n]$, as n approaches infinity.

“Ecosystem”: A natural unit formed by the interaction of a community of plants and animals with the environment in which they live. All of the elements of an ecosystem interact with each other in some way, depending on each other directly or indirectly.

“Effluent”: Discharge into surface waters from other than natural sources.

“Ephemeral stream”: A reach of a stream that flows temporarily in direct response to precipitation or snow melt, the channel bed of which is above the water table.

“Epilimnion”: The layer of water that overlies the thermocline of a lake and that is subject to the action of wind.

“Eutrophication”: The slow aging process during which a lake, estuary, or bay evolves into a bog or marsh and eventually disappears. During the later stages of eutrophication the water body is choked by abundant plant life as the result of increased amounts of nutritive compounds such as nitrogen and phosphorus. Human activities can accelerate the process.

“Exceptional": Waters of exceptional value or significance to the Pueblo will be determined at the discretion of the Tribal Council.

“Existing uses”: Those uses actually attained in a surface water body on or after November 28, 1975, whether or not they are referred to this Code.

“Fecal coliform bacteria”: The portion of the coliform group which is present in the gut or the feces of warm-blooded animals. Fecal coliform bacteria generally include organisms that are capable of producing gas from lactose broth in a suitable culture medium within 24 hours at 44.5 + / -0.2° C.

“Fish culture”: Production of cold-water or warm water fish in a hatchery or rearing station.

“Fishery”: A balanced, diverse community of fishes controlled by the water quality, quantity, and habitat of a water body.

“Flow”: Atmospheric precipitation resulting in surface and/or ground water runoff.

“Food Crops”: Subsistence crops that are meant for human consumption, including fruits, vegetables, grains, and tubers.

“Geometric mean”: A mean calculated by converting all values to logarithms; averaging the logarithms; and determining the antilogarithm of that average.

“Harmonic mean flow”: is the number of daily flow measurements divided by the sum of the reciprocals of the flow. That is, it is the reciprocal of the mean of reciprocals.

“High quality water”: Waters whose existing quality is better than necessary to support fishable and or swimmable uses.

“Human health criteria”: Criteria guidance published under section 304 (a) of the Clean Water Act based on the latest scientific information on the effect a constituent concentration has on human health from consumption of fish and/ or ingestion of water. This information is issued periodically to the states and tribes as guidance for use in developing criteria.

“Impair”: To have a detrimental effect on a water body that prevents attainment of a designated use.

“Indigenous”: Produced, growing, or living naturally in a particular region or environment.

“Industrial”: Production of goods or services for profit.

“Industrial water supply use”: The use of water with reference to the production of goods or services for profit.

“Intermittent stream”: A stream or reach of a stream that flows only at certain times of the year, when receiving flow from springs, melting snow, or localized precipitation.

“Irrigation use”: The use of water, after diversion, to promote the growth of crops.

“LC-50”: The concentration of a substance that is lethal to 50% of the test organisms within a defined time period.

“Livestock and wildlife use”: The use of water, by ingestion, by domestic livestock and vertebrate animals.

“Marginal cold-water fishery”: A stream reach, lake, or impoundment where water temperature and other characteristics are suitable for support of cold-water fish (such as brown trout, cutthroat trout, brook trout, or rainbow trout), but where temperature and other characteristics may not always be suitable for propagation of cold-water fish.

“Micrograms per liter (ug/l)”: Micrograms of solute per liter of solution; one microgram per liter is equivalent to one part per billion (ppb) at unit density.

“Milligrams per liter (mg/l)”: Milligrams of solute per liter of solution; one milligram per liter is equivalent to one part per million (ppm) at unit density.

“Mixing zone”: A three-dimensional zone in which discharged effluent mixes with the receiving water and within which there is a gradation of water quality.

“National Pollutant Discharge Elimination System (NPDES)”: A national program under Section 402 of the Clean Water Act for regulation of discharges of pollutants from point sources to waters of the United States. Discharges are illegal unless authorized by an NPDES permit.

“Narrative standards”: A standard or criterion expressed in words rather than numerically.

“Natural background”: Characteristics that are not man-induced that are related to water quality; the levels of pollutants present in ambient water that are from natural, as opposed to man-induced, sources.

“Non-point source”: A source of pollution that is not a discernible, confined, and discrete conveyance; a diffuse source which flows across natural or manufactured surfaces, such as runoff from agricultural, construction, mining, or silvicu1tural activities, or from urban areas.

“NTU”: Nephelometric Turbidity Units; a measure of turbidity in water; see Turbidity.

“Nuisance condition”: A condition involving uncontrolled growth of aquatic plants, usually caused by excessive nutrients in the water.

“Nutrient”: A chemical element or inorganic compound taken in by green plants and used in organic synthesis.

“Outstanding Resource Waters (ORW)”: ORW designation shall be assigned by the Tribal Council through tribal rule making procedures. Outstanding water quality is not a prerequisite for ORW designation.

“Pathogens”: Microorganisms that can cause disease in humans, animals, and plants. They may be bacteria, viruses, or parasites and are found in sewage, in runoff from animal farms or rural areas populated with domestic and/ or wild animals, and in water used for swimming. Fish and shellfish contaminated by pathogens, or the contaminated water itself, can cause serious illnesses.

“Perennial stream”: A stream or reach of a stream that flows continuously throughout the year, the upper surface of which is generally lower than the water table of the region adjoining the stream.

“Persistent”: Continued existence or occurrence.

“pH”: The negative logarithm of the effective hydrogen-ion concentration in gram equivalents per liter; a measure of the acidity or alkalinity of a solution, increasing with increasing alkalinity and decreasing with increasing acidity.

“Picocurie (pCi)”: That quantity of radioactive material producing 2.22 nuclear transformations per minute.

"Point source": Any discernible, confined, and discrete conveyance from which pollutants are or may be discharged into a water body, but not including return flows from irrigated agriculture.

"Primary contact": Any recreational or other water use in which there is prolonged and intimate contact with the water body, such as swimming and water skiing, involving considerable risk of ingesting water in quantities sufficient to pose a significant health hazard. Primary contact also means any use of water bodies for American Indian traditional, cultural, religious, or ceremonial purposes in which there is intimate contact with the water body that may pose a significant health risk. This contact may include but is not limited to ingestion or immersion.

"Proposed activity": For the purposes of antidegradation implementation procedures, this means a proposed activity that is also a regulated activity.

"Pueblo Lands": means (1) all lands within the exterior boundaries of the Pueblo's reservation and its confirmed grants from prior sovereigns, and (2) any other lands title to which is either held in trust by the United States for the exclusive benefit of the Pueblo or is held by the Pueblo subject to restrictions against alienation imposed by the United States.

"Reference": 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.

"Regulated activity": Any activity that requires a permit or water quality certification pursuant to tribal or federal law, any activity subject to non-point source control requirements or regulations, and any activity which is otherwise subject to tribal regulations that specify that the antidegradation review process is applicable.

"Section 401": Clean Water Act section 401 provides that Federal agencies may not issue a license or permit to conduct any activity that may result in any discharge into a ''water of the United States'', unless the state or authorized tribe where the discharge would originate either issues a 401water quality certification (with or without conditions), or waives certification. Common examples of licenses or permits that may be subject to section 401 certification are NPDES permits issued by EPA; Clean Water Act section 404 permits for the discharge of dredged or fill material and Rivers and Harbors Act sections 9 and 10 permits issued by the Army Corps of Engineers; and hydropower and interstate natural gas pipeline licenses issued by the Federal Energy Regulatory Commission. Activities regulated under the section 404 program include fill for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports) and mining projects.

"Secondary contact recreational use": Any recreational use of the water in which contact with the water need not occur and in which the probability of ingesting water is minimal, such as fishing and boating.

“Segment”: A portion of a surface water body that has common hydrologic characteristics or flow regulation regimes, possesses common natural physical, chemical, and biological characteristics, and exhibits common reactions to external stresses such as the discharge of pollutants.

“Statistical Threshold Value (STV)”: the 90^{th} percentile of the water quality distribution that is intended to be a value that should not be exceeded by more than 10 percent of the samples taken.

“Synergism”: Cooperative action of discrete agents such that the total effect is greater than the sum of the effects taken independently.

“'TDS”: Total dissolved solids.

“Technology-based controls”: The application of technology-based effluent limitations required under Section 301(b) of the Clean Water Act.

“Thermal stratification”: Temperature-caused horizontal layers of different densities produced in a lake.

“Threatened and endangered species habitat”: Means a stream reach, lake, spring, and/or pool where water quality, lack of interspecies competition, temperature and instream or benthic habitat provide for the support and propagation of a threatened or endangered species.

“Toxic pollutant”: Those pollutants or combinations of pollutants, including but not limited to 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, on the basis of information available to the EPA or the Pueblo of Santa Clara, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including but not limited to malfunctions in reproduction), or physical deformations in such organisms or their offspring.

“Toxicity”: The degree of danger posed by a substance to animal or plant life; see “Acute Toxicity” and “Chronic Toxicity.”

“Tribal waters”: All waters within the exterior boundaries of the Pueblo Lands, including water situated wholly or partly within, or bordering upon, the Pueblo Lands, all lakes, rivers, streams (including perennial, intermittent, and ephemeral streams), irrigation ditches, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, reservoirs and natural ponds, and all tributaries and impoundments of such waters. Waters which do not combine with other surface or subsurface waters, such as stock tanks, treatment lagoons, or reservoirs are private waters and are excluded from this Code, but any receiving bodies of water impacted from the effluent from such reservoirs and treatment lagoons are part of tribal waters.

“Turbidity”: A measure of the degree to which water is cloudy or muddy in physical appearance due to suspended silt or organic matter.

“Use-attainability analysis”: A structured scientific assessment of the factors affecting attainment of a use for a body of water, which may include physical, chemical biological, and economic factors, such as those referred to in 40 C.F.R. Section 131.10(g).

“Warm water fishery”: A stream reach, lake, or impoundment where the water temperature and other characteristics are suitable for the support of warm water fish such as but not limited to large-mouth black bass, small-mouth bass, crappie, bluegill, and white bass, and native fish species such as flathead chub, white sucker, channel catfish, and fathead minnow.

“Water contaminant”: Any substance that alters the physical, chemical, biological or radiological qualities of water.

“Water quality-based effluent limits”: Effluent limitations, as provided under Section 301(b)(1)(c) of the Clean Water Act, that are developed and imposed on point-source dischargers in order to protect and maintain applicable water quality standards.

“Wetland”: Those areas inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands include swamps, marshes, bogs and similar areas. Constructed wetlands used for wastewater treatment purposes are not included in this definition.

“Wetland functions”: May include, but are not limited to: food chain production; habitat for nesting, spawning, rearing and resting for wetland and terrestrial species; ground water exchange, discharge and recharge; nutrient transport, removal or transformation; sediment and or contaminant retention; water storage; storm and flood water retention and or attenuation; sediment stabilization; recreation; education and research; and habitat for threatened or endangered species.

“Wildlife habitat”: Tribal waters used for drinking water supply, food supply, habitation and propagation by plants and animals that are not pathogenic to humans, domesticated livestock and plants.

“Zone of passage”: The portion of the receiving water outside the mixing zone where water quality is the same as that of the receiving water.

Enacted February 13,1995; amended March 24,1995 revised and adopted by Res. No. 03-27, November 5, 2002; approved by Sec’y August 5, 2003; amended by Res. No. 2023-066; approved by Sec’y March 4, 2024.

Appendix A. Total Ammonia (mg N/L) - Acute and Chronic Standard

Table A-1. Total Ammonia Nitrogen (mg/L)- Temperature and pH-Dependent Values of the CMC (Acute Criterion Magnitude*). Oncorhynchus spp. Present.

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

* The acute criterion duration represents a one-hour average and should not be exceeded more than once in three years, on average.

Table A-2. Total Ammonia Nitrogen (mg/L)- Temperature and pH-Dependent Values of the CMC (Acute Criterion Magnitude) Oncorhynchus spp. Absent.

Temperature (°C)																					
pH	**0-10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
6.5	51	48	44	41	37	34	32	29	27	25	23	21	19	18	16	15	14	13	12	11	9.9
6.6	49	46	42	39	36	33	30	28	26	24	22	20	18	17	16	14	13	12	11	10	9.5
6.7	46	44	40	37	34	31	29	27	24	22	21	19	18	16	15	14	13	12	11	9.8	9.0
6.8	44	41	38	35	32	30	27	25	23	21	20	18	17	15	14	13	12	11	10	9.2	8.5
6.9	41	38	35	32	30	28	25	23	21	20	18	17	15	14	13	12	11	10	9.4	8.6	7.9
7.0	38	35	33	30	28	25	23	21	20	18	17	15	14	13	12	11	10	9.4	8.6	7.9	7.3
7.1	34	32	30	27	25	23	21	20	18	17	15	14	13	12	11	10	9.3	8.5	7.9	7.2	6.7
7.2	31	29	27	25	23	21	19	18	16	15	14	13	12	11	9.8	9.1	8.3	7.7	7.1	6.5	6.0
7.3	27	26	24	22	20	18	17	16	14	13	12	11	10	9.5	8.7	8.0	7.4	6.8	6.3	5.8	5.3
7.4	24	22	21	19	18	16	15	14	13	12	11	9.8	9.0	8.3	7.7	7.0	6.5	6.0	5.5	5.1	4.7
7.5	21	19	18	17	15	14	13	12	11	10	9.2	8.5	7.8	7.2	6.6	6.1	5.6	5.2	4.8	4.4	4.0
7.6	18	17	15	14	13	12	11	10	9.3	8.6	7.9	7.3	6.7	6.2	5.7	5.2	4.8	4.4	4.1	3.8	3.5
7.7	15	14	13	12	11	10	9.3	8.6	7.9	7.3	6.7	6.2	5.7	5.2	4.8	4.4	4.1	3.8	3.5	3.2	2.9
7.8	13	12	11	10	9.3	8.5	7.9	7.2	6.7	6.1	5.6	5.2	4.8	4.4	4.0	3.7	3.4	3.2	2.9	2.7	2.5
7.9	11	9.9	9.1	8.4	7.7	7.1	6.6	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

* The acute criterion duration represents a one-hour average and should not be exceeded more than once in three years, on average.

Table A-3. Total Ammonia Nitrogen (mg/L) -Temperature and pH-Dependent Values of the CCC (Chronic Criterion Magnitude*).

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

* The chronic criterion duration represents a 30-day rolling average, with the additional restriction that the highest 4-day average within the 30 days be no greater than 2.5 times the chronic criterion magnitude. The chronic criteria should not be exceeded more than once in three years, on average.

Appendix B Human Health Criteria and Aesthetic Standards.

Table B. Human health criteria.

Pollutant	CAS Number	Criteria using a fish consumption of 22 grams per day		Aesthetic Standards
		Water + Organism (µg/L)	Organism Only (µg/L)	Water Only (µg/L)
1,1,1-Trichloroethane[a]	71-55-6	10,000	200,000	--
1,1,2,2-Tetrachloroethane[b]	79-34-5	0.2	3	--
1,1,2-Trichloroethane[a,b]	79-00-5	0.55	8.9	--
1,1-Dichloroethylene[a]	75-35-4	300	20,000	--
1,2,4,5-Tetrachlorobenzene	95-94-3	0.03	0.03	--
1,2,4-Trichlorobenzene[a]	120-82-1	0.071	0.076	--
1,2-Dichlorobenzene[a]	95-50-1	1,000	3,000	--
1,2-Dichloroethane[a,b]	107-06-2	9.9	650	--
1,2-Dichloropropane[b]	78-87-5	0.9	31	--
1,2-Diphenylhydrazine[b]	122-66-7	0.03	0.2	--
1,2-Trans-Dichloroethylene[a]	156-60-5	100	4,000	--
1,3-Dichlorobenzene	541-73-1	7	10	--
1,3-Dichloropropene[b]	542-75-6	0.27	12	--
1,4-Dichlorobenzene[a]	106-46-7	300	900	--
2,4,5-Trichlorophenol[c]	95-95-4	300	600	--
2,4,6-Trichlorophenol[b,c]	88-06-2	1.5	2.8	--
2,4,5-Trichlorophenol	95-95-4	300	600	1
2,4,6-Trichlorophenol[c]	88-06-2	1.5	2.8	--
2,3-Dichlorophenol[c]	576-24-9	--	--	0.04
2,4-Dichlorophenol[c]	120-83-2	10	60	0.3
2,5-Dichlorophenol[c]	583-78-8	--	--	0.5
2,6-Dichlorophenol[c]	87-65-0	--	--	0.2
3,4-Dichlorophenol	95-77-2	--	--	0.3
2,4-Dimethylphenol[c]	105-67-9	100	3,000	400
2,4-Dinitrophenol	51-28-5	10	300	--
2,4-Dinitrotoluene[b]	121-14-2	0.049	1.7	--
2-Chloronaphthalene	91-58-7	800	1,000	--
2-Chlorophenol[c]	95-57-8	30	800	0.1
3-Chlorophenol[c]	108-43-0	--	--	0.1
4-Chlorophenol[c]	106-48-9	--	--	0.1

Pollutant	CAS Number	Criteria using a fish consumption of 22 grams per day		Aesthetic Standards
		Water + Organism (µg/L)	Organism Only (µg/L)	Water Only (µg/L)
2-Methyl-4,6-Dinitrophenol	534-52-1	2	30	--
3,3'-Dichloro-benzidine[b]	91-94-1	0.049	0.15	--
3-Methyl-4-Chlorophenol[c]	59-50-7	500	2,000	--
4,''-DDD[b]	72-54-8	0.00012	0.00012	--
4,''-DDE[b]	72-55-9	0.000018	0.000018	--
4,''-DDT[b]	50-29-3	0.00003	0.00003	--
Acenaphthene[c]	83-32-9	70	90	20
Acrolein	107-02-8	3	400	--
Acrylonitrile[b]	107-13-1	0.061	7.0	--
Aldrin[b]	309-00-2	0.00000077	0.00000077	--
alpha-BHC	319-84-6	0.00036	0.00039	--
alpha-Anovulant (alpha-Endosulfan)	959-98-8	20	30	--
Anthracene	120-12-7	300	400	--
Antimony[a,d]	7440-36-0	5.6	640	--
Arsenic	7440-38-2	--	20.5	--
Asbestos[a]	1332214	7 million fibers/L	--	--
Barium[a,e]	7440-39-3	1,000	--	--
Benzene- Upper CSF[a,b]	71-43-2	0.58	16	--
Benzidine[b]	92-87-5	0.00014	0.011	--
Benzo(a) Anthracene[b]	56-55-3	0.0012	0.0013	--
Benzo(a) Pyrene[a,b]	50-32-8	0.00012	0.00013	--
Benzo(b) Fluoranthene[b]	205-99-2	0.0012	0.0013	--
Benzo(k) Fluoranthene[b]	207-08-9	0.012	0.013	--
beta-BHC (beta-HCH)[b]	319-85-7	0.0080	0.014	--
beta-Endosulfan	33213-65-9	20	40	--
Bis(2-Chloro-1-Methylethyl) Ether	108-60-1	200	4,000	--
Bis(2-Chloroethyl) Ether[b]	111-44-4	0.03	2.2	--
Bis(2-Ethylhexyl) Phthalate[a,b]	117-81-7	0.32	0.37	--
Bis(Chlormethyl) Ether	542-88-1	0.00015	0.017	--
Bromoform[a,b]	75-25-2	7	120	--
Butylbenzyl Phthalate	85-68-7	0.1	0.1	--
Carbon Tetrachloride[a,b]	56-23-5	0.4	5	--

Pollutant	CAS Number	Criteria using a fish consumption of 22 grams per day		Aesthetic Standards
		Water + Organism (µg/L)	Organism Only (µg/L)	Water Only (µg/L)
Chlordane[a]	57-74-9	0.00031	0.00032	--
Chlorobenzene[a,c]	108-90-7	100	800	20
Chlorodibromo-methane[a,b]	124-48-1	0.8	21	--
Chloroform[a,]	67-66-3	60	2,000	--
Chlorophenoxy Herbicide (2,4,5-TP) [Silvex][a]	93-72-1	100	400	--
Chlorophenoxy Herbicide (2,4-D)[a]	94-75-7	1,300	12,000	--
Chrysene[a,b]	218-01-9	0.12	0.13	--
Copper[a,,c]	7440-50-8	1,300	--	1,000
Cyanide[a]	57-12-5	4	400	--
Dibenzo(a,h) Anthracene[b]	53-70-3	0.00012	0.00013	--
Dichlorobromo-methane[a,b]	75-27-4	0.95	27	--
Dieldrin[b]	60-57-1	0.0000012	0.0000012	--
Diethyl Phthalate	84-66-2	600	600	--
Dimethyl Phthalate	131-11-3	2,000	2,000	--
Di-n-Butyl Phthalate	84-74-2	20	30	--
Dinitrophenols	25550-58-7	10	1000	--
2,3,7,8-TCDD Dioxin [b]	1746-01-6	5.0 E-9	5.1E-9	--
Endosulfan Sulfate	1031-07-8	20	40	--
Endrin[a]	72-20-8	0.03	0.03	--
Endrin Aldehyde	7421-93-4	1	1	--
Ethylbenzene[a]	100-41-4	68	130	--
Fluoranthene	206-44-0	20	20	--
Fluorene	86-73-7	50	70	--
Gamma-BHC (HCH); Lindane[a]	58-89-9	4.2	4.4	--
Heptachlor[a,b]	76-44-8	0.0000059	0.0000059	--
Heptachlor Epoxide[a,b]	1024-57-3	0.000032	0.000032	--
Hexachlorobenzene[a,b]	118-74-1	0.000079	0.000079	--
Hexachlorobutadiene[b]	87-68-3	0.01	0.01	--
Hexachlorocyclo-hexane (HCH)–- Technical	608-73-1	0.0066	0.01	--
Hexachlorocyclo-pentadiene[a,c]	77-47-4	4	4	1

Pollutant	CAS Number	Criteria using a fish consumption of 22 grams per day		Aesthetic Standards
		Water + Organism (µg/L)	Organism Only (µg/L)	Water Only (µg/L)
Hexachloroethane[b]	67-72-1	0.1	0.1	--
Indeno(1,2,3-cd) Pyrene[b]	193-39-5	0.0012	0.0013	--
Isophorone[b]	78-59-1	34	1,800	--
Manganese[c,f]	7439-96-5	50	100	--
Methoxychlor[a]	72-43-5	0.02	0.02	--
Methyl Bromide	74-83-9	100	10,000	--
2-Methyl-4-Chlorophenol[c]		--	--	1,800
Methylene Chloride[a,b]	75-09-2	20	1,000	--
Methylmercury [g]	22967926		0.3 mg/kg	--
Nickel[d]	7440-02-0	610	4,600	--
Nitrates[a]	14797558	10,000	--	--
Nitrobenzene[c]	98-95-3	10	600	30
Nitrosamines	-	0.0008	1.24	--
Nitro-sodibutylamine[b]	924-16-3	0.0063	0.22	--
Nitro-sodiethylamine[b]	55-18-5	0.0008	1.24	--
Nitrosopyrrolidine[b]	930-55-2	0.016	34	--
N-Nitro-sodimethylamine[b]	62-75-9	0.00069	3.0	--
N-Nitrosodi-n-Propylamine[b]	621-64-7	0.005	0.51	--
N-Nitro-sodiphenylamine[b]	86-30-6	3.3	6.0	--
Pentachloro-benzene	608-93-5	0.1	0.1	--
Pentachlorophenol (PCP)[a,b,c]	87-86-5	0.03	0.04	30
Phenol[c]	108-95-2	4,000	300,000	300
Polychlorinated Biphenyls (PCBs)[a,b,h]	PCB	0.000064	0.000064	--
Pyrene	129-00-0	20	30	--
Selenium[a]	7782-49-2	170	4,200	--
Tetrachloroethylene[a,b]	127-18-4	10	29	--
Thallium	7440-28-0	0.24	0.47	--
Toluene[a]	108-88-3	57	520	--
Toxaphene[a,b]	8001-35-2	0.0007	0.00071	--
Trichloroethylene[a,b]	79-01-6	0.6	7	--
Vinyl Chloride[a,b]	75-01-4	0.022	1.6	--
Zinc[c]	7440-66-6	7,400	26,000	5,000

Footnotes to Table B of this section:

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

b. This criterion is based on carcinogenicity of 10^{-6} risk. Alternate risk levels may be obtained by moving the decimal point (*e.g.*, for a risk level of 10^{-5}, move the decimal point in the recommended criterion one place to the right).

c. The criterion for organoleptic (taste and odor) effects may be more stringent.

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. 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").

f. 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.

g. This fish tissue residue criterion for methylmercury is based on the total fish consumption rates of 17.5 grams per day.

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