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DEPARTMENT OF CONSUMER AND REGULATORY AFFAIRS

NOTICE OF FINAL RULEMAKING

The Acting Director, Department of Consumer and Regulatory Affairs, pursuant to the authority set forth in section 5 of the Water Pollution Control Act of 1984, D.C. Law 5-188, effective March 16, 1985, D.C. Code section 6-924 (1988) and Mayor's Order 85-152, September 12, 1985, hereby gives notice of intent to adopt the following rules upon publication of this notice in the D.C. Register (DCR). Adoption of the rules will amend Chapter 11 of Title 21 DCMR, Water Quality Standards (WQS) of the District of Columbia. This rule making renumbers the existing ground water regulations, sections 1104 through 1112 (40 DCR 4203) to 1150 to 1158 and replaces the existing sections 1100 to 1103 by the sections 1100 to 1106 of this publication. Existing section 1199 of definitions is replaced by merging sections 1199 from both the surface and ground waters standards arranged alphabetically. Notice of Proposed Rulemaking was published on September 10, 1993, (40 DCR 6538). These final rules will be effective upon publication of this notice in the D.C. Register.

Amend 21 DCMR Chapter 11 as follows:

- 1. Renumber the existing sections 1104 through 1112 (40 DCR 4203) to 1150 to 1159.
- 2. Amend the existing sections 1100 to 1103 to read as follows:

1100 PURPOSE AND SCOPE

1100.1 These rules establish the revised Water Quality Standards for the waters of the District of Columbia, as authorized under section 5 of the D.C. Law 5-188, the "Water Pollution Control Act of 1984".

1101 SURFACE WATERS

1101.1 For the purposes of water quality standards, the surface waters of the District shall be classified on the basis of their (i) current uses and (ii) future uses to which the waters will be restored. The categories of beneficial uses for the surface waters of the District shall be as follows:

<u>Categories of uses which determine water quality standards</u>	<u>Classes of Water</u>
Primary contact recreation	A
Secondary contact recreation and aesthetic enjoyment	B
Protection & propagation of fish, shellfish and wildlife	C
Protection of human health related	D
to consumption of fish & shellfish	
Navigation	E

1101.2

The surface waters of the District are designated for beneficial use classes according to the categories delineated in subsection 1101.1, as follows:

CLASSIFICATION OF DISTRICT'S WATERS

Surface waters of the District	USE CLASSES	
	Current Use	Designated Use
Potomac River	B, C, D, E	A, B, C, D, E
Potomac River tributaries (except as listed below)	B, C, D	A, B, C, D
Battery Kemble Creek	B, C, D	A, B, C, D
C & O Canal	B, C, D, E	A, B, C, D, E
Rock Creek and its tributaries	B, C, D, E	A, B, C, D, E
Tidal Basin	B, C, D, E	A, B, C, D, E
Washington Ship Channel	B, C, D, E	A, B, C, D, E
Oxon Run	B, C, D	A, B, C, D
Anacostia River	B, C, D, E	A, B, C, D, E
Anacostia River tributaries (except as listed below)	B, C, D	A, B, C, D
Hickey Run	B, C, D	B, C, D
Watts Branch	B, C, D	B, C, D
Wetland	C, D	C, D

- 1102 **ANTIDEGRADATION POLICY**
- 1102.1 **TIER I: Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.**
- 1102.2 **TIER II: If the water quality of the surface waters of the District exceeds the water quality criteria necessary to sustain the existing uses, those waters shall be maintained at that quality. The water quality will not be allowed to degrade unless the District finds after full satisfaction of the intergovernmental coordination and public participation provisions of the District's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation of lower water quality, the District shall assure water quality adequate to protect existing uses fully. Further, the District shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost effective and reasonable best management practices for nonpoint source control.**
- 1102.3 **TIER III: Where High Quality Waters constitute an outstanding National resource, such as waters of the National and District parks and wildlife refuges and waters of exceptional recreational or ecological significance, those waters shall be designated Outstanding National Resource Waters (ONRW) and the water quality in the ONRW shall be maintained, protected and designated as below:**
- (a) **New point and nonpoint source discharges, treated or otherwise, shall be prohibited in these segments.**
 - (b) **Increases in loadings or new pollutants from existing point and nonpoint source discharges shall be prohibited in these segments.**
 - (c) **Short-term degradation of the water quality shall be allowed after opportunity for public participation and addressing their comments if any. However, all practical means of minimizing such degradation shall be implemented.**
 - (d) **Designation of ONRWs shall be adopted after full satisfaction of the intergovernmental coordination and public participation provisions of the District's continuing planning process.**
- 1102.4 **SPECIAL WATERS OF DISTRICT OF COLUMBIA (SWDC): Any segment or segments of the surface waters of the District which are of water quality better than needed for the current use or have scenic or aesthetic importance shall be designated as Special Waters of the District**

of Columbia (SWDC). The water quality in SWDC designated segments of the District's surface waters shall be maintained at or above the current level by implementing the following:

- (a) Existing nonpoint source discharges, storm water discharges and storm sewer discharges to SWDC segments shall be controlled through implementation of best management practices and regulatory programs.
- (b) Construction or development projects, such as roads, bridges, and bank stabilization of the streams in which a SWDC designated segment is located, which may lead to pollution of the water shall be permitted on a case by case basis to insure that there are no long term adverse water quality effects and no impairment of the designated uses of the segment occurs.
- (c) Short term degradation of water quality in an SWDC segment due to construction projects may be permitted provided that prior notice is given to the public as well as other local and federal government agencies, and provided that their concerns are properly addressed.

1102.5 Effective the date of promulgation of these regulations, the following waters of the District shall be the designated as SWDC segments:

- (a) Rock Creek and its tributaries; and
- (b) Battery Kemble Creek and its tributaries.

1103 **WETLANDS**

1103.1 In a wetland, the numerical criteria shall be applied to the column of water above the wetland in accordance with the designated use.

1103.2 Wetlands with rooted vascular aquatic vegetation, except those specifically constructed or created as waste water treatment devices and except as provided in D. C. Code section 6-923(d) and section 6-926(a)(3), shall be protected from significant adverse hydrologic modifications, excessive sedimentation, deposition of toxic substances in toxic amounts, nutrient imbalances, and other adverse anthropogenic impacts.

1104 **STANDARDS**

1104.1 The surface waters of the District shall be free from substances attributable to point or nonpoint sources discharged in amounts that do any one of the following:

- (a) Settle to form objectionable deposits;
- (b) Float as debris, scum, oil or other matter to form nuisances;
- (c) Produce objectionable odor, color, taste or turbidity;
- (d) Cause injury to, are toxic to or produce adverse physiological or behavioral changes in humans, plants or animals;
- (e) Produce undesirable aquatic life or result in the dominance of nuisance species;
- (f) Impair the biological community which naturally occurs in the waters or depends on the waters for their survival and propagation.

1104.2 For the waters of the District with multiple designated uses, the most stringent standards or criteria shall govern.

1104.3 Class A waters shall be free of discharges of untreated sewage, litter and unmarked, submerged or partially submerged, man-made structures which would constitute a hazard to the users.

1104.4 The aesthetic qualities of Class B waters shall be maintained. Construction, placement or mooring of facilities not primarily and directly water oriented is prohibited in, on or over Class B waters unless:

- (a) The facility is for the general public benefit and service; and,
- (b) Land based alternatives are not available.

1104.5 Class E waters shall be free of unmarked submerged or partially submerged man-made objects which pose a hazard to users of these waters.

1104.6 Unless otherwise stated, the numeric criteria which shall be met to attain and maintain designated uses, are as follows (Tables 1 through 3):

Table 1

Constituent	Criteria for Classes		
	A	B	C
Bacteriological(No./100 mL)			
Fecal Coliform (Maximum 30 day geometric mean for 5 samples)	200	1,000	
Physical			
Dissolved oxygen (mg/L) Minimum daily average (3 samples per 24 hours once per 8 hour) One hour minimum			5.0
March through June			5.0
July through February			4.0
Temperature(°C)			
Maximum			32.2
Maximum change above ambient			2.8
pH			
Greater than	6.0	6.0	6.0
and less than	8.5	8.5	8.5
Turbidity increase above ambient (NTU)	20	20	20
Total dissolved gases (maximum % saturation)			110
Hydrogen sulfide (maximum (µg/L))			2.0
Oil & grease (mg/L)			10.0

Table 2

Constituent	Criteria for Classes	
	C	D
	CCC	CMC

MAXIMUM VALUE FOR CLASS C(CCC; FOUR DAY AVERAGE), CLASS C(CMC; ONE HOUR AVERAGE AND) CLASS D (30 DAY AVERAGE)

Trace metals and inorganics in mg/L, except where stated otherwise (see Notes below)

Ammonia, Total	[Note 6]	[Note 7]	
Antimony, dissolved			4.3
Arsenic, dissolved	0.19	0.36	0.00014 ^c
Cadmium, dissolved	[I]	[IA]	
Chlorine, total residual	0.011	0.019	
Chromium, hexavalent, dissolved	0.011	0.016	
Chromium, trivalent, dissolved	[II]	[IIA]	
Copper, dissolved	[III]	[IIIA]	
Cyanide, free	0.0052	0.022	220.0
Iron, dissolved	1.0		
Lead, dissolved	[IV]	[IVA]	
Mercury, total recoverable	0.000012	0.0024	0.00015
Nickel, dissolved	[V]	[VA]	4.6
Selenium, total recoverable	0.005	0.02	
Silver, dissolved		[VI]	65.0
Thallium, dissolved			0.0063
Zinc, dissolved	[VII]	[VIIA]	

Notes:

- [Note 1] Superscript ^c means the criterion is based on carcinogenicity (10⁻⁶ risk).
- [Note 2] CCC and CMC are defined in section 1199.
- [Note 3] Human Health Criteria for metals will be based on Total Recoverable metals.
- [Note 4] The formulas for calculating the concentrations of substances indicated above are as follows:

- [I] The numerical CCC criterion for cadmium in $\mu\text{g/L}$ shall be given by:

$$e^{(0.7852[\ln(\text{hardness})]-3.490)}$$
- [IA] The numerical CMC criterion for cadmium in $\mu\text{g/L}$ shall be given by:

$$e^{(1.128[\ln(\text{hardness})]-3.828)}$$
- [II] The numerical CCC criterion for trivalent chromium in $\mu\text{g/L}$ shall be given by:

$$e^{(0.8190[\ln(\text{hardness})]+1.561)}$$
- [IIA] The numerical CMC criterion for trivalent chromium in $\mu\text{g/L}$ shall be given by:

$$e^{(0.8190[\ln(\text{hardness})]+3.688)}$$
- [III] The numerical CCC criterion for copper in $\mu\text{g/L}$ shall be given by:

$$e^{(0.8545[\ln(\text{hardness})]-1.465)}$$
- [IIIA] The numerical CMC criterion for copper in $\mu\text{g/L}$ shall be given by:

$$e^{(0.9422[\ln(\text{hardness})]-1.464)}$$
- [IV] The numerical CCC criterion for lead in $\mu\text{g/L}$ shall be given by:

$$e^{(1.2730[\ln(\text{hardness})]-4.705)}$$
- [IVA] The numerical CMC criterion for lead in $\mu\text{g/L}$ shall be given by:

$$e^{(1.2730[\ln(\text{hardness})]-1.460)}$$
- [V] The numerical CCC criterion for nickel in $\mu\text{g/L}$ shall be given by:

$$e^{(0.8460[\ln(\text{hardness})]+1.1645)}$$
- [VA] The numerical CMC criterion for nickel in $\mu\text{g/L}$ shall be given by:

$$e^{(0.8460[\ln(\text{hardness})]+3.3612)}$$
- [VI] The numerical CMC criterion for silver in $\mu\text{g/L}$ shall be given by:

$$e^{(1.72[\ln(\text{hardness})]-6.52)}$$
- [VII] The numerical CCC criterion for zinc in $\mu\text{g/L}$ shall be given by:

$$e^{(0.8473[\ln(\text{hardness})]+0.7614)}$$
- [VIIA] The numerical CMC criterion for zinc in $\mu\text{g/L}$ shall be given by:

$$e^{(0.8473[\ln(\text{hardness})]+0.8604)}$$

[Note 5] Hardness in the equations (I) through (VIIA) in [Note 4] above shall be measured as mg/L of CaCO_3 . The minimum hardness allowed for use in

those equations shall not be less than 25 mg/L, as CaCO₃, even if the actual ambient hardness is less than 25 mg/L as CaCO₃. The maximum hardness value allowed for use in those equations shall not exceed 400 mg/L, as CaCO₃, even if the actual ambient hardness is greater than 400 mg/L as CaCO₃.

[Note 6]

The CCC criterion for ammonia shall be (i) the thirty day average concentration for total ammonia, computed for a design flow specified in subsection 1105.3; and (ii) and shall account for the influence of the pH and temperature (in degrees centigrade) as shown in the following table (to be linearly extrapolated for values of pH and temperature not in the table). Exceeding of the total ammonia concentration for given pH and temperature shall be considered as the violation of CCC criteria for ammonia.

Total ammonia (in mg/L as ammonia) for various pH and temperatures for CCC:

pH \ °C	0	5	10	15	20	25	30
6.50	3.02	2.82	2.66	2.50	2.53	1.78	1.27
6.75	3.02	2.82	2.66	2.59	2.53	1.78	1.27
7.00	3.02	2.82	2.66	2.59	2.53	1.78	1.27
7.25	3.02	2.82	2.66	2.59	2.53	1.78	1.27
7.50	3.02	2.82	2.66	2.59	2.53	1.78	1.27
7.75	2.80	2.60	2.47	2.38	2.30	1.65	1.18
8.00	1.82	1.71	1.62	1.57	1.55	1.10	0.79
8.25	1.03	0.97	0.93	0.91	0.90	0.65	0.47
8.50	0.58	0.55	0.53	0.53	0.53	0.39	0.29

[Note 7]

The CMC criterion for total ammonia shall be (i) one hour average concentration for total ammonia, computed for a design flow specified in subsection 1105.3; and (ii) and shall account for the influence of the pH and temperature (in degrees centigrade) as shown in the following table (to be linearly extrapolated for values of pH and temperature not in the table). Exceedance of the total ammonia concentration for given pH and temperature shall be considered as the violation of CMC criteria for ammonia.

Total ammonia (in mg/L as ammonia) for various pH & temperatures for CMC:

pH \ °C	0	5	10	15	20	25	30
6.50	35	33	31	30	29	29	20
6.75	32	30	28	27	27	26	18.6
7.00	28	26	25	24	23	23	16.4

7.25	23	22	20	19.7	19.2	19	13.5
7.50	17.4	16.3	15.5	14.9	14.6	14.5	10.3
7.75	12.2	11.4	10.9	10.5	10.3	10.2	7.3
8.00	8.0	7.5	7.1	6.9	6.8	6.8	4.9
8.25	4.5	4.2	4.1	4.0	3.9	4.0	2.9
8.50	2.6	2.4	2.3	2.3	2.3	2.4	1.81

Table 3

Constituent (Chemical Abstracts Service Registry Number)	Criteria for Class	
	C	D
	CCC	CMC

Organics (in µg/L):

Acrolein (107028)	10.0		780
Acrylonitrile (107131)	700.0		0.66,c
Aldrin (309002)	0.4	3.0	0.00014,c
Benzene (71432)	1000		71.0,c
Carbon tetrachloride (56235)	1000		4.4,c
Chlordane (57749)	0.0043	2.4	0.00059,c
Chlorinated benzenes (except Di)	25.0		
Chlorobenzene (108907)			21,000
1,2-Dichlorobenzene (95501)	200		17,000
1,3-Dichlorobenzene (541731)	200		2,600
1,4-Dichlorobenzene (106467)	200		2,600
Hexachlorobenzene (118741)			0.00077,c
Chlorinated ethanes	50		
1,2-Dichloroethane (107062)			99.0,c
1,1,2,2-Tetra- chloroethane (79345)			11.0,c
1,1,1-Trichloroethane (71556)			

Table 3
(continued)

Constituent (Chemical Abstracts Service Registry Number)	Criteria for Class		D
	C		
	CCC	CMC	
Organics (in $\mu\text{g/L}$): (continued)			
1,1,2-Trichloroethane (79005)			42.0,c
Hexachloroethane (67721)			8.9,c
Chlorinated naphthalene			
2-Chloronaphthalene (91587)	200		
Chlorinated phenols			
2-chlorophenol (95578)	100		
2,4-dichlorophenol (120832)	200		790.0
2,4,6-trichlorophenol (88062)			6.5,c
Pentachlorophenol (87865)	[IX]	[IXA]	8.2,c
Chloroalkyl ethers	1000		
Bis(2-Chloroethyl)ether (111444)			1.4,c
Bis(2-Chloroisopropyl) ether (108601)			170,000
DDT or isomers (50293,72559 or 72548)	0.001	1.1	0.00059,c
3,3-Dichlorobenzidine (91941)	10		0.077,c
Dichloroethylenes	1000		
1,1-Dichloroethylene (75354)			3.2,c
1,2-Trans-Dichloro- ethylene (156605)			
1,2-Dichloropropane (78875)	2000		39.0
Dichloropropenes	400		
1,3-Dichloropropylene (542756)			1,700
Dieldrin-60571	0.0019	2.5	0.00014,c
2,4-Dimethylphenol (105679)	200		
2,4-Dinitrotoluene (121142)	33		9.1,c
Dioxin(2,3,7,8-TCDD) (1746016)			0.000000014,c

Table 3
(continued)

Constituent (Chemical Abstracts Service Registry Number)	Criteria for Class		D
	C		
	CCC	CMC	
Organics (in $\mu\text{g/L}$): (continued)			
1,2-Diphenylhydrazine (122667)	30		0.54,c
Endosulfan (959988 or 33213659)	0.056	0.22	2.0
Endosulfan sulfate (1031078)			2.0
Endrin (72208)	0.0023	0.18	0.81
Endrin aldehyde (7421934)			0.81
Ethylbenzene (100414)	40		29,000
Halomethanes	1000		
Bromoform (75252)			360.0,c
Chloroform (67663)	3000		470.0,c
Methyl bromide (74839)			4,000
Methyl chloride (74873)			
Methylene chloride (75092)			1,600,c
Chlorodibromomethane (124481)			34.0,c
Dichlorobromomethane (75274)			22.0,c
Heptachlor (76448)	0.0038	0.52	0.00021,c
Heptachlor epoxide (1024573)	0.0038	0.52	0.00011,c
Hexachlorobutadiene (87683)	10		50.0,c
Hexachlorocyclohexane			
Alpha-BHC (319846)			0.013,c
Beta-BHC (319857)			0.046,c
Gamma-BHC (58899)	0.08	2.0	0.063,c
Hexachloro- cyclopentadiene (77474)	0.5		17,000
Isophorone (78591)	1000		600.0,c
Naphthalene (91203)	600		
Nitrobenzene (98953)	1000		1,900
Nitrophenols	20		
2-Methyl-4,6- Dinitrophenol (534521)			765
2,4-Dinitrophenol (51285)			14,000
Nitrosamines	600		
N-Nitrosodi- methylamine (62759)			8.1,c

Table 3
(continued)

Constituent (Chemical Abstracts Service Registry Number)	Criteria for Class	
	C	D
	CCC	CMC
Organics (in µg/L): (continued)		
N-Nitrosodi- n-Propylamine (621647)		
N-Nitrosodi- phenylamine (86306)		16.0,c
Phenol (108952)		4,600,000
Phthalate esters	100	
Bis(2-Ethylhexyl)- phthalate (117817)		5.9,c
Butylbenzyl phthalate (85687)		
Diethyl phthalate (84662)		120,000
Dimethyl phthalate (131113)		2,900,000
Di-n-Butyl phthalate (84742)		12,000
Polychlorinated biphenyls	0.014	0.000045,c
Polynuclear aromatic hydrocarbons		
Acenaphthene (83329)	50	
Acenaphthylene (208968)		110,000
Anthracene (120127)		0.00054,c
Ben-zidine (92875)	250	0.031,c
Benzo(a)Anthracene (56553)		0.031,c
Benzo(a)Pyrene (50328)		0.031,c
Benzo(b)Fluoranthene (205992)		0.031,c
Benzo(k)Fluoranthene (207089)		0.031,c
Chrysene (218019)		0.031,c
Dibenzo(a,h)- Anthracene (53703)		0.031,c
Fluoranthene (206440)	400	370.0
Fluorene (86737)		14,000

Table 3
(continued)

Constituent (Chemical Abstracts Service Registry Number)	Criteria for Class		D
	C	CCC	
Organics (in µg/L): (continued)			
Indeno(1,2,3-cd)-Pyrene (193395)			0.031,c
Phenanthrene (85018)			11,000
Pyrene (129000)			8.85,c
Tetrachloroethylene (127184)	800		200,000
Toluene (108883)	600		0.00075,c
Toxaphene (8001352)	0.0002	0.73	81.0,c
Trichloroethylene (79016)	1000		525.0,c
Vinyl chloride (75014)			

Notes:

[VIII] ,c After the Human Health Criteria numeric value means that the criteria is based on carcinogenicity (10⁻⁶) risk level.

[IX] The numerical CCC criterion for pentachlorophenol in µg/L shall be given by:
 $e^{(1.005(\text{pH}) - 5.290)}$

[IXA] The numerical CMC criterion for pentachlorophenol in µg/L shall be given by:
 $e^{(1.005(\text{pH}) - 4.830)}$

1105 IMPLEMENTATION AND APPLICABILITY

1105.1 The discharge of pollutants in quantities that prevent the attainment of, or violates the surface water quality standards shall be allowed temporarily only if the discharger can justify every three (3) years through a public hearing process that at least one (1) of the following conditions exist:

- (a) Irretrievable and irreversible conditions which prevent the attainment of the standards; or
- (b) The application of technology sufficient to attain the standards is more stringent than that required by sections 301 and 306 of the federal Clean Water Act, or the application of the technology

would result in substantial and widespread adverse economic and social impacts; or

- (c) One or more of the reasons specified in 40 CFR § 131.10 (g).

1105.2 Variance from meeting water quality standards shall not be granted if the variance will result in loss of protection for an existing use.

1105.3 The design flow to be used for establishing permit limitations for discharges to the District waters shall be as follows:

- (a) The numerical criteria for classes A, B, and C(CCC) as delineated in subsection 1104.6, shall not apply at flows less than the average seven (7) day low flow which has a probability of occurrence of once in ten (10) years.
- (b) The numerical criteria for class C(CMC), as delineated in subsection 1104.6 shall not apply at flows less than the average one day low flow which has a probability of occurrence of once in ten (10) years.
- (c) For carcinogenic pollutants under class D as delineated in subsection 1104.6 the design flow shall be the harmonic mean flow, and for noncarcinogenic pollutants under class D the design flow shall be the average 30 day low flow which has the probability of occurrence of once in five years. The categorization of pollutants to be carcinogenic or non carcinogenic is shown under the column of Human Health Criteria.

1105.4 The numerical criteria for total residual chlorine, fecal coliform, dissolved oxygen, turbidity and total ammonia shall not apply during and for a period of twenty-four (24) hours following high flow conditions, that occur due to local storm events, as described below.

- (a) For the Potomac River the following shall be considered a high flow.
- (i) A flow which may result due to a rainfall with an average intensity greater than two-tenths of an inch (0.2") per hour for a period of one (1) hour in the portion of the District of Columbia contributory to the Potomac River, or
- (ii) A flow equivalent to a three hundred percent (300%) increase in flow during a twenty-four (24) hour period.
- (b) For the Anacostia River the following shall be considered a high flow.
- (i) A flow which may result due to a rainfall with an average

intensity greater than two-tenths of an inch (0.2") per hour for a period of one (1) hour in the portion of the District of Columbia tributary to the Anacostia River, or

- (ii) A flow equivalent to a three hundred percent (300%) increase in flow during a twenty-four (24) hour period.
- (c) For Rock Creek and tributaries the following shall be considered a high flow.
 - (i) A flow which may result due to a rainfall with an average intensity greater than two-tenths of an inch (0.2") per hour for a period of one (1) hour in the portion of the District of Columbia tributary to Rock Creek, or
 - (ii) A flow equivalent to a three hundred percent (300%) increase in flow during a twenty-four (24) hour period.
- (d) For other tributaries to the Potomac and Anacostia Rivers a flow equivalent to a five hundred percent (500%) increase in flow during a twenty-four (24) hour period, shall be considered a high flow.

1105.5

Mixing zones may be allowed for point source discharges of pollutants on a case by case basis, where it is demonstrated that allowing a small area impact will not adversely affect the waterbody as a whole. The following conditions shall apply:

- (a) In the nontidal waters the permissible size of the mixing zone shall be determined by the ability of the organisms to pass through the mixing zone and the size of the receiving water body;
- (b) Mixing zones shall be free from discharged substances that will settle to form objectionable deposits; float to form unsightly masses; or produce objectionable color, odor or turbidity;
- (c) A mixing zone, or two (2) or more mixing zones, shall not form a barrier to the movements of aquatic life nor cause significant adverse impact on aquatic life in shallow areas that serve as nursery;
- (d) The water quality within a mixing zone shall be such that the concentration of a substance in the mixing zone does not cause lethality to passing organisms;
- (e) The positioning of mixing zones shall be done in a manner that provides the greatest protection to aquatic life and for the designated uses of the water;

- (f) Within the estuary, the maximum cross-sectional area occupied by a mixing zone shall not exceed ten percent (10%) of the numerical value of the cross-sectional area of the waterway, and the width of the mixing zone shall not occupy more than one third (1/3) of the width of the waterway;
 - (g) Within the estuary, mixing zones may move with the prevailing hydraulic and meteorological conditions; and,
 - (h) The numerical standards for Criteria Continuous Concentration (CCC) in subsection 1104.6 must be met at the edge of the mixing zone and therefore the CMC criteria will be met within some portions of the mixing zone.
 - (i) Complete mixing will be assumed within the mixing zone.
- 1105.6 Any permits issued pursuant to section 7 of D.C. Law 5-188 shall be based upon consideration of the designated uses.
- 1105.7 Whenever a new water quality standard based effluent limitation is imposed in a discharge permit, the permittee shall have no more than three years in which to achieve compliance with such limitation, unless it can demonstrate that a longer compliance period is warranted. A compliance schedule shall be included in the permit.
- 1106 **SITE SPECIFIC STANDARDS**
- 1106.1 If requested, the Director may allow site specific study to change the numerical criteria when at least one of the following conditions exist:
- (a) The species at the site are more or less sensitive than those included in the national criteria data set; or
 - (b) Physical or chemical characteristics of the site alter the biological availability or toxicity of the chemical.
- 1106.2 If the criteria in subsection 1104.6 are found to be unsuitable for the District waters based on the conditions described in 1106.1, when requested to do so, the Director may adopt site specific criteria for Class C waters, except for mercury and selenium, or for Class D waters, only when site specific study necessitates.
- 1106.3 When requested to do so based on the conditions described in 1106.1, and if warranted, the Director shall allow site specific studies to generate scientific information regarding

- (a) The water effect ratio for metals specific to the District waters;
- (b) The sensitivities of the aquatic organisms prevalent in the District;
- (c) The toxicity of chemicals to the fish in the District waters and related human health effects; and
- (d) Any other compelling factors which merit consideration for changing of the numerical standards in section 1104.6.

1106.4 A person or persons planning to conduct a site specific study shall submit a complete plan of study to the Director for approval, and the site specific study shall be carried out only after a written approval is issued by the Director, subject to the requirements set forth in section 1106.

1106.5 The Director shall provide advance notice to all discharge permittees and applicants for discharge permits prior to the initiation of any site specific study.

1106.6 All site specific studies and adoption of site specific criteria shall be subject to the following requirements:

- (a) Once the Director has given approval for the study, it must be concluded in accordance with the approved plan.
- (b) Person or persons conducting a site specific study subject to subsection 1106.3, shall submit to the Director for review and approval all data, analyses, findings, reports and other information as deemed necessary by the Director.
- (c) The Director shall seek review of the findings of the site specific studies and other relevant information by the public as well as appropriate local and federal government agencies, and shall take into consideration their concerns before adopting any less stringent site specific criterion based on those findings.
- (d) If the study concludes that a more stringent criterion is needed for Class C or D waters than provided in Section 1104.6, then the standards shall be modified to reflect the more stringent level of protection.

1106.7 If a study is conducted to determine the Water Effect Ratio (WER) for metals which criteria are in the dissolved form, the WER must be based on the dissolved fraction of the metals. If the study is conducted to determine the WER for metals which criteria are in the total recoverable form, the WER must be based on the total recoverable fraction of the metals. If

WERs are to be developed at a minimum, the following conditions shall be met unless a deviation or alternate method is approved by the Director.

- (a) If a WER study concludes that an existing criterion is not stringent enough then the criterion shall be made more stringent.
- (b) At least two sensitive indicator species, a fish and at least an invertebrate, shall be used to determine toxicity in laboratory water and water collected from the site.
- (c) The LC_{50} in the laboratory water must be comparable to the LC_{50} data developed by EPA.
- (d) Water samples collected from the site shall be representative of critical low flow. A minimum of eight samples per location per season should be evaluated.
- (e) Samples should be taken at the edge of the mixing zone unless multiple discharges are involved. At least one sample should be reasonably well mixed with the flow of the receiving water or the sample should be well outside the regulatory mixing zone.
- (f) Laboratory water should be same as the water used by EPA and adjusted for site water characteristics and hardness.
- (g) The trace metal should be added in the form of a highly soluble inorganic salt.
- (h) The chemical and physical characteristics, both dissolved and total recoverable metal concentrations, hardness, pH, alkalinity, suspended solids, organic carbon, temperature, and specific metal binding ligands (where known to be important) and any other water quality characteristic that affects bioavailability and toxicity of the water should be monitored during the toxicity tests.
- (i) A water effect ratio which is large or which is based upon highly variable tests may be rejected.
- (j) The water effect ratio shall be the geometric mean of the two species.
- (k) All chemical, biochemical, biological and other appropriate analyses must be conducted by EPA approved methods.

1106.8

If a site specific study is conducted to determine the Human Health Criteria and related human health effects, at a minimum, the following

information shall be incorporated:

- (a) Bioconcentration factors of the substances in the commonly consumed fish in the District;
- (b) Percent lipids in the commonly consumed fish in the District; and
- (c) Information regarding the per capita consumption by the District citizens of fish caught from the District waters.

1106.9 The determination of 1106.8 (a) and (b) shall be done by EPA approved methods.

1106.10 The criteria, based on a site specific study and information collected through the study, shall be calculated using relations developed by EPA (Technical Support Document for Water Quality-Based Toxics Control (EPA/505/2-90-001) issued March, 1991), minus the component for drinking water, as follows:

- (a) For noncarcinogens:

$$\text{NEW CRITERIA} = (\text{RfD} \times \text{WT}) / (\text{FC} \times \text{L} \times \text{FM} \times \text{BCF})$$

where RfD is the reference dose from the EPA Integrated Risk Information System (IRIS) database, WT is 70 kilograms, FC is the daily fish consumption by the exposed population in kilograms per day, L is the ratio of lipid fraction of fish tissue consumed to 3 percent, FM is the food chain multiplier and BCF is the bioconcentration factor for fish with 3% lipid.

- (b) For carcinogens:

$$\text{NEW CRITERIA} = (\text{RL} \times \text{WT}) / (\text{q1}^* \times \text{FC} \times \text{L} \times \text{FM} \times \text{BCF})$$

where WT, FC, L, FM, and BCF are as stated above; RL is 10^{-6} and $q1^*$ is the carcinogenic potency factor from the EPA IRIS database.

1106.11 If the effluent limitation for a metal in a discharge permit is specified as "total recoverable", and the criterion for it in subsection 1104.6 is specified as "dissolved", either of the following two approaches based on EPA Publication "Technical Support Document for Water Quality-Based Toxics Control" (EPA/505/2-90-001 issued March, 1991) may be used, subject to review and approval by the Director:

- (a) The criterion may be used as total recoverable for the purpose of establishing effluent limitations; or

- (b) A site specific ratio between the dissolved and total recoverable metal may be developed by systematic monitoring and analysis of the effluent and the receiving water at the edge of the mixing zone during periods reflective of the environmental conditions based on which the permit is issued. Such a ratio must incorporate considerations to avoid toxicity to aquatic organisms from deposition to the sediment outside of the mixing zone. The ratio of dissolved to total recoverable will then be used by the permitting authority to determine the total recoverable effluent limits based on dissolved metal criterion.

1106.12 The Director may establish additional requirements for adopting site specific water quality standards.

1107 TO 1149 **SECTIONS RESERVED**

1199 **DEFINITIONS**

When used in this chapter, the terms and phrases defined in this section shall have the meanings ascribed:

Ambient - those conditions existing before or upstream of a source or incidence of pollution.

Best Management Practices - one or several practices found to be the most effective and practical means of preventing or reducing point and non-point source pollution to levels that are compatible with water quality goals.

Contamination - an impairment of water quality by biological, chemical, physical, or radiological materials which lowers the water quality to a degree that creates a potential hazard to the environment or public health or interferes with a designated use.

Criteria - any of the group of physical, chemical, biological, and radiological water quality parameters and the associated numerical concentrations or levels which compose the numerical standards of the water quality standards and which define a component of the quality of the water needed for a designated use.

CCC or Criteria Continuous Concentration - the highest concentration of a pollutant to which aquatic life can be exposed for an extended period of time (four day average) without deleterious effects at a frequency that should not exceed more than once every three years.

CMC or Criteria maximum concentration - the highest concentration of a pollutant to which aquatic life can be exposed for a short period of time (one hour average) without deleterious effects at a frequency that should not exceed more than once every three years.

Current Use - the use which is generally and usually met in the waterbody at the present time in spite of the numeric criteria for that use not being met sometimes.

Department - the Department of Consumer and Regulatory Affairs, or a subsequent agency delegated to implement the District of Columbia Water Pollution Control Act (D.C. Law 5-188) and regulations under the Act.

Designated Use - the use specified for the waterbody in the water quality standards whether or not it is being attained.

Director - the Director of the Department, as defined above, or his or her representative.

District - the District of Columbia.

EPA - U. S. Environmental Protection Agency.

Existing Use - the use actually attained in the waterbody on or after November 28, 1975.

Harmonic Mean Flow - the number of daily flow measurements divided by the sum of the reciprocals of the flows. That is, it is the reciprocal of the mean of the reciprocals.

High Quality Waters - waters that have quality which is better than needed to protect fishable/swimmable streams.

LC₅₀ or Lethal Concentration - the numerical limit or concentration of a test material mixed in water, which is lethal to fifty percent (50%) of the aquatic organisms exposed to the test material for a period of 96 hours.

Loading - the total quantity in a given period of time, e.g., pounds of a pollutant/day.

Mixing Zone - a limited area or a volume of water where initial dilution of a discharge takes place; and where numerical water quality criteria can be exceeded but acute toxic conditions are prevented from occurring.

Narrative Criteria - a condition that should not be attained in a specific medium to maintain a given designated use and is generally expressed in a

"free from" format.

Nonpoint Source - any source from which pollutants are or may be discharged other than a point source.

Numerical Criteria - the maximum level a contaminant shall not exceed, or the minimum level of a constituent that shall be attained, or the acceptable range of a parameter in water that shall be attained to maintain a given designated use.

Permitted - an activity, facility or entity authorized through a department permit to treat, store, or dispose of materials or wastes.

Point Source - any discrete source of quantifiable pollutants, including, but not limited to a municipal treatment facility discharge, residential, commercial or industrial waste discharge or a combined sewer overflow; or any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, or concentrated animal feeding operation from which contaminants are or may be discharged.

Pollution - the man-made or man-induced alteration of the chemical, physical, biological, or radiological integrity of water.

Pollutant - any substance which may alter or interfere with the restoration or maintenance of the chemical, physical, radiological, or biological integrity of the waters of the District; or any dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions chemical wastes, hazardous wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, oil, gasoline and related petroleum products, and industrial, municipal, and agricultural wastes.

Primary Contact Recreation - those water contact sports or activities which result in frequent whole body immersion and/or involve significant risks of ingestion of the water.

Secondary Contact Recreation - those water contact sports or activities which seldom result in whole body immersion and/or do not involve significant risks of ingestion of the water.

Solid Waste - all putrescible and non-putrescible solid and semisolid wastes, including but not limited to garbage, rubbish, ashes, industrial wastes, swill, demolition and construction wastes, abandoned vehicles or parts thereof, and discarded commodities. This includes all liquid, solid and semisolid, materials which are not the primary products of public,

private, industrial or commercial mining, and agricultural operations.

Standards - those regulations, in the form of numerical, narrative, or enforcement standards which specify a level of quality of the waters of the District necessary to sustain the designated uses.

Surface Waters - all rivers, lakes, ponds, wetlands, inland waters, streams, and all other water and water courses within the jurisdiction of the District of Columbia.

Water Effect Ratio - the ratio of site water LC_{50} value to the laboratory water LC_{50} value.

Waters of the District - flowing and still bodies of water, whether artificial or natural, whether underground or on land, so long as in the District of Columbia, but excludes water on private property prevented from reaching underground or land water courses, and also excludes water in closed collection or distribution systems.

Wetland - a marsh, swamp, bog or other area periodically inundated by tides or having saturated soil conditions for prolonged periods of time and capable of supporting aquatic vegetation.