HUALAPAI ENVIRONMENTAL REVIEW CODE

WATER QUALITY STANDARDS

(Final Version)

February 12, 2004

Hualapai Department of Natural Resources

Water Resources Program

(Revised January 21, 2004)

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SUBTITLE I. WATER RESOURCES AND WETLANDS

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PART I. WATER RESOURCES ORDINANCE

CHAPTER 1: GENERAL PROVISIONS

Section 101. Title and Authority

This Ordinance, which shall be known as the Hualapai Water Resources Ordinance, is enacted pursuant to Sections 303 and 518 of the Clean Water Act (33 U.S.C. §§ 1313, 1377) and under the authority of Article V, Section (f) of the Constitution of the Hualapai Indian Tribe.

Section 102. Purposes

A. The purposes of this Ordinance are as follows:

1. To designate uses for which all Tribal waters shall be protected;

2. To prescribe narrative and numeric water quality standards for all Tribal waters in order to sustain the designated uses;

3. To minimize degradation of existing water quality and assure that economic growth occurs in a manner consistent with the preservation of existing uses;

4. To promote the social welfare and economic well-being of the Hualapai Tribe; and

5. To protect the health and welfare of the Hualapai people by ensuring that water is safe for recreation, drinking, domestic, and agricultural purposes.

B. These purposes shall be accomplished by incorporating the standards set forth in this Ordinance into permits issued pursuant to the NPDES provisions of § 402 of the Clean Air Act or § 604 of this Ordinance and into the management process for nonpoint source generators; by using those standards to determine when a designated use is threatened; and by using current treatment technologies and best management practices for nonpoint sources of pollution.

Section 103. Applicability and Exclusions

A. This Ordinance applies to all Tribal waters, as that term is defined in section 110 below, to all persons residing or doing business on Hualapai tribal lands, and to all property located within Hualapai tribal lands.

B. The following activities and sources are exempt from this Ordinance:

1. Activities associated with acknowledged aquacultural management practices, such as:

a. The rearing of endangered or threatened species,
b. The rearing of cultured fish species intended for human consumption, and
c. The rearing of cultured fish species for economic, recreational, and educational (scientific and otherwise) purposes.

Such activities, conducted in controlled water systems such as static artificial ponds on the Hualapai Reservation, may involve the introduction of fertilizers, wastes from human activities, and other similar practices that induce the growth of algae and satisfy the necessary requirements in the food pyramid of particular species.

2. Reservoirs used for sewage treatment, including ponds, lagoons, and constructed wetlands; provided, however, that the water released from any such reservoir meets the standards that apply to the receiving body of water.

3. Routine physical or mechanical maintenance of dams or fish-rearing facilities which may cause increases in turbidity.

Section 104. Tribal Resource Management Agencies

Nothing in this Ordinance shall be construed to prohibit fisheries, wildlife, and forestry management activities by the Hualapai Department of Natural Resources.

Section 105. Implementation by Water Resources Program

The Water Resources Program shall implement this Ordinance under the direction of the Hualapai Tribal Council and Department of Natural Resources. The Water Resources Program shall work in cooperation with the U.S. Environmental Protection Agency and other agencies of the federal government and, as appropriate, the State of Arizona. The Water Resources Program shall take into consideration the applicable water quality standards for downstream surface waters and shall ensure that the water quality standards that are established for an upstream

surface water also provide for the attainment and maintenance of the water quality standards of downstream surface waters.

Section 106. Water Quality Standards

A. Narrative standards to protect all surface waters and groundwater are prescribed in Chapter 4. Numeric water quality criteria to protect Tribal waters with specific designated uses are prescribed in Chapter 5 and Appendix A. Standards particular to a designated use shall be protected at all times.

B. Water quality standards shall be the basis for managing discharges attributable to point and nonpoint sources of pollution. Water quality standards are not used to control natural background phenomena (i.e., non-anthropogenic or acts of God), hence, resulting exceedences shall not be considered a violation of such standards.

Section 107. Review and Amendment

Pursuant to Section 303(c)(1) of the Clean Water Act (33 U.S.C. Section 1313(c)(1)), the Water Resources Program shall hold public hearings at least once every three years following enactment of this Ordinance, for the purpose of reviewing and, as appropriate, requesting the Council to amend this Ordinance. Amendments shall incorporate relevant scientific advances.

Section 108. Modification Based On Attainability

In the event that monitoring of water quality identifies reaches where attainable water quality is less than what is required by this Ordinance, then the Council may modify the water quality standards to reflect attainability. Modification thereof shall be within the sole discretion of the Council, based on the recommendation of the Water Resources Program, which shall be subject to the provisions of the Clean Water Act and shall be carried out in accordance with use-attainability analysis procedures.

Section 109. Corrections

Errors resulting from inadequate and erroneous data or human or clerical oversight will be subject to correction by the Council. The discovery of such errors does not render the remaining and unaffected standards invalid. If any provision of this Ordinance, or the application of any provision of this Ordinance to any person or circumstance, should be held to be invalid, the application of such provision to other persons and circumstances and the remainder of this Ordinance shall not be affected.

Section 110. Definitions

As used in this Ordinance, unless otherwise indicated, the following terms shall have the following meanings:

A. "Administrator" means the Administrator of the United States Environmental Protection Agency, or his or her authorized representative.

B. "Agricultural irrigation" or "AgI" means the use of a surface water for the irrigation of crops.

C. "Agricultural use/livestock watering" or "AgL" means the use of a surface water as a supply of water for irrigation and livestock watering.

D. "Aquatic and wildlife (coldwater fishery)" or "A&Wc" means a stream reach, lake, or impoundment where water temperature and other characteristics are suitable for support and propagation of coldwater fish, including salmonids, plants, or other organisms.

E. "Aquatic and wildlife (ephemeral)" or "A&We" means the use of an ephemeral water by animals, plants, or other organisms, excluding fish, for habitation, growth, or propagation.

F. "Aquatic and wildlife (warmwater fishery)" or "A&Ww" means a stream reach, lake, or impoundment where water temperature and other characteristics are suitable for support and propagation of percids and other warmwater fish.

G. "Attainable use" means the use of a surface water which has the level of water quality and other characteristics that are needed to support the use, or which would have the level of water quality and other characteristics needed to support the use upon implementation of and compliance with the pertinent narrative and numeric standards.

H. "Best management practices" means practices undertaken to control, restrict, and diminish nonpoint sources of pollution that are consistent with the purposes of this Ordinance.

I. "Clean Water Act" means the Federal Water Pollution Control Act, as amended (33 U.S.C. §§ 1251-1387).

J. "Color" means the true color as well as apparent color. True color is the color of the water from which turbidity has been removed. Apparent color includes the color due to substances in solution (true color), but also the color due to suspended matter.

K. "Constructed Wetlands" means those waters outside and not classified as Waters of the U.S. which are used for waste water treatment purposes.

L. "Council" means the Hualapai Tribal Council.

M. “Criteria” means the elements of water quality standards that are expressed as pollutant concentrations, levels, or narrative statements representing a water quality that supports a designated use.

N. “Degradation” means a decline in existing water quality.

O. “Designated use” means a use specified in Appendix B of this Article for a surface or ground water.

P. “Discharge” means the addition of a pollutant to any Tribal waters from any point source.

Q. “Dissolved Oxygen” or “DO” means 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.

R. “Domestic Water Source” or “DWS” means a Tribal water used as a potable water supply for consumption by humans.

S. “Effluent” means quantity, rate, and/or concentration of a chemical, physical, biological, and/or other constituent.

T. “Endangered or Threatened Species” means an animal or plant designated by the Federal government and/or the State of Arizona as becoming close to extinction or near extinction.

U. “EPA” means the United States Environmental Protection Agency.

V. “Ephemeral water” means a surface water that has a channel, is at all times above the water table, flows only in direct response to precipitation, and does not support a self-sustaining fish population.

W. “Existing use” means a use that has actually occurred in a surface or ground water, or that the water quality of a surface water allowed, on or after January 4, 1883. (Ethnographic reports and oral histories are contained within the archives of the Cultural Resources Department and are proprietary in nature.)

X. “Fish Culture” means the use of a stream, reach, lake, or impoundment for production of coldwater or warmwater fish in a hatchery or rearing station.

Y. “Fish consumption” or “FC” means the use of a surface water by humans for harvesting aquatic organisms for consumption. Harvestable aquatic organisms include, but are not limited to, fish, clams, turtles, crayfish, and frogs.

Z. “Full body contact” or “FBC” means the use of a surface water which causes the human body to come into direct contact with the water to the point of complete submergence. The use is such that ingestion of the water is likely to occur and certain sensitive body organs, such as the eyes, ears, or nose, may be exposed to direct contact with the water.

AA. “Groundwater” means underground water within the earth that flows, or is found in an aquifer, beneath the Reservation.

BB. “Hualapai Tribal Lands” means all lands over which the Hualapai Tribe has jurisdiction, including all land within the exterior boundaries of the Hualapai Reservation and all other Hualapai Indian Country, as that term is defined in 18 U.S.C. §1151.

CC. “Industrial Water Supply” means Tribal waters used for the production of goods or services for profit.

DD. “Limited Recreation” means the use of Tribal waters for limited recreational activities that do not involve direct contact with water or disturb the natural wildlife, such as bird watching, photography, or visual enjoyment of the natural beauty associated with areas surrounding such Tribal waters.

EE. “Narrative Standard” means a standard or criterion expressed in words rather than numerically.

FF. “NNS” means no numeric standard.

GG. “Nonpoint source” means a source of pollution that is not a discernible, confined, and discrete conveyance, but is a diffuse source which flows across natural or manmade surfaces, such as run-off from agricultural, construction, mining, or silvicultural activities, or from urban areas.

HH. “Oil” means petroleum in any form, including but not limited to crude oil, gasoline, fuel, oil, diesel oil, lubricating oil, or sludge.

II. “Outstanding Tribal Resource Waters” or “OTRW” means surface waters which are of exceptional recreational or ecological significance; waters associated with Traditional Cultural Places; and/or waters with which threatened or endangered species are known to be associated, and either the existing water quality is essential to the maintenance and propagation of a threatened or endangered species, or the surface water provides critical habitat for a threatened or endangered species.

JJ. “Person” means an individual, corporation, company, association, partnership, local, state, or federal government or any of their programs, agencies or

departments, or Indian tribe, including the Hualapai Tribe, or any of its programs, agencies, departments, corporations or entities.

KK. "pH" means 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.

LL. "Point source" means any discernible, confined, and discrete conveyance from which pollutants are or may be discharged into a water body, and does not include return flows from irrigated agriculture.

MM. "Pollutant" means any substance which will alter the quality of Tribal waters, and which is discharged in such a manner that either the discharge itself or the resulting alteration of water quality does not comply with Federal or Tribal standards, and includes, but is not limited to, dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste.

NN. "Program Manager" means the Manager of the Hualapai Water Resources Program.

OO. "Research Site" means Tribal waters used for nature observation and scientific study. Such activities include, but are not limited to, avian point counts to determine bird density, diversity, and ecology; plant and vegetation mapping and measurement; and monitoring and assessment of inorganic and organic chemical compound concentrations.

PP. "Surface water" means any water of the United States, as that phrase is defined in 33 C.F.R. § 328.3, and includes the following: wetlands, lakes, streams, reservoirs, natural ponds, rivers, creeks, washes, draws, mudflats, sandflats, wetlands, sloughs, backwaters, prairie potholes, wet meadows, playa lakes; all impoundments of waters otherwise defined as surface waters; tributaries of surface waters; and wetlands adjacent to surface waters.

QQ. "TERC" means the Tribal Environmental Review Commission established and operating under the provisions of Subtitle A of the Hualapai Environmental Review Code.

RR. "Total Residual Chlorine" means the amount of chlorine left over after removal of chlorine by filtration.

SS. "Toxic pollutant" means those pollutants, or combination of pollutants, 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, may cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions in reproduction), or physical deformations in such organisms or their offspring.

TT. "Traditional Cultural Place" means tribal waters and surrounding areas which meet the definition of a "traditional cultural place" under the Hualapai Cultural Heritage Resources Ordinance, namely, a place that is eligible for the National Register because of its association with cultural practices or beliefs of a living community that are rooted in that community's history and are important in maintaining the continuing cultural identity of the community, or a place that has been determined eligible for the Hualapai Register. These places serve as exclusive harvest areas where members of the Hualapai Tribe may search for and extract plant life and vegetation to be used for ethnobotanical purposes (e.g., constructing baskets and cradleboards, as well as for medicinal and/or any other such purposes commonly identified by the Hualapai community as being associated with traditional uses), as well as for religious gatherings and sensitive ceremonial activities.

UU. "Tribal waters" means all surface waters and groundwater located on, within, underlying, or passing through, Hualapai Tribal Lands.

VV. "Turbidity" means the measure of the amount of suspended material, particles or sediment that has the potential for adverse impacts on aquatic biota.

WW. "Wetlands" means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal conditions do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, bogs, vernal pools, fens, cienegas, and marshes.

Section 111. Severability

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

CHAPTER 2: ANTIDEGRADATION

Section 201. Antidegradation Policy

A. Existing uses of all Tribal waters shall be protected. The level of water quality necessary to protect existing uses shall be achieved and maintained.

B. The Water Resources Program of the Hualapai Tribe shall monitor all Tribal waters to determine whether there is any degradation of water quality on a pollutant by pollutant basis.

C. No degradation of existing water quality is permitted where the existing water quality does not meet the applicable standard(s).

D. Where the existing water quality meets or exceeds any applicable water quality standard, the existing water quality shall be maintained and protected. Subject to section 201(E) below, the Water Resources Program may allow limited degradation of existing water quality in surface water or groundwater, after a public hearing regarding such degradation has been held pursuant to the procedures set forth in Chapter 9, and upon finding all of the following:

1. the level of water quality necessary to protect existing uses is fully protected;

2. the highest statutory and regulatory requirements for all new and existing point sources as set forth in the Clean Water Act are achieved;

3. all cost-effective and reasonable best management practices for nonpoint source control are implemented; and

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4. allowing lower water quality is necessary to accommodate important economic or social development in the area which the surface water or ground water is located.

E. Existing water quality shall be maintained and protected in all Outstanding Tribal Resource Waters. No degradation of such waters shall be permitted.

CHAPTER 3: CLASSIFICATION OF TRIBAL WATERS

Section 301. Designated Uses

A. Designated uses of Tribal waters may include one or more of the following:

1. Domestic Water Source

2. Full Body Contact
3. Fish consumption
4. Fish culture
5. Aquatic and wildlife (coldwater fishery)
6. Aquatic and wildlife (warmwater fishery)
7. Aquatic and wildlife (ephemeral)
8. Aquatic and wildlife (effluent dependent water)
9. Agricultural irrigation
10. Agricultural use/livestock watering
11. Limited recreation (Partial Body Contact)
12. Research sites
13. Industrial water supply

B. Current designated uses for specific surface water and groundwater bodies are listed in Appendix B to this Ordinance.

C. If a surface water or groundwater body has more than one designated use listed in Appendix B, then the most stringent water quality criterion identified in Appendix A for those designated uses applies to that body of water.

Section 302: Outstanding Tribal Resource Waters

A. The Council may classify surface waters as Outstanding Tribal Resource Waters if one (1) of the following criteria is met:

1. The surface water is of exceptional recreational or ecological significance because of its unique attributes, including but not limited to attributes related to the geology, flora, fauna, water quality, aesthetic values, or the wilderness characteristics of the surface water;

2. The surface water is associated with a Traditional Cultural Place; or

3. Threatened or endangered species are known to be associated with the surface water and the existing water quality is essential to the maintenance and propagation of a threatened or endangered species or the surface water provides critical habitat for a threatened or endangered species. Endangered or threatened species are identified in the following documents:

a. Endangered and Threatened Wildlife and Plants, U. S. Fish and Wildlife Service;

b. Threatened Native Wildlife of Arizona, Arizona Game and Fish Department (July 21, 1988);

c. List of highly safeguarded protective native plants in 3 A.A.C.4, Article 6, Appendix A(A) (December 20, 1994).

B. Prior to the Council classifying a surface water as an Outstanding Tribal Resource Water, the Water Resources Program shall consult with the Tribal Historic Preservation Officer in order to ensure that the functions ascribed to any Traditional Cultural Places are not modified and shall hold a public hearing in compliance with the provisions of Chapter 9 of this Ordinance.

Section 303: Additions and Modifications

Upon recommendation by the Water Resources Program, the Hualapai Tribal Council may modify, add to or remove designated uses from the list in Appendix B, following the procedures set forth in Chapter 9, and consistent with the requirements of section 303(c) of the Clean Water Act and the regulations implementing that section, as part of its triennial review of this Ordinance or at any other time when circumstances require such action through the enactment of an appropriate ordinance.

CHAPTER 4: NARRATIVE WATER QUALITY STANDARDS

Section 401. Applicability

The narrative water quality standards set forth in this Chapter apply to all Tribal waters, including tributaries of waters listed in Appendix B and ephemeral streams, and shall be maintained at all times except as otherwise expressly provided in this Ordinance.

Section 402. Surface Waters

A. All surface waters shall be free from pollutants in amounts or combinations that:

1. Settle to form bottom deposits that inhibit or prohibit the habitation, growth, or propagation of aquatic life or that impair recreational uses;

2. Cause objectionable odor in the area in which the surface water is located;

3. Cause off-taste or odor in drinking water;

4. Cause off-flavor in aquatic organisms or waterfowl;

5. Are toxic to humans, animals, plants, or other organisms;

6. Cause the growth of algae or aquatic plants that inhibit or prohibit the habitation, growth, or propagation of other aquatic life or that impair

recreational uses; or cause a nuisance condition or cause gastrointestinal or skin disorders.

7. Change the color of the surface water from natural background levels of color.

8. Cause or contribute to a violation of a groundwater quality standard described in section 403 below.

B. All surface waters shall be free from oil, grease, and other pollutants that float as debris, foam, or scum; or that cause a film or iridescent appearance on the surface of the water; or that cause a deposit on a shoreline, bank, or aquatic vegetation.

Section 403. Groundwater

A. All groundwater classified as a domestic water source shall remain free of pollutants in concentrations which endanger human health.

B. All groundwater shall be free of pollutants in concentrations which impair any other existing or reasonably foreseeable uses of such groundwater.

C. All groundwater shall be free of pollutants in concentrations which cause or contribute to a violation of a narrative standard for a surface water, as described in section 402 above, or of a numeric standard for a surface water, as set forth in Appendix A.

Section 404. Outstanding Tribal Resource Waters

To maintain and protect existing water quality in Outstanding Tribal Resource Waters, the Tribal Council may adopt, by ordinance, site-specific water quality standards, after complying with the public hearing procedures set forth in Chapter 9.

CHAPTER 5: NUMERIC WATER QUALITY STANDARDS

Section 501. Applicability

The water quality standards prescribed in this Chapter and in Appendix A apply to all Tribal waters classified in Appendix B and their tributaries.

Section 502. Maximum Bacteria Levels

The following standards for bacteria levels shall apply to Tribal waters with the identified designated uses:

A. For waters designated for use as Full Body Contact and/or as Outstanding Tribal Resource Waters, the presence of E. coli shall not exceed a geometric mean value of 126 cfu/100 ml. and a single sample maximum range of 235-576 cfu/100 ml. (235 cfu for frequent body contact and 576 cfu for infrequent body contact)

Section 503. Acceptable pH Ranges

The following levels of pH shall be maintained in all Tribal waters with the identified designated uses:

A. Aquatic and Wildlife (Coldwater Fishery): 6.6-8.8
B. Aquatic and Wildlife (Warmwater Fishery): 6.0-9.0

Section 504. Maximum Turbidity Levels

The following standards of turbidity shall apply to Tribal waters with the identified designated uses:

A. Aquatic and Wildlife (Coldwater Fishery): 10 NTUs
B. Aquatic and Wildlife (Warmwater Fishery):
    1. Flowing water: 50 NTUs
    2. Standing water: 25 NTUs
C. Outstanding Tribal Resource Waters: 10 NTUs

Section 505. Total Residual Chlorine

Total residual chlorine shall not exceed 11 ug/l (acute) or 5.0 ug/l (chronic) in any Tribal waters designated for use as Aquatic and Wildlife.

Section 506. Dissolved Oxygen

Single sample minimum:	aquatic/wildlife cold	7.0 mg/l
	aquatic/wildlife warm	6.0 mg/l

If the dissolved oxygen (mg/l) of a surface water is less than the water quality standard for dissolved oxygen, but the percent saturation of oxygen is equal to or greater than 90%, then the surface water shall be deemed to be in compliance with the standard.

Section 507. Uses For Which No Numeric Standards Have Been Established

There are no numeric standards which specifically apply to waters designated as Fish Culture, Industrial Water Supply, or Research Sites. Waters designated for such uses are subject to the narrative water quality standards set forth in Chapter 4 of this Ordinance.

CHAPTER 6: IMPLEMENTATION

Section 601. Powers and Duties of Water Resources Program

Acting under the authority of the Hualapai Tribal Council, the Water Resources Program shall implement this Ordinance by establishing and maintaining controls on the introduction of pollutants into Tribal waters. More particularly, the Water Resources Program shall do the following:

A. Monitor and require dischargers to monitor water quality to assess the effectiveness of pollution controls and to determine whether water quality standards are being attained;

B. Obtain information regarding and assess the probable impact of natural run-off and effluents on receiving waters in light of designated uses and numeric and narrative water quality standards;

C. Review the adequacy of the existing data base and obtain additional data when required;

D. Advise prospective dischargers of discharge and/or permit requirements;

E. Require the highest and best degree of wastewater treatment practicable and commensurate with protecting and maintaining designated uses and existing water quality;

F. Provide continuing technical training for Water Resource personnel through training and certification programs;

G. Develop water quality-based effluent limitations and comment 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. § 1342);

H. Require that these effluent limitations or any other appropriate limitations applicable to mining or other activities be included in any such permit as a condition for certification pursuant to Section 401 of the Clean Water Act (33 U.S.C. § 1341);

I. Coordinate water pollution control activities with other Tribal, federal, state and local agencies, as appropriate;

J. Develop and pursue inspection and enforcement programs in order to ensure compliance with this Ordinance and any regulations promulgated thereunder, and in order to support the enforcement of federal permits by the EPA;

K. Pursue funds to assist in the construction of publicly owned wastewater treatment facilities through the construction grants and revolving funds program authorized by the Clean Water Act (33 U.S.C. § 1281) and other federal funds available for the purpose;

L. Encourage voluntary implementation of best management practices to control nonpoint sources of pollutants to achieve or maintain water quality standards;

M. Require that sufficient instream flows be maintained to meet the narrative and numeric water quality standards set forth in this Ordinance;

N. Require that surface and groundwater withdrawals do not cause degradation of Outstanding Tribal Resource Waters;

O. Examine existing and future Hualapai policies pertaining to septic systems, solid waste disposal, range management practices, and any other relevant activities to ensure that these policies are sufficient to meet the narrative and numeric water quality standards set forth in this Ordinance;

P. Ensure that groundwater withdrawals do not occur in quantities that will cause degradation of springs or riparian habitat;

Q. Conduct an antidegradation analysis for regulated actions that may potentially impair water quality;

R. Evaluate the effectiveness of best management practices to prevent or abate nonpoint sources of pollution;

S. Ensure that the provisions for public participation required by the Clean Water Act and this Ordinance are followed, including conducting public hearings as provided for in sections 107, 201(D), 302(A) and 801 of this Ordinance;

T. Investigate violations alleged and/or potential violations of the provisions of this Ordinance, and refer any such violations to the Tribal Environmental Review Commission for enforcement proceedings under the provisions of Chapter 8.

Section 602. Analytic Review

A. Sample collection, preservation, and analysis used to determine water quality and to maintain the standards set forth in this Ordinance shall be performed in accordance with procedures prescribed by the latest EPA authoritative analytical reference, Hualapai Field Sample and Analysis Plan, and 40 CFR Part 136 - Guidelines for Establishing Test Procedures for Analysis of Pollutants.

B. An alternative analytical method may be employed, provided the alternative analytical method is approved by the Director of the Hualapai Department of Natural Resources with the concurrence of the Administrator.

Section 603. Tributary Rule

In implementing this Ordinance, the Water Resources Program will apply the following water quality standards to tributary surface waters that are not listed in Appendix B:

A. For an unlisted tributary that is an ephemeral water, the Aquatic and Wildlife (Ephemeral) standards apply.

B. For an unlisted tributary that is not an ephemeral water and has salmonids present, the Aquatic and Wildlife (Coldwater Fishery) and Fish Consumption water quality standards apply as well as the water quality standards that have been established for the nearest downstream surface water listed in Appendix B.

C. For an unlisted tributary that is not an ephemeral water and does not have salmonids present, the Aquatic and Wildlife (Warmwater Fishery) and Fish Consumption standards apply as well as the water quality standards which have been established for the nearest downstream surface water listed in Appendix B.

Section 604. Discharge Permits

To further implement the purposes and provisions of this Ordinance, the Water Resources Program is hereby authorized to develop a program for issuing permits in accordance with the National Pollutant Discharge Elimination System provisions of the Clean Water Act. Unless and until the Hualapai Tribe asserts primary responsibility for NPDES permitting, the EPA shall work together with the Tribe to develop, issue and enforce permits for dischargers within Hualapai tribal lands in accordance with standards set forth in this Ordinance.

Section 605. Nonpoint Source Management

To further implement the purposes and provisions of this Ordinance, the Water Resources Program is hereby authorized and directed to develop a plan for managing nonpoint sources of water pollution, including guidance for the use of current treatment technologies and best management practices for such sources.

CHAPTER 7: PROHIBITED ACTS

Section 701. Prohibitions

A. No person shall conduct any activity which causes a discharge from a point source into a Tribal water without first obtaining an NPDES permit from EPA under section 402 of the Clean Water Act or from the Water Resources Program, if the program implements an NPDES permit program pursuant to section 604 of this Ordinance. In addition, to the extent the activity constitutes "development" under subtitle A of the Hualapai Environmental Review Code, such person shall obtain a permit from the Tribal Environmental Review Commission as required by Subtitle A.

B. No person shall violate the terms or conditions of any permit obtained from the EPA, the Water Resources Program or the TERC in connection with the discharge from a point source into Tribal waters.

C. No person shall sell, exchange or transport, or offer to sell, exchange or transport, any Tribal waters for personal benefit without obtaining approval from the Water Resources Program Manager, and/or a permit from the Tribal Environmental Review Commission as may be required by Subtitle A of the Tribal Environmental Review Code; provided however, that any such sale, exchange or also comply with the provisions of Article V(m) and Article XI, section 4, of the Constitution of the Hualapai Indian Tribe.

C. No person who receives a Letter of Inquiry pursuant to Section 801 of this Ordinance shall fail to respond truthfully within the time specified in such letter; nor shall any person otherwise hinder the Program Manager in the investigation of any alleged or potential violation of this Ordinance.

D. No person shall fail to comply with an Enforcement Order or Cease and Desist Order issued pursuant to Section 804 or 805 of this Ordinance.

CHAPTER 8: ENFORCEMENT

Section 801. Investigation; Letters of Inquiry

The Water Resources Program is authorized to investigate potential violations of this Ordinance, including violations of any permit which may be issued pursuant to an NPDES program developed and implemented under section 604 of this Ordinance. Such authority shall include a right of entry upon any premises necessary for the investigation and access to and the right to copy records, and inspect equipment, sample effluent, and perform such other inspection as is necessary for the investigation. If the Program Manager determines a violation has occurred or is occurring, the Program Manager shall refer the matter to the Tribal Environmental Review Commission, who may serve any person with a Letter of Inquiry. Such Letter of Inquiry shall inform the person to whom it is addressed that: (a) answers must be provided to the TERC within 60 days; (b) failure to respond may result in the imposition of civil penalties; (c) information provided may be used in law enforcement proceedings; and (d) giving false information is a violation of this Ordinance.

Section 802. Notice of Violation

A. If the TERC has reason to believe that a violation of this Ordinance has occurred, or is occurring, the TERC may issue a Notice of Violation to the person(s) apparently responsible for the violation. If the apparent violation occurred, or is occurring, on land in which a person other than the alleged violator holds a property interest, a Notice of Violation shall also be issued to the holder of such an interest.

B. A Notice of Violation shall include:

1. A concise statement of facts believed to constitute a violation;

2. Specific reference(s) to the provision(s) of this Ordinance and/or rules implemented pursuant to this Ordinance that allegedly have been violated;

3. The proposed amount of any civil penalty calculated as provided in section 806 of this Ordinance (possibly accompanied by a proposal to reduce or waive collection of the amount if the violator takes certain actions to mitigate damage) or a statement that a penalty may be assessed in an amount to be determined after further investigation;

4. A statement that the amount of the civil penalty may be doubled if the violation continues to occur after the Notice of Violation has been served on the alleged violator; and

5. An explanation of rights to petition for relief, request an administrative hearing, and seek judicial review of any final determination pursuant to

the provisions of Part 7 of Subtitle A of the Tribal Environmental Review Code.

C. A Notice of Violation may include a Summons to appear before the TERC at an enforcement hearing at a specified time and date. The Summons shall advise the alleged violator that failure to appear will constitute a violation of this Ordinance, which may result in the imposition of additional civil penalties.

D. A Notice of Violation may be served on an alleged violator by any person designated by the TERC.

Section 803. Administrative Enforcement

Within thirty (30) days after the date of an enforcement hearing held under Section 802, the TERC shall issue a written decision and may issue an Enforcement Order, pursuant to the provisions of section 703(a) of Subtitle A of the Tribal Environmental Review Code. As specified in that section, an Enforcement Order may require the violator(s) to comply immediately with the requirements of this Ordinance, may suspend or revoke a permit for failure to comply, and may specify a time and conditions for compliance. The Order may also impose civil penalties pursuant to Section 806 of this Ordinance, and may require mitigation of damage or that the violator(s) take whatever corrective action the TERC, with recommendation from the Program Manager, deems appropriate.

Section 804. Judicial Enforcement

The TERC may pursue civil enforcement proceedings in the Hualapai Tribal Court, pursuant to the provisions of Section 705 of Subtitle A of the Tribal Environmental Review Code, against any person who commits any act prohibited by Chapter 7 or otherwise violates any provision of this Ordinance. In any such civil proceeding, the Court may issue a cease and desist order, as provided in Section 805 of this Ordinance, assess civil penalties calculated as provided in Section 806, determine title to any seized property pursuant to Section 807, or grant any other relief provided by law.

Section 805. Cease and Desist Orders

A. If the TERC has reason to believe that an ongoing and continuing violation is occurring, or that there is a substantial likelihood that a violation will occur in the near future, the TERC is authorized to cause a petition to be filed in the Tribal Court for a Cease and Desist Order to prevent the violation from continuing or occurring. The petition shall include a brief statement of facts, according to information and belief, and a brief explanation of how the alleged facts, if true, constitute a violation of this Ordinance.

B. The Tribal Court shall issue a Cease and Desist Order upon a showing that:

1. Probable cause exists that a violation is occurring, or is likely to occur in the near future; and

2. The violation has resulted in, or is likely to result in, damage to Tribal waters.

C. If the petition concerns a violation for which a Notice of Violation has been issued, a showing that the conduct has continued after the Notice of Violation was served on the alleged violator shall be sufficient to establish probable cause that a violation is occurring, or is likely to occur in the near future.

D. A Cease and Desist Order shall include:

1. A concise statement of facts believed to constitute a violation of this Ordinance;

2. Specific reference(s) to the provision(s) of this Ordinance and/or the rules to carry out this Ordinance allegedly violated;

3. A statement that the Tribal Court has determined that there is probable cause to believe that a violation has occurred or is likely to occur in the near future;

4. A statement that the alleged violator must cease and desist the conduct that is a violation of this Ordinance;

5. The proposed amount of a civil penalty calculated pursuant to Section 806 of this Ordinance (possibly accompanied by a proposal to reduce or waive collection of the amount if the violator takes certain actions to mitigate damage) or a statement that a penalty may be assessed in an amount to be determined after further investigation;

6. A statement that the amount of the civil penalty may be tripled if the violation continues to occur after the Cease and Desist Order has been served on the alleged violator; and

7. An explanation of the right to seek judicial review of any final determination made under this Section.

E. A Cease and Desist Order shall be served on an alleged violator as directed by the Tribal Court.

Section 806. Civil Penalties

A. *Conduct Subject to Civil Penalties*. Any person who commits any of the prohibited acts enumerated in Chapter 7 or otherwise violates any provision of this Ordinance shall be subject to civil penalties, which may be assessed by the TERC, in accordance with rules adopted expressly for this purpose, or by the Tribal Court in a civil enforcement proceeding instituted under Section 804.

B. *Calculation of Civil Penalties*. Following the procedure set out in Sections 304 and 305 of Subtitle A of the Tribal Environmental Review Code, the TERC, with input and recommendations from the Program Manager, shall issue rules for the assessment of civil penalties. In developing these rules, TERC may consider the factors outlined under section 309(g)(3) of the Clean Water Act (33 U.S.C. § 1319(g)(3)). These include the nature, circumstances, extent and gravity of the violation(s) and, with respect to the violator(s), ability to pay, prior history of violations, the degree of culpability, economic benefit or savings (if any) resulting from the violation, and such other matters as justice may require. Penalty amounts may also reflect consideration of the following factors:

1. Costs of restoration of Tribal waters;
2. Enforcement and administrative costs associated with the assessment and collection of the civil penalty;
3. Costs associated with the documentation and evaluation of the affected Tribal waters in order to assess damages and plans for restoration;
4. Costs of any additional mitigation measures the TERC, with input and recommendation by the Program Manager, deems appropriate to implement;
5. An amount based on the loss to the Tribe of the use of the affected Tribal waters;
6. For any second or subsequent offense, a factor allowing the total penalty amount to be doubled or trebled, in the TERC's judgment, depending upon the nature of the offense.

C. *Referral to Federal Authorities for Civil Penalties.* In lieu of, or in addition to, imposing civil penalties under this Ordinance, the Program Manager may recommend that the TERC cause matters to be referred to federal authorities.

Section 807. Civil Forfeitures

A. *Seizure and Forfeiture of Personal Property*. In the event that a Tribal law enforcement officer is present at the scene of any violation of this Ordinance, whether or not in the process of serving a Notice of Violation, an Enforcement Order or a Cease and Desist Order, the Officer is authorized to seize all items of personal property that apparently have been involved in the violation. Title to such property shall be deemed to vest in the Hualapai Tribe at the time of the commission of the unlawful activity, provided that an action is brought on behalf of the Tribe in the Tribal Court to perfect the Tribe's title and the Tribal Court issues a ruling in favor of the Tribe. If the owner is present at the time of seizure, the Officer shall obtain the necessary information to provide such person information regarding the procedure to seek the

return of such property; if not present at the time of seizure, a notice shall be posted and other reasonable steps taken to provide notice to the owner.

B. *Action To Perfect the Tribe's Title to Seized Property.* The TERC may pursue an action in Tribal Court seeking to perfect the Tribe's title to any personal property seized. Any such action shall be considered by the Tribal Court in accordance with provisions of Chapter 4 of Subtitle B of the Tribal Environmental Review Code. The owner of seized property shall be referred to as a "claimant." If the Program Manager fails to file such an action within 60 days after the date of seizure, the items of personal property that were seized shall be returned to the claimant. At any time that an action to perfect the Tribe's title in seized property is pending, the TERC is authorized, upon recommendation of the Program Manager, to return the seized property to its former owner upon timely payment of any and all related civil penalties that may have been assessed against the violator.

C. *Use by Natural Resources Department.* Any forfeited property, title to which has vested in the Tribe pursuant to an order of the Tribal Court, shall be made available for the use of, or disposition by, the Hualapai Department of Natural Resources upon the expiration of the period for filing an appeal in the Tribal Court of Appeals. At any time up until the property is made available for the use of the Department, the TERC is authorized, upon recommendation of the Program Manager, to return the property to the former owner if any and all civil penalties assessed against the former owner have been paid.

D. *Seizure under Federal Law.* The TERC is authorized to cooperate with federal officials with respect to the forfeiture of items of personal property in connection with violations of this Ordinance. Any such items that are transferred to the Tribe shall be made available for the use of or disposition by the Department of Natural Resources.

Section 808. Violations as Trespass

Violation of any provision of this Ordinance by any person who is not a member of the Hualapai Tribe constitutes a trespass on the Hualapai Indian Reservation, subject to exclusion or expulsion from the Reservation pursuant to the provisions of the Hualapai Law and Order Code.

Section 809. Criminal Penalties

A. *Tribal Criminal Penalties.* It is a criminal offense for any person to intentionally commit any act prohibited by Chapter 7 of this Ordinance or to knowingly counsel, procure, solicit, or employ any other person to violate any of the prohibitions set forth in Chapter 7. Upon conviction in Tribal Court, such a criminal offense may be punishable by restitution, community service, a fine not to exceed $5,000, and/or imprisonment for a term not to exceed one year. For the purposes of this Ordinance, each act that constitutes a criminal offense shall be considered a separate offense. A person convicted of such an offense may also be subject to civil penalties.

B. *Federal Criminal Penalties.* Any person who commits an act in violation of this Ordinance may also be subject to criminal prosecution under federal law.

Section 810. Referrals to Federal and Other Authorities

When, in the judgment of the TERC, with input and recommendations by the Program Manager, it would serve the interests of the Hualapai Tribe, the TERC is authorized to provide information to, and cooperate with, federal agencies, state agencies, and other Indian tribes in the enforcement of water resource laws within Hualapai tribal lands.

Section 811. Civil Actions in Federal Court

When, in the judgement of the TERC, with input and recommendations by the Program Manager, it would serve the interests of the Hualapai Tribe to file a civil action in federal court to seek protection or recognition of the Tribe's rights and interest under federal law relating to water resources, the TERC shall so advise the Tribal Chairperson. In most circumstances the filing of such an action must be authorized by the Tribal Council. In the event that the Program Manager, TERC, and Tribal Chairperson conclude that the matter is an emergency, the Chairperson is authorized to cause such an action to be filed on behalf of the Tribe.

CHAPTER 9: PUBLIC REVIEW AND AMENDMENT PROCEDURES

Section 901. Applicability

In any case in which a public hearing is required under this Ordinance, including pursuant to sections 107, 201(D), 302(A) and 404, the provisions of this Chapter shall be followed.

Section 902. Public Hearings

The Water Resources Program shall hold public hearings, as required under this Ordinance and, in any event, at least every three years for purposes of review and, as appropriate, amendment of this Ordinance. Notice of the hearing and copies of the Ordinance and all proposed amendment(s) and supporting analyses shall be made available to the public at least forty-five (45) days prior to the date selected for the hearing.

Section 903. Record and Consideration of Public Comments

The results of the hearing, including community concerns and responses to the proposed amendment(s), will be dutifully recorded and taken into consideration when determining the implementation of the amendment(s).

Section 904. Determinations Regarding Amendments

The Water Resources Program will submit the results of the hearing and recommendations of the Department of Natural Resources, to the Hualapai Tribal Council, which shall determine whether to adopt the proposed amendment(s). A written summary shall be prepared for community review outlining the results of the Council's decision.

APPENDIX A

Appendix A: Table 1. Human Health and Agricultural Designated Use Numeric Water Quality Criteria

PARAMETER	CAS[1] NUMBER	DWS[2] (∶g/L)	FC[2] (∶g/L)	FBC[2] (∶g/L)	PBC[2] (∶g/L)	AgI[2] (∶g/L)	AgL[2] (∶g/L)
Acenaphthene	83-32-9	420	2600	8400	8400	NNS	NNS
Acenaphthylene	208-96-8	NNS	NNS	NNS	NNS	NNS	NNS
Acrolein	107-02-8	110	750	2200	2200	NNS	NNS
Acrylonitrile	107-13-1	0.06	0.64	2.6	NNS	NNS	NNS
Alachlor	15972-60-8	2	NNS	1400	1400	NNS	NNS
Aldrin	309-00-2	0.002	0.0003	0.08	4.2	k	k
Ammonia	7664-41-7	NNS	NNS	NNS	NNS	NNS	NNS
Anthracene	120-12-7	2100	6300	42000	42000	NNS	NNS
Antimony (as Sb)	7440-36-0	6 T	140 T	56 T	56 T	NNS	NNS
Arsenic (as As)	7440-38-2	50 T	NNS	50 T	50 T	2000 T	200 T
Asbestos	1332-21-4	NNS	NNS	NNS	NNS	NNS	NNS
Atrazine	1912-24-9	3	NNS	4900	4900	NNS	NNS
Barium (as Ba)	7440-39-3	2000 T	NNS	9800 D	9800 D	NNS	NNS
Benzene	71-43-2	5	120	48	NNS	NNS	NNS

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Benzidine	92-87-5	0.0002	0.002	0.006	420	0.01	0.01
Benz (a) anthracene	56-55-3	0.003	0.00008	0.12	NNS	NNS	NNS
Benzo (a) pyrene	50-32-8	0.2	0.002	0.2	NNS	NNS	NNS
Benzo (ghi) perylene	191-24-2	NNS	NNS	NNS	NNS	NNS	NNS
Benzo (k) fluoranthene	207-08-9	0.003	0.00001	0.12	NNS	NNS	NNS
3,4-Benzofluoranthene	205-99-2	0.003	0.00004	0.12	NNS	NNS	NNS
Beryllium (as Be)	7440-41-7	4 T	0.21 T	4 T	700 T	NNS	NNS
Bis (2-chloroethoxy) methane	111-91-1	NNS	NNS	NNS	NNS	NNS	NNS
Bis (2-chloroethyl) ether	111-44-4	0.03	1.4	1.3	NNS	NNS	NNS
Bis (2-chloroisopropyl) ether	108-60-1	280	15000	5600	5600	NNS	NNS
Boron (as B)	7440-42-8	630	NNS	12600	12600	1000 T	NNS
Bromodichloromethane	75-27-4	TTHM	22	100	2800	NNS	NNS
p-Bromodiphenyl ether	101-55-3	NNS	NNS	NNS	NNS	NNS	NNS
Bromoform	75-25-2	TTHM	80	180	2800	NNS	NNS
Bromomethane	74-83-9	9.8	7500	200	200	NNS	NNS
Butyl benzyl phthalate	85-68-7	1400	5000	28000	28000	NNS	NNS

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PARAMETER	CAS[1] NUMBER	DWS[2] (∶g/L)	FC[2] (∶g/L)	FBC[2] (∶g/L)	PBC[2] (∶g/L)	AgI[2] (∶g/L)	AgL[2] (∶g/L)
Cadmium (as Cd)	7440-43-9	5 T	41 T	70 T	70 T	50 T	50 T
Carbofuran	1563-66-2	40	NNS	700	700	NNS	NNS
Carbon tetrachloride	56-23-5	5	5.5	11	98	NNS	NNS
Chlordane	57-74-9	2	0.001	2	8.4	NNS	NNS
Chlorine (total residual)	7782-50-5	NNS	NNS	14000	14000	NNS	NNS
Chlorobenzene	108-90-7	100	500	2800	2800	NNS	NNS
p-Chloro-m-cresol	59-50-7	NNS	NNS	NNS	NNS	NNS	NNS
2-Chloroethyl vinyl ether	110-75-8	NNS	NNS	NNS	NNS	NNS	NNS
Chloroform	67-66-3	TTHM	590	230	1400	NNS	NNS
Chloromethane	74-87-3	NNS	NNS	NNS	NNS	NNS	NNS
Chloronapthalene beta	91-58-7	560	13000	11000	11000	NNS	NNS
2-Chlorophenol	95-57-8	35	2100	700	700	NNS	NNS
4-Chlorophenyl phenyl ether	7005-72-3	NNS	NNS	NNS	NNS	NNS	NNS
Chromium (as Cr III)	16065-83-1	NNS	67000 T	140000 T	140000 T	NNS	NNS
Chromium (as Cr VI)	18540-29-9	NNS	3400 T	700 T	700 T	NNS	NNS

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PARAMETER	CAS[1] NUMBER	DWS[2] (∶g/L)	FC[2] (∶g/L)	FBC[2] (∶g/L)	PBC[2] (∶g/L)	AgI[2] (∶g/L)	AgL[2] (∶g/L)
Chromium (Total as Cr)	7440-47-3	100 T	NNS	NNS	NNS	1000 T	1000 T
Chrysene	218-01-9	0.003	.0001	0.12	NNS	NNS	NNS
Copper (as Cu)	7440-50-8	1000 D	NNS	5200 D	5200 D	5000 T	500 T
Cyanide	57-12-5	200 T	210000 T	2800 T	2800 T	NNS	200 T
Dibenz (ah) anthracene	53-70-3	0.003	0.00003	0.12	NNS	NNS	NNS
Dibromochloromethane	124-48-1	TTHM	12	17	2800	NNS	NNS
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	0.2	NNS	NNS	NNS	NNS	NNS
1,2-Dibromoethane (EDB)	106-93-4	0.05	NNS	1.6	NNS	NNS	NNS
Dibutyl phthalate	84-74-2	700	2300	14000	14000	NNS	NNS
1,2-Dichlorobenzene	95-50-1	600	2800	13000	13000	NNS	NNS
1,3-Dichlorobenzene	541-73-1	94	2000	1880	1880	NNS	NNS
1,4-Dichlorobenzene	106-46-7	75	1200	1880	1880	NNS	NNS
3,3'-Dichlorobenzidine	91-94-1	0.08	0.09	3.1	NNS	NNS	NNS
p,p'-Dichlorodiphenyldichloroethane (DDD)	72-54-8	0.15	0.0009	5.8	NNS	0.001	0.001
p,p'-Dichlorodiphenyldichloroethylene (DDE)	72-55-9	0.1	0.0006	4.1	NNS	0.001	0.001

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PARAMETER	CAS[1] NUMBER	DWS[2] (∶g/L)	FC[2] (∶g/L)	FBC[2] (∶g/L)	PBC[2] (∶g/L)	AgI[2] (∶g/L)	AgL[2] (∶g/L)
p,p'-Dichlorodiphenyltrichloroethane (DDT)	50-29-3	0.1	0.0005	4.1	70	0.001	0.001
1,1-Dichloroethane	75-34-3	NNS	NNS	NNS	NNS	NNS	NNS
1,2-Dichloroethane	107-06-2	5	120	15	NNS	NNS	NNS
1,1-Dichloroethylene	75-35-4	7	4.5	7	1300	NNS	NNS
1,2-cis-Dichloroethylene	156-59-2	70	NNS	NNS	NNS	NNS	NNS
1,2-trans-Dichloroethylene	156-60-5	100	13000	2800	2800	NNS	NNS
Dichloromethane	75-09-2	5	480	190	8400	NNS	NNS
2,4-Dichlorophenol	120-83-2	21	810	420	420	NNS	NNS
2,4-Dichlorophenoxyacetic acid (2,4-D)	94-75-7	70	NNS	1400	1400	NNS	NNS
1,2-Dichloropropane	78-87-5	5	NNS	NNS	NNS	NNS	NNS
1,3-Dichloropropene	542-75-6	0.2	6.6	7.8	42	NNS	NNS
Dieldrin	60-57-1	0.002	0.0002	0.09	7	k	k
Diethyl phthalate	84-66-2	5600	110000	110000	110000	NNS	NNS
Di(2-ethylhexyl) phthalate	117-81-7	6	7.4	100	2800	NNS	NNS
2,4-Dimethylphenol	105-67-9	140	2200	2800	2800	NNS	NNS

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PARAMETER	CAS[1] NUMBER	DWS[2] (µg/L)	FC[2] (µg/L)	FBC[2] (µg/L)	PBC[2] (µg/L)	AgI[2] (µg/L)	AgL[2] (µg/L)
Dimethyl phthalate	131-11-3	70000	2800000	1400000	1400000	NNS	NNS
4,6-Dinitro-o-cresol	534-52-1	2.7	120	55	55	NNS	NNS
2,4-Dinitrophenol	51-28-5	14	5400	280	280	NNS	NNS
2,4-Dinitrotoluene	121-14-2	14	163	280	280	NNS	NNS
2,6-Dinitrotoluene	606-20-2	NNS	NNS	NNS	NNS	NNS	NNS
Di-n-octyl phthalate	117-84-0	NNS	NNS	NNS	NNS	NNS	NNS
1,2-Diphenylhydrazine	122-66-7	0.04	0.25	1.8	NNS	NNS	NNS
Endosulfan sulfate	1031-07-8	0.35	0.78	7	7	NNS	NNS
Endosulfan (Total)	115-29-7	42	110	840	840	NNS	NNS
Endrin	72-20-8	0.2	1.1	40	40	0.004	0.004
Endrin aldehyde	7421-93-3	2.1	0.81	420	420	NNS	NNS
Ethylbenzene	100-41-4	700	110000	14000	14000	NNS	NNS
Ethyl chloride	75-00-3	NNS	NNS	NNS	NNS	NNS	NNS
Fluoranthene	206-44-0	280	130	5600	5600	NNS	NNS
Fluorene	86-73-7	280	580	5600	5600	NNS	NNS
Fluoride	7782-41-4	4000	NNS	8400	8400	NNS	NNS

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Heptachlor	76-44-8	0.4	0.0002	0.4	70	NNS	NNS
Heptachlor epoxide	1024-57-3	0.2	0.0001	0.2	2	NNS	NNS
Hexachlorobenzene	118-74-1	1	0.002	1	280	NNS	NNS
Hexachlorobutadiene	87-68-3	0.45	0.52	18	NNS	NNS	NNS
Hexachlorocyclohexane alpha	319-84-6	0.006	0.03	0.22	NNS	NNS	NNS
Hexachlorocyclohexane beta	319-85-7	0.02	0.02	0.78	NNS	NNS	NNS
Hexachlorocyclohexane delta	319-86-8	NNS	NNS	NNS	NNS	NNS	NNS
Hexachlorocyclohexane gamma (lindane)	58-89-9	0.2	0.02	1	42	NNS	NNS
Hexachlorocyclopentadiene	77-47-4	50	550	1000	1000	NNS	NNS
Hexachloroethane	67-72-1	2.5	4.8	100	140	NNS	NNS
Indeno (1,2,3-cd) pyrene	193-39-5	0.003	0.000003	0.12	NNS	NNS	NNS
Isophorone	78-59-1	36.8	2300	1500	28000	NNS	NNS
Lead (as Pb)	7439-97-1	50 T	NNS	NNS	NNS	10000 T	100 T
Manganese (as Mn)	7439-96-5	4900 T	NNS	19600 T	19600 T	10000	NNS
Mercury (as Hg)	7439-97-6	2 T	0.6 T	42 T	42 T	NNS	10 T
Methoxychlor	72-43-5	40	NNS	700	700	NNS	NNS

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Naphthalene	91-20-3	NNS	NNS	NNS	NNS	NNS	NNS
Nickel (as Ni)	7440-02-0	100 T	730 T	2800 T	2800 T	NNS	NNS
Nitrate (as N)	14797-55-8	10000	NNS	224000	224000	NNS	NNS
Nitrite (as N)	14797-65-0	1000	NNS	14000	14000	NNS	NNS
Nitrate/Nitrite (as Total N)		10000	NNS	NNS	NNS	NNS	NNS
Nitrobenzene	98-95-3	3.5	600	70	70	NNS	NNS
o-Nitrophenol	88-75-5	NNS	NNS	NNS	NNS	NNS	NNS
p-Nitrophenol	100-02-7	NNS	NNS	NNS	NNS	NNS	NNS
N-nitrosodimethylamine	62-75-9	0.0007	2.1	0.03	NNS	NNS	NNS
N-nitrosodiphenylamine	86-30-6	7.1	14	290	NNS	NNS	NNS
N-nitrosodi-n-propylamine	621-64-7	0.005	0.51	0.2	NNS	NNS	NNS
Pentachlorophenol	87-86-5	1	8.2	11.7	2000	NNS	NNS
Phenanthrene	85-01-8	NNS	NNS	NNS	NNS	NNS	NNS
Phenol	108-95-2	4200	6500000	84000	84000	NNS	NNS
Polychlorinatedbiphenyls (PCBs)	1336-36-3	0.5	0.00009	0.5	NNS	0.001	0.001
Pyrene	129-00-0	210	1100	4200	4200	NNS	NNS

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Selenium (as Se)	7782-49-2	50 T	9000 T	700 T	700 T	20 T	50 T
Silver (as Ag)	7440-22-4	NNS	NNS	NNS	NNS	NNS	NNS
Styrene	100-42-5	100	NNS	28000	28000	NNS	NNS
Sulfides		NNS	NNS	NNS	NNS	NNS	NNS
2,3,7,8-Tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD)	1746-01-6	0.0000003	0.000000004	0.00009	NNS	NNS	NNS
1,1,2,2-Tetrachloroethane	79-34-5	0.17	11	7	NNS	NNS	NNS
Tetrachloroethylene	127-18-4	5	11	35	1400	NNS	NNS
Thallium (as Tl)	7440-28-0	2 T	41 T	12 T	12 T	NNS	NNS
Toluene	108-88-3	1000	90000	28000	28000	NNS	NNS
Toxaphene	8001-35-2	3	0.0008	3	NNS	0.005	0.005
1,2,4-Trichlorobenzene	120-82-1	70	155	1400	1400	NNS	NNS
1,1,1-Trichloroethane	71-55-6	200	NNS	NNS	NNS	NNS	NNS
1,1,2-Trichloroethane	79-00-5	5	31	25	560	NNS	NNS
Trichloroethylene	79-01-6	5	NNS	NNS	NNS	NNS	NNS
2,4,6-Trichlorophenol	88-06-2	3.2	4.9	130	NNS	NNS	NNS

Appendix A: Table 1. Human Health and Agricultural Designated Use Numeric Water Quality Criteria

PARAMETER	CAS[1] NUMBER	DWS[2] (µg/L)	FC[2] (µg/L)	FBC[2] (µg/L)	PBC[2] (µg/L)	AgI[2] (µg/L)	AgL[2] (µg/L)
2-(2,4,5-Trichlorophenoxy) proprionic acid (2,4,5-TP)	93-72-1	50	NNS	1120	1120	NNS	NNS
Trihalomethanes, Total	NNS	100	NNS	NNS	NNS	NNS	NNS
Uranium (as Ur)	7440-61-1	35 D	NNS	NNS	NNS	NNS	NNS
Vinyl chloride	75-01-4	2	620	80	NNS	NNS	NNS
Xylenes (Total)	1330-20-7	10000	NNS	280000	280000	NNS	NNS
Zinc (as Zn)	7440-66-6	2100 T	22000 T	42000 T	42000 T	10000 T	25000 T

Appendix A: Table 2. Aquatic & Wildlife Designated Use Numeric Water Quality Criteria

PARAMETER	CAS[1] NUMBER	A&Wc Acute[3] (µg/L)	A&Wc Chronic[4] (µg/L)	A&Ww Acute[3] (µg/L)	A&Ww Chronic[4] (µg/L)	A&W edw Acute[3] (µg/L)	A&W edw Chronic[4] (µg/L)	A&We Acute[3] (µg/L)	A&We Chronic[4] (µg/L)
Acenaphthene	83-32-9	850	550	850	550	850	550	NNS	NNS
Acenaphthylene	208-96-8	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Acrolein	107-02-8	34	30	34	30	34	30	NNS	NNS
Acrylonitrile	107-13-1	3800	250	3800	250	3800	250	NNS	NNS
Alachlor	15972-60-8	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Aldrin	309-00-2	2.0	NNS	2.0	NNS	2.0	NNS	4.5	NNS
Ammonia	7664-41-7	b	b	b	b	NNS	NNS	NNS	NNS
Anthracene	120-12-7	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Antimony (as Sb)	7440-36-0	88 D	30 D	88 D	30 D	1000 D	600 D	NNS	NNS
Arsenic (as As)	7440-38-2	360 D	190 D	360 D	190 D	360 D	190 D	440 D	230 D
Asbestos	1332-21-4	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Atrazine	1912-24-9	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Barium (as Ba)	7440-39-3	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Benzene	71-43-2	2700	180	2700	180	11000	700	NNS	NNS
Benzidine	92-87-5	1300	89	1300	89	1300	89	10000	640
Benz (a) anthracene	56-55-3	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS

Appendix A: Table 2. Aquatic & Wildlife Designated Use Numeric Water Quality Criteria

PARAMETER	CAS[1] NUMBER	A&Wc Acute[3] (µg/L)	A&Wc Chronic[4] (µg/L)	A&Ww Acute[3] (µg/L)	A&Ww Chronic[4] (µg/L)	A&W edw Acute[3] (µg/L)	A&W edw Chronic[4] (µg/L)	A&We Acute[3] (µg/L)	A&We Chronic[4] (µg/L)
Benzo (a) pyrene	50-32-8	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Benzo (ghi) perylene	191-24-2	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Benzo (k) fluoranthene	207-08-9	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
3,4-Benzofluoranthene	205-99-2	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Beryllium (as Be)	7440-41-7	65 D	5.3 D	65 D	5.3 D	65 D	5.3 D	NNS	NNS
Bis (2-chloroethoxy) methane	111-91-1	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Bis (2-chlorethyl) ether	111-44-4	120000	6700	120000	6700	120000	6700	NNS	NNS
Bis (2-chloroisopropyl) ether	108-60-1	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Boron (as B)	7440-42-8	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Bromodichloromethane	75-27-4	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
p-Bromodiphenyl ether	101-55-3	180	14	180	14	180	14	NNS	NNS
Bromoform	75-25-2	15000	10000	15000	10000	15000	10000	NNS	NNS
Bromomethane	74-83-9	5500	360	5500	360	5500	360	NNS	NNS
Butyl benzyl phthalate	85-68-7	1700	130	1700	130	1700	130	NNS	NNS
Cadmium (as Cd)	7440-43-9	c D	c D	c D	c D	c D	c D	c D	c D

Appendix A: Table 2. Aquatic & Wildlife Designated Use Numeric Water Quality Criteria

PARAMETER	CAS[1] NUMBER	A&Wc Acute[3] (µg/L)	A&Wc Chronic[4] (µg/L)	A&Ww Acute[3] (µg/L)	A&Ww Chronic[4] (µg/L)	A&W edw Acute[3] (µg/L)	A&W edw Chronic[4] (µg/L)	A&We Acute[3] (µg/L)	A&We Chronic[4] (µg/L)
Carbofuran	1563-66-2	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Carbon tetrachloride	56-23-5	18000	1100	18000	1100	18000	1100	NNS	NNS
Chlordane	57-74-9	2.4	0.004	2.4	0.21	2.4	0.21	3.2	0.45
Chlorine (total residual)	7782-50-5	11	5.0	11	5.0	11	5.0	NNS	NNS
Chlorobenzene	108-90-7	9800	620	9800	620	NNS	NNS	NNS	NNS
p-Chloro-m-cresol	59-50-7	15	4.7	15	4.7	15	4.7	48000	15000
2-Chloroethyl vinyl ether	110-75-8	180000	9800	180000	9800	180000	9800	NNS	NNS
Chloroform	67-66-3	14000	900	14000	900	14000	900	NNS	NNS
Chloromethane	74-87-3	270000	15000	270000	15000	270000	15000	NNS	NNS
Chloronapthalene beta	91-58-7	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
2-Chlorophenol	95-57-8	2200	150	2200	150	2200	150	NNS	NNS
4-Chlorophenyl phenyl ether	7005-72-3	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Chromium (as Cr III)	16065-83-1	d D	d D	d D	d D	d D	d D	d D	d D
Chromium (as Cr VI)	18540-29-9	16 D	11 D	16 D	11 D	16 D	11 D	34 D	23 D
Chromium (Total as Cr)	7440-47-3	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS

Appendix A: Table 2. Aquatic & Wildlife Designated Use Numeric Water Quality Criteria

PARAMETER	CAS[1] NUMBER	A&Wc Acute[3] (∶g/L)	A&Wc Chronic[4] (∶g/L)	A&Ww Acute[3] (∶g/L)	A&Ww Chronic[4] (∶g/L)	A&W edw Acute[3] (∶g/L)	A&W edw Chronic[4] (∶g/L)	A&We Acute[3] (∶g/L)	A&We Chronic[4] (∶g/L)
Chrysene	218-01-9	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Copper (as Cu)	7440-50-8	e D	e D	e D	e D	e D	e D	e D	e D
Cyanide	57-12-5	22 T	5.2 T	41 T	9.7 T	41 T	9.7 T	84 T	19 T
Dibenz (ah) anthracene	53-70-3	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Dibromochloromethane	124-48-1	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
1,2-Dibromoethane (EDB)	106-93-4	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Dibutyl phthalate	84-74-2	470	35	470	35	470	35	1100	84
1,2-Dichlorobenzene	95-50-1	790	300	1200	470	1200	470	5900	2300
1,3-Dichlorobenzene	541-73-1	2500	970	2500	970	2500	970	NNS	NNS
1,4-Dichlorobenzene	106-46-7	560	210	2000	780	2000	780	6500	2500
3,3'-Dichlorobenzidine	91-94-1	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
p,p'-Dichlorodiphenyldichloroethane (DDD)	72-54-8	1.1	0.001	1.1	0.02	1.1	0.02	1.1	0.02

Appendix A: Table 2. Aquatic & Wildlife Designated Use Numeric Water Quality Criteria

PARAMETER	CAS[1] NUMBER	A&Wc Acute[3] (µg/L)	A&Wc Chronic[4] (µg/L)	A&Ww Acute[3] (µg/L)	A&Ww Chronic[4] (µg/L)	A&W edw Acute[3] (µg/L)	A&W edw Chronic[4] (µg/L)	A&We Acute[3] (µg/L)	A&We Chronic[4] (µg/L)
p,p'-Dichlorodiphenyldichloroethylene (DDE)	72-55-9	1.1	0.001	1.1	0.02	1.1	0.02	1.1	0.03
p,p'-Dichlorodiphenyltrichloroethane (DDT)	50-29-3	1.1	0.001	1.1	0.001	1.1	0.001	1.1	0.006
1,1-Dichloroethane	75-34-3	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
1,2-Dichloroethane	107-06-2	59000	41000	59000	41000	59000	41000	NNS	NNS
1,1-Dichloroethylene	75-35-4	15000	950	15000	950	15000	950	NNS	NNS
1,2-cis-Dichloroethylene	156-59-2	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
1,2-trans-Dichloroethylene	156-60-5	68000	3900	68000	3900	68000	3900	NNS	NNS
Dichloromethane	75-09-2	97000	5500	97000	5500	97000	5500	NNS	NNS
2,4-Dichlorophenol	120-83-2	1000	88	1000	88	1000	88	NNS	NNS
2,4-Dichlorophenoxyacetic acid (2,4-D)	94-75-7	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
1,2-Dichloropropane	78-87-5	26000	9200	26000	9200	26000	9200	NNS	NNS
1,3-Dichloropropene	542-75-6	3000	1100	3000	1100	3000	1100	NNS	NNS
Dieldrin	60-57-1	2.5	0.002	2.5	0.002	2.5	0.005	4	0.9

Appendix A: Table 2. Aquatic & Wildlife Designated Use Numeric Water Quality Criteria

PARAMETER	CAS[1] NUMBER	A&Wc Acute[3] (µg/L)	A&Wc Chronic[4] (µg/L)	A&Ww Acute[3] (µg/L)	A&Ww Chronic[4] (µg/L)	A&W edw Acute[3] (µg/L)	A&W edw Chronic[4] (µg/L)	A&We Acute[3] (µg/L)	A&We Chronic[4] (µg/L)
Diethyl phthalate	84-66-2	26000	1600	26000	1600	26000	1600	NNS	NNS
Di(2-ethylhexyl) phthalate	117-81-7	400	360	400	360	400	360	3100	360
2,4-Dimethylphenol	105-67-9	1000	310	1000	310	1100	310	150000	43000
Dimethyl phthalate	131-11-3	17000	1000	17000	1000	17000	1000	NNS	NNS
4,6-Dinitro-o-cresol	534-52-1	310	24	310	24	310	24	NNS	NNS
2,4-Dinitrophenol	51-28-5	110	9.2	110	9.2	110	9.2	NNS	NNS
2,4-Dinitrotoluene	121-14-2	15000	970	15000	970	15000	970	NNS	NNS
2,6-Dinitrotoluene	606-20-2	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
-Di-n-octyl phthalate	117-84-0	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
1,2-Diphenylhydrazine	122-66-7	130	11	130	11	130	11	NNS	NNS
Endosulfan sulfate	1031-07-8	0.22	0.06	0.22	0.06	0.22	0.06	3.0	1.5
Endosulfan (Total)	115-29-7	0.22	0.06	0.22	0.06	0.22	0.06	3.0	1.5
Endrin	72-20-8	0.18	0.002	0.2	0.08	0.2	0.08	0.7	0.3
Endrin aldehyde	7421-93-3	0.18	0.002	0.2	0.08	0.2	0.08	0.7	0.3
Ethylbenzene	100-41-4	23000	1400	23000	1400	23000	1400	NNS	NNS
Ethyl chloride	75-00-3	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS

Appendix A: Table 2. Aquatic & Wildlife Designated Use Numeric Water Quality Criteria

PARAMETER	CAS[1] NUMBER	A&Wc Acute[3] (∶g/L)	A&Wc Chronic[4] (∶g/L)	A&Ww Acute[3] (∶g/L)	A&Ww Chronic[4] (∶g/L)	A&W edw Acute[3] (∶g/L)	A&W edw Chronic[4] (∶g/L)	A&We Acute[3] (∶g/L)	A&We Chronic[4] (∶g/L)
Fluoranthene	206-44-0	2000	1600	2000	1600	2000	1600	NNS	NNS
Fluorene	86-73-7	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Fluoride	7782-41-4	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Heptachlor	76-44-8	0.52	0.004	0.52	0.004	0.58	0.013	0.9	0.1
Heptachlor epoxide	1024-57-3	0.52	0.004	0.52	0.004	0.58	0.013	0.9	0.1
Hexachlorobenzene	118-74-1	6.0	3.7	NNS	NNS	NNS	NNS	NNS	NNS
Hexachlorobutadiene	87-68-3	45	8.2	45	8.2	45	8.2	NNS	NNS
Hexachlorocyclohexane alpha	319-84-6	1600	130	1600	130	1600	130	1600	130
Hexachlorocyclohexane beta	319-85-7	1600	130	1600	130	1600	130	1600	130
Hexachlorocyclohexane delta	319-86-8	1600	130	1600	130	1600	130	1600	130
Hexachlorocyclohexane gamma (lindane)	58-89-9	2.0	0.08	3.4	0.28	7.6	0.61	11	0.9
Hexachlorocyclopentadiene	77-47-4	3.5	0.3	3.5	0.3	3.5	0.3	NNS	NNS
Hexachloroethane	67-72-1	490	350	490	350	490	350	850	610
Indeno (1,2,3-cd) pyrene	193-39-5	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS

Appendix A: Table 2. Aquatic & Wildlife Designated Use Numeric Water Quality Criteria

PARAMETER	CAS[1] NUMBER	A&Wc Acute[3] (µg/L)	A&Wc Chronic[4] (µg/L)	A&Ww Acute[3] (µg/L)	A&Ww Chronic[4] (µg/L)	A&W edw Acute[3] (µg/L)	A&W edw Chronic[4] (µg/L)	A&We Acute[3] (µg/L)	A&We Chronic[4] (µg/L)
Isophorone	78-59-1	59000	43000	59000	43000	59000	43000	NNS	NNS
Lead (as Pb)	7439-97-1	f D	f D	f D	f D	f D	f D	f D	f D
Manganese (as Mn)	7439-96-5	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Mercury (as Hg)	7439-97-6	2.4 D	0.01 D	2.4 D	0.01 D	2.6 D	0.2 D	5.0 D	2.7 D
Methoxychlor	72-43-5	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Naphthalene	91-20-3	1100	210	3300	600	3300	600	NNS	NNS
Nickel (as Ni)	7440-02-0	g D	g D	g D	g D	g D	g D	g D	g D
Nitrate (as N)	14797-55-8	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Nitrite (as N)	14797-65-0	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Nitrate/Nitrite (as Total N)		NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Nitrobenzene	98-95-3	1300	850	1300	850	1300	850	NNS	NNS
o-Nitrophenol	88-75-5	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
p-Nitrophenol	100-02-7	4100	3000	4100	3000	4100	3000	NNS	NNS
N-nitrosodimethylamine	62-75-9	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
N-nitrosodiphenylamine	86-30-6	2900	200	2900	200	2900	200	NNS	NNS
N-nitrosodi-n-propylamine	621-64-7	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS

Appendix A: Table 2. Aquatic & Wildlife Designated Use Numeric Water Quality Criteria

PARAMETER	CAS[1] NUMBER	A&Wc Acute[3] (: g/L)	A&Wc Chronic[4] (: g/L)	A&Ww Acute[3] (: g/L)	A&Ww Chronic[4] (: g/L)	A&W edw Acute[3] (: g/L)	A&W edw Chronic[4] (: g/L)	A&We Acute[3] (: g/L)	A&We Chronic[4] (: g/L)
Pentachlorophenol	87-86-5	h	h	h	h	h	h	h	h
Phenanthrene	85-01-8	30	6.3	30	6.3	54	6.3	NNS	NNS
Phenol	108-95-2	5100	730	7000	1000	7000	1000	180000	26000
Polychlorinatedbiphenyls (PCBs)	1336-36-3	2.0	0.01	2.0	0.02	2.0	0.02	11	2.5
Pyrene	129-00-0	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Selenium (as Se)	7782-49-2	20 T	2.0 T	20 T	2.0 T	50 T	2.0 T	33 T	2.0 T
Silver (as Ag)	7440-22-4	i D	NNS	i D	NNS	i D	NNS	i D	NNS
Styrene	100-42-5	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Sulfides		100	NNS	100	NNS	100	NNS	100	NNS
2,3,7,8-Tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD)	1746-01-6	0.01	0.005	0.01	0.005	0.12	0.01	0.1	0.01
1,1,2,2-Tetrachloroethane	79-34-5	4700	3200	4700	3200	4700	3200	NNS	NNS
Tetrachloroethylene	127-18-4	2600	280	6500	680	6500	680	15000	1600
Thallium (as Tl)	7440-28-0	700 D	150 D	700 D	150 D	700 D	150 D	NNS	NNS
Toluene	108-88-3	8700	180	8700	180	8700	180	NNS	NNS

Appendix A: Table 2. Aquatic & Wildlife Designated Use Numeric Water Quality Criteria

PARAMETER	CAS[1] NUMBER	A&Wc Acute[3] (µg/L)	A&Wc Chronic[4] (µg/L)	A&Ww Acute[3] (µg/L)	A&Ww Chronic[4] (µg/L)	A&W edw Acute[3] (µg/L)	A&W edw Chronic[4] (µg/L)	A&We Acute[3] (µg/L)	A&We Chronic[4] (µg/L)
Toxaphene	8001-35-2	0.73	0.0002	0.73	0.02	0.73	0.02	11	1.5
1,2,4-Trichlorobenzene	120-82-1	750	130	1700	300	NNS	NNS	NNS	NNS
1,1,1-Trichloroethane	71-55-6	2600	1600	2600	1600	2600	1600	NNS	NNS
1,1,2-Trichloroethane	79-00-5	18000	12000	18000	12000	18000	12000	NNS	NNS
Trichloroethylene	79-01-6	20000	1300	20000	1300	20000	1300	NNS	NNS
2,4,6-Trichlorophenol	88-06-2	160	25	160	25	160	25	3000	460
2-(2,4,5-Trichlorophenoxy) proprionic acid (2,4,5-TP)	93-72-1	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Trihalomethanes, Total		NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Uranium (as Ur)	7440-61-1	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Vinyl chloride	75-01-4	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Xylenes (Total)	1330-20-7	NNS	NNS	NNS	NNS	NNS	NNS	NNS	NNS
Zinc (as Zn)	7440-66-6	j D	j D	j D	j D	j D	j D	j D	j D

Footnotes for Appendix A:

a - The standard to protect this use is 7 million fibers (longer than 10 micrometers) per liter.
b - Values for ammonia are contained in separate tables located at the end of Appendix A.

c - Cadmium
A&Wc acute standard: $e^{(1.128\ [\ln(\text{Hardness})] - 3.828)}$
A&Wc chronic standard: $e^{(0.7852\ [\ln(\text{Hardness})] - 3.490)}$
A&Ww acute standard: $e^{(1.128\ [\ln(\text{Hardness})] - 2.0149)}$
A&Ww chronic standard: $e^{(0.7852\ [\ln(\text{Hardness})] - 3.490)}$
A&Wedw acute standard: $e^{(1.128\ [\ln(\text{Hardness})] - 2.0149)}$
A&Wedw chronic standard: $e^{(0.7852\ [\ln(\text{Hardness})] - 3.490)}$
A&We acute standard: $e^{(1.128\ [\ln(\text{Hardness})] - 0.9691)}$
A&We chronic standard: $e^{(0.7852\ [\ln(\text{Hardness})] - 3.490)}$
(See Footnote 5)

d - Chromium III
A&Wc acute standard: $e^{(0.8190\ [\ln(\text{Hardness})] + 3.688)}$
A&Wc chronic standard: $e^{(0.8190\ [\ln(\text{Hardness})] + 1.561)}$
A&Ww acute standard: $e^{(0.8190\ [\ln(\text{Hardness})] + 3.688)}$
A&Ww chronic standard: $e^{(0.8190\ [\ln(\text{Hardness})] + 1.561)}$
A&Wedw acute standard: $e^{(0.8190\ [\ln(\text{Hardness})] + 4.9361)}$
A&Wedw chronic standard: $e^{(0.8190\ [\ln(\text{Hardness})] + 1.561)}$
A&We acute standard: $e^{(0.8190\ [\ln(\text{Hardness})] + 3.688)}$
A&We chronic standard: $e^{(0.8190\ [\ln(\text{Hardness})] + 1.561)}$
(See Footnote 5)

e - Copper
A&Wc acute standard: $e^{(0.9422\ [\ln(\text{Hardness})] - 1.464)}$
A&Wc chronic standard: $e^{(0.8545\ [\ln(\text{Hardness})] - 1.465)}$
A&Ww acute standard: $e^{(0.9422\ [\ln(\text{Hardness})] - 1.464)}$
A&Ww chronic standard: $e^{(0.8545\ [\ln(\text{Hardness})] - 1.465)}$
A&Wedw acute standard: $e^{(0.9422\ [\ln(\text{Hardness})] - 1.464)}$
A&Wedw chronic standard: $e^{(0.8545\ [\ln(\text{Hardness})] - 1.465)}$
A&We acute standard: $e^{(0.9422\ [\ln(\text{Hardness})] - 1.1514)}$
A&We chronic standard: $e^{(0.8545\ [\ln(\text{Hardness})] - 1.1448)}$
(See Footnote 5)

f - Lead
A&Wc acute standard: $e^{(1.2730\ [\ln(\text{Hardness})] - 1.460)}$
A&Wc chronic standard: $e^{(1.2730\ [\ln(\text{Hardness})] - 4.705)}$
A&Ww acute standard: $e^{(1.2730\ [\ln(\text{Hardness})] - 1.460)}$
A&Ww chronic standard: $e^{(1.2730\ [\ln(\text{Hardness})] - 4.705)}$
A&Wedw acute standard: $e^{(1.2730\ [\ln(\text{Hardness})] - 1.460)}$
A&Wedw chronic standard: $e^{(1.2730\ [\ln(\text{Hardness})] - 4.705)}$
A&We acute standard: $e^{(1.2730\ [\ln(\text{Hardness})] - 0.7131)}$
A&We chronic standard: $e^{(1.2730\ [\ln(\text{Hardness})] - 3.9518)}$
(See Footnote 5)

g - Nickel
A&Wc acute standard: $e^{(0.8460\ [\ln(\text{Hardness})] + 3.3611)}$
A&Wc chronic standard: $e^{(0.8460\ [\ln(\text{Hardness})] + 1.1644)}$
A&Ww acute standard: $e^{(0.8460\ [\ln(\text{Hardness})] + 3.3611)}$
A&Ww chronic standard: $e^{(0.8460\ [\ln(\text{Hardness})] + 1.1644)}$
A&Wedw acute standard: $e^{(0.8460\ [\ln(\text{Hardness})] + 3.3611)}$
A&Wedw chronic standard: $e^{(0.8460\ [\ln(\text{Hardness})] + 1.1644)}$
A&We acute standard: $e^{(0.8460\ [\ln(\text{Hardness})] + 4.4389)}$
A&We chronic standard: $e^{(0.8460\ [\ln(\text{Hardness})] + 2.2417)}$
(See Footnote 5)

h - Pentachlorophenol
A&Wc acute standard: $e^{(1.005\ (\text{pH}) - 4.830)}$
A&Wc chronic standard: $e^{(1.005\ (\text{pH}) - 5.290)}$

A&Ww acute standard: $e^{(1.005\ (pH) - 4.830)}$
A&Ww chronic standard: $e^{(1.005\ (pH) - 5.290)}$
A&Wedw acute standard: $e^{(1.005\ (pH) - 4.830)}$
A&Wedw chronic standard: $e^{(1.005\ (pH) - 5.290)}$
A&We acute standard: $e^{(1.005\ (pH) - 3.4306)}$
A&We chronic standard: $e^{(1.005\ (pH) - 3.9006)}$
(See Footnote 6)

i - Silver A&Wc acute standard: $e^{(1.72\ [ln(Hardness)] - 6.52)}$
A&Ww acute standard: $e^{(1.72\ [ln(Hardness)] - 6.52)}$
A&Wedw acute standard: $e^{(1.72\ [ln(Hardness)] - 6.52)}$
A&We acute standard: $e^{(1.72\ [ln(Hardness)] - 6.52)}$
(See Footnote 5)

j - Zinc A&Wc acute standard: $e^{(0.8473\ [ln(Hardness)] + 0.860)}$
A&Wc chronic standard: $e^{(0.8473\ [ln(Hardness)] + 0.761)}$
A&Ww acute standard: $e^{(0.8473\ [ln(Hardness)] + 0.860)}$
A&Ww chronic standard: $e^{(0.8473\ [ln(Hardness)] + 0.761)}$
A&Wedw acute standard: $e^{(0.8473\ [ln(Hardness)] + 0.860)}$
A&Wedw chronic standard: $e^{(0.8473\ [ln(Hardness)] + 0.761)}$
A&We acute standard: $e^{(0.8473\ [ln(Hardness)] + 3.1342)}$
A&We chronic standard: $e^{(0.8473\ [ln(Hardness)] + 3.0484)}$
(See Footnote 5)

k - The standard to protect this use is 0.003 ug/l aldrin/dieldrin.
1 - Chemical Abstract System (CAS) number is a unique identification number given to each chemical.
2 - The numeric standards to protect this use shall not be exceeded.
3 - Determination of compliance with acute standards shall be as prescribed in R18-11-120.C.
4 - Determination of compliance with chronic standards shall be as prescribed in R18-11-120.C.
5 - Hardness, expressed as mg/L $CaCO_3$, is inserted into the equation where it says "Hardness". Hardness is determined according to the following criteria:
a. If the receiving water body has an A&Wc or A&Ww designated use, then hardness is based on the hardness of the receiving water body from a sample taken at the same time that the sample for the metal is taken, <u>except that the hardness may not exceed 400mg/L $CaCO_3$.</u>
b. If the receiving water body has an A&Wedw or A&We designated use, then the hardness is based on the hardness of the effluent from a sample taken at the same time that the sample for the metal is taken, except that the hardness may not exceed 400 mg/L $CaCO_3$.
6 - The pH is inserted into the equation where it says "pH". pH is determined according to the following criteria:
a. If the receiving water body has an A&Wc or A&Ww designated use, then pH is based on the pH of the receiving water body from a sample taken at the same time that the sample for pentachlorophenol is taken.
b. If the receiving water body has an A&Wedw or A&We designated use, then the pH is based on the pH of the effluent from a sample taken at the same time that the sample for pentachlorophenol is taken.
∶g/L - micrograms per liter
NNS - No numeric standard.
D - Dissolved
T - Total recoverable
TTHM - Indicates that the chemical is a trihalomethane. See Trihalomethanes, Total for DWS standard.

A&Wc - ACUTE

Total Ammonia mg-N/l (or mg NH3-N/liter)

pH	Temperature in Degrees Celsius 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	25	30 and above	pH
6.5	29	28	28	27	27	27	27	26	26	26	25	25	25	25	25	24	24	24	24	24	24	16.6	11.8	6.5
6.6	28	27	27	27	26	26	26	25	25	25	25	24	24	24	24	24	24	23	23	23	23	16.2	11.4	6.6
6.7	27	27	26	26	26	25	25	25	24	24	24	24	23	23	23	23	23	23	23	22	22	15.6	11.1	6.7
6.8	26	25	25	25	24	24	24	24	23	23	23	23	23	22	22	22	22	22	22	22	21	15.0	10.6	6.8
6.9	25	24	24	24	23	23	23	22	22	22	22	22	21	21	21	21	21	21	21	21	20	14.3	10.1	6.9
7.0	23	23	22	22	22	22	21	21	21	21	20	20	20	20.0	19.9	19.7	19.6	19.5	19.4	19.3	19.2	13.4	9.5	7.0
7.1	22	21	21	21	20	20	19.9	19.6	19.5	19.3	19.1	18.9	18.8	18.6	18.5	18.4	18.3	18.2	18.1	18.0	17.9	12.5	8.9	7.1
7.2	19.8	19.6	19.2	19.0	18.8	18.5	18.4	18.1	17.9	17.8	17.6	17.5	17.3	17.2	17.0	16.9	16.8	16.7	16.7	16.6	16.5	11.6	8.2	7.2
7.3	18.0	17.8	17.5	17.3	17.1	16.9	16.7	16.5	16.3	16.2	16.0	15.9	15.8	15.6	15.5	15.4	15.3	15.2	15.2	15.1	15.0	10.6	7.5	7.3
7.4	16.2	16.0	15.7	15.5	15.3	15.1	15.0	14.8	14.6	14.5	14.4	14.3	14.1	14.0	13.9	13.8	13.8	13.7	13.6	13.6	13.5	9.5	6.7	7.4
7.5	14.3	14.1	13.9	13.7	13.6	13.4	13.3	13.1	13.0	12.8	12.7	12.6	12.5	12.4	12.4	12.3	12.2	12.1	12.1	12.1	12.0	8.4	6.0	7.5
7.6	12.5	12.3	12.2	12.0	11.9	11.7	11.6	11.5	11.4	11.2	11.2	11.1	11.0	10.9	10.8	10.8	10.7	10.6	10.6	10.5	10.5	7.4	5.3	7.6
7.7	10.8	10.7	10.5	10.4	10.3	10.1	10.0	9.9	9.8	9.7	9.6	9.6	9.5	9.5	9.3	9.3	9.2	9.2	9.2	9.1	9.1	6.4	4.6	7.7
7.8	9.2	9.1	9.0	8.9	8.8	8.7	8.6	8.5	8.4	8.3	8.2	8.2	8.1	8.1	8.0	8.0	7.9	7.9	7.9	7.8	7.8	5.5	4.0	7.8
7.9	7.8	7.7	7.6	7.5	7.4	7.3	7.2	7.2	7.1	7.0	7.0	6.9	6.9	6.8	6.8	6.7	6.7	6.7	6.7	6.6	6.6	4.7	3.4	7.9
8.0	6.5	6.4	6.4	6.3	6.2	6.1	6.1	6.0	5.9	5.9	5.8	5.8	5.8	5.7	5.7	5.7	5.6	5.6	5.6	5.6	5.6	4.0	2.9	8.0
8.1	5.2	5.1	5.1	5.0	4.9	4.9	4.8	4.8	4.8	4.7	4.7	4.6	4.6	4.6	4.6	4.5	4.5	4.9	4.5	4.5	4.5	3.2	2.3	8.1
8.2	4.2	4.1	4.0	4.0	4.0	3.9	3.9	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.6	3.6	3.6	2.6	1.89	8.2
8.3	3.3	3.3	3.2	3.2	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.1	1.55	8.3
8.4	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.4	2.4	1.71	1.27	8.4
8.5	2.1	2.1	2.1	2.0	2.0	2.0	1.98	1.96	1.95	1.94	1.93	1.92	1.91	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.91	1.92	1.41	1.05	8.5
8.6	1.68	1.66	1.65	1.63	1.61	1.60	1.59	1.58	1.57	1.56	1.55	1.55	1.54	1.54	1.54	1.54	1.54	1.55	1.55	1.56	1.57	1.16	0.88	8.6
8.7	1.35	1.33	1.32	1.31	1.30	1.29	1.28	1.27	1.26	1.26	1.25	1.25	1.25	1.25	1.25	1.25	1.26	1.26	1.27	1.28	1.29	0.96	0.74	8.7
8.8	1.08	1.07	1.06	1.05	1.04	1.04	1.03	1.03	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.03	1.03	1.04	1.05	1.06	1.07	0.81	0.63	8.8
8.9	0.87	0.86	0.86	0.85	0.84	0.84	0.84	0.83	0.83	0.83	0.83	0.83	0.84	0.84	0.84	0.85	0.85	0.86	0.87	0.88	0.89	0.69	0.55	8.9
9.0	0.70	0.70	0.69	0.69	0.69	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.69	0.69	0.70	0.70	0.71	0.72	0.73	0.74	0.75	0.59	0.48	9.0

NOTES: (for A&Wc - ACUTE)

1. pH and temperature are field measurements taken at the same time and location as the water samples destined for the laboratory analysis of ammonia.

2. If field measured pH and/or temperature values fall between the A&Wc Acute Total Ammonia tabular values, round field measured values according to standard rounding procedures to nearest tabular value to determine ammonia standard.

A&Ww - ACUTE

Total Ammonia mg-N/liter (or mg NH3-N/liter)

Temperature in Degrees Celsius

pH	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	pH
6.5	29	28	28	27	27	27	27	26	26	26	25	25	25	25	25	6.5
6.6	28	27	27	27	26	26	26	25	25	25	25	25	24	24	24	6.6
6.7	27	27	26	26	26	25	25	25	24	24	24	24	23	23	23	6.7
6.8	26	25	25	25	24	24	24	24	23	23	23	23	23	22	22	6.8
6.9	25	24	24	24	23	23	23	22	22	22	22	22	21	21	21	6.9
7.0	23	23	22	22	22	22	21	21	21	21	20	20	20	20	20	7.0
7.1	22	21	21	21	20	20	20	20	19.5	19.3	19.1	18.9	18.8	18.6	18.5	7.1
7.2	20	20	19.2	19.0	18.8	18.5	18.4	18.1	17.9	17.8	17.6	17.5	17.3	17.2	17.0	7.2
7.3	18.0	17.8	17.5	17.3	17.1	16.9	16.7	16.5	16.3	16.2	16.0	15.9	15.8	15.6	15.5	7.3
7.4	16.2	16.0	15.7	15.5	15.3	15.1	15.0	14.8	14.7	14.5	14.4	14.3	14.1	14.0	13.9	7.4
7.5	14.3	14.1	13.9	13.7	13.6	13.4	13.3	13.1	13.0	12.8	12.7	12.6	12.5	12.4	12.4	7.5
7.6	12.5	12.3	12.2	12.0	11.9	11.7	11.6	11.5	11.4	11.3	11.2	11.1	11.0	10.9	10.8	7.6
7.7	10.8	10.7	10.5	10.4	10.3	10.1	10.0	9.9	9.8	9.7	9.6	9.6	9.5	9.5	9.3	7.7
7.8	9.2	9.1	9.0	8.9	8.8	8.7	8.6	8.5	8.4	8.3	8.2	8.2	8.1	8.1	8.0	7.8
7.9	7.8	7.7	7.6	7.5	7.4	7.3	7.2	7.2	7.1	7.0	7.0	6.9	6.9	6.8	6.8	7.9
8.0	6.5	6.4	6.4	6.3	6.2	6.1	6.1	6.0	5.9	5.9	5.8	5.8	5.8	5.7	5.7	8.0
8.1	5.2	5.1	5.1	5.0	4.9	4.9	4.8	4.8	4.8	4.7	4.7	4.6	4.6	4.6	4.6	8.1
8.2	4.2	4.1	4.0	4.0	4.0	3.9	3.9	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.6	8.2
8.3	3.3	3.3	3.2	3.2	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	8.3
8.4	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	8.4
8.5	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	1.95	1.94	1.93	1.92	1.91	1.90	1.90	8.5
8.6	1.68	1.66	1.65	1.63	1.61	1.60	1.59	1.58	1.57	1.56	1.55	1.55	1.54	1.54	1.54	8.6
8.7	1.35	1.33	1.32	1.31	1.30	1.29	1.28	1.27	1.26	1.26	1.25	1.25	1.25	1.25	1.25	8.7
8.8	1.08	1.07	1.06	1.05	1.04	1.04	1.03	1.03	1.02	1.02	1.02	1.02	1.02	1.02	1.02	8.8
8.9	0.87	0.86	0.86	0.85	0.84	0.84	0.84	0.83	0.83	0.83	0.83	0.83	0.84	0.84	0.84	8.9
9.0	0.70	0.70	0.69	0.69	0.69	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.69	0.69	0.70	9.0

A&Ww - ACUTE (contd)

Total Ammonia mg-N/liter (or mg NH3-N/liter) (cont.)

pH	Temperature in Degrees Celsius 15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30 and above	pH
6.5	24	24	24	24	24	24	24	24	24	24	23	22	20	19.1	17.8	16.6	6.5
6.6	24	24	23	23	23	23	23	23	23	23	23	21	20	18.5	17.3	16.1	6.6
6.7	23	23	23	23	22	22	22	22	22	22	22	21	19.2	17.9	16.7	15.6	6.7
6.8	22	22	22	22	22	21	21	21	21	21	21	20	18.4	17.2	16.1	15.0	6.8
6.9	21	21	21	21	21	20	20	20	20	20	20	18.8	17.5	16.4	15.3	14.3	6.9
7.0	20	20	20	19.4	19.3	19.2	19.2	19.1	19.1	19.0	19.0	17.7	16.5	15.4	14.4	13.4	7.0
7.1	18.4	18.3	18.2	18.1	18.0	17.9	17.9	17.8	17.8	17.7	17.7	16.5	15.4	14.4	13.4	12.6	7.1
7.2	16.9	16.8	16.7	16.7	16.6	16.5	16.5	16.4	16.4	16.4	16.3	15.2	14.2	13.3	12.4	11.6	7.2
7.3	15.4	15.3	15.2	15.2	15.1	15.0	15.0	15.0	14.9	14.9	14.9	13.9	12.9	12.0	11.3	10.6	7.3
7.4	13.8	13.8	13.7	13.6	13.6	13.5	13.5	13.5	13.4	13.4	13.4	12.5	11.6	10.9	10.2	9.5	7.4
7.5	12.3	12.2	12.2	12.1	12.1	12.0	12.0	12.0	11.9	11.9	11.9	11.1	10.4	9.7	9.1	8.5	7.5
7.6	10.8	10.7	10.6	10.6	10.5	10.5	10.5	10.4	10.4	10.4	10.5	9.8	9.1	8.5	8.0	7.4	7.6
7.7	9.3	9.2	9.2	9.2	9.1	9.1	9.1	9.1	9.1	9.1	9.1	8.5	7.9	7.4	6.9	6.5	7.7
7.8	8.0	7.9	7.9	7.9	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.3	6.8	6.4	6.0	5.6	7.8
7.9	6.7	6.7	6.7	6.7	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.2	5.8	5.4	5.1	4.8	7.9
8.0	5.7	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.2	4.9	4.6	4.3	4.0	8.0
8.1	4.5	4.5	4.9	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.2	4.0	3.7	3.5	3.3	8.1
8.2	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.7	3.4	3.2	3.0	2.8	2.7	8.2
8.3	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3.0	2.8	2.6	2.5	2.3	2.2	8.3
8.4	2.4	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.1	2.0	1.90	1.80	8.4
8.5	1.90	1.90	1.90	1.90	1.91	1.92	1.92	1.93	1.95	1.96	1.99	1.86	1.77	1.66	1.57	1.49	8.5
8.6	1.54	1.54	1.55	1.55	1.56	1.57	1.58	1.58	1.60	1.62	1.63	1.55	1.46	1.38	1.31	1.24	8.6
8.7	1.25	1.26	1.26	1.27	1.28	1.29	1.30	1.31	1.33	1.34	1.36	1.29	1.22	1.16	1.10	1.05	8.7
8.8	1.03	1.03	1.04	1.05	1.06	1.07	1.08	1.09	1.11	1.12	1.14	1.09	1.03	0.98	0.94	0.90	8.8
8.9	0.85	0.85	0.86	0.87	0.88	0.89	0.91	0.92	0.93	0.95	0.97	0.93	0.88	0.84	0.81	0.77	8.9
9.0	0.70	0.71	0.72	0.73	0.74	0.75	0.77	0.78	0.80	0.81	0.83	0.80	0.76	0.73	0.70	0.68	9.0

NOTES: (for A&Ww - ACUTE)

1. pH and temperature are field measurements taken at the same time and location as the water samples destined for the laboratory analysis of ammonia.

2. If field measured pH and/or temperature values fall between the A&Ww Acute Total Ammonia tabular values, round field measured values according to standard scientific rounding procedures to nearest tabular value to determine the ammonia standard.

APPENDIX B
Designated Uses of Hualapai Surface Waters

BASIN	SEGMENT	DESIGNATED USES						
	Sites	A&Wc	A&Ww	FBC	DWS	FC	AgI	AgL
	pdc #2, Truxton				X			
	Mud Tank #9, Truxton				X			
	IHS, Truxton				X			
	NRD, Peach Springs				X			
Spencer	Bridge	X		X				
Spencer	**Spencer**		X	X				
Spencer	Milkweed (lower)		X	X				
Spencer	Hindu	X		X				
Spencer	**Meriwhitica**	X		X	X		X	X
Spencer	Harding Falls	X		X	X			
Spencer	**Willow Spring**	X		X	X			X
Spencer	**Upper Milkweed Spring**	X		X	X			X
Spencer	Horse Trough	X		X	X			X
Spencer	Dewey Mahone	X			X			X
Granite Gorge	**Bridge Canyon**	X		X	X			
Granite Gorge	**Travertine Spring**	X		X	X			
Granite Gorge	**Travertine Falls**	X		X				
Peach Springs	Mesquite		X	X				
Peach Springs	Lower Peach Spring		X	X				
Peach Springs	Red2 Spring		X	X				

Peach Springs	Surprise Spring		X	X				

Appendix B. Designated Uses of Hualapai Surface and Ground Water Cont.

BASIN	SEGMENT	DESIGNATED USES						
	Sites	A&Wc	A&Ww	FBC	DWS	FC	AgI	AgL
Peach Springs	**Diamond Creek**	X		X	X			
Peach Springs	**Diamond Creek Spring**	X		X	X			X
Peach Springs	**Blue Mountain**	X		X	X		X	
Peach Springs	**Metuck**	X		X	X		X	X
Peach Springs	Mulbery	X			X			X
Peach Springs	**Peach Springs Spring**	X		X	X		X	X
W. Hualapai Plateau	**Westwater**	X		X	X		X	X
W. Hualapai Plateau	**Clay Tank**	X		X	X		X	X
W. Hualapai Plateau	Horse Flat	X		X	X		X	
W. Hualapai Plateau	Columbine Falls	X		X				X
W. Hualapai Plateau	Boundary Spring	X		X		X		
Coconino Plateau	Red1 Spring		X	X				X
Coconino Plateau	Big Spring		X	X	X			
Coconino Plateau	**Hocky Puck**		X	X				
Coconino Plateau	Upper Pine Spring		X	X				X
Coconino Plateau	Pine Spring		X	X				X
Coconino Plateau	**Pocamote Spring**		X	X				
Coconino Plateau	Ridenour Mine	X		X	X			X
Coconino Plateau	**Mohawk Spring**	X		X	X			X

Coconino Plateau	**Granite Spring**	X		X	X		X	

Appendix B. Designated Uses of Hualapai Surface and Ground Water Cont.

BASIN	SEGMENT	DESIGNATED USES						
	Sites	A&Wc	A&Ww	FBC	DWS	FC	AgI	AgL
Coconino Plateau	**Three Spring**	X		X	X		X	X
Coconino Plateau	Pumpkin Spring		X	X				
Coconino Plateau	Granite Park Spring	X		X	X	X		
Coconino Plateau	Beecher Spring	X		X		X		
Coconino Plateau	Artesian Spring		X	X		X		
Coconino Plateau	**Warm Spring**		X	X	X		X	
Coconino Plateau	Hells Hollow Spring		X	X				
Coconino Plateau	Cement Spring	X		X				X
Coconino Plateau	**Honga Spring**	X		X	X			X
Coconino Plateau	**National Canyon Spring**	X		X	X			
Coconino Plateau	**National Canyon**	X		X	X			
Coconino Plateau	**Moss Spring**	X		X				

A&Wc - Aquatic and Wildlife coldwater
A&Ww - Aquatic and Wildlife warmwater
FC - Fish Consumption
DWS - Domestic Water Source
AgI - Agricultural Irrigation
AgL - Agricultural Livestock
FBC - Full Body Contact

Those segments highlighted in **Bold** are classified as Outstanding Tribal Resource Waters.

Supplement to Appendix B

1. pdc #2, Truxton, Mud Tank #9, Truxton, IHS, Truxton, NRD, Peach Springs

These sites were listed as "DWS" only because the water is immediately captured into storage tanks and do not have the opportunity to travel as a stream. "FBC" is inaccessible due to closed tanks. Fish Consumption is not supported as explained above. Documentation is located within the HDNR Water Resources Office that aquatic invertebrates are not present within the tanks.

2. Bridge Canyon was listed as "FBC" because it is located in a very remote area of the reservation and sometimes it is accessible by the Colorado River. This spring does not support a fish population conducive for consumption. However, this spring has been known to be an area for river runners to bath in. Documentation is located within the HDNR Water Resources Office.

3. Spencer, Lower Milkweed, Hindu, Meriwhitica, Harding Falls, Willow Spring, and Upper Milkweed Spring were not listed as "FC" because these springs are located in a sacred canyon and the Tribe prohibits fishing. Documentation is located within the HDNR Water Resources Office.

4. Horse Trough is located within a cave and fish have not been found within this spring. Documentation is located within the HDNR Water Resources Office. Full body contact is possible if you go within the cave.

5. Dewey Mahone is a hand dug well. The well is too deep for anyone to access and fish have not been found within the well. Documentation is located within the HDNR Water Resources Office.

6. Bridge Canyon and Travertine Spring supports a very sparse population of invertebrates. Fish have not been found in these two springs. Documentation is located within the HDNR Water Resources Office.

7. Travertine Falls and Mesquite may in the future support "FBC" but currently does not produce enough water. These were not listed as "FC" because fish and invertebrates are rarely found. Documentation is located within the HDNR Water Resources Office.

8. Lower Peach Spring has not been known, and there has not been any fish found within this spring. Documentation is located within the HDNR Water Resources Office.

9. Red2 Spring and Surprise are springs issuing from caves and have not been used for anything other than livestock waters. Fish have not been found in these springs. Documentation is located within the HDNR Water Resources Office.

10. Diamond Creek, Diamond Creek Spring, Blue Mountain, and Metuck have not been known to contain fish. Documentation is located within the HDNR Water Resources Office.

11. Mulbery Spring barely issues from the ground and would not support “FBC ” or “FC”. Documentation is located within the HDNR Water Resources Office.

12. Peach Springs Spring, Westwater, Clay Tank, Horse Flat, and Columbine Falls are remote and have not been found to contain fish. Documentation is located within the HDNR Water Resources Office.

13. Boundary Spring - fish have not been recorded within this spring; however, there is potential for fish presence due to the close proximity to the Colorado River.

14. Red Spring 1, Big Spring, Hocky Puck, Upper Pine Spring, and Pine Spring are not known to contain fish, but may have the potential for presence of invertebrates. Documentation is located within the HDNR Water Resources Office.

15. Pocamote Spring is a sacred spring and fishing is prohibited.

16. Ridenour spring is not designated for fish consumption because it is a spring that issues from a mine.

17. Pumpkin Spring would not be conducive for fish consumption due to high levels of naturally occurring sulphur. Documentation is located within the HDNR Water Resources Office.

18. Warm springs, Hells Hollow Spring, Cement spring, Honga spring, National Canyon Spring, National Canyon, and Moss Spring, Mohawk Spring, Granite Spring, and Three Spring has not been found to contain fish. Documentation is located within the HDNR Water Resources Office.

APPENDIX C
Water Resources Program Guidance Regarding Implementation of Water Resources Ordinance

1. Antidegradation Implementation Procedures

Antidegradation implementation procedures include those in Chapter 6 of the Water Resources Ordinance intended for implementing the Ordinance. In addition, under Chapter 6, item Q, the antidegradation analysis will include a review of each of the receiving water bodies that are being considered for any action that would result in changes to water quality (including discharges) to determine their applicability/capacity for degradation. The review will include at a minimum:

- an analysis of the water body(ies) in question to determine their capacity for degradation on a pollutant-by-pollutant basis;
- an analysis of the effluent quality of the proposed discharge and its impact on receiving water bodies in question;
- an evaluation of the need for the action (e.g. discharge) to accommodate important economic or social development in the area; and
- a public review of the analysis and decision process.

NOTE: Unless and until the Hualapai Tribe asserts primary responsibility for NPDES permitting, the EPA shall work together with the Tribe to develop, issue and enforce permits for dischargers within the Reservation in accordance with standards set forth in this Ordinance.

2. Existing Use

The definition of existing use is supported by ethnographic reports housed within the Cultural Resources Office.

3. Methods Used and Analyses Conducted to Support Revisions to Water Quality Standards

The Hualapai Tribe's water quality standards were adopted from previous Arizona State Water Quality Standards, whose methods were subjected to scientific and technical review by EPA. The Hualapai Tribe's Water Quality Standards were evaluated, assessed and compared to other states' standards including Arizona's 2002 amended standards. There are some differences between the Hualapai Tribe's Water Quality Standards and Arizona's 2002 standards. The Hualapai Tribe reviewed and determined, however, that its current set of standards are appropriate for our Tribal waters. Upon each triennial review of the Hualapai Tribe's water quality standards, the Tribe will consider the latest scientific literature, current state standards (e.g., Arizona's), and the most recent water quality standards guidance from EPA to determine whether any changes should be made to the Hualapai Tribe's Water Quality Standards. The Tribe's methods conducted to analyze and consider changes to their water quality standards are in accordance with EPA's requirements under 40 CFR 131.6 (b).