

*Presented below are water quality standards that are in effect for Clean Water Act purposes.*

*EPA is posting these standards as a convenience to users and has made a reasonable effort to assure their accuracy. Additionally, EPA has made a reasonable effort to identify parts of the standards that are not approved, disapproved, or are otherwise not in effect for Clean Water Act purposes.*

**2015 Revised**  
**Pueblo of Pojoaque Water Quality Standards**

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## **Section I. Introduction, Authority and Applicability**

*Pursuant to the authority set forth in section 518 of the Clean Water Act, enacted February 4, 1987 (33 U.S.C. Section 1377), the Tribal Council of the Pueblo of Pojoaque, a federally recognized Native American Tribe, hereby enact the Pueblo of Pojoaque Water Quality Standards for the Pueblo of Pojoaque (Revised PPWQS).*

- A. The purpose of the Revised PPWQS contained herein is as follows:
1. *To designate the exiting and attainable uses for which the Surface Water of the Pueblo of Pojoaque (Tribal Waters), shall be protected;*
  2. *To prescribe Water Quality Standards (narrative and numeric) to sustain the designated uses;*
  3. *To continue to assure that degradation of existing water quality does not occur,*
  4. *To restore and maintain Water Quality Standards in order to protect existing and attainable biological communities;*
  5. *To promote the social welfare and economic wellbeing of the Pueblo of Pojoaque.*
- B. The said purposes shall be accomplished by incorporating the regulations contained in the Revised PPWQS into the permitting and management process for all dischargers who are subject to federal, state or Pueblo regulations. The Revised PPWQS shall be used in such existing processes, or new processes as may be created, in order to determine when a designated use is threatened. If standards are exceeded, advanced treatment technologies for regulated point sources and such Best Management Practices are as applicable for regulated non-point sources will be implemented.
- C. The Revised PPWQS apply to all Tribal Waters; that is, all waters within the exterior boundaries of the Pueblo of Pojoaque Indian Reservation, including water situated wholly or partly within, or bordering upon the Reservation, whether surface or subsurface, public or private, with the exception of privately owned treatment lagoons and stock watering ponds that do not combine with other surface or subsurface waters.

- D. The Revised PPWQS are consistent with Section 101(a) (2) of the Clean Water Act which declares that, *"it is the national goal that, wherever attainable and 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."* Irrigation, primary contact, groundwater recharge, and fish culture are other beneficial uses for Pueblo of Pojoaque Tribal Waters.

Note: Contamination that may result from such uses shall not lower the quality of the water below that which is specified within the PPWQS for ceremonial, recreation and protection and propagation of fish, shellfish, and wildlife.

- E. The Pueblo of Pojoaque Environment Department (PPED) shall serve under the direction of the Governor of the Pueblo and the Pueblo of Pojoaque Tribal Council. The PPED, in cooperation with the U.S. Environmental Protection Agency (EPA) and other agencies of the federal government, shall be responsible for the implementation and enforcement of the PPWQS.
- F. The Antidegradation Policy for the Pueblo of Pojoaque Tribal waters and the procedures for implementing it are set forth in Section II herein and in Implementation Plan referred to therein.
- G. Pursuant to Section 303 (c) (1) of the Clean Water Act ( 33 U.S.C. Section 1313 (c), the Pueblo of Pojoaque shall hold public hearing at least once each three year period for the purpose of reviewing and, as appropriate, modifying existing PPWQS. Revisions shall incorporate relevant scientific and engineering advances with respect to water quality. The Pueblo shall hold public hearings with respect to any regulations it may propose which could be incorporated by reference into the Revised PPWQS.
- H. The Pueblo of Pojoaque shall issue and approve Surface Water designations for Tribal waters and shall determine the suitability of bodies of water for recreational and ceremonial purposes.
- I. Numerical standards for streams shall be maintained any time the flow equals or exceeds the four day three year (4Q3) flow value. The narrative standards set forth in Section III, this document shall be maintained at all times and shall apply to all streams, lakes, reservoirs, canals, drains, ponds, springs and wetlands, whether perennial, ephemeral, or intermittent in nature. For a given parameter, the criterion assigned to a water body is the criterion required to protect all the uses designated for the water body. The water within reservoirs used for water treatment is exempt from these regulations. However, the Revised PPWQS do apply to receiving bodies of water impacted by effluent from such reservoirs.

- J. The Revised PPWQS contained herein specifically apply to substances attributable to discharges, non-point sources, or in stream activities, as opposed to natural phenomena. The said Revised PPWQS shall not apply to acts of God or to natural phenomena not brought about by human activity.**
- K. In the event that monitoring of water quality identifies reaches where the attainable quality is less than that specified in the existing Revised PPWQS, the said standards may be modified to reflect attainability. Modification thereof shall be carried out in accordance with use attainability analysis procedures, development of a site specific standard, or other appropriate methods.**
- L. The Revised PPWQS may be modified as the need arises, or upon receipt of updated scientific information with approval from EPA, Region VI.**
- 1. Errors resulting from inadequate and/or erroneous data, human or clerical oversight will be subject to correction by the PPED.**
  - 2. If any provision or application of the Revised PPWQS is found to be invalid or inaccurate the remainder of the Revised PPWQS shall not be affected.**
- M. It shall be the policy of the Pueblo of Pojoaque to allow, on a case-by-case basis, the inclusion of a schedule of compliance for National Pollutant Discharge Elimination System (NPDES) permits issued by the EPA to an existing facility. Such a schedule of compliance will be for the purpose of providing the permittee with adequate time to make treatment modifications necessary to comply with water quality based permit limitations determined necessary under new or Revised PPWQS. Compliance schedules may be included in NPDES permits at the time of permit re-issuance or modification and shall require compliance at the earliest practicable time. Compliance schedules should also specify milestone dates so as to measure progress towards final project completion.**
- N. The PPED, with consent from the Tribal Council, may authorize short-term activities that may cause violations of the 2015 Revised PPWQS if the Pueblo determines said activities are necessary to accommodate legitimate uses or emergencies which protect public health and welfare.**
- 1. Short term exceedances are not intended to supersede existing Tribal or Federal permitting process or requirements.**
  - 2. Such authorization shall not be granted for activities, which could result in adverse impact on any federally Endangered or Threatened Species, or on the critical habitat of such species.**
  - 3. The PPED shall specify the degree of variance, the time limit and restoration procedures where applicable.**

4. The PPED may include additional requirements for short term exceedances in related environmental regulations such as a Water Quality Management Plan.
- O. A variance from numeric criteria may be allowed in certain cases where the appropriateness of the criteria is questionable. Variance from criteria will be allowed for anticipated nonattainment of water quality regulations due to one or more of the reasons listed in 40 CFR 131.10. The PPED and the EPA on a case-by-case basis may consider other reasons for approval of a variance.
1. The Variance Provides a period of time during which issues concerning the appropriateness of the criteria may be resolved.
  2. Any person may request that the PPED/EPA grant a variance.
  3. A variance shall be granted only after appropriate public participation with PPED/EPA review and approval.

## **Section II. Antidegradation Policy and Implementation Plan**

- A. The Anti-Degradation Policy of the Revised PPWQS is as follows:
1. Existing water uses and the level of water quality necessary to protect existing uses shall be maintained and protected.
  2. Where water quality exceeds levels necessary to support propagation of fish, 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 a lower level of water quality is required in order to accommodate important economic or social development.
  3. In permitting such degradation of water quality, the Pueblo of Pojoaque shall require the highest statutory and regulatory requirements for all new and existing point sources and all cost effective and reasonable BMP's for non-point source control.
  4. Where high quality water constitutes an outstanding National or Tribal resource, or where waters are of exceptional recreational or ecological significance, the water quality and uses shall be maintained and protected by water quality controls, maintenance of natural flow regimes, protection of in stream habitats and pursuit of land use practices protective of the watershed.

5. 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)).

**B. Implementation Procedures for the Antidegradation Policy are as follows:**

1. The PPED, acting under authority delegated by the Tribal Council shall implement the Revised PPWQS, including the antidegradation policy, by establishing and maintaining regulations for the discharge of pollutants to surface waters.
2. The Pueblo of Pojoaque Environment Department shall:
  - a. Obtain information pertinent to the impact of the effluent on the receiving water.
  - b. Advise the prospective discharger, including any permit requirements as the Pueblo itself may enact subsequent to the implementation of the Revised PPWQS.
  - c. Review the adequacy of the existing database and, if needed, obtain additional data by conducting an intensive survey of the receiving water.
  - d. Assess the probable impact of the effluent on the receiving water relative to its designated uses and PPWQS numeric and narrative regulations.
  - e. Require the highest and best degree of wastewater treatment practicable and commensurate with protecting and maintaining the designated uses and existing water quality of the receiving water.
  - f. Develop water quality based effluent limitations and comment on technology based effluent limitations, as appropriate, for inclusion in any federal permit issued to a potential discharger to Tribal Water within the exterior boundaries of the Pueblo of Pojoaque pursuant to Section 402 of the Clean Water Act (33 U.S.C. Section 1342).
  - g. Require that these effluent limitations 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).
  - h. Coordinate its water pollution control activities with other local, state, and federal agencies as appropriate.
  - i. Develop and pursue inspection and enforcement programs to ensure that discharges comply with the Revised PPWQS and satisfy the requirements of any related regulations which the Tribe may enact subsequent to adoption of these standards, and to complement EPA's enforcement of federal permits.
  - j. Ensure that the provisions for public participation required by the Revised PPWQS and the Clean Water Act are followed.

- k. Conduct water quality surveillance of waters subject to the Revised PPWQS to assess the effectiveness of water pollution controls and to determine whether Water Quality Standards are being attained.
- l. Encourage, in conjunction with other agencies, implantation of BMPs consistent with the provision of the Revised PPWQS and the Clean Water Act.
- m. Evaluate effectiveness of BMPs selected to prevent or abate non-point sources of water pollutants.
- n. Recommend to the Tribal Council permitting or managements practices, which would be consistent with the purposes of the Revised PPWQS.
- o. Designate streams as ephemeral, perennial, or intermittent, in accordance with the Revised PPWQS and other federal regulations, and determine low flow numeric values.
- p. Conduct biological monitoring of fish, invertebrate, plant bioassay and sediment quality to assess the physical and chemical factors relative to heavy metals and toxic substance contamination in designated Tribal waters.

### **Section III. General Standards**

Pueblo of Pojoaque Waters shall be free of any water contaminant in such quantity and of such duration that harm; with reasonable probability, human health, animal or plant life, property, or unreasonably interfere with the public welfare or the use of property. In addition, the following narrative codes apply to all Tribal Waters, unless stricter codes are imposed in Section IV.

- A. **Stream Bottom Deposits:** Streams 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 stream bottom.
- B. **Floating Solids, Oil and Grease:** All waters shall be free of oils, scum, grease and other floating materials resulting from other than natural causes, that would cause the formation of a visible deposit on the bottom or stream bank or that would damage or impair the normal growth, function or reproduction of wildlife, plant or aquatic life.
- C. **Color:** Materials producing true color resulting from other than natural causes shall not create an aesthetically undesirable condition; nor should color impair the attainable uses of the water. Color producing substances, from other than natural sources, shall be limited to concentrations equivalent to 70 color units



(CU). Water color will be tested with such methods as the platinum-cobalt method.

- D. **Odor and Taste:** Water contaminants from other than natural causes shall be limited to concentrations that will not impart unpalatable flavor to fish, or result in offensive odor or taste arising from the water, or otherwise interfere with the 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 which will produce objectionable algal densities, nuisance aquatic vegetation, result in a dominance of nuisance species, or otherwise cause nuisance conditions.
1. When stricter requirements are not established elsewhere in the Revised PPWQS, the dissolved oxygen shall be maintained at 2 mg/liter in order to prevent nuisance conditions from other than natural causes.
  2. The phosphorus and nitrogen concentration shall not be increased to levels, which result in man-induced eutrophication problems.
  3. The Tribal Council may establish nutrient limitations for lakes, reservoirs, and streams and shall incorporate such limitations into appropriate Water Quality Management Plans.
- F. **Pathogens:** The stream shall be virtually free from pathogens, which include bacteria, viruses or parasites. In particular, waters used for irrigation of table crops such as vegetables shall be virtually free from 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. Turbidity attributable to natural causes is not subject to these codes. 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:** The size of mixing zones shall be less than 1/3 of the cross-sectional area at or above 4Q3 conditions of the receiving stream. If stream morphology is not ascertainable, critical stream flow may be used to calculate the mixing zone. In intermittent or ephemeral streams, discharges shall meet all applicable numeric and narrative criteria at the point of discharge.

1. There shall be no acute toxicity within the mixing zone.
  2. Numeric acute criteria shall be attained at the point of discharge.
  3. There shall be no chronic toxicity at the edge of the mixing zone.
  4. Numeric chronic criteria shall be attained at the edge of the mixing zone.
  5. Mixing zones are not allowed for discharges to publicly owned lake or reservoirs; these effluents shall meet all applicable numeric and narrative criteria at the point of discharge.
  6. Mixing zones shall not overlap ceremonial or recreation sites.
  7. Requirements for mixing zones shall be consistent with those established in other regulations such as Water Quality Management Plans and implementation plans developed by the Pueblo of Pojoaque or by the EPA.
  8. In any waters receiving a waste discharge, a continuous zone (zone of passage) must be maintained where the water is of adequate quality to allow the migration of aquatic life with no significant effect on their population.
- I. **Radioactive Materials:** The radioactivity surface water shall be maintained at concentrations, which do not exceed current maximum natural background concentrations in the Surface Water of the Pueblo.
- 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.
1. In lakes, the temperature of the water column or epilimnion (if thermal stratification exists) shall not be raised more than 1.7°C/3°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 surface to the bottom of the epilimnion (if stratified).
  2. The normal daily and seasonal variations that were present before the addition of heat from other than natural sources shall be maintained.
  3. In no case shall man introduced heat be permitted when the maximum temperature specified for the reach (20°C/68°F for cold water fisheries and 32.2°C/90°F for warm water fisheries) would thereby be exceeded.

- K. Salinity/Mineral Quality (total dissolved solids (TDS), chlorides and sulfates): No increase exceeding 1/3 over current naturally occurring levels may be permitted.**
- 1. TDS shall not exceed 500 mg/L.**
  - 2. Chlorides shall not exceed 25 mg/L.**
  - 3. Sulfates shall not exceed 150 mg/L.**
  - 4. Existing mineral quality shall not be altered by municipal, industrial and in stream activities or other waste discharges so as to interfere with the designated uses.**
- L. pH: The pH of a stream or lake shall not fluctuate in excess of 1.0 units over a period of 24 hours for other than natural causes. pH shall be within the range of 6.6 to 8.8.**
- M. Dissolved Oxygen: If the stream is capable of supporting aquatic life, the dissolved oxygen standard will be a minimum of 6 mg/L.**
- N. Dissolved Gases: Surface Water shall be free of nitrogen and other dissolved gases at level above 110% saturation when this supersaturation is attributable to municipal, industrial or other discharges.**
- O. Toxic Substances: Toxic substances such as, 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 sensitive indigenous aquatic biota.**
- 1. For lists of the applicable toxic substances, criteria published, and sensitive indigenous species/life stages, reference should be made to the EPA regulations and guidance, or any rules regulations and guidelines adopted by the Pueblo of Pojoaque subsequent to adoption of the Revised PPWQS.**
  - 2. Within the mixing zone, there shall be no acute toxicity.**
  - 3. There shall be no chronic toxicity at the edge of the mixing zone.**
  - 4. Bio monitoring may be used to determine compliance with this narrative standard. These protocols can be found in;**
    - a. *Methods for Measuring the Acute Toxicity of Effluent and Receiving Waters to Freshwater and Marine Organisms*, EPA/821/R-02/012; October 2002.**
    - b. *Post Third Round NPDES Permitting Implementation Strategy*, adopted October 1, 1992.**
    - c. *Short Term Methods for Estimating the Chronic Toxicity of Effluent and Receiving waters to Freshwater Organisms*, EPA/821/R-02/013; October 2002.**
    - d. *Technical Support Document for Water Quality-based Toxics Control*, EPA/505/2-90-001; March 1991 or the most current version thereof.**

5. Should the Pueblo need to derive numeric criteria, without actually conducting toxicity test, it shall use the AQUIRE (Aquatic Toxicity Information Retrieval) database and EPA guidance in “*Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and their Uses*”.
6. In the event that sufficient data are 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<sub>50</sub> values) to representative sensitive aquatic organisms.
  - b. Concentrations of persistent toxic materials that do not bio accumulate shall not exceed concentrations which are chronically toxic (as determined from appropriate chronic toxicity data or calculated as 5% of LC<sub>50</sub> values) to representative, sensitive aquatic organisms.
  - c. Concentrations of toxic materials that bio accumulate shall not exceed concentrations which are chronically toxic (as determined from appropriate chronic toxicity data or calculated as 1% of LC<sub>50</sub> values) to representative, sensitive aquatic organisms.
7. Toxins 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.

**Section IV. Water Body Uses and Standards Specific to Use**

**A. Segments Designated for Irrigation**

1. The following numeric standards shall not be exceeded.

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 selenium (in presence of >500 mg/L sulfate)	0.25 mg/L
Dissolved selenium (in presence of <500 mg/L sulfate)	0.13 mg/L
Dissolved vanadium	0.10 mg/L
Dissolved zinc	2.0 mg/L

\*The criteria for chromium shall be applied to a method that measures both the trivalent and hexavalent ions.

**B. Segments Designated for Livestock and Wildlife Habitat**

1. The following numeric standards shall not be exceeded.

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	0.50 mg/L
Dissolved cyanide	5.2 µg/L
Dissolved lead	0.10 mg/L
Total residual chlorine	13 µg/L
Total DDT	0.011 ng/L
Total mercury	0.012 µg/L
Total PCBs	0.014 µg/L
Total selenium	0.002 mg/L
Dissolved vanadium	0.10 mg/L
Dissolved zinc	25 mg/L
Radium-226 + Radium-228	5.0 pCi/L

\*The criteria for chromium shall be applied to a method that measures both the trivalent and hexavalent ions.

**C. Segments Designated for Groundwater Recharge**

1. The following numeric standards shall not be exceeded.

Dissolved arsenic	.01 mg/L
Dissolved barium	2.0 mg/L
Dissolved cadmium	0.005 mg/L
Dissolved chromium *	0.10 mg/L
Dissolved lead	.015 mg/L
Dissolved selenium	0.05 mg/L
Dissolved silver	0.05 mg/L
Dissolved cyanide	0.20 mg/L
Dissolved uranium	5.0 mg/L
Radium-226 + Radium-228	5.0 pCi/L
Total nitrates, as N	10.00 mg/L

Total mercury	0.002 mg/L
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\*The criteria for chromium shall be applied to a method that measures both the trivalent and hexavalent ions.

**D. Segments Designated for Primary Contact**

The following regulations are applicable to segments designated for ceremonial and recreational use. Primary contact also means any use of water bodies for Native American traditional cultural, religious, or ceremonial purposes in which there is intimate contact with the water body that may pose a significant health risk. This may include but is not limited to ingestion or immersion.

1. The monthly geometric mean maximum of *E. Coli* shall not exceed 126 colonies/100 ml and a single sample maximum of 235 colonies/100 ml, in accordance with an illness rate of 8 per 1,000 exposures. Compliance with these criteria shall be determined based on a minimum of 5 samples taken over 30 days.
2. pH shall be within the range 6.6 to 8.8.
3. The total dissolved solids of mineral constituents shall not exceed 500 mg/L.
4. Turbidity shall not exceed 25 NTU's.
5. The open water shall be free from algae in concentrations causing a nuisance condition or causing gastrointestinal or skin disorders.

**E. Segments Designated for Marginal Coldwater Fisheries**

1. The dissolved oxygen shall be greater than 6 mg/L, except that on a case by case basis it may reach a minimum of 5.0 ml/L.
2. The temperature shall not exceed 20 C (68 F) except on a case by case basis; temperature may reach 25 C.
3. pH shall be within the range of 6.6 to 8.8 except that on a case by case basis it may range 6.6 to 9.0.
4. Total chlorine residual shall not exceed 0.003 mg/L.
5. Total ammonia shall be calculated as a function of pH and temperature in accordance with Appendix A of this document.
6. The following numeric codes shall not be exceeded.

a. Chronic criteria

Dissolved aluminum	87.0 µg/L
Dissolved beryllium	5.3 µg/L
Total mercury	0.012 µg/L
Total selenium	5.0 µg/L
Total cyanide	5.2 µg/L
Dissolved arsenic	150 µg/L
Total chlordane	4.3 ng/L
Dissolved cadmium	$1.101672 - [\ln(\text{hardness})(0.041838)] \times e(0.7409[\ln(\text{hardness})] - 4.719)$ µg/L
Dissolved chromium *	$e(0.8190[\ln(\text{hardness})] + 0.534)$ µg/L
Dissolved copper	$e(0.8545[\ln(\text{hardness})] - 1.7428)$ µg/L
Dissolved lead	$1.46203 - [\ln(\text{hardness})(0.145712)] \times e(1.273[\ln(\text{hardness})] - 4.705)$ µg/L
Dissolved nickel	$e(0.8460[\ln(\text{hardness})] + 0.0554)$ µg/L
Dissolved zinc	$e(0.8473[\ln(\text{hardness})] + 0.8699)$ µg/L

\*The criteria for chromium shall be applied to a method that measures both the trivalent and hexavalent ions.

b. Acute criteria

Dissolved arsenic	340 µg/L
Dissolved aluminum	750 µg/L
Dissolved beryllium	130 µg/L
Total mercury	1.4 µg/L
Total selenium	20 µg/L
Dissolved silver	$e(1.72[\ln(\text{hardness})] - 6.7525)$ µg/L
Total cyanide	22 µg/L
Total chlordane	2.4 µg/L
Dissolved cadmium	$1.136672 - [\ln(\text{hardness})(.041838)] \times e(1.0166[\ln(\text{hardness})] - 3.924)$ µg/L
Dissolved chromium *	$e(0.819[\ln(\text{hardness})] + 2.5736)$ µg/L
Dissolved copper	$e(0.9422[\ln(\text{hardness})] - 1.7408)$ µg/L
Dissolved lead	$1.46203 - [\ln(\text{hardness})(.145712)] \times e(1.273[\ln(\text{hardness})] - 1.46)$ µg/L
Dissolved nickel	$E(0.8460[\ln(\text{hardness})] + 2.253)$ µg/L
Dissolved zinc	$e(0.8473[\ln(\text{hardness})] + 0.8618)$ µg/L

\*The criteria for chromium shall be applied to a method that measures both the trivalent and hexavalent ions.

- F. Uses and regulations for the segment of the Rio Pojoaque which passes through the Pueblo of Pojoaque, including all tributaries and branches thereof.**
- 1. Uses**
    - a. Irrigation**
    - b. Primary contact**
    - c. Marginal cold water fisheries**
    - d. Livestock watering and wildlife habitat use**
    - e. Groundwater recharge**
  - 2. Criteria**
    - a. In any single sample, dissolved oxygen shall be greater than 6 mg/L.**
    - b. In any single sample, pH shall be within the range of 6.6 and 8.8.**
    - c. In any single sample, temperature shall be less than 25 C (71.6 F).**
    - d. In any single sample, turbidity shall be less than 50 NTU.**
    - e. The monthly average concentration for TDS shall be less than 500 mg/L, sulfate shall be less than 150 mg/L, and chloride shall be less than 25 mg/L.**
- G. Uses and regulations for the segment of the Rio Tesuque which passes through the Pueblo of Pojoaque, including all tributaries and branches thereof.**
- 1. Uses**
    - a. Irrigation**
    - b. Primary contact**
    - c. Marginal cold water fisheries**
    - d. Livestock watering and wildlife habitat use**
    - e. Groundwater recharge**
  - 2. Criteria**
    - a. In any single sample, dissolved oxygen shall be greater than 6 mg/L.**
    - b. In any single sample, pH shall be within the range of 6.6 and 8.8.**
    - c. In any single sample, temperature shall be less than 25 C (71.6 F).**
    - d. In any single sample, turbidity shall be less than 50 NTU.**
    - e. The monthly average concentration for TDS shall be less than 500 mg/L, sulfate shall be less than 150 mg/L, and chloride shall be less than 25 mg/L.**
- H. Uses and regulations for the segment of the Rio Nambe which passes through the Pueblo of Pojoaque, including all tributaries and branches thereof.**
- 1. Uses**
    - a. Irrigation**
    - b. Primary contact**
    - c. Marginal cold water fisheries**



- d. Livestock watering and wildlife habitat use
  - e. Groundwater recharge
2. Criteria
    - a. In any single sample, dissolved oxygen shall be greater than 6 mg/L.
    - b. In any single sample, pH shall be within the range of 6.6 and 8.8.
    - c. In any single sample, temperature shall be less than 25 C (71.6 F).
    - d. In any single sample, turbidity shall be less than 50 NTU.
    - e. The monthly average concentration for TDS shall be less than 500 mg/L, sulfate shall be less than 150 mg/L, and chloride shall be less than 25 mg/L.
- I. Irrigation Ponds: Uses and criteria for irrigation ponds are designed in support of the goal of the Clean Water Act. It is recognized that these uses may or may not be attainable in each waterbody. Further assessment of waters may result in modifications of uses and/or criteria in future PPWQS revisions.
1. Uses
    - a. Irrigation
    - b. Primary contact
    - c. Livestock and wildlife watering
  2. Criteria
    - a. In any single sample, dissolved oxygen shall be greater than 5 mg/L.
    - b. In any single sample, pH shall be within the range of 6.6 and 8.8.
    - c. In any single sample, temperature shall be less than 25 C (71.6 F).
    - d. In any single sample, turbidity shall be less than 50 NTU.
    - e. The monthly average concentration for TDS shall be less than 500 mg/L, sulfate shall be less than 150 mg/L, and chloride shall be less than 25 mg/L.

## **Section V. Sampling and Analysis**

- A. All methods of sample collection, preservation, and analysis used in determining water quality and maintenance of these standards shall be in accordance with procedures prescribed by:
1. American Public Health Association, "*Standard Methods for the Examination of Water and Wastewater*"
  2. "*Methods for Chemical Analysis of Water and Wastes*"
  3. "*EPA Guidelines Establishing Test Procedures for the Analysis for Pollutants*" 40 CFR Part 136.
  4. EPA's "*Rapid Bio Assessment Protocols for Use in Streams and Rivers, Benthic Macro Invertebrates and Fish.*"

5. Other methods, which may not be EPA approved, may be used as determined to be appropriate by the PPED, such as LaMotte water quality testing kits.

**B. Bacteriological Surveys**

1. The monthly geometric mean is used in assessing attainment of codes when a minimum of five samples is collected in a 30 day period.
2. No single sample shall exceed the upper limit for bacterial density as set forth in Section IV, when less than 5 samples are collected in a 30-day period.

**C. Sampling Procedures**

1. Streams: Stream monitoring stations below waste discharges shall be located outside the mixing zone.
2. Lakes: Sampling in lakes, including artificial lakes shall be located where the attainment of a water quality standard is to be assessed.
  - a. Water quality measurements shall be taken at intervals in the water column at a sampling station
  - b. For toxic substances and nutrients, the entire water column shall be monitored.
  - c. For dissolved oxygen in stratified lakes, measurements shall be made in the epilimnion.
  - d. In nonstratified lakes measurements will be made at intervals throughout the entire water column.

**D. Biological Surveys**

1. Any biological assessment program that is undertaken shall be established in accordance with established procedures from such documents (V.A.4.) stated above.
2. Artificial collection sites shall be installed in lowland streambeds to determine potential species diversity under improved stream condition as needed.

**Section VI. Water Quality Definitions**

- A. "Acute Toxicity": Toxicity that exerts short term lethal impacts on representative sensitive organism with duration of exposure generally less than or equal to 48**

hours. This will be quantified as a statistically significant difference at the 95% confidence level between survival in the appropriate test organisms and a control. Other methods may be used as appropriate to determine acute effects other than lethality such as but not limited to behavioral changes or immobilization. Some methods used to measure acute toxicity is included in; EPA/821/R-02/012, *“Methods for Measuring the Acute Toxicity of Effluents to Freshwater Organisms.”*

- B. **“Algae”:** A simple plant without roots, stems, or leaves which contain chlorophyll and are capable of photosynthesis.
- C. **“Antidegradation”:** The policy set forth in the Revised PPWQS as required by federal regulation (i.e. EPA under the Clean Water Act) whereby existing uses and the level of water quality necessary to maintain those uses is maintained and protected (see 40 C.F.R. Section 131.12 (1987)).
- D. **“Aquatic Biota”:** Animal and plant life in the water.
- E. **“Attainable Use”:** Refers to use of Surface Water which has water quality and all other characteristics necessary to support and maintain the use, as specified in Section IV of these codes, or which would support and maintain the use after the implementation of regulations as set forth in the Revised PPWQS. Attainable uses are, at a minimum, the uses that can be achieved 1) when effluent limits under sections 301 (b)(1)(A) and (B) and section 306 of the Clean Water Act are imposed on point source dischargers and 2) when cost effective and reasonable best management practices are imposed on nonpoint source dischargers.
- F. **“Best Management Practices” (BMPs):** Practices undertaken to control, restrict, and diminish non-point sources of pollution that are consistent with the purposes of the Revised PPWQS and with the narrative and numeric codes contained therein, that are determined to be the most effective practical means of preventing or reducing pollution of water bodies from non-point sources.
- G. **“Carcinogenic”:** Cancer producing.
- H. **“Cfs”** Cubic feet per second.
- I. **“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. This will be quantified as a statistically significant difference between the survival and/or reproduction of growth of an appropriate test organism and control. Some methods used to measure chronic toxicity are included in; EPA/821/R-02/013,

***“Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms.”***

- J. **“Coldwater Fishery”:** A stream reach, lake or impoundment where the water temperature and other characteristics are suitable for the support, or propagation or both of cold water fish such as but not limited to Longnose Dace, Rio Grande Chub, Rio Grande Sucker, Brown, Cutthroat (including the native Rio Grande Cutthroat), Brook or Rainbow Trout, also the protection for aquatic life in addition to the identified fish species.
- K. **“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.
- L. **“Cumulative”:** Increasing by successive additions.
- M. **“Designated Uses”:** Those uses set forth in these Revised PPWQS.
- N. **“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, milligrams per liter, mg/L.
- O. **“Domestic Water Supply”:** Water that only requires disinfection in order to be usable for drinking or cooking.
- P. **“Effluent”:** Discharge into Surface Waters from other than natural sources.
- Q. **“*E. coli*”:** *Escherichia coli*, a subgroup of fecal coliform bacteria that is present in the intestinal tracts and feces of warm blooded animals. It is used as an indicator of the potential presence of pathogens.
- R. **“Ephemeral Stream”:** A reach of a stream that flows temporarily in direct response to precipitation or snowmelt, the channel bed of which is above the water table. This definition includes arroyos.
- S. **“Epilimnion”:** The layer of water that overlies the thermocline of a lake and this is subject to the action of wind.
- T. **“Eutrophication”:** The maturation of a standing body of water, involving increasing concentration of dissolved nutrients and seasonal oxygen deficiency.
- U. **“Existing Uses”:** Those uses actually attained in a Surface Water body on or after November 28, 1975, whether or not they are referred to in the Revised PPWQS.

- V. **“FDA Alert Limits”**: Levels promulgated by the U.S. Food and Drug Administration concerning concentrations of substances in food.
- W. **“Fish Culture”**: Production of cold water or warm water fish in a hatchery or rearing station.
- X. **“Fishery”**: A balance, diverse community of fishes controlled by the water quality, quantity, and habitat of a waterbody.
- Y. **“Flow”**: Atmospheric precipitation resulting in a surface and/or ground water runoff.
- Z. **“FTU”**: Formazin turbidity units (See American Public Health Association, *Standards, Methods for the Examination of Water and Wastewater*).
- AA. **“Geometric Mean”**: A mean calculated by converting all values to logarithms; averaging the logarithms, and determining the antilogarithm of that average.
- BB. **“Indigenous”**: Having originated in and being produced, growing, or living naturally in a particular region or environment.
- CC. **“Industrial Water Supply Use”**: The use of water with reference to the production of goods or services for profit.
- DD. **“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. This definition includes arroyos.
- EE. **“Marginal Coldwater Fishery”**: A stream reach, lake, or impoundment where water temperature and other characteristics are suitable for support or propagation or both of cold water fish such as but not limited to Longnose Dace, Rio Grande Chub, Rio Grande Sucker, Brown, Cutthroat (including the native Rio Grande Cutthroat), Brook or Rainbow Trout, but where temperature and other characteristics may not always be suitable for propagation of cold water fish, also the protection for aquatic life in addition to the identified fish species.
- FF. **“LC-50”**: The concentration of a substance that is lethal to 50% of the test organisms within a defined time period.
- GG. **“Milligrams per Liter (mg/L)”**: The concentration at which one-milligram is contained in a volume of one liter. One milligram per liter is equivalent to one part per million (ppm) at unit density.

- HH. **“Mixing Zone”**: A three-dimensional zone in which discharged effluent mixes with the receiving water and within which there is a gradation of local water quality.
- II. **“Narrative Standards”**: A standard or criterion expressed in words rather than numerically.
- JJ. **“Natural Background”**: Characteristics that are not man induced that are related to water quality, i.e. the levels of pollutants present in ambient water that are from natural, as opposed to man induced sources.
- KK. **“Non-point Source”**: A source of pollution that is not a discernible, confined, and discrete conveyance (e.g. runoff from land).
- LL. **“NTU (Nephelometric Turbidity Units)”**: A measure of turbidity in water (see “turbidity” below).
- MM. **“Nuisance Condition”**: A condition involving uncontrolled growth of aquatic plants, usually caused by excessive nutrients in the water.
- NN. **“Nutrient”**: A chemical element or inorganic compound taken in by green plants and used in organic synthesis.
- OO. **“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.
- PP. **“Persistent”**: Existing for a long or longer than usual time or continuously.
- QQ. **“pH”**: the negative logarithm of the effective hydrogen ion concentration on gram equivalents per liter.
- RR. **“Picocurie (pCi)”**: That quantity of radioactive material producing 2.22 nuclear transformations per minute.
- SS. **“Point Source”**: Any discernible, confined and discrete conveyance from which pollutants are or may be discharged into a water body, does not include return flows from irrigated agriculture.
- TT. **“Primary Contact”**: The use of water for the practice of Indian religion and Indian traditional purposes by Tribal member of the Pueblo of Pojoaque, such use involves the intentional and incidental ingestion of water and immersion.
- UU. **“Segment”**: A Surface Water body which has common hydrologic characteristics or flow regulation regimes, possesses common natural physical, chemical, and

- biological characteristic and exhibits common reaction to external stresses such as the discharge of pollutants.
- VV. **“Synergism”**: Cooperative action of discrete agents such that the total effect is greater than the sum of the effects taken independently.
- WW. **“TDS”**: Total dissolved solids.
- XX. **“Technology Based Controls”**: The application of technology based affluent limitations as required under Section 301(b) of the Clean Water Act.
- YY. **“Thermal Stratification”**: Temperature caused horizontal layers of different densities produced in a lake.
- ZZ. **“Threatened and Endangered Species Habitat”**: Means a stream reach, lake, spring, and/or pool where water quality, lack of interspecies competition, temperature and the instream of benthic habitat provide for the support and propagation of a threatened or endangered aquatic species.
- AB. **“Total Inorganic Nitrogen”**: The sum of nitrate nitrogen, nitrite nitrogen and total ammonia nitrogen.
- AC. **“Toxic Pollutant”**: Refers to those pollutants, or combinations of pollutants, including disease causing agents, which after discharge and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will on the basis of information available to the Environmental Protection Agency Administrator or the Pueblo, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions in reproduction), or physical deformations, in such organisms or their offspring.
- AD. **“Toxicity”**: State or degree of being toxic or poisonous.
- AE. **“Turbidity”**: Refers to water that is cloudy or muddy in physical appearance.
- AF. **“Use Attainability Analysis”**: A structured scientific assessment of the factors affecting attainment of a use for a body of water.
- AG. **“Warmwater Fishery”**: A stream reach, lake or impoundment where the water temperature and other characteristics are suitable for the support or propagation or both of warm water fish such as but not limited to Crappie, White Bass, Bluegill, Flathead Chub and other native cyprinids, Largemouth and Smallmouth Bass, Flathead Catfish or Channel Catfish, and Fathead Minnow, also the protection for aquatic life in addition to the identified fish species.

- AH. **“Water Contaminant”**: Any substance that alters the physical, chemical, or biological qualities of water.
- AI. **“Water Quality Based Controls”**: Effluent limitation, as provided under Section 301(b)(1)(c) of the Clean Water Act, which are developed and imposed on point source discharges in order to protect and maintain applicable water quality codes. These controls are more stringent than the technology bases effluent limitations required under other paragraphs of Section 301(b).
- AJ. **“Zone of Passage”**: The portion of the receiving water outside the mixing zone (where quality is, throughout, the same as that of the receiving water).

## **APPENDIX**

### **Ammonia Tables for the Pueblo of Pojoaque Waters**



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

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

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

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

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

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

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

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

\* 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.