

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

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

NOTICE OF FINAL RULEMAKING

TITLE 18. ENVIRONMENTAL QUALITY

CHAPTER 11. DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY STANDARDS

PREAMBLE

- 1. Sections Affected**

R18-11-101	<u>Rulemaking Action</u>
Appendix A	Amend
	Amend
- 2. The statutory authority for the rulemaking, including both the authorizing statute (general) and the statutes the rules are implementing (specific):**

Authorizing statutes: A.R.S. §§ 49-202(A), 49-203(A)(1), and 49-221
Implementing statute: A.R.S. § 49-222
- 3. The effective date of the rules:**

April 8, 2003
- 4. A list of all previous notices appearing in the Register addressing the final rules:**

Notice of Rulemaking Docket Opening: 8 A.A.R. 4696, November 8, 2002
Notice of Proposed Rulemaking: 8 A.A.R. 4676, November 8, 2002
- 5. The name and address of agency personnel with whom persons may communicate regarding the rulemaking:**

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- 6. An explanation of the rules, including the agency's reasons for initiating the rules:**

This rulemaking makes technical corrections required by the U.S. Environmental Protection Agency (EPA), and other minor technical and clerical corrections, to rules for Water Quality Standards for Surface Waters. The corrections are required by EPA before EPA will complete its review and approval of the Water Quality Standards for Surface Waters (which were approved at the February 7, 2002 meeting of the Governor's Regulatory Review Council).

R18-11-101. Definitions

EPA believes that the current definition for "existing use" is inconsistent with the federal definition at 40 CFR 131.3(e).

The Department revised the definition using the language in 40 CFR 131.3(e).

EPA expressed concern over the definitions for "ephemeral water" and "intermittent surface water." EPA indicated that the definition of "intermittent surface water" implies that a surface water may flow for up to 30 days and still be considered an ephemeral water. This raised a concern as to how this bright line definition would affect the Department's proposed repeal of chronic aquatic life criteria for ephemeral waters. EPA is concerned that some surface waters that flow for periods of up to 30 days should be protected by both acute and chronic aquatic life standards.

The Department agrees that this is an arbitrary restriction and removed the 30-day time period from the definition and amended the term for clarity. The Department will retain the current definition of "ephemeral water," which is a surface water that 1) has a channel that is at all times above the water table, and 2) flows only in direct response to precipitation.

The Department believes that these two definitions, as amended, are complementary. An ephemeral water is a normally dry watercourse that flows only in direct response to precipitation. An intermittent stream flow is a stream that flows seasonally.

Appendix A. Numeric Water Quality Criteria

Table 1. Human Health and Agricultural Designated Uses

Dioxin

The Department revised the human health criteria for 2,3,7,8-tetrachlorodibenzo-p-dioxin in the February 2002 (effective March 8, 2002) rulemaking. Because oral cancer potency slopes (q1*) for dioxin were not available in the Integrated Risk Information System (IRIS) database at the time the Department proposed criteria for dioxin, the

Department derived criteria for dioxin using a minimum risk level (MRL) developed by the Agency for Toxic Substances and Disease Registry. However, EPA has pointed out in their review that the resulting criteria for dioxin are significantly less than the dioxin criteria adopted in 1996:

1996	2002
DWS: 0.0000003 µg/L	DWS: 0.00003 µg/L
FC:0.000000004 µg/L	FC: 0.002 µg/L
FBC: 0.00009 µg/L	FBC: 1.4 µg/L
PBC: NNS	PBC: 1.4 µg/L

After discussion with EPA the Department agreed that due to the ongoing reassessment of human health risks from exposure to dioxin, it is appropriate to retain the 1996 criteria for dioxin for domestic water source (DWS), fish consumption (FC), and the full body contact (FBC) designated uses that were based on a previously available q1*. While the Department believes that it is proper to use minimum risk levels to derive human health criteria for pollutants when data is not available in IRIS, the Department also recognizes that dioxin is a special case because of the national dialogue and ongoing reassessment. For this reason, the Department is re-adopting the 1996 criteria for DWS, FC, and FBC designated uses.

The Department did not use the carcinogen procedure to derive human health criteria for the partial body contact (PBC) designated use for any priority pollutant. The Department believes it is appropriate to use minimum risk levels to derive a criterion for dioxin for the PBC designated use. As EPA is aware, the Department did not have a numeric criterion for dioxin for PBC designated use in 1996. Thus, the Department will retain the criterion of 1.4 µg/L for dioxin for the PBC designated use.

Polycyclic Aromatic Hydrocarbons

In the February 2002 rulemaking, the Department revised the numeric criteria for a number of parameters belonging to the family of pollutants called polycyclic aromatic hydrocarbons (PAHs) including benz(a)anthracene, 3-4 benzfluoranthene, benzo(k)fluoranthene, chrysene, dibenz(ah)anthracene, and indeno (1,2,3-cd) pyrene. For each of these pollutants, the Department repealed the previously adopted human health criteria and replaced the numeric criteria with “NNS” (meaning “No Numeric Standard”) because of the unavailability of oral slope factors (q1*) in IRIS to derive new criteria. Each of the listed PAHs is considered a “probable” human carcinogen based on sufficient evidence of carcinogenicity in animals and inadequate or no evidence of carcinogenicity in humans (i.e., a Class B2 carcinogen). EPA objected to the repeal of numeric criteria for PAHs and asked the Department to adopt the criteria that had been in rule before the 2002 amendment.

The Department agreed to revised the criteria for the PAHs listed in Appendix A, Table 1. To address the problem of absent oral slope factors for the listed pollutants, the Department derived human health criteria based on the oral slope factor for benzo(a)pyrene. The Department used this approach to derive both the 1992 and 1996 criteria for the listed PAHs. However, the criteria was adjusted for the listed PAHs using a “potency equivalency factor.” This approach uses different factors to extrapolate the relative potency of one chemical from the data of a “chemical relative” and is an accepted standard/criteria derivation method in the absence of specific data. EPA proposed such an approach as a provisional guide in 1993, but never finalized the document.

The use of potency equivalency factors to adjust criteria for PAHs has already been accepted by EPA for the California Water Resources Board in deriving criteria.

Table 2. Aquatic & Wildlife Designated Uses

No changes have been made to the Table. The footnote section, however, has been amended to include the (p) footnote, which was inadvertently left out of the previous rulemaking, and additional parentheses, which were left out of the equations.

Table 20. Chronic and Acute Water Quality Standards for dissolved Zinc

The equations used by EPA to derive the zinc acute and chronic criteria resulted in acute standards that were more stringent than chronic standards. Given that the chronic averaging period is longer than the acute averaging period and should result in more stringent standards, this rulemaking corrects this deficiency by defaulting to the more stringent standards to protect the chronic aquatic and wildlife life use.

The Table for Chronic Water Quality Standards for dissolved Zinc, “Aquatic and Wildlife coldwater, warmwater and edw” has been deleted and the term “chronic” has been added to the Table for Acute Water Quality Standards for dissolved Zinc, “Aquatic and Wildlife coldwater, warmwater and edw.”

Other than Tables 1 and 2, the subsequent Tables within Appendix A were not labeled. These subsequent tables have been labeled in this rulemaking to provide stakeholders with easy access to specific information on numeric water quality.

7. A reference to any study relevant to the rules that the agency reviewed and either relied on or did not rely on in its evaluation of or justification for the rules, where the public may obtain or review each study, all data underlying each study, and any analysis of each study and other supporting material:

None

8. A showing of good cause why the rules are necessary to promote a statewide interest if the rules will diminish a previous grant of authority of a political subdivision of this state:

Not applicable

9. The summary of the economic, small business, and consumer impact:

This rulemaking makes changes requested by EPA and other minor technical and clerical corrections.

R18-11-101. Definitions.

The revision of “existing use” is consistent with federal water quality standards regulations and the change to “intermittent water” further clarifies the meaning of the term and clearly distinguishes intermittent waters from ephemeral waters.

Appendix A, Table 1.

Numeric Criteria for Polycyclic Aromatic Hydrocarbons.

The numeric water quality criteria to protect human health for six pollutants belonging to a family of pollutants called polycyclic aromatic hydrocarbons (PAHs), have been revised. PAHs are described as volatile coal tar products and they are more typically found in air emissions as unwanted by-products of combustion.

In the last triennial review of Surface Water Quality Standards (effective March 8, 2002), the Department repealed the numeric water quality criteria for benz(a)anthracene, benzo(k)fluoranthene, 3,4-benzofluoranthene, chrysene, dibenz(ah)anthracene, and indeno(1,2,3-cd)pyrene because of the lack of human health effects data for those pollutants to derive criteria. EPA objected to the repeal of the numeric criteria for the six PAHs and urged that the Department adopt the numeric criteria for the PAHs that had been previously adopted in rules that were effective April 24, 1996. To avoid federal promulgation of numeric criteria for the six PAHs, the Department agreed to adopt the 1996 criteria and adjusted those criteria using an updated criteria derivation methodology. The use of the updated methodology results in minor changes to the numeric criteria that existed before the March 2002 revision of the Surface Water Quality Standards rules.

Since PAHs are only slightly soluble in water, they are not expected to be found in surface waters. The re-adoption of the numeric criteria will have little or no real world or practical effect. While state law requires the Department to adopt standards for PAHs, the Department does not routinely monitor surface waters for the presence of PAHs. Also, point source dischargers are not required to monitor for the presence of PAHs in discharges because there is little or no reasonable potential that the pollutants are present.

Numeric criteria for dioxin.

The Department is adopting numeric criteria for dioxin. In the last triennial review of Surface Water Quality Standards (effective March 8, 2002), the Department repealed numeric water quality criteria to protect human health for dioxin because of a lack of human health effects data to derive the criteria. As with the PAHs, EPA objected to the repeal of the previously-adopted numeric criteria for dioxin and urged the state to maintain the numeric criteria for dioxin that had been in place since 1996. To avoid a federal promulgation of human health criteria for dioxin by EPA, the Department agreed to re-propose the 1996 criteria for dioxin in this rulemaking.

Dioxin is a by-product in the manufacture of certain herbicides. Currently, all herbicidal products containing dioxin are banned by the federal government for most uses. To the Department’s knowledge, there are no herbicide manufacturing facilities in Arizona that may produce dioxin in a discharge that could find its way to a surface water to which the re-adopted standard applies. Dioxin also is formed in industrial processes involving the use of chlorine. One important example of an industrial process that produces dioxin is bleaching at paper pulp mills. The Department is aware of one facility in Arizona, Stone Container near Snowflake, Arizona, that is involved with paper bleaching and could possibly be affected by re-adoption of a numeric dioxin standard. However, the Stone Container facility does not discharge to a surface water to which surface water quality standards apply.

Renumbering and Consolidation of Tables.

The Department numbered the remaining tables under Appendix A and consolidated the acute and chronic toxicity tables for zinc in Appendix B.

Estimated Costs and Benefits to the Arizona Department of Environmental Quality.

The Department will benefit from the proposed rulemaking by eliminating all obstacles standing in the way of final EPA approval of (previously adopted) Surface Water Quality Standards. If this rulemaking is not approved, EPA Region IX will disapprove portions of the Surface Water Quality Standards and federally promulgate Surface Water

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Quality Standards for Arizona. This would create confusion and regulatory uncertainty for the agency and the regulated community.

Estimated Costs and Benefits to Political Subdivisions, Consumers, Small Businesses, Private or Public Employment, or State Revenue.

This rulemaking does not impose administrative or other compliance costs on small businesses. The rules will have no economic, small business, or consumer impact on the Department, political subdivisions, consumers, small businesses, private or public employment, or state revenues.

10. A description of the changes between the proposed rules, including supplemental notices, and final rules (if applicable):

Only technical and grammatical changes were made between the proposed and final rules.

11. A summary of the comments made regarding the rule and the agency response to them:

None

12. Any other matters prescribed by statute that are applicable to the specific agency or to any specific rule or class of rules:

None

13. Incorporations by reference and their location in the rules:

None

14. Were these rules previously adopted as emergency rules?

No

15. The full text of the rules follows:

TITLE 18. ENVIRONMENTAL QUALITY

**CHAPTER 11. DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY STANDARDS**

ARTICLE 1. WATER QUALITY STANDARDS FOR SURFACE WATERS

Section

R18-11-101. Definitions

Appendix A. Numeric Water Quality Criteria

ARTICLE 1. WATER QUALITY STANDARDS FOR SURFACE WATERS

R18-11-101. Definitions

The terms of this Article have the following meanings:

1. "Acute toxicity" means toxicity involving a stimulus severe enough to induce a response rapidly. In aquatic toxicity tests, an effect observed in 96 hours or less is considered acute.
2. "AgI" means agricultural irrigation.
3. "AgL" means agricultural livestock watering.
4. "Agricultural irrigation" means the use of a surface water for the irrigation of crops.
5. "Agricultural livestock watering" means the use of a surface water as a supply of water for consumption by livestock.
6. "Annual mean" means the arithmetic mean of monthly values determined over a consecutive 12-month period, provided that monthly values are determined for at least three months. The monthly value is the arithmetic mean of all values determined in a calendar month.
7. "Aquatic and wildlife (cold water)" means the use of a surface water by animals, plants, or other cold-water organisms, generally occurring at elevations greater than 5000 feet, for habitation, growth, or propagation.
8. "Aquatic and wildlife (effluent-dependent water)" means the use of an effluent-dependent water by animals, plants, or other organisms for habitation, growth, or propagation.
9. "Aquatic and wildlife (ephemeral)" means the use of an ephemeral water by animals, plants, or other organisms, excluding fish, for habitation, growth, or propagation.
10. "Aquatic and wildlife (warm water)" means the use of a surface water by animals, plants, or other warm-water organisms, generally occurring at elevations less than 5000 feet, for habitation, growth, or propagation.
11. "A&Wc" means aquatic and wildlife (cold water).
12. "A&We" means aquatic and wildlife (ephemeral).
13. "A&Wedw" means aquatic and wildlife (effluent-dependent water).
14. "A&Ww" means aquatic and wildlife (warm water).
15. "Clean Water Act" means the Federal Water Pollution Control Act [33 U.S.C. §§ 1251 to 1387].

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16. "Criteria" means elements of water quality standards that are expressed as pollutant concentrations, levels, or narrative statements representing a water quality that supports a designated use.
17. "Designated use" means a use specified in Appendix B of this Article for a surface water.
18. "Domestic water source" means the use of a surface water as a potable water supply. Coagulation, sedimentation, filtration, disinfection, or other treatments may be necessary to yield a finished water suitable for human consumption.
19. "DWS" means domestic water source.
20. "EDW" means effluent-dependent water.
21. "Effluent-dependent water" means a surface water that consists of discharges of treated wastewater that is classified as an effluent-dependent water by the Director under R18-11-113. An effluent-dependent water is a surface water that, without the discharge of treated wastewater, would be an ephemeral water.
22. "Ephemeral water" means a surface water that has a channel that is at all times above the water table, and that flows only in direct response to precipitation.
23. ~~"Existing use" means a use of a surface water that occurs in a surface water or a use that the existing water quality of a surface water will allow.~~ "Existing use" means those uses actually attained in the waterbody on or after November 28, 1975, whether or not they are included in the water quality standards.
24. "FBC" means full-body contact.
25. "FC" means fish consumption.
26. "Fish consumption" 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.
27. "Full-body contact" means the use of a surface water for swimming or other recreational activity that 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 and sensitive body organs, such as the eyes, ears, or nose, may be exposed to direct contact with the water.
28. "Geometric mean" ~~mean~~ means the nth root of the product of n items or values. The geometric mean is calculated using the following formula:

$$G.M._y = \sqrt[n]{(Y_1)(Y_2)(Y_3)...(Y_n)}$$

29. "Hardness" means the sum of the calcium and magnesium concentrations, expressed as calcium carbonate (CaCO₃) in milligrams per liter.
30. "Intermittent surface water" means a ~~surface water~~ stream or reach of a stream that flows continuously ~~for 30 days or more only~~ at certain times of the year, as when ~~the surface water it~~ receives water from a spring or from another surface source, such as melting snow.
31. "Mixing zone" means a prescribed area or volume of a surface water that is contiguous to a point source discharge where initial dilution of the discharge takes place.
32. "National Pollutant Discharge Elimination System" means the point source discharge permit program established by § 402 of the Clean Water Act [33 U.S.C. §§ 1342].
33. "Ninetieth percentile" means the value ~~which that~~ may not be exceeded by more than 10% of the observations in a consecutive 12 month period. A minimum of 10 samples, each taken at least 10 days apart, are required to determine a ninetieth percentile.
34. "NNS" means no numeric standard.
35. "Oil" means petroleum in any form, including but not limited to crude oil, gasoline, fuel oil, diesel oil, lubricating oil, or sludge.
36. "Partial-body contact" means the recreational use of a surface water that may cause the human body to come into direct contact with the water, but normally not to the point of complete submergence (for example, wading or boating). The use is such that ingestion of the water is not likely and sensitive body organs, such as the eyes, ears, or nose, will not normally be exposed to direct contact with the water.
37. "PBC" means partial-body contact.
38. "Perennial surface water" means a surface water that flows continuously throughout the year.
39. "Pollutant" means fluids, contaminants, toxic wastes, toxic pollutants, dredged spoil, solid waste, substances and chemicals, pesticides, herbicides, fertilizers and other agricultural chemicals, incinerator residue, sewage, garbage, sewage sludge, munitions, petroleum products, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and mining, industrial, municipal, and agricultural wastes or any other liquid, solid, gaseous, or hazardous substance.
40. "Practical quantitation limit" means the lowest level of quantitative measurement that can be reliably achieved during routine laboratory operations.
41. "Recreational uses" means the full-body contact and partial-body contact designated uses.
42. "Regional Administrator" means the Regional Administrator of Region IX of the U.S. Environmental Protection Agency.

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43. "Surface water" means a water of the United States and includes the following:
 - a. A water that is currently used, was used in the past, or may be susceptible to use in interstate or foreign commerce;
 - b. An interstate water, including an interstate wetland;
 - c. All other waters, such as an intrastate lake, reservoir, natural pond, river, stream (including an intermittent or ephemeral stream), creek, wash, draw, mudflat, sandflat, wetland, slough, backwater, prairie pothole, wet meadow, or playa lake, the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce, including any such water:
 - i. That is or could be used by interstate or foreign travelers for recreational or other purposes;
 - ii. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
 - iii. That is used or could be used for industrial purposes by industries in interstate or foreign commerce;
 - d. An impoundment of a surface water as defined by this definition;
 - e. A tributary of a surface water identified in subsections (a) through (d) of this definition;
 - f. A wetland adjacent to a surface water identified in subsections (a) through (e) of this definition.
44. "Total nitrogen" means the sum of the concentrations of ammonia (NH₃), ammonium ion (NH₄⁺), nitrite (NO₂), and nitrate (NO₃), and dissolved and particulate organic nitrogen expressed as elemental nitrogen.
45. "Total phosphorus" means all of the phosphorus present in a sample, regardless of form, as measured by a persulfate digestion procedure.
46. "Toxic" means a pollutant, or combination of pollutants, ~~which that~~ after discharge and upon exposure, ingestion, inhalation, or assimilation into an 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 the organism or its offspring.
47. "Unique water" means a surface water that is classified as an outstanding state resource water by the Director under R18-11-112.
48. "Use attainability analysis" means a structured scientific assessment of the factors affecting the attainment of a designated use including physical, chemical, biological, and economic factors.
49. "Wetland" means an area that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions. A wetland includes a swamp, marsh, bog, cienega, tinaja, and similar areas.
50. "Zone of passage" means a continuous water route of volume, cross-sectional area, and quality necessary to allow passage of free-swimming or drifting organisms with no acutely toxic effect produced on the organisms.

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

PARAMETER	CAS* NUMBER	DWS (µg/L)	FC (µg/L)	FBC (µg/L)	PBC (µg/L)	AgI (µg/L)	AgL (µg/L)
Acenaphthene	83-32-9	420	2670	84,000	84,000	NNS	NNS
Acenaphthylene	208-96-8	NNS	NNS	NNS	NNS	NNS	NNS
Acrolein	107-02-8	3.5	25	700	700	NNS	NNS
Acrylonitrile	107-13-1	0.07	0.7	3	56,000	NNS	NNS
Alachlor	15972-60-8	2	NNS	14,000	14,000	NNS	NNS
Aldrin	309-00-2	0.002	0.0001	0.08	42	p	p
Ammonia	7664-41-7	NNS	NNS	NNS	NNS	NNS	NNS
Anthracene	120-12-7	2100	1000	420,000	420,000	NNS	NNS
Antimony (as Sb)	7440-36-0	6 T	4,300 T	560 T	560 T	NNS	NNS
Arsenic (as As)	7440-38-2	50 T	1450 T	50 T	420 T	2000 T	200 T
Asbestos	1332-21-4	a	NNS	NNS	NNS	NNS	NNS
Atrazine	1912-24-9	3	NNS	49,000	49,000	NNS	NNS
Barium (as Ba)	7440-39-3	2000 T	NNS	98,000 T	98,000 T	NNS	NNS
Benzene	71-43-2	5	140	93	93	NNS	NNS
Benzidine	92-87-5	0.0002	0.001	0.01	4,200	0.01	0.01
Benz (a) anthracene	56-55-3	NNS 0.048	NNS 0.49	NNS 1.9	NNS 1.9	NNS	NNS
Benzo (a) pyrene	50-32-8	0.2	0.05	0.2	0.2	NNS	NNS
Benzo (ghi) perylene	191-24-2	NNS	NNS	NNS	NNS	NNS	NNS
Benzo (k) fluoranthene	207-08-9	NNS 0.048	NNS 0.49	NNS 1.9	NNS 1.9	NNS	NNS
3,4-Benzofluoranthene	205-99-2	NNS 0.048	NNS 0.49	NNS 1.9	NNS 1.9	NNS	NNS
Beryllium (as Be)	7440-41-7	4 T	1,130 T	2,800 T	2,800 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	1.3	NNS	NNS
Bis (2-chloroisopropyl) ether	108-60-1	280	174,400	56,000	56,000	NNS	NNS
Boron (as B)	7440-42-8	630 T	NNS	126,000 T	126,000 T	1000 T	NNS
Bromodichloromethane	75-27-4	TTHM	46	TTHM	28,000	NNS	NNS
p-Bromodiphenyl ether	101-55-3	NNS	NNS	NNS	NNS	NNS	NNS
Bromoform	75-25-2	TTHM	360	180	28,000	NNS	NNS
Bromomethane	74-83-9	9.8	4020	2000	2000	NNS	NNS
Butyl benzyl phthalate	85-68-7	1400	5200	280,000	280,000	NNS	NNS
Cadmium (as Cd)	7440-43-9	5 T	84 T	700 T	700 T	50 T	50 T
Carbofuran	1563-66-2	40	NNS	7,000	7,000	NNS	NNS
Carbon tetrachloride	56-23-5	5	4	11	980	NNS	NNS
Chlordane	57-74-9	2	0.002	4	700	NNS	NNS
Chlorine (total residual)	7782-50-5	700	NNS	140,000	140,000	NNS	NNS
Chlorobenzene	108-90-7	100	20,900	28,000	28,000	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	470	230	14,000	NNS	NNS
Chloromethane	74-87-3	NNS	NNS	NNS	NNS	NNS	NNS

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Appendix A: Numeric Water Quality Criteria							
Table 1. Human Health and Agricultural Designated Uses							
PARAMETER	CAS* NUMBER	DWS (µg/L)	FC (µg/L)	FBC (µg/L)	PBC (µg/L)	AgI (µg/L)	AgL (µg/L)
Chloronaphthalene beta	91-58-7	560	4,300	112,000	112,000	NNS	NNS
2-Chlorophenol	95-57-8	35	400	7,000	7,000	NNS	NNS
4-Chlorophenyl phenyl ether	7005-72-3	NNS	NNS	NNS	NNS	NNS	NNS
Chromium (as Cr III)	16065-83-1	10,500 T	1,010,000 T	2,100,000 T	2,100,000 T	NNS	NNS
Chromium (as Cr VI)	18540-29-9	21 T	2,000T	4,200 T	4,200 T	NNS	NNS
Chromium (Total as Cr)	7440-47-3	100 T	NNS	100 T	100 T	1000 T	1000 T
Chrysene	218-01-9	<u>NNS 0.479</u>	<u>NNS 4.92</u>	<u>NNS 19.2</u>	<u>NNS 19</u>	NNS	NNS
Copper (as Cu)	7440-50-8	1,300 T	NNS	1,300 T	1,300 T	5000 T	500 T
Cyanide	57-12-5	200 T	215,000 T	28,000 T	28,000 T	NNS	200 T
Dalapon	75-99-0	200	161,500	42,000	42,000	NNS	NNS
Dibenz (ah) anthracene	53-70-3	<u>NNS 0.048</u>	<u>NNS 0.20</u>	<u>NNS 1.9</u>	<u>NNS 1.9</u>	NNS	NNS
Dibromochloromethane	124-48-1	TTHM	34	TTHM	28,000	NNS	NNS
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	0.2	NNS	2,800	2,800	NNS	NNS
1,2-Dibromoethane (EDB)	106-93-4	0.05	NNS	0.05	0.05	NNS	NNS
Dibutyl phthalate	84-74-2	700	12,100	140,000	140,000	NNS	NNS
1,2-Dichlorobenzene	95-50-1	600	2800	126,000	126,000	NNS	NNS
1,3-Dichlorobenzene	541-73-1	NNS	NNS	NNS	NNS	NNS	NNS
1,4-Dichlorobenzene	106-46-7	75	77,500	560,000	560,000	NNS	NNS
3,3'-Dichlorobenzidine	91-94-1	0.08	0.08	3.1	3.1	NNS	NNS
p,p'-Dichlorodiphenyldichloroethane (DDD)	72-54-8	0.15	0.001	5.8	5.8	0.001	0.001
p,p'-Dichlorodiphenyldichloroethylene (DDE)	72-55-9	0.1	0.001	4.1	4.1	0.001	0.001
p,p'-Dichlorodiphenyltrichloroethane (DDT)	50-29-3	0.1	0.0006	4.1	700	0.001	0.001
1,1-Dichloroethane	75-34-3	NNS	NNS	NNS	NNS	NNS	NNS
1,2-Dichloroethane	107-06-2	5	100	15	280,000	NNS	NNS
1,1-Dichloroethylene	75-35-4	7	320	230	12,600	NNS	NNS
1,2-cis-Dichloroethylene	156-59-2	70	NNS	70	70	NNS	NNS
1,2-trans-Dichloroethylene	156-60-5	100	136,000	28,000	28,000	NNS	NNS
Dichloromethane	75-09-2	5	1600	190	84,000	NNS	NNS
2,4-Dichlorophenol	120-83-2	21	800	4,200	4,200	NNS	NNS
2,4-Dichlorophenoxyacetic acid (2,4-D)	94-75-7	70	NNS	14,000	14,000	NNS	NNS
1,2-Dichloropropane	78-87-5	5	236,000	126,000	126,000	NNS	NNS
1,3-Dichloropropene	542-75-6	2	1,700	420	420	NNS	NNS
Dieldrin	60-57-1	0.002	0.0001	0.09	70	p	p
Diethyl phthalate	84-66-2	5600	118,000	1,120,000	1,120,000	NNS	NNS

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Appendix A: Numeric Water Quality Criteria							
Table 1. Human Health and Agricultural Designated Uses							
PARAMETER	CAS* NUMBER	DWS (µg/L)	FC (µg/L)	FBC (µg/L)	PBC (µg/L)	AgI (µg/L)	AgL (µg/L)
Di (2-ethylhexyl) adipate	103-23-1	400	NNS	1,200	840,000	NNS	NNS
Di (2-ethylhexyl) phthalate	117-81-7	6	7.4	100	28,000	NNS	NNS
2,4-Dimethylphenol	105-67-9	140	2300	28,000	28,000	NNS	NNS
Dimethyl phthalate	131-11-3	NNS	NNS	NNS	NNS	NNS	NNS
4,6-Dinitro-o-cresol	534-52-1	28	7,800	5,600	5,600	NNS	NNS
2,4-Dinitrophenol	51-28-5	14	14,400	2,800	2,800	NNS	NNS
2,4-Dinitrotoluene	121-14-2	14	5,700	2,800	2,800	NNS	NNS
2,6-Dinitrotoluene	606-20-2	0.05	NNS	2	5,600	NNS	NNS
Di-n-octyl phthalate	117-84-0	2800	NNS	560,000	560,000	NNS	NNS
Dinoseb	88-85-7	7	NNS	1,400	1,400	NNS	NNS
1,2-Diphenylhydrazine	122-66-7	0.04	0.5	1.8	1.8	NNS	NNS
Diquat	85-00-7	20	NNS	3,080	3,080	NNS	NNS
Endosulfan sulfate	1031-07-8	NNS	NNS	NNS	NNS	NNS	NNS
Endosulfan (Total)	115-29-7	42	240	8,400	8,400	NNS	NNS
Endothall	145-73-3	100	NNS	28,000	28,000	NNS	NNS
Endrin	72-20-8	2	0.8	420	420	0.004	0.004
Endrin aldehyde	7421-93-3	NNS	NNS	NNS	NNS	NNS	NNS
Ethylbenzene	100-41-4	700	28,700	140,000	140,000	NNS	NNS
Ethyl chloride	75-00-3	NNS	NNS	NNS	NNS	NNS	NNS
Fluoranthene	206-44-0	280	380	56,000	56,000	NNS	NNS
Fluorene	86-73-7	280	14,400	56,000	56,000	NNS	NNS
Fluoride	7782-41-4	4000	NNS	84,000	84,000	NNS	NNS
Glyphosate	1071-83-6	700	1,077,000	140,000	140,000	NNS	NNS
Heptachlor	76-44-8	0.4	0.0002	0.4	700	NNS	NNS
Heptachlor epoxide	1024-57-3	0.2	0.0001	0.2	18	NNS	NNS
Hexachlorobenzene	118-74-1	1	0.001	1	1,120	NNS	NNS
Hexachlorobutadiene	87-68-3	0.45	50	18	280	NNS	NNS
Hexachlorocyclohexane alpha	319-84-6	0.006	0.01	0.22	11,200	NNS	NNS
Hexachlorocyclohexane beta	319-85-7	0.02	0.02	0.78	840	NNS	NNS
Hexachlorocyclohexane delta	319-86-8	NNS	NNS	NNS	NNS	NNS	NNS
Hexachlorocyclohexane gamma (lindane)	58-89-9	0.2	25	420	420	NNS	NNS
Hexachlorocyclopentadiene	77-47-4	50	580	9,800	9,800	NNS	NNS
Hexachloroethane	67-72-1	2.5	9	100	1,400	NNS	NNS
Indeno (1,2,3-cd) pyrene	193-39-5	NNS 0.048	NNS 0.49	NNS 1.9	NNS 1.9	NNS	NNS
Isophorone	78-59-1	37	2,600	1,500	280,000	NNS	NNS
Lead (as Pb)	7439-97-1	15 T	NNS	15 T	15 T	10000 T	100 T
Manganese (as Mn)	7439-96-5	980 T	NNS	196,000 T	196,000 T	10000	NNS
Mercury (as Hg)	7439-97-6	2 T	0.6 T	420 T	420 T	NNS	10 T
Methoxychlor	72-43-5	40	NNS	7,000	7,000	NNS	NNS
Naphthalene	91-20-3	140	20,500	28,000	28,000	NNS	NNS
Nickel (as Ni)	7440-02-0	140 T	4,600 T	28,000 T	28,000 T	NNS	NNS
Nitrate (as N)	14797-55-8	10000	NNS	2,240,000	2,240,000	NNS	NNS
Nitrite (as N)	14797-65-0	1000	NNS	140,000	140,000	NNS	NNS

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Appendix A: Numeric Water Quality Criteria							
Table 1. Human Health and Agricultural Designated Uses							
PARAMETER	CAS* NUMBER	DWS (µg/L)	FC (µg/L)	FBC (µg/L)	PBC (µg/L)	AgI (µg/L)	AgL (µg/L)
Nitrate/Nitrite (as Total N)		10000	NNS	NNS	NNS	NNS	NNS
Nitrobenzene	98-95-3	3.5	1,900	700	700	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	0.001	8	0.03	0.03	NNS	NNS
N-nitrosodiphenylamine	86-30-6	7.1	16	290	290	NNS	NNS
N-nitrosodi-n-propylamine	621-64-7	0.005	1.4	0.2	133,000	NNS	NNS
Oxamyl	23135-22-0	200	NNS	35,000	35,000	NNS	NNS
Pentachlorophenol	87-86-5	1	1000	12	42,000	NNS	NNS
Phenanthrene	85-01-8	NNS	NNS	NNS	NNS	NNS	NNS
Phenol	108-95-2	4200	1,000	840,000	840,000	NNS	NNS
Picloram	1918-02-1	500	24,300	98,000	98,000	NNS	NNS
Polychlorinated biphenyls (PCBs)	1336-36-3	0.5	0.007	28	28	0.001	0.001
Pyrene	129-00-0	210	10,800	42,000	42,000	NNS	NNS
Selenium (as Se)	7782-49-2	50 T	9000 T	7,000 T	7,000 T	20 T	50 T
Silver (as Ag)	7440-22-4	35 T	107,700 T	7,000 T	7,000 T	NNS	NNS
Simazine	112-34-9	4	NNS	7,000	7,000	NNS	NNS
Styrene	100-42-5	100	NNS	280,000	280,000	NNS	NNS
Sulfides		NNS	NNS	NNS	NNS	NNS	NNS
2,3,7,8-Tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD)	1746-01-6	0.00003 0.0000003	0.002 0.00000004	1.4 0.00009	1.4	NNS	NNS
1,1,2,2-Tetrachloroethane	79-34-5	0.17	11	7	56,000	NNS	NNS
Tetrachloroethylene	127-18-4	5	3,500	14,000	14,000	NNS	NNS
Thallium (as Tl)	7440-28-0	2 T	7.2 T	112 T	112 T	NNS	NNS
Toluene	108-88-3	1000	201,000	280,000	280,000	NNS	NNS
Toxaphene	8001-35-2	3	0.001	1.3	1400	0.005	0.005
1,2,4-Trichlorobenzene	120-82-1	70	950	14,000	14,000	NNS	NNS
1,1,1-Trichloroethane	71-55-6	200	NNS	200	200	1000	NNS
1,1,2-Trichloroethane	79-00-5	5	42	25	5,600	NNS	NNS
Trichloroethylene	79-01-6	5	203,200	280,000	280,000	NNS	NNS
2,4,6-Trichlorophenol	88-06-2	3.2	6.5	130	130	NNS	NNS
2-(2,4,5-Trichlorophenoxy) propionic acid (2,4,5-TP)	93-72-1	50	NNS	11,200	11,200	NNS	NNS
Trihalomethanes, Total		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	13	2	4,200	NNS	NNS
Xylenes (Total)	1330-20-7	10000	NNS	2,800,000	2,800,000	NNS	NNS
Zinc (as Zn)	7440-66-6	2100 T	69,000 T	420,000 T	420,000 T	10000 T	25000 T

*Chemical Abstract System (CAS) number is a unique identification number given to each chemical.

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

No change to Table

Footnotes

- 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: $(e^{(1.128 [\ln(\text{Hardness})] - 3.6867)}) * (1.136672 - \ln(\text{hardness})) * (0.041838)$
 - A&Wc chronic standard: $(e^{(0.7852 [\ln(\text{Hardness})] - 2.715)}) * (1.101672 - \ln(\text{hardness})) * (0.041838)$
 - A&Ww acute standard: $(e^{(1.128 [\ln(\text{Hardness})] - 3.6867)}) * (1.136672 - \ln(\text{hardness})) * (0.041838)$
 - A&Ww chronic standard: $(e^{(0.7852 [\ln(\text{Hardness})] - 2.715)}) * (1.101672 - \ln(\text{hardness})) * (0.041838)$
 - A&Wedw acute standard: $(e^{(1.128 [\ln(\text{Hardness})] - 3.6867)}) * (1.136672 - \ln(\text{hardness})) * (0.041838)$
 - A&Wedw chronic standard: $(e^{(0.7852 [\ln(\text{Hardness})] - 2.715)}) * (1.101672 - \ln(\text{hardness})) * (0.041838)$
 - A&We acute standard: $(e^{(1.128 [\ln(\text{Hardness})] - 0.9691)}) * (1.136672 - \ln(\text{hardness})) * (0.041838)$(See Footnote k)
- d. Chromium III
 - A&Wc acute standard: $(e^{(0.8190 [\ln(\text{Hardness})] + 3.7256)}) * (0.316)$
 - A&Wc chronic standard: $(e^{(0.8190 [\ln(\text{Hardness})] + 0.6848)}) * (0.86)$
 - A&Ww acute standard: $(e^{(0.8190 [\ln(\text{Hardness})] + 3.7256)}) * (0.316)$
 - A&Ww chronic standard: $(e^{(0.8190 [\ln(\text{Hardness})] + 0.6848)}) * (0.86)$
 - A&Wedw acute standard: $(e^{(0.8190 [\ln(\text{Hardness})] + 3.7256)}) * (0.316)$
 - A&Wedw chronic standard: $(e^{(0.8190 [\ln(\text{Hardness})] + 0.6848)}) * (0.86)$
 - A&We acute standard: $(e^{(0.8190 [\ln(\text{Hardness})] + 4.9361)}) * (0.316)$(See Footnote k)
- e. Copper
 - A&Wc acute standard: $(e^{(0.9422 [\ln(\text{Hardness})] - 1.7)}) * (0.96)$
 - A&Wc chronic standard: $(e^{(0.8545 [\ln(\text{Hardness})] - 1.702)}) * (0.96)$
 - A&Ww acute standard: $(e^{(0.9422 [\ln(\text{Hardness})] - 1.7)}) * (0.96)$
 - A&Ww chronic standard: $(e^{(0.8545 [\ln(\text{Hardness})] - 1.702)}) * (0.96)$
 - A&Wedw acute standard: $(e^{(0.9422 [\ln(\text{Hardness})] - 1.7)}) * (0.96)$
 - A&Wedw chronic standard: $(e^{(0.8545 [\ln(\text{Hardness})] - 1.702)}) * (0.96)$
 - A&We acute standard: $(e^{(0.9422 [\ln(\text{Hardness})] - 1.1514)}) * (0.96)$(See Footnote k)
- f. Lead
 - A&Wc acute standard: $(e^{(1.2730 [\ln(\text{Hardness})] - 1.460)}) * (1.46203 - \ln(\text{hardness})) * (0.145712)$
 - A&Wc chronic standard: $(e^{(1.2730 [\ln(\text{Hardness})] - 4.705)}) * (1.46203 - \ln(\text{hardness})) * (0.145712)$
 - A&Ww acute standard: $(e^{(1.2730 [\ln(\text{Hardness})] - 1.460)}) * (1.46203 - \ln(\text{hardness})) * (0.145712)$
 - A&Ww chronic standard: $(e^{(1.2730 [\ln(\text{Hardness})] - 4.705)}) * (1.46203 - \ln(\text{hardness})) * (0.145712)$
 - A&Wedw acute standard: $(e^{(1.2730 [\ln(\text{Hardness})] - 1.460)}) * (1.46203 - \ln(\text{hardness})) * (0.145712)$
 - A&Wedw chronic standard: $(e^{(1.2730 [\ln(\text{Hardness})] - 4.705)}) * (1.46203 - \ln(\text{hardness})) * (0.145712)$
 - A&We acute standard: $(e^{(1.2730 [\ln(\text{Hardness})] - 0.7131)}) * (1.46203 - \ln(\text{hardness})) * (0.145712)$(See Footnote k)
- g. Nickel
 - A&Wc acute standard: $(e^{(0.8460 [\ln(\text{Hardness})] + 2.255)}) * (0.998)$
 - A&Wc chronic standard: $(e^{(0.8460 [\ln(\text{Hardness})] + 0.0584)}) * (0.997)$
 - A&Ww acute standard: $(e^{(0.8460 [\ln(\text{Hardness})] + 2.255)}) * (0.998)$
 - A&Ww chronic standard: $(e^{(0.8460 [\ln(\text{Hardness})] + 0.0584)}) * (0.997)$
 - A&Wedw acute standard: $(e^{(0.8460 [\ln(\text{Hardness})] + 2.255)}) * (0.998)$
 - A&Wedw chronic standard: $(e^{(0.8460 [\ln(\text{Hardness})] + 0.0584)}) * (0.997)$
 - A&We acute standard: $(e^{(0.8460 [\ln(\text{Hardness})] + 4.4389)}) * (0.998)$(See Footnote k)
- h. Pentachlorophenol
 - No change
- i. Silver
 - A&Wc acute standard: $(e^{(1.72 [\ln(\text{Hardness})] - 6.52)}) * (0.85)$
 - A&Ww acute standard: $(e^{(1.72 [\ln(\text{Hardness})] - 6.52)}) * (0.85)$
 - A&Wedw acute standard: $(e^{(1.72 [\ln(\text{Hardness})] - 6.52)}) * (0.85)$
 - A&We acute standard: $(e^{(1.72 [\ln(\text{Hardness})] - 6.52)}) * (0.85)$

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(See Footnote k)

j. Zinc

A&Wc acute standard: $(e^{(0.8473 [\ln(\text{Hardness})] + 0.884)})^{*}(0.978)$

A&Wc chronic standard: $(e^{(0.8473 [\ln(\text{Hardness})] + 0.884)})^{*}(\underline{0.986} \ 0.978)$

A&Ww acute standard: $(e^{(0.8473 [\ln(\text{Hardness})] + \underline{0.532} \ 0.884)})^{*}(\underline{0.978} \ 0.978)$

A&Ww chronic standard: $(e^{(0.8473 [\ln(\text{Hardness})] + \underline{0.433} \ 0.884)})^{*}(\underline{0.986} \ 0.978)$

A&Wedw acute standard: $(e^{(0.8473 [\ln(\text{Hardness})] + \underline{0.532} \ 0.884)})^{*}(\underline{0.978} \ 0.978)$

A&Wedw chronic standard: $(e^{(0.8473 [\ln(\text{Hardness})] + \underline{0.433} \ 0.884)})^{*}(\underline{0.986} \ 0.978)$

A&We acute standard: $(e^{(0.8473 [\ln(\text{Hardness})] + 3.1342)})^{*}(0.978)$

(See Footnote k)

k. No change

l. No change

m. No change

n. No change

o. No change

p. The standard to protect this use is 0.003 µg/L aldrin/dieldrin.

µg/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.

**Table 3. Acute Water Quality Standards for dissolved Cadmium
Aquatic and Wildlife ephemeral**

No change to Table

**Table 4. Acute Water Quality Standards for dissolved Cadmium
Aquatic and Wildlife coldwater, warmwater and edw**

No change to Table

**Table 5. Chronic Water Quality Standards for dissolved Cadmium
Aquatic and Wildlife coldwater, warmwater and edw**

No change to Table

**Table 6. Acute Water Quality Standards for dissolved Chromium III
Aquatic and Wildlife ephemeral**

No change to Table

**Table 7. Acute Water Quality Standards for dissolved Chromium III
Aquatic and Wildlife coldwater, warmwater and edw**

No change to Table

**Table 8. Chronic Water Quality Standards for dissolved Chromium III
Aquatic and Wildlife Coldwater, warmwater and edw**

No change to Table

**Table 9. Chronic Water Quality Standards for dissolved Copper
Aquatic and Wildlife coldwater, warmwater and edw**

No change to Table

**Table 10. Acute Water Quality Standards for dissolved Copper
Aquatic and Wildlife ephemeral**

No change to Table

**Table 11. Acute Water Quality Standards for dissolved Copper
Aquatic and Wildlife coldwater, warmwater and edw**

No change to Table

**Table 12. Acute Water Quality Standards for dissolved Nickel
Aquatic and Wildlife ephemeral**

No change to Table

**Table 13. Acute Water Quality Standards for dissolved Lead
Aquatic and Wildlife ephemeral**

No change to Table

**Table 14. Acute Water Quality Standards for dissolved Lead
Aquatic and Wildlife Coldwater, warmwater and edw**

No change to Table

**Table 15. Chronic Water Quality Standards for dissolved Lead
Aquatic and Wildlife coldwater, warmwater and edw**

No change to Table

**Table 16. Acute Water Quality Standards for dissolved Nickel
Aquatic and Wildlife coldwater, warmwater and edw**

No change to Table

**Table 17. Chronic Water Quality Standards for dissolved Nickel
Aquatic and Wildlife coldwater, warmwater and edw**

No change to Table

**Table 18. Water Quality Standards for dissolved Silver
Aquatic and Wildlife coldwater, warmwater, edw and ephemeral**

No change to Table

**Table 19. Acute Water Quality Standards for dissolved Zinc
Aquatic and Wildlife ephemeral**

No change to Table

**Table 20. Acute and Chronic Water Quality Standards for dissolved Zinc
Aquatic and Wildlife coldwater, warmwater and edw**

No change to Table

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Chronic Water Quality Standards for dissolved Zinc "Aquatic and Wildlife coldwater, warmwater, and edw"																			
Hard:	Std:	Hard:	Std:	Hard:	Std:	Hard:	Std:	Hard:	Std:	Hard:	Std:	Hard:	Std:	Hard:	Std:	Hard:	Std:	Hard:	Std:
mg/L	ug/L	mg/L	ug/L	mg/L	ug/L	mg/L	ug/L	mg/L	ug/L	mg/L	ug/L	mg/L	ug/L	mg/L	ug/L	mg/L	ug/L	mg/L	ug/L
1	NA	41	55.50	81	98.82	121	138.85	161	176.86	201	213.45	241	248.93	281	283.52	321	317.36	361	350.57
2	NA	42	56.65	82	99.85	122	139.82	162	177.79	202	214.35	242	249.80	282	284.37	322	318.20	362	351.39
3	NA	43	57.79	83	100.89	123	140.79	163	178.72	203	215.25	243	250.68	283	285.23	323	319.04	363	352.21
4	NA	44	58.92	84	101.91	124	141.76	164	179.65	204	216.14	244	251.55	284	286.08	324	319.87	364	353.03
5	NA	45	60.06	85	102.94	125	142.73	165	180.58	205	217.04	245	252.43	285	286.93	325	320.71	365	353.85
6	NA	46	61.19	86	103.97	126	143.69	166	181.51	206	217.94	246	253.30	286	287.79	326	321.55	366	354.68
7	NA	47	62.31	87	104.99	127	144.66	167	182.43	207	218.83	247	254.17	287	288.64	327	322.38	367	355.50
8	NA	48	63.43	88	106.01	128	145.62	168	183.36	208	219.73	248	255.04	288	289.49	328	323.22	368	356.32
9	NA	49	64.55	89	107.03	129	146.59	169	184.28	209	220.62	249	255.91	289	290.34	329	324.05	369	357.14
10	NA	50	65.66	90	108.05	130	147.55	170	185.20	210	221.52	250	256.78	290	291.19	330	324.89	370	357.96
11	NA	51	66.78	91	109.07	131	148.51	171	186.13	211	222.41	251	257.65	291	292.04	331	325.72	371	358.78
12	NA	52	67.88	92	110.08	132	149.47	172	187.05	212	223.30	252	258.52	292	292.90	332	326.55	372	359.60
13	NA	53	68.99	93	111.09	133	150.43	173	187.97	213	224.20	253	259.39	293	293.74	333	327.39	373	360.41
14	NA	54	70.09	94	112.10	134	151.39	174	188.89	214	225.09	254	260.26	294	294.59	334	328.22	374	361.23
15	NA	55	71.19	95	113.11	135	152.34	175	189.81	215	225.98	255	261.13	295	295.44	335	329.05	375	362.05
16	NA	56	72.28	96	114.12	136	153.30	176	190.73	216	226.87	256	262.00	296	296.29	336	329.88	376	362.87
17	NA	57	73.37	97	115.13	137	154.25	177	191.65	217	227.76	257	262.86	297	297.14	337	330.72	377	363.69
18	NA	58	74.46	98	116.13	138	155.21	178	192.56	218	228.65	258	263.73	298	297.99	338	331.55	378	364.50
19	NA	59	75.55	99	117.14	139	156.16	179	193.48	219	229.54	259	264.60	299	298.83	339	332.38	379	365.32
20	NA	60	76.63	100	118.14	140	157.11	180	194.40	220	230.42	260	265.46	300	299.68	340	333.21	380	366.14
21	NA	61	77.71	101	119.14	141	158.06	181	195.31	221	231.31	261	266.33	301	300.53	341	334.04	381	366.95
22	NA	62	78.79	102	120.14	142	159.01	182	196.22	222	232.20	262	267.19	302	301.37	342	334.87	382	367.77
23	NA	63	79.87	103	121.14	143	159.96	183	197.14	223	233.08	263	268.05	303	302.22	343	335.70	383	368.58
24	NA	64	80.94	104	122.13	144	160.91	184	198.05	224	233.97	264	268.92	304	303.06	344	336.53	384	369.40
25	36.50	65	82.01	105	123.13	145	161.85	185	198.96	225	234.85	265	269.78	305	303.91	345	337.36	385	370.22
26	37.73	66	83.08	106	124.12	146	162.80	186	199.87	226	235.74	266	270.64	306	304.75	346	338.18	386	371.03
27	38.96	67	84.14	107	125.11	147	163.74	187	200.78	227	236.62	267	271.50	307	305.59	347	339.01	387	371.84
28	40.18	68	85.21	108	126.10	148	164.69	188	201.69	228	237.50	268	272.37	308	306.44	348	339.84	388	372.66
29	41.39	69	86.27	109	127.09	149	165.63	189	202.60	229	238.39	269	273.23	309	307.28	349	340.67	389	373.47
30	42.59	70	87.33	110	128.08	150	166.57	190	203.51	230	239.27	270	274.09	310	308.12	350	341.49	390	374.28
31	43.79	71	88.38	111	129.06	151	167.51	191	204.42	231	240.15	271	274.95	311	308.96	351	342.32	391	375.10
32	44.99	72	89.44	112	130.05	152	168.45	192	205.32	232	241.03	272	275.81	312	309.81	352	343.15	392	375.91
33	46.18	73	90.49	113	131.03	153	169.39	193	206.23	233	241.91	273	276.66	313	310.65	353	343.97	393	376.72
34	47.36	74	91.54	114	132.01	154	170.33	194	207.13	234	242.79	274	277.52	314	311.49	354	344.80	394	377.53
35	48.54	75	92.58	115	132.99	155	171.26	195	208.04	235	243.67	275	278.38	315	312.33	355	345.62	395	378.35
36	49.71	76	93.63	116	133.97	156	172.20	196	208.94	236	244.55	276	279.24	316	313.17	356	346.45	396	379.16
37	50.88	77	94.67	117	134.95	157	173.13	197	209.84	237	245.42	277	280.10	317	314.01	357	347.27	397	379.97
38	52.04	78	95.71	118	135.92	158	174.07	198	210.75	238	246.30	278	280.95	318	314.85	358	348.10	398	380.78
39	53.20	79	96.75	119	136.90	159	175.00	199	211.65	239	247.18	279	281.81	319	315.69	359	348.92	399	381.59
40	54.35	80	97.79	120	137.87	160	175.93	200	212.55	240	248.05	280	282.66	320	316.52	360	349.74	400	382.40

Table 21. Water Quality Standards for Pentachlorophenol Acute Aquatic and Wildlife coldwater, warmwater and edw

No change to Table

Table 22. Water Quality Standards for Pentachlorophenol Chronic Aquatic and Wildlife coldwater, warmwater and edw

No change to Table

Table 23. Water Quality Standards for Pentachlorophenol Acute Aquatic and Wildlife ephemeral

No change to Table

Table 24. Acute Criteria for Total Ammonia (in mg N / L)

No change to Table

Table 25. Chronic Criteria for Total Ammonia (in mg N / L) for A&Wc, and A&Ww Designated Uses

No change to Table