CHAPTER 33-16-02.1
STANDARDS OF QUALITY FOR WATERS OF THE STATE

Section 33-16-02.1-09 is amended as follows:

33-16-02.1-09. Surface water classifications, mixing zones, and numeric standards.

1. **Classifications.** Procedures for the classifications of streams and lakes of the state shall follow this subsection. Classifications of streams and lakes are listed in appendix I and appendix II, respectively.

   a. Class I streams. The quality of the waters in this class shall be suitable for the propagation and/or protection of resident fish species and other aquatic biota and for swimming, boating, and other water recreation. The quality of the waters shall be for irrigation, stock watering, and wildlife without injurious effects. After treatment consisting of coagulation, settling, filtration, and chlorination, or equivalent treatment processes, the water quality shall meet the bacteriological, physical, and chemical requirements of the department for municipal or domestic use.

   b. Class IA streams. The quality of the waters in this class shall be the same as the quality of Class I streams, except that ~~treatment for municipal use may also require softening to meet the~~ where natural conditions exceed Class I criteria for municipal and domestic use, the availability of softening or other treatment methods may be considered in determining whether ambient water quality meets the requirements of the department.

   The Sheyenne River from its headwaters to 0.1 mile downstream from Baldhill Dam is not classified for municipal or domestic use.

   c. Class II streams. The quality of the waters in this class shall be the same as the quality of Class I streams, except that additional treatment may be required to meet the drinking water requirements of the department. Streams in this classification may be intermittent in nature which would make these waters of limited value for beneficial uses such as municipal water, fish life, irrigation, bathing or swimming.

d. Class III streams. The quality of the waters in this class shall be suitable for agricultural and industrial uses. Streams in this class generally have low average flows with prolonged periods of no flow. During periods of no flow they are of limited value for recreation, and fish and aquatic biota. The quality of these waters must be maintained to protect secondary contact recreation uses (e.g., wading), fish and aquatic biota, and wildlife uses.

e. Wetlands. These water bodies, including isolated ponds, sloughs, and marshes, are to be considered waters of the state and will be protected under section 33-16-02-08.

f. Lakes and Reservoirs. The type of fishery a lake or reservoir may be capable of supporting is based on the lake or reservoirs' geophysical characteristics. The capability of a lake or reservoir to support a fishery may be affected by seasonal or climatic variability and/or other natural occurrences which may alter the physical and chemical characteristics of the lake or reservoir.

Class	Characteristics
1	Cold water fishery. Waters capable of supporting growth of cold water fish species (e.g., salmonoids) and associated aquatic biota.
2	Cool water fishery. Waters capable of supporting natural reproduction and growth of cool water fishes (e.g., northern pike and walleye) and associated aquatic biota. These waters are also capable of supporting the marginal growth and survival of cold water species and associated biota.
3	Warm water fishery. Waters capable of supporting natural reproduction and growth of warm water fishes (e.g., largemouth bass and bluegill) and associated aquatic biota. Some cool water species may also be present.
4	Marginal fishery. Waters capable of supporting a fishery on a short-term or seasonal basis (generally a "put and take" fishery.)
5	Not capable of supporting a fishery due to high salinity.

2. **Mixing zones.** North Dakota mixing zone and dilution policy is contained in appendix III.

3. **Numeric standards.**

a. Class I streams. Unless stated otherwise, maximum limits for Class I streams are listed in table 1 and table 2.

b. Class IA streams. The physical and chemical criteria shall be those for Class I, with the following exceptions:

Substance or Characteristic	Maximum Limit
Chlorides (Total)	175 mg/L (30 day arithmetic average)
Sodium	60% of total cations as mEq/L
Sulfate (Total)	450 mg/L (30 days arithmetic average)

Site-Specific Sulfate (total) Standard

The following site-specific standard applies to the Sheyenne River from its headwaters to 0.1 mile downstream from Baldhill Dam.

Sulfate (Total)	750 mg/L (30 day arithmetic average)

131.10(b) requirement

The water quality standards for the Red River and the portions of the Sheyenne River located downstream from the segment of the Sheyenne River to which the Site-Specific Sulfate Standard applies must continue to be maintained. The Sheyenne River from 0.1 mile downstream from Baldhill Dam to the confluence with the Red River shall not exceed 450 mg/L sulfate (total) 30 day arithmetic average and the Red River shall not exceed 250 mg/L sulfate (total) 30 day arithmetic average after mixing, downstream from the confluence of the Sheyenne River. Regulated pollution control efforts must be developed to achieve compliance with these water quality standards.

c. Class II streams. The physical and chemical criteria shall be those for class IA, with the following exceptions:

Substance or Characteristic	Maximum Limit
Chlorides (Total)	250 mg/L (30 day arithmetic average)
pH	6.0-9.0 (up to 10% of representative samples collected during any 3-year period may exceed this range provided that lethal conditions are avoided)

d. Class III streams. The physical and chemical criteria shall be those for Class II, with the following exceptions:

Substance or Characteristic	Maximum Limit
Sulfate (Total)	750 mg/L (30 day arithmetic average)

e. Lakes and reservoirs.

(1) The beneficial uses and parameter limitations designated for Class I streams shall apply to all classified lakes or reservoirs, except that reservoirs located on Class 1A, Class II or Class III streams shall have the parameter limitations for that class stream. However, specific background studies and information may require that the department revise a standard for any specific parameter.

(2) In addition, these nutrient parameters are guidelines for use as goals in any lake improvement or maintenance program:

Parameter	Limit
NO3 as N	.25 mg/L
PO4 as P	.02 mg/L

(3) The temperature standard for Class I streams does not apply to Nelson Lake in Oliver County. The temperature of any discharge to Nelson Lake shall not have an adverse effect on fish, aquatic biota, recreation, and wildlife.

(4) A numeric temperature standard of not greater than fifty-nine (59) degrees Fahrenheit (fifteen [15] degrees Celsius) shall be maintained in the hypolimnion of Class 1 lakes and reservoirs during periods of thermal stratification.

(5) The numeric dissolved oxygen standard of 5 mg/L as a daily minimum does not apply to the hypolimnion of Class 3 and 4 lakes and reservoirs during periods of thermal stratification.

(6) Lake Sakakawea must maintain a minimum volume of water of 500,000-acre feet (61,674 hectare meters) that has a temperature of fifty-nine (59) degrees Fahrenheit (fifteen [15] degrees Celsius) or less and a dissolved oxygen concentration of not less than 5 mg/L.

History:
General Authority: NDCC 61-28-04
Law Implemented: NDCC 23-33, 61-28

Table 1 is amended as follows:

TABLE 1

MAXIMUM LIMITS FOR SUBSTANCES IN
OR CHARACTERISTICS OF CLASS I STREAMS

CAS No.	Substance or Characteristic	Maximum Limit
		Acute Standard
7429905	Aluminum	750 ug/L
		Chronic Standard
		87 ug/L Where the pH is equal to or greater than 7.0, and the hardness is equal to or greater than 50 mg/L as CaCO3 in the receiving water after mixing, the 87 ug/L chronic total recoverable aluminum criterion will not apply, and aluminum will be regulated based on compliance with the 750 ug/L acute total recoverable aluminum criterion.
		Acute Standard
7446-41-7	Ammonia (Total as N)	The one-hour average concentration of total ammonia (expressed as N in mg/L) does not exceed, more often than once every three years on the average, the numerical value given by the following formula: $\frac{0.411}{1 + 10^{7.204-pH}} + \frac{58.4}{1 + 10^{pH-7.204}}$, where salmonids are absent; or $\frac{0.275}{1 + 10^{7.204-pH}} + \frac{39.0}{1 + 10^{pH-7.204}}$, where salmonids are present.
		Chronic Standard
		The 30-day average concentration of total ammonia (expressed as N in mg/L) does not exceed, more often than once every three years on the average, the numerical value given by the following formula; and the highest 4-day average concentration of total ammonia within the 30-day averaging period does not exceed 2.5 times the numerical value given by the following formula: $= \left\{\frac{0.0577}{1 + 10^{7.688-pH}} + \frac{2.487}{1 + 10^{pH-7.688}}\right\} \cdot CV$;

CAS No.	Substance or Characteristic	Maximum Limit
		where CV = 2.85, when T ≤ 14° C; or $CV = 1.45 \times 10^{0.028 \cdot (25-T)}$, when T >14° C. **Site-Specific Chronic Standard** The following site-specific standard applies to the Red River of the North beginning at the 12th Avenue North bridge in Fargo, North Dakota and extending approximately 32 miles downstream to its confluence with the Buffalo River, Minnesota. This site-specific standard applies only during the months of October, November, December, January, and February. During the months of March through September, the statewide chronic ammonia standard applies. The 30-day average concentration of total ammonia (expressed as N in mg/L) does not exceed, more often than once every three years on the average, the numerical value given by the following formula; and the highest 4-day average concentration of total ammonia within the 30-day averaging period does not exceed 2.5 times the numerical value given by the following formula: $= \left(\frac{0.0577}{1 + 10^{7.688-pH}} + \frac{2.487}{1 + 10^{pH-7.688}} \right) \cdot CV$; where CV = 4.63, when T ≤ 7° C; or $CV = 1.45 \times 10^{0.028 \cdot (25-T)}$, when T > 7° C.
7440-39-3	Barium (Total)	1.0 mg/L (one day arithmetic average)
	Boron (Total)	.75 mg/L (30 day arithmetic average)
16887-00-6	Chlorides (Total)	100 mg/L (30 day arithmetic average)
7.782-50-5	Chlorine Residual (Total)	Acute .019 mg/L Chronic .011 mg/L
7782-44-7	Dissolved Oxygen	5 mg/L as a daily minimum (up to 10 % of representative samples collected during any 3-year period may be less than this value provided that lethal conditions are avoided)

	~~Fecal Coliform[2]~~	~~Not to exceed 200 organisms per 100 mL as a geometric mean of representative samples collected during any 30-day consecutive period~~
CAS No.	Substance or Characteristic	Maximum Limit
		~~individually exceed 400 organisms per 100 mL. For assessment purposes, the 30-day consecutive period shall follow the calendar month. This standard shall apply only during the recreation season May 1 to September 30.~~
	E. Coli[2]	Not to exceed 126 organisms per 100 mL as a geometric mean of representative samples collected during any 30-day consecutive period, nor shall more than 10 percent of samples collected during any 30-day consecutive period individually exceed 409 organisms per 100 mL. For assessment purposes, the 30-day consecutive period shall follow the calendar month. This standard shall apply only during the recreation season May 1 to September 30.
14797-55-8	Nitrates (N) (Diss.)[1]	1.0 mg/L (up to 10 % of samples may exceed)
	pH	7.0-9.0 (up to 10 % of representative samples collected during any 3-year period may exceed this range, provided that lethal conditions are avoided)
32730	Phenols (Total)	0.3 mg/L (organoleptic criterion) (one day arithmetic average)
	Sodium	50 percent of total cations as mEq/L
	Sulfates (Total as SO_4)	250 mg/L (30-day arithmetic average)
	Temperature	Eighty-five degrees Fahrenheit [29.44 degrees Celsius]. The maximum increase shall not be greater than five degrees Fahrenheit [2.78 degrees Celsius] above natural background conditions.
	Combined radium 226 and radium 228 (Total)	5 pCi/L (30-day arithmetic average)
	Gross alpha particle activity, including radium 226, but excluding radon and uranium	15 pCi/L (30-day arithmetic average)

[1] The standard~~s~~ for nitrate~~s~~ (N) are intended as an interim guideline limit~~s~~. Since each stream or lake has unique characteristics which determine the ~~level~~s concentration of ~~these~~ this constituent~~s~~ that will cause excessive plant growth (eutrophication), the department reserves the right to review this standard after additional study and to set specific limitations on any waters of the state. However, in no case shall the concentration for nitrate plus nitrite exceed 10 mg/L for any waters used as a municipal or domestic drinking water supply.

[2] Where the ~~fecal coliform or~~ E. coli criteria, ~~or both~~, are exceeded and there are natural sources, the criteria may be considered attained, provided there is reasonable basis for concluding that the indicator bacteria density attributable to anthropogenic sources is consistent with the level of water quality required by the criteria. This may be the situation, for example, in headwater streams that are minimally affected by anthropogenic activities.

Table 2 is amended as follows:

TABLE 2

WATER QUALITY CRITERIA [1]
(MICROGRAMS PER LITER)

		Aquatic Life Value		Human Health Value	
		Classes I,IA,II,III		Classes	Class
CAS No.	Pollutant	Acute	Chronic	I,IA,II[2]	III[3]
83-32-9	Acenaphthene			670	990
107-02-8	Acrolein			6 ~~190~~	9 ~~290~~
107-13-1	Acrylonitrile[4]			0.051	0.25
71-43-2	Benzene[4]			2.2	51
92-87-5	Benzidine[4]			0.000086	0.00020
56-23-5	Carbon tetrachloride[4]			0.23	1.6
	(Tetrachloromethane)				
108-90-7	Chlorobenzene			100[7]	1,600
2921-88-2	Chlorpyrifos	0.083	0.041		
	(Monochlorobenzene)				
120-82-1	1,2,4-Trichlorobenzene			35	70
118-74-1	Hexachlorobenzene[4]			0.00028	0.00029
107-06-2	1,2-Dichloroethane[4]			0.38	37
71-55-6	1,1,1-Trichloroethane			200[7]	
67-72-1	Hexachloroethane[4]			1.4	3.3
79-00-5	1,1,2-Trichloroethane[4]			0.59	16 ~~42~~
79-34-5	1,1,2,2-Tetrachloroethane[4]			0.17	4.0
111-44-4	Bis(2-chloroethyl) ether[4]			0.030	0.53
91-58-7	2-Chloronaphthalene			1,000	1,600
88-06-2	2,4,6-Trichlorophenol[4]			1.4	2.4
59-50-7	p-Chloro-m-cresol			3000	
	(4-Chloro-3-methylphenol)				
67-66-3	Chloroform (HM)[4]			5.7	470
	(Trichloromethane)				
95-57-8	2-Chlorophenol			81	150
95-50-1	1,2-Dichlorobenzene[7]			420	1,300
541-73-1	1,3-Dichlorobenzene			320	960
106-46-7	1,4-Dichlorobenzene[7]			63	190
91-94-1	3,3'-Dichlorobenzidine[4]			0.021	0.028
75-35-4	1,1-Dichloroethylene[4]			7[7]	7,100
156-60-5	1,2-trans-Dichloroethylene[7]			100[7]	10,000
120-83-2	2,4-Dichlorophenol			77	290
542-75-6	1,3-Dichloropropylene			0.34	21
	(1,3-Dichloropropene)				
	(cis and trans isomers)				
78-87-5	1,2-Dichloropropane			0.50	15
105-67-9	2,4-Dimethylphenol			380	850
121-14-2	2,4-Dinitrotoluene[4]			0.11	3.4
122-66-7	1,2-Diphenylhydrazine[4]			0.036	0.20
160-41-4	Ethylbenzene[7]			530	2,100
206-44-0	Fluoranthene			130	140

		Aquatic Life Value		Human Health Value	
		Classes I,IA,II,III		Classes	Class
CAS No.	Pollutant	Acute	Chronic	I,IA,II[2]	III[3]
39638-32-9	Bis(2-chloroisopropyl) ether			1400	65,000
75-09-2	Methylene chloride (HM)[4]			4.6	590
	(Dichloromethane)				
74-83-9	Methyl bromide (HM)			47	1,500
	(Bromomethane)				
75-25-2	Bromoform (HM)[5]			4.3	140
	(Tribromomethane)				
75-27-4	Dichlorobromomethane (HM)[5]			0.55	17
124-48-1	Chlorodibromomethane (HM)[5]			0.40	13
87-68-3	Hexachlorobutadiene[4]			0.44	18
77-47-4	Hexachlorocyclopentadiene			40	1,100
78-59-1	Isophorone[4]			35	960
98-95-3	Nitrobenzene			17	690
51-28-5	2,4-Dinitrophenol			69	5,300
534-52-1	4,6-Dinitro-o-cresol			13	280
	(4,6-Dinitro-2-methylphenol)				
62-75-9	N-Nitrosodimethylamine[4]			0.00069	3.0
86-30-6	N-Nitrosodiphenylamine[4]			3.3	6.0
621-64-7	N-Nitrosodi-n-propylamine[4]			0.005	0.51
87-86-5	Pentachlorophenol	19[9]	15[9]	0.27	3.0
108-95-2	Phenol			~~21000~~ 10,000	~~1,700,000~~ 860,000
117-81-7	Bis(2-ethylhexyl)phthalate[4]			1.2	2.2
85-68-7	Butyl benzyl phthalate			1,500	1,900
84-74-2	Di-n-butyl phthlate			2,000	4,500
84-66-2	Diethyl phthalate			17,000	44,000
131-11-3	Dimethyl phthalate			270,000	1,100,000
56-55-3	Benzo(a)anthracene (PAH)[4]			0.0038	0.018
	(1,2-Benzanthracene)				
50-32-8	Benzo(a)pyrene (PAH)[4]			0.0038	0.018
	(3,4-Benzopyrene)				
205-99-2	Benzo(b)fluoranthene (PAH)[4]			0.0038	0.018
	(3,4-Benzofluoranthene)				
207-08-9	Benzo(k)fluoranthene (PAH)[4]			0.0038	0.018
	(11,12-Benzofluoranthene)				
218-01-9	Chrysene (PAH)[4]			0.0038	0.018
120-12-7	Anthracene (PAH)[5]			8,300	40,000
86-73-7	Fluorene (PAH)[5]			1,100	5,300
53-70-1	Dibenzo(a,h)anthracene (PAH)[4]			0.0038	0.018
	(1,2,5,6-Dibenzanthracene)				
193-39-5	Indeno(1,2,3-cd)pyrene (PAH)[4]			0.0038	0.018
129-00-0	Pyrene (PAH)[5]			830	4,000
127-18-4	Tetrachloroethylene[4]			0.69	3.3
108-88-3	Toluene			1,000[7]	15,000
79-01-6	Trichloroethylene[4]			2.5	30
75-01-4	Vinyl chloride[4]			0.025	2.4
	(Cloroethylene)				
309-00-2	Aldrin[4]	1.5		0.000049	0.000050
60-57-1	Dieldrin[4]	0.24	0.056	0.000052	0.000054
57-74-9	Chlordane[4]	1.2	0.0043	0.00080	0 00081

		Aquatic Life Value		Human Health Value	
		Classes I,IA,II,III		Classes	Class
CAS No.	Pollutant	Acute	Chronic	I,IA,II[2]	III[3]
80-29-3	4,4'-DDT[4]	0.55[13]	0.001[13]	0.00022	0.00022
75-55-9	4,4'-DDE[4]			0.00022	0.00022
72-54-8	4,4'-DDD[4]			0.00031	0.00031
115-29-7	alpha-Endosulfan	0.11[12]	0.056[12]	62	89
115-29-7	beta-Endosulfan	0.11[12]	0.056[12]	62	89
1031-07-8	Endosulfan sulfate			62	89
72-20-8	Endrin	0.09	0.036	0.059	0.060
7421-93-4	Endrin aldehyde			0.29	0.30
76-44-8	Heptachlor[4]	0.26	0.0038	0.000079	0.000079
1024-57-3	Heptachlor epoxide[4]	0.26	0.0038	0.000039	0.000039
319-84-6	alpha-BHC[4]			0.0026	0.0049
	(Hexachlorocyclohexane-alpha)				
319-85-7	beta-BHC[4]			0.0091	0.017
	(Hexachlorocyclohexane-beta)				
58-89-9	gamma-BHC (Lindane)[4]	0.95		0.2[7]	1.8
	(Hexachlorocyclohexane-gamma)				
319-86-8	delta-BHC[4]				
	(Hexachlorocyclohexane-delta)				
1336-36-3	PCB 1242 (Arochlor 1242)[4]		0.014[11]	0.000064[11]	0.000064[11]
1336-36-3	PCB-1254 (Arochlor 1254)[4]		0.014[11]	0.000064[11]	0.000064[11]
1336-36-3	PCB-1221 (Arochlor 1221)[4]		0.014[11]	0.000064[11]	0.000064[11]
1336-36-3	PCB-1232 (Arochlor 1232)[4]		0.014[11]	0.000064[11]	0.000064[11]
1336-36-3	PCB-1248 (Arochlor 1248)[4]		0.014[11]	0.000064[11]	0.000064[11]
1336-36-3	PCB-1260 (Arochlor 1260)[4]		0.014[11]	0.000064[11]	0.000064[11]
1336-36-3	PCB-1016 (Arochlor 1016)[4]		0.014[11]	0.000064[11]	0.000064[11]
8001-35-2	Toxaphene[4]	0.73	0.0002	0.00028	0.00028
7440-36-0	Antimony			5.6	640
7440-38-2	Arsenic[7]	340[10]	150[10]	10[7]	
1332-21-4	Asbestos[4 7]			7,000,000 f/l	
7440-41-7	Beryllium[4]			4[7]	
7440-43-9	Cadmium	2.1[6]	0.27[6]	5[7]	
7440-47-3	Chromium (III)	1800[6]	86[6]	100(total)[7]	
	Chromium (VI)	16	11	100(total)[7]	
7440-50-8	Copper	14.0[6]	9.3[6]	1000	
57-12-5	Cyanide (total)	22	5.2	140	140
7439-92-1	Lead	82[6]	3.2[6]	15[7]	
7439-97-6	Mercury	1.7	0.012	0.05	0.051
7440-02-0	Nickel	470[6]	52[6]	100[7]	4,200
7782-49-2	Selenium	20	5	50[7]	
7440-22-4	Silver	3.8[6]			
7440-28-0	Thallium			0.24	0.47
7440-66-6	Zinc	120[6]	120[6]	7,400	26,000
56-39-9	Tributyltin	0.46	0.072		
1746-01-6	Dioxin (2,3,7,8-TCDD)[4]			5.0E-9	5.1E-9
15972-60-8	Alachlor			2[7]	
1912-24-9	Atrazine			3[7]	

		Aquatic Life Value		Human Health Value	
		Classes I,IA,II,III		Classes	Class
CAS No.	Pollutant	Acute	Chronic	I,IA,II[2]	III[3]
56-38-2	Parathion	0.065	0.013		
1563-66-2	Carbofuran			40[7]	
94-75-7	2,4-D			70[7]	
75-99-0	Dalapon			200[7]	
103-23-1	Di(2-ethylhexyl)adipate			400[7]	
333-41-5	Diazinon	0.17	0.17		
84852-15-3	Nonylphenol (Isomer mixture)[14]	28	6.6		
~~96-12-8~~*67708-83-2	Dibromochloropropane			0.2[7]	
156-59-2	Dichloroethylene (cis-1.2-)			70[7]	
88-85-7	Dinoseb			7[7]	
85-00-7	Diquat			20[7]	
145-73-3	Endothall			100[7]	
106-93-4	Ethylene dibromide (EDB)			0.05[7]	
107-83-6	Glyphosate			700[7]	
72-43-5	Methoxychlor			40[7]	
23135-22-0	Oxamyl (Vydate)			200[7]	
1918-02-1	Picloram			500[7]	
122-34-9	Simazine			4[7]	
100-42-5	Styrene			100[7]	
1330-20-7	Xylenes			10,000[7]	
7782-41-4	Fluoride			4,000[7]	
14797-65-0	Nitrite			1,000[7]	
12587-47-2	Beta/photon emitters			4 mrem/yr[7]	
7440-61-1	Uranium			30[7]	
15541-45-4	Bromate			10[7]	
	Chlorite			1,000[7]	
	Halocetic acids[15]			60[7]	

CAS No. **Chemical Abstracts Service Registry Number**

[1] Except for the aquatic life values for metals, the values given in this appendix refer to the total (dissolved plus suspended) amount of each substance. For the aquatic life values for metals, the values refer to the total recoverable method for ambient metals analyses.

[2] Based on two routes of exposure - ingestion of contaminated aquatic organisms and drinking water.

[3] Based on one route of exposure - ingestion of contaminated aquatic organisms only.

[4] Substance classified as a carcinogen, with the value based on an incremental risk of one additional instance of cancer in one million persons.

[5] Chemicals which are not individually classified as carcinogens but which are contained within a class of chemicals, with carcinogenicity as the basis for the criteria derivation for that class of chemicals; an individual carcinogenicity assessment for these chemicals is pending.

[6] Hardness dependent criteria. [16]Value given is an example only and is based on a $CaCO_3$ hardness of 100 mg/L. Criteria for each case must be calculated using the following formula:

CMC = exp (ma [ln (hardness)] + ba)

	ma	ba
Cadmium	1.0166	-3.924
Copper	0.9422	-1.700
Chromium (III)	0.8190	3.7256
Lead	1.273	-1.460
Nickel	0.8460	2.255
Silver	1.72	-6.59
Zinc	0.8473	0.884

CMC = Criterion Maximum Concentration (acute exposure value)
The threshold value at or below which there should be no unacceptable effects to freshwater aquatic organisms and their uses if the one-hour concentration does not exceed that CMC value more than once every three years on the average.

CCC = exp (mc [ln (hardness)] + bc)

	mc	bc
Cadmium	0.7409	-4.719
Copper	0.8545	-1.702
Chromium	0.8190	0.6848
Lead	1.273	- 4.705
Nickel	0.8460	0.0584
Silver	------	------
Zinc	0.8473	0.884

CCC = Criterion Continuous Concentration (chronic exposure value)
The threshold value at or below which there should be no unacceptable effects to freshwater aquatic organisms and their uses if the four-day concentration does not exceed that CCC value more than once every three years on the average.

[7] Safe Drinking Water Act (MCL).

[8] pH dependent criteria. Value given is an example only and is based on a pH of 7.8. Criteria for each case must be calculated using the following formula:

[9] Freshwater aquatic life criteria for pentachlorophenol are expressed as a function of pH. Values displayed in the table correspond to a pH of 7.8 and are calculated as follows:

CMC = exp [1.005 (pH) - 4.869] CCC = exp [1.005 (pH) - 5.134]

[10] This criterion applies to total arsenic.

[11] This criterion applies to total PCBs (i.e., the sum of all congener or all isomer or homolog or Arochlor analyses).

[12] This criterion applies to the sum of alpha-endosulfan and beta-endosulfan.

[13] This criterion applies to DDT and its metabolites (i.e., the total concentration of DDT and its metabolites should not exceed this value).

[14] The nonylphenol criteria address CAS numbers 84852-15-3 and 25154-52-3.

[15] The criterion is for a total measurement of 5 haloacetic acids, dichloroacetic acid, trichloroacetic acid, monochloroacetic acid, bromoacetic acid, and dibromoacetic acid.

[16] Hardness values shall be no greater than 400 mg/L. For waters with hardness levels greater than 400 mg/L. The actual ambient hardness may be used where a site-specific WER has been determined consistent with EPA's water effect ratio procedure.

Appendix I is amended as follows:

APPENDIX I

STREAM CLASSIFICATIONS

The following intrastate and interstate streams are classified as the class of water quality which is to be maintained in the specified stream or segments noted. There are a number of minor or intermittently flowing watercourses, unnamed creeks, or draws, etc., which are not listed. All tributaries not specifically mentioned are classified as class III streams.

RIVER BASINS, SUBBASINS, AND TRIBUTARIES	CLASSIFICATION
Missouri River, including Lake Sakakawea and Oahe Reservoir	I
Yellowstone	I
Little Muddy Creek near Williston	II
White Earth River	II
Little Missouri River	II
Knife River	II
Spring Creek	IA
Square Butte Creek below Nelson Lake	IA
Heart River	IA
Green River	IA
Antelope Creek	II
Muddy Creek	II
Apple Creek	II
Cannonball River	II
Cedar Creek	II
Beaver Creek near Linton	II
Grand River	IA
Spring Creek	II
Souris River	IA
Des Lacs River	II
Willow Creek	II
Deep River	III
Mauvais Coulee	I
James River	IA
Pipestem	IA
Cottonwood Creek	II
Beaver Creek	II
Elm River	II
Maple River	II

RIVER BASINS, SUBBASINS, AND TRIBUTARIES	CLASSIFICATION
Bois de Sioux	I
Red River	I
Wild Rice River	II
Antelope Creek	III
Sheyenne River (except as noted below)	IA
Baldhill Creek	II
Maple River	II
Rush River	III
Elm River	II
Goose River	IA
Turtle River	II
Forest River	II
North Branch	III
Park River	II
North Branch	III
South Branch	II
Middle Branch	III
Cart Creek	III
Pembina River	IA
Tongue River	II

The Sheyenne River from its headwaters to 0.1 mile downstream from Baldhill Dam is not classified for municipal or domestic use.

Appendix II is amended as follows:

APPENDIX II

LAKE AND RESERVOIR CLASSIFICATION

Lakes are classified according to the water characteristics which are to be maintained in the specified lakes. The beneficial water uses and parameter limitations designated for Class I streams shall apply to all classified lakes. For lakes not listed, the following default classification applies: Class 4.

COUNTY	LAKE	CLASSIFICATION
Adams	Mirror Lake	3
Adams	N. Lemmon Lake	1
Barnes	Lake Ashtabula	3
Barnes	Moon Lake	2
Barnes	Clausen Springs	3
Benson	Wood Lake	2
Benson	Graves	3
Benson	Reeves	3
Bottineau	Lake Metigoshe	2
Bottineau	Long Lake	2
Bottineau	Pelican Lake	3
Bottineau	Carbury Dam	2
Bottineau	Cassidy Lake	3
Bottineau	Strawberry Lake	2
Bowman	Bowman-Haley Dam	3
Bowman	Gascoyne Lake	3
Bowman	Kalina Dam	3
Bowman	Lutz Dam	2
Bowman	Spring Lake	3
Burke	Powers Lake	3

COUNTY	LAKE	CLASSIFICATION
Burke	Short Creek Dam	2
Burke	Smishek Dam	2
Burke	Northgate Dam	2
Burleigh	McDowell Dam	3
Burleigh	Mitchell Lake	3
Burleigh	New Johns Lake	2
Cass	Casselton Reservoir	3
Cass	Brewer Lake	2
Cavalier	Mt. Carmel Dam	2
Dickey	Moores Lake	3
Dickey	Pheasant Lake	3
Dickey	Wilson Dam	3
Divide	Baukol-Noonan Dam	2
Divide	Skjermo Dam	2
Dunn	Lake Ilo	3
Eddy	Battle Lake	3
Eddy	Warsing Dam	3
Emmons	Braddock Dam	3
Emmons	Nieuwsma Dam	2
Emmons	Rice Lake	3
Foster	Juanita Lake	3
Golden Valley	Buffalo Gap Dam	2
Golden Valley	Camel Hump Dam	1
COUNTY	LAKE	CLASSIFICATION
Golden Valley	Odland Dam	3
Grand Forks	Fordville Dam	2
Grand Forks	Kolding Dam	3

Grand Forks	Larimore Dam	2
Grand Forks	Niagara Dam	3
Grant	Heart Butte Dam (Lake Tschida)	2
Grant	Raleigh Reservoir	1
Grant	Sheep Creek Dam	2
Griggs	Red Willow Lake	2
Griggs	Carlson-Tande Dam	3
Hettinger	Blickensderfer Dam	2
Hettinger	Castle Rock Dam	1
Hettinger	Indian Creek	2
Hettinger	Kilzer Dam	3
Hettinger	Larson Lake	3
Hettinger	Mott Watershed Dam	3
Kidder	Cherry Lake	3
Kidder	Crystal Springs	3
Kidder	Frettum Lake	3
Kidder	Lake Isabel	3
Kidder	Lake Williams	3
Kidder	Round Lake	3
Kidder	George Lake	5
LaMoure	Heinrich-Martin Dam	3
LaMoure	Kalmbach Lake	3
LaMoure	Kulm-Edgeley Dam	3
COUNTY	LAKE	CLASSIFICATION
LaMoure	Lake LaMoure	3
LaMoure	Lehr Dam	3
LaMoure	Limesand-Seefeldt Dam	3
LaMoure	Schlect-Thom Dam	3

LaMoure	Schlect-Weix. Dam	3
Logan	Beaver Lake	3
Logan	Mundt Lake	3
Logan	Rudolph Lake	3
McHenry	Cottonwood Lake	3
McHenry	George Lake	3
McHenry	Round Lake	3
McHenry	Buffalo Lodge Lake	3
McIntosh	Blumhardt Dam	2
McIntosh	Clear Lake	3
McIntosh	Coldwater Lake	3
McIntosh	Dry Lake	2
McIntosh	Green Lake	2
McIntosh	Lake Hoskins	2
McKenzie	Arnegard Dam	4
McKenzie	Leland Dam	2
McKenzie	Sather Dam	2
McLean	Brush Lake	3
McLean	Crooked Lake	3
McLean	Custer Mine Pond	2
McLean	East Park Lake	2
McLean	Lake Brekken	2
COUNTY	LAKE	CLASSIFICATION
McLean	Lake Holmes	2
McLean	Lake Audubon	2
McLean	Lightning Lake	1
McLean	Long Lake	4
McLean	Riverdale Spillway Lake	1

McLean	Strawberry Lake	3
McLean	West Park Lake	2
Morton	Crown Butte Dam	3
Morton	Danzig Dam	3
Morton	Fish Creek Dam	1
Morton	Nygren Dam	2
Morton	Sweetbriar Dam	3
Mercer	Harmony Lake	3
Mountrail	Clearwater Lake	3
Mountrail	Stanley Reservoir	3
Mountrail	White Earth Dam	2
Nelson	McVille Dam	2
Nelson	Tolna Dam	2
Nelson	Whitman Dam	2
Oliver	East Arroda Lake	2
Oliver	Nelson Lake	3
Oliver	West Arroda Lake	2
Pembina	Renwick Dam	3
Pierce	Balta Dam	3
COUNTY	LAKE	CLASSIFICATION
Pierce	Buffalo Lake	3
Ramsey	Devils Lake	2
Ramsey	Cavanaugh Lake	3
Ransom	Dead Colt Creek Dam	3
Renville	Lake Darling	2
Richland	Lake Elsie	3
Richland	Mooreton Pond	3
Rolette	Belcourt Lake	2

Rolette	Carpenter Lake	2
Rolette	Dion Lake	2
Rolette	Gordon Lake	2
Rolette	Gravel Lake	2
Rolette	Hooker Lake	2
Rolette	Island Lake	3
Rolette	Jensen Lake	3
Rolette	School Section Lake	2
Rolette	Upsilon Lake	2
Rolette	Shutte Lake	2
Sargent	Alkali Lake	3
Sargent	Buffalo Lake	3
Sargent	Lake Tewaukon	3
Sargent	Silver Lake	3
Sargent	Sprague Lake	3
Sheridan	Hecker Lake	2
Sheridan	South McClusky Lake (Hoffer Lake)	2
Sioux	Froelich Dam	2
Slope	Cedar Lake	3
COUNTY	LAKE	CLASSIFICATION
Slope	Davis Dam	2
Slope	Hamann Dam	1
Slope	Stewart Lake	3
Stark	Belfield Pond	1
Stark	Dickinson Dike	1
Stark	Patterson Lake	3
Steele	North Golden Lake	3
Steele	North Tobiason Lake	3

Steele	South Golden Lake	3
Stutsman	Arrowwood Lake	4
Stutsman	Bader Lake	3
Stutsman	Barnes Lake	3
Stutsman	Clark Lake	3
Stutsman	Crystal Springs	3
Stutsman	Hehn-Schaffer Lake	3
Stutsman	Jamestown Reservoir	3
Stutsman	Jim Lake	3
Stutsman	Spiritwood Lake	3
Stutsman	Pipestem Reservoir	3
Towner	Armourdale Dam	2
Towner	Bisbee Dam	2
Walsh	Bylin Dam	3
Walsh	Homme Dam	3
Walsh	Matejcek Dam	3
Ward	Hiddenwood Lake	3
Ward	Makoti Lake	4
COUNTY	LAKE	CLASSIFICATION
Ward	North-Carlson Lake	3
Ward	Rice Lake	3
Ward	Velva Sportsmans Pond	1
Wells	Harvey Dam	3
Wells	Lake Hiawatha (Sykeston Dam)	4
Williams	Blacktail Dam	3
Williams	Epping-Springbrook Dam	3
Williams	Cottonwood Lake	3

Williams	East Spring Lake Pond	3
Williams	Iverson Dam	2
Williams	Kettle Lake	2
Williams	Kota-Ray Dam	1
Williams	McCloud (Ray) Reservoir	2
Williams	McGregor Dam	1
Williams	Tioga Dam	2
Williams	Trenton Lake	2
Williams	West Spring Lake Pond	3
	Lake Oahe	1
	Lake Sakakawea	1