DEPARTMENT OF ENERGY AND ENVIRONMENT

NOTICE OF PROPOSED RULEMAKING

Water Quality Standards and Ground Water Standards Update for the Triennial Review 2021

The Interim Director of the Department of Energy and Environment (DOEE), in accordance with the authority set forth in the District Department of the Environment Establishment Act of 2005, effective February 15, 2006 (D.C. Law 16-51; D.C. Official Code §§ 8-151.01, *et seq*.), sections 5 and 21 of the Water Pollution Control Act of 1984, effective March 16, 1985 (D.C. Law 5-188; D.C. Official Code §§ 8-103.04 and 8-103.20, and Mayor's Order 98-50, dated April 15, 1998, as amended by Mayor's Order 2006-61, dated June 14, 2006, hereby gives notice of the intent to adopt the following amendments to Chapter 11 (Water Quality Standards) of Title 21 (Water and Sanitation) of the District of Columbia Municipal Regulations (DCMR) in not less than 60 days from the date of publication of this notice in the *D.C. Register*.

DOEE is conducting the 2021 triennial review of the District of Columbia's Water Quality Standards ("WQS") regulations as required by section 5(a) of the Water Pollution Control Act (D.C. Official Code § 8-103.04(a)), and section 303(c) of the federal Clean Water Act (33 U.S.C. § 1313(c)). The purpose of the WQS triennial review is to evaluate the District's WQS regulations and adopt or revise WQS to be consistent with the requirements of the Clean Water Act.

DOEE is proposing to add a numeric equivalent for ambient turbidity, to adopt numeric criteria for diazinon, and to add mercury to the list of referenced conversion factors. DOEE is also proposing to update the groundwater standard and early warning values for arsenic, and proposing to correct the note for the detection limit, minimum level of quantitation, and the Environmental Protection Agency (EPA) method for the silver ground water criterion.

The District's current turbidity criteria are twenty (20) Nephelometric Turbidity Units (NTU) above ambient for primary contact, secondary contact, and aquatic life designated uses. DOEE is not proposing to change the criteria; DOEE is, however, proposing a numeric equivalent for "ambient turbidity" to clarify the criteria. This rulemaking proposes two ambient equivalencies, one for District surface waters that are in the Piedmont ecoregion (that is, the Potomac River northwest of the Theodore Roosevelt Bridge and its tributaries, and Rock Creek) and the other one for District surface waters that are in the Coastal Plain ecoregion (that is, the Potomac River east of the Theodore Roosevelt Bridge and its tributaries and the Anacostia River and its tributaries).

The ambient equivalencies were calculated using twenty (20) years of turbidity data (over twenty thousand (20,000) samples taken from fifty (50) monitoring stations in District surface waters) and using established EPA methodology. The scientifically based methodology is used to determine ambient values that are protective of the primary contact and aquatic life designated uses, and is found in EPA's document entitled "Ambient Water Quality Criteria Recommendations: Information Supporting the Development of State and Tribal Nutrient Criteria: Rivers and Streams in Nutrient Ecoregion IX," EPA 822-B-00-019, https://www.epa.gov/sites/default/files/documents/rivers9.pdf, which was published in 2000.

Diazinon (CAS number 333415) is a broad-spectrum insecticide. Diazinon was used commonly for household applications on lawns, ornamentals, and crack and crevice treatments before it was prohibited for residential use in 2004. DOEE is proposing to adopt EPA's recommended diazinon aquatic life ambient water quality criteria, EPA-822-R-05-006, https://www.epa.gov/sites/default/files/2019-03/documents/ambient-wqc-diazinon-final.pdf, of 0.3397 micrograms per liter (µg/L) as the freshwater acute criterion and 0.1699 µg/L as the freshwater chronic criterion. Diazinon is not routinely found in the District; however, there is one pesticide registered in the District, corathon, that contains diazinon. There are no reported uses, sales, or hotspots of diazinon in the District. There are no EPA National Pollution Discharge Elimination System (NPDES) individual permits that have diazinon permit limits. In addition, EPA strongly supports and encourages the adoption of this nationally recommended criteria.

DOEE is proposing to add mercury to the list of metals requiring an EPA conversion since the numeric criteria were established for total recoverable metals but are being used for dissolved metals. The failure to include mercury in the original table was an oversight that is being corrected here, per the EPA conversion factors specified in Appendix A of "EPA National Recommended Water Quality Criteria: 2002," EPA-822-R-02-047, November 2002, https://nepis.epa.gov/Exe/ZyPDF.cgi/P1005EYQ.PDF?Dockey=P1005EYQ.PDF.

Additionally, DOEE is proposing to update the District's Ground Water Standards (GWS). The District uses EPA's drinking water standards as a basis for the District's GWS because groundwater is protected as a raw drinking water source. GWS are used to protect groundwater for its beneficial uses, thereby minimizing harm to human and ecological receptors. DOEE is proposing to update the ground water quality standard for arsenic from 0.050 milligrams per liter (mg/L) to 0.010 mg/L and the early warning value from 0.01 mg/L to 0.002 mg/L (66 FR 6976 (https://www.federalregister.gov/documents/2001/07/19/01-18093/national-primary-drinking-water-regulations-arsenic-and-clarifications-to-compliance-and-new-source) and 40 CFR 141.62 (https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-141/subpart-G/section-141.62)). In 2001, EPA updated the 1993 arsenic criteria based on health benefits including reductions in the numbers of fatal and non-fatal lung and bladder cancers in a year and the costs of implementation by the regulated community (EPA, 2001, EPA 816-F-01-004 (https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=300065YM.txt), and 2000b). There should be minimal costs to implement this change as sampling and treatment technologies to achieve the standard have been in use since EPA required them to be implemented by 2006.

DOEE is also proposing to correct the note for the silver ground water criterion by replacing it with the correct detection limit, minimum level of quantitation, and the EPA method.

Lastly, DOEE is making available the socio-economic, institutional, technological, and environmental (SITE) study which describes DOEE's rationale for proposing WQS updates and considers the impacts of applying and enforcing the updates, pursuant to D.C. Official Code § 8-103.04(c). The SITE study may be viewed at: https://doee.dc.gov/service/public-notices-hearings.

Chapter 11, WATER QUALITY STANDARDS, of Title 21, WATER AND SANITATION, of the DCMR is amended as follows:

Section 1104, STANDARDS, is amended as follows:

Subsection 1104.8 is amended to read as follows:

1104.8 Unless otherwise stated, the numeric criteria that shall be met to attain and maintain designated uses are as follows in Tables 1 through 3:

Table 1: Conventional Constituents Numeric Criteria

Constituent	Class A	Class B	Class C
Chlorophyll *a*[a,b] (μg/L)(seasonal segment average)			
July 1 through September 30	—	—	25
Dissolved Oxygen (mg/L)			
Instantaneous minimum (year-round)[c]	—	—	5.0
February 1 through May 31[a,b]			
7-day mean	—	—	6.0
Instantaneous minimum	—	—	5.0
June 1 through January 31[a,b]			
30-day mean	—	—	5.5
7-day mean	—	—	4.0
Instantaneous minimum[d]	—	—	3.2
E. coli[e] (MPN/100 mL)			
Single Sample Value	410	—	—
Geometric mean (Geometric mean of 5 samples over a maximum period of 30 days)	126	—	—
Hydrogen sulfide (maximum μg/L)	—	—	2.0
Oil and grease (mg/L)	—	—	10.0
pH			
Greater than	6.0	6.0	6.0
And less than	8.5	8.5	8.5
Secchi depth[a,b] (m)(seasonal segment average)			
April 1 through October 31	—	—	0.8
Temperature (°C)			
Maximum	—	—	32.2
Maximum change above ambient	—	—	2.8
Total dissolved gases (maximum % saturation)	—	—	110
Turbidity Increase above Ambient (NTU)[f]	20	20	20

Notes:

[a] Attainment of the dissolved oxygen, water clarity and chlorophyll *a* water quality criteria that apply to tidally influenced Class C waters will be determined following the guidelines

documented in the 2003 Environmental Protection Agency publication: Ambient Water Quality Criteria for Dissolved Oxygen, Water Clarity and Chlorophyll *a* for the Chesapeake Bay and its Tidal Tributaries, EPA 903-R-03-002 (April 2003, Region III Chesapeake Bay Program Office, Annapolis, Maryland); 2004 Addendum, EPA 903-R-04-005 (October 2004); 2007 Addendum, EPA 903-R-07-003 CBP/TRS 285/07 (July 2007); 2007 Chlorophyll Criterion Addendum, EPA 903-R-07-005 CBP/TRS 288-07 (November 2007); 2008 Addendum, EPA 903-R-08-001 CBP/TRS 290-08 (September 2008); and 2010 Criterion Addendum, EPA 903-R-10-002 CBP/TRS-301-10 (May 2010).

[b] This criterion shall apply to only tidally influenced waters.

[c] This criterion shall apply to only non-tidal waters.

[d] An instantaneous minimum dissolved oxygen concentration of 4.3 mg/L shall apply in tidally influenced waters at temperatures greater than 29°C.

[e] The geometric mean criterion shall be used for assessing water quality trends and for permitting. The single sample value criterion shall be used for assessing water quality trends only.

[f] The ambient turbidity equivalent for Piedmont river mainstems and tributaries (Potomac River northwest of the Theodore Roosevelt Bridge and its tributaries, and Rock Creek) is 1 NTU. The ambient equivalent for Coastal Plain river mainstems and tributaries (Potomac River east of the Theodore Roosevelt Bridge and Anacostia River and its tributaries) is 6 NTU.

Table 2: Trace Metals and Inorganics Numeric Criteria

Constituent[a] Trace metals and inorganics in μg/L, except where stated otherwise (see Notes below)	**CAS Number**	**Class C**		**Class D[b]**
		CMC 1-Hour Avg (Acute)	**CCC 4-Day Avg (Chronic)**	**30-Day Avg**
Ammonia, total ammonia nitrogen (in mg N/L)	7664417	See Footnote g	See Footnote h	—
Antimony, total recoverable	7440360	—	—	640
Arsenic, dissolved	7440382	340	150	0.14[c]
Cadmium, dissolved	7440439	See Footnotes d and e	See Footnotes d and e	—
Chlorine, total residual	7782505	19	11	—
Chromium, hexavalent, dissolved	18540299	16[e]	11[e]	—
Chromium, trivalent, dissolved	16065831	See Footnotes d and e	See Footnotes d and e	—

Constituent[a] Trace metals and inorganics in μg/L, except where stated otherwise (see Notes below)	**CAS Number**	**Class C**		**Class D**[b]
		CMC 1-Hour Avg (Acute)	**CCC 4-Day Avg (Chronic)**	**30-Day Avg**
Copper, dissolved	7440508	See Footnotes d and e	See Footnotes d and e	—
Cyanide, free	57125	22	5.2	400
Iron, dissolved	7439896	—	1,000	—
Lead, dissolved	7439921	See Footnotes d and e	See Footnotes d and e	—
Manganese	7439965	—	—	100
Mercury, dissolved	7439976	1.4[e]	0.77[e]	0.15
Methylmercury (mg/kg, fish tissue residue)	22967926	—	—	0.3
Nickel, dissolved	7440020	See Footnotes d and e	See Footnotes d and e	4,600
Selenium, total recoverable	7782492	20	5	4,200
Silver, dissolved	7440224	See Footnotes d and e	—	65,000
Thallium, dissolved	7440280	—	—	0.47
Zinc, dissolved	7440666	See Footnotes d and e	See Footnotes d and e	26,000

Notes:

[a] If there are no numeric criteria listed for a constituent, the criteria to attain and maintain designated uses shall be the narrative criteria for toxics contained in these water quality standards.

[b] The Class D human health criteria for metals are based on total recoverable metals.

[c] The criteria is based on carcinogenicity of 10^{-6} risk level.

[d] The formulas for calculating the criterion for the hardness dependent constituents indicated above are as follows:

Table 2a: Formulas for Hardness-Dependent Constituents[e]

Constituent	**CMC (Acute)**	**CCC (Chronic)**
Cadmium	$e^{(0.9789[\ln(\text{hardness})] - 3.866)}$	$e^{(0.7977[\ln(\text{hardness})] - 3.909)}$
Chromium III	$e^{(0.8190[\ln(\text{hardness})] + 3.7256)}$	$e^{(0.8190[\ln(\text{hardness})] + 0.6848)}$
Copper	$e^{(0.9422[\ln(\text{hardness})] - 1.700)}$	$e^{(0.8545[\ln(\text{hardness})] - 1.702)}$
Lead	$e^{(1.2730[\ln(\text{hardness})] - 1.460)}$	$e^{(1.2730[\ln(\text{hardness})] - 4.705)}$

Constituent	CMC (Acute)	CCC (Chronic)
Nickel	$e^{(0.8460[\ln(\text{hardness})] + 2.255)}$	$e^{(0.8460[\ln(\text{hardness})] + 0.0584)}$
Silver	$e^{(1.7200[\ln(\text{hardness})] - 6.590)}$	—
Zinc	$e^{(0.8473[\ln(\text{hardness})] + 0.884)}$	$e^{(0.8473[\ln(\text{hardness})] + 0.884)}$

[e] The criterion is multiplied by the EPA conversion factor which converts the total recoverable metal to dissolved metal in Table 2b as specified in §1105.10:

Table 2b: Conversion Factors from Total Recoverable to Dissolved Metals[f]

Constituent	CMC (Acute)	CCC (Chronic)
Cadmium	1.136672 − [(ln hardness)(0.041838)]	1.101672 − [(ln hardness)(0.041838)]
Chromium III	0.316	0.860
Chromium VI	0.982	0.962
Copper	0.960	0.960
Lead	1.46203 − [(ln hardness)(0.145712)]	1.46203 − [(ln hardness)(0.145712)]
Mercury	0.85	0.85
Nickel	0.998	0.997
Silver	0.85	—
Zinc	0.978	0.986

[f] Hardness in Tables 2a and 2b shall be measured as mg/L of calcium carbonate ($CaCO_3$). The allowed hardness value range shall be 25 – 400 mg/L as $CaCO_3$, even if the actual ambient water hardness is outside of that range.

[g] Criterion Maximum Concentration (CMC) for total ammonia nitrogen (in mg N/L):

(a) Shall be the one (1)-hour average concentration for total ammonia nitrogen, computed for a design flow specified in §1105.5.

(b) Shall account for the influence of the pH as shown in Table 2e.

(c) Is calculated using the following formula, which shall be used to calculate unlisted values: $\text{CMC} = [(0.411/(1+10^{7.204-\text{pH}})] + [58.4/(1+ 10^{\text{pH}-7.204})]$.

Table 2e: Total Ammonia Nitrogen (in mg N/L) CMC for Various pH

pH	CMC	pH	CMC	pH	CMC	pH	CMC
6.50	48.8	7.20	29.5	7.90	10.1	8.60	2.65
6.60	46.8	7.30	26.2	8.00	8.40	8.70	2.20
6.70	44.6	7.40	23.0	8.10	6.95	8.80	1.84
6.80	42.0	7.50	19.9	8.20	5.72	8.90	1.56
6.90	39.1	7.60	17.0	8.30	4.71	9.00	1.32
7.00	36.1	7.70	14.4	8.40	3.88		
7.10	32.8	7.80	12.1	8.50	3.20		

[h] Criterion Continuous Concentration (CCC) for total ammonia nitrogen (in mg TAN/L):

(a) Shall be the thirty (30)-day average concentration for total ammonia computed for a design flow specified in §1105.5.

(b) Shall account for the influence of the pH and temperature as shown in Table 2b and Table 2c. The highest four (4)-day average within the thirty (30)-day period shall not exceed 2.5 times the CCC.

(c) Is, for the period March 1 through June 30, calculated using the following formula, which shall be used to calculate unlisted values: $CCC = [(0.0577/(1+10^{7.688-pH})) + (2.487/(1+ 10^{pH-7.688}))] \times MIN(2.85, 1.45 \times 10^{0.028 \times (25-T)})$, where MIN indicates the lesser of the two values $(2.85, 1.45 \times 10^{0.028 \times (25-T)})$ separated by a comma, as shown in Table 2c

(d) Is, for the period July 1 through February 28/29, calculated using the following formula, which shall be used to calculate unlisted values: $CCC = [(0.0577/(1+10^{7.688-pH})) + (2.487/(1+ 10^{pH-7.688}))] \times [1.45 \times 10^{0.028 \times (25-MAX(T,7)}]$, where MAX indicates the greater of the two values (T,7) separated by a comma, as shown in Table 2d.

Table 2c: Total Ammonia Nitrogen (in mg N/L) CCC for Various pH and Temperatures for March 1 through June 30

	Temperature (°C)									
pH	**0**	**14**	**16**	**18**	**20**	**22**	**24**	**26**	**28**	**30**
6.50	6. 67	6.67	6.06	5.33	4.68	4.12	3.62	3.18	2.80	2.46
6.60	6.57	6.57	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42
6.70	6.44	6.44	5.86	5.15	4.52	3.98	3.42	3.00	2.64	2.32
6.80	6.29	6.29	5.72	5.03	4.42	3.89	3.42	3.00	2.64	2.32
6.90	6.12	6.12	5.56	4.89	4.30	3.78	3.32	2.92	2.57	2.25
7.00	5.91	5.91	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18
7.10	5.67	5.67	5.15	4.53	3.98	3.50	3.08	2.70	2.38	2.09
7.20	5.39	5.39	4.90	4.31	3.78	3.33	2.92	2.57	2.26	1.99
7.30	5.08	5.08	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87
7.40	4.73	4.73	4.30	3.97	3.49	3.06	2.69	2.37	2.08	1.83
7.50	4.36	4.36	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61
7.60	3.98	3.98	3.61	3.18	2.79	2.45	2.16	1.90	1.67	1.47
7.70	3.58	3.58	3.25	2.86	2.51	2.21	1.94	1.71	1.50	1.32
7.80	3.18	3.18	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17
7.90	2.80	2.80	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03
8.00	2.43	2.43	2.21	1.94	1.71	1.50	1.32	1.16	1.02	0.897
8.10	2.10	2.10	1.91	1.68	1.47	1.29	1.14	1.00	0.879	0.773
8.20	1.79	1.79	1.63	1.43	1.26	1.11	0.973	0.855	0.752	0.661
8.30	1.52	1.52	1.39	1.22	1.07	0.941	0.827	0.727	0.639	0.562

	Temperature (°C)									
pH	**0**	**14**	**16**	**18**	**20**	**22**	**24**	**26**	**28**	**30**
8.40	1.29	1.29	1.17	1.03	0.906	0.796	0.700	0.615	0.541	0.475
8.50	1.09	1.09	0.990	0.870	0.765	0.672	0.591	0.520	0.457	0.401
8.60	0.920	0.920	0.836	0.735	0.646	0.568	0.499	0.439	0.386	0.339
8.70	0.778	0.778	0.707	0.622	0.547	0.480	0.422	0.371	0.326	0.287
8.80	0.661	0.661	0.601	0.528	0.464	0.408	0.359	0.315	0.277	0.208
8.90	0.565	0.565	0.513	0.451	0.397	0.349	0.306	0.269	0.237	0.208
9.00	0.486	0.486	0.442	0.389	0.342	0.300	0.264	0.232	0.204	0.179

Table 2d: Total Ammonia Nitrogen (in mg N/L) CCC Criterion for Various pH and Temperatures for July 1 through February 28/29

	Temperature (°C)									
pH	**0-7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15***	**16***
6.50	10.8	10.1	9.51	8.92	8.36	7.84	7.35	6.89	6.46	6.06
6.60	10.7	9.99	9.37	8.79	8.24	7.72	7.24	6.79	6.36	5.97
6.70	10.5	9.81	9.20	8.62	8.08	7.58	7.11	6.66	6.25	5.86
6.80	10.2	9.58	8.98	8.42	7.90	7.40	6.94	6.51	6.10	5.72
6.90	9.93	9.31	8.73	8.19	7.68	7.20	6.75	6.33	5.93	5.56
7.00	9.60	9.00	8.43	7.91	7.41	6.95	6.52	6.11	5.73	5.37
7.10	9.20	8.63	8.09	7.58	7.11	6.67	6.25	5.86	5.49	5.15
7.20	8.75	8.20	7.69	7.21	6.76	6.34	5.94	5.57	5.22	4.90
7.30	8.24	7.73	7.25	6.79	6.37	5.97	5.60	5.25	4.92	4.61
7.40	7.69	7.21	6.76	6.33	5.94	5.57	5.22	4.89	4.59	4.30
7.50	7.09	6.64	6.23	5.84	5.48	5.13	4.81	4.51	4.23	3.97
7.60	6.46	6.05	5.67	5.32	4.99	4.68	4.38	4.11	3.85	3.61
7.70	5.81	5.45	5.11	4.79	4.49	4.21	3.95	3.70	3.47	3.25
7.80	5.17	4.84	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89
7.90	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89	2.71	2.54
8.00	3.95	3.70	3.47	3.26	3.05	2.86	2.68	2.52	2.36	2.21
8.10	3.41	3.19	2.99	2.81	2.63	2.47	2.31	2.17	2.03	1.91
8.20	2.91	2.73	2.56	2.4	2.25	2.11	1.98	1.85	1.74	1.63
8.30	2.47	2.32	2.18	2.04	1.91	1.79	1.68	1.58	1.48	1.39
8.40	2.09	1.96	1.84	1.73	1.62	1.52	1.42	1.33	1.25	1.17
8.50	1.77	1.66	1.55	1.46	1.37	1.28	1.20	1.13	1.06	0.990
8.60	1.49	1.40	1.31	1.23	1.15	1.08	1.01	0.951	0.892	0.836
8.70	1.26	1.18	1.11	1.04	0.976	0.915	0.858	0.805	0.754	0.707
8.80	1.07	1.01	0.944	0.885	0.829	0.778	0.729	0.684	0.641	0.601
8.90	0.917	0.860	0.806	0.756	0.709	0.664	0.623	0.584	0.548	0.513
9.00	0.790	0.740	0.694	0.651	0.610	0.572	0.536	0.503	0.471	0.442

*At 15°C and above, the criterion for July 1 through February 28/29 is the same as the criterion for March 1 through June 30.

Table 3: Organic Constituents Numeric Criteria

Organic Constituent[a] (*µg*/L)	CAS Number	Class C		Class D
		CMC 1-Hour Avg (Acute)	CCC 4-Day Avg (Chronic)	30-Day Avg
Acrolein	107028	3.0	3.0	400
Acrylonitrile	107131	—	700.0	7.0, [b]
Aldrin	309002	3.0	0.4	0.00000077, [b]
Benzene	71432	—	1000	16, [b]
Benzidine	92875	—	250	0.011, [b]
Carbamates	—	—	—	—
Carbaryl (Sevin)	63252	2.1	2.1	—
Carbon Tetrachloride	56235	—	1000	5, [b]
Chlordane	57749	2.4	0.0043	0.00032, [b]
Chlorinated Benzenes (except Di)	—	—	25.0	—
Chlorobenzene	108907	—	—	800
1,2-Dichlorobenzene	95501	—	200	3,000
1,3-Dichlorobenzene	541731	—	200	10
1,4-Dichlorobenzene	106467	—	200	900
Hexachlorobenzene	118741	—	—	0.000079, [b]
Pentachlorobenzene	608935	—	—	0.1
1,2,4,5-Tetrachlorobenzene	95943	—	—	0.03
1,2,4-Trichlorobenzene	120821	—	—	0.076
Chlorinated Ethanes	—	—	50	—
1,2-Dichloroethane	107062	—	—	650, [b]
Hexachloroethane	67721	—	—	0.1, [b]
1,1,2,2-Tetrachloroethane	79345	—	—	3, [b]
1,1,1-Trichloroethane	71556	—	—	200,000
1,1,2-Trichloroethane	79005	—	—	8.9, [b]
Chlorinated Naphthalenes	—	—	—	—
2-Chloronaphthalene	91587	—	200	1000
Chlorinated Phenols	—	—	—	—
2-Chlorophenol	95578	—	100	800
2,4-Dichlorophenol	120832	—	200	60
Pentachlorophenol	87865	Footnote c	Footnote c	0.04, [b]
2,4,5-Trichlorophenol	95954	—	—	600
2,4,6-Trichlorophenol	88062	—	—	2.8, [b]
3-Methyl-4-Chlorophenol	59507	—	—	2,000

Organic Constituent[a] (*µg*/L)	CAS Number	Class C		Class D
		CMC 1-Hour Avg (Acute)	CCC 4-Day Avg (Chronic)	30-Day Avg
Chloroalkyl Ethers	—	—	1000	—
Bis(2-Chloroethyl) Ether	111444	—	—	2.2, [b]
Bis(2-Chloro-1-methylethyl) Ether	108601	—	—	4,000
Bis(Chloromethyl) Ether	542881	—	—	0.017, [b]
Chlorophenoxy Herbicide (2,4-D)	94757	—	—	12,000
Chlorophenoxy Herbicide (2,4,5-TP) [Silvex]	93721	—	—	400
3,3-Dichlorobenzidine	91941	—	10	0.15, [b]
Dichloroethylenes	—	—	1000	—
1,1-Dichloroethylene	75354	—	—	20,000
Trans-1,2-Dichloroethylene	156605	—	—	4,000
1,2-Dichloropropane	78875	—	2000	31, [b]
Dichloropropenes	—	—	400	—
1,3-Dichloropropene	542756	—	—	12, [b]
Dieldrin	60571	0.24	0.056	0.0000012, [b]
2,4-Dimethylphenol	105679	—	200	3000
2,4-Dinitrotoluene	121142	—	33	1.7, [b]
Dioxin (2,3,7,8-TCDD)	1746016	—	—	0.0000000051, [b]
1,2-Diphenylhydrazine	122667	—	30	0.2, [b]
Endosulfan	—	0.22	0.056	89
alpha-Endosulfan	959988	0.22	0.056	30
beta-Endosulfan	33213659	0.22	0.056	40
Endosulfan Sulfate	1031078	—	—	40
Endrin	72208	0.086	0.036	0.03
Endrin Aldehyde	7421934	—	—	1
Ethylbenzene	100414	—	40	130
Halomethanes	—	—	1000	—
Bromoform	75252	—	—	120, [b]
Chloroform	67663	—	3000	2000
Chlorodibromomethane	124481	—	—	21, [b]
Dichlorobromomethane	75274	—	—	27, [b]
Methyl Bromide	74839	—	—	10,000
Methylene Chloride	75092	—	—	1,000, [b]
Heptachlor	76448	0.52	0.0038	0.0000059, [b]
Heptachlor Epoxide	1024573	0.52	0.0038	0.000032, [b]
Hexachlorobutadiene	87683	—	10	0.01, [b]
Hexachlorocyclohexane (HCH)-	608731	—	—	0.010, [b]

Organic Constituent[a] (*µg*/L)	CAS Number	Class C		Class D
		CMC 1-Hour Avg (Acute)	CCC 4-Day Avg (Chronic)	30-Day Avg
Technical				
alpha-Hexachlorocyclohexane (HCH)	319846	—	—	0.00039, [b]
beta-Hexachlorocyclohexane (HCH)	319857	—	—	0.014, [b]
gamma-Hexachlorocyclohexane (HCH) [Lindane]	58899	0.95	0.08	4.4
Hexachlorocyclopentadiene	77474	—	0.5	4
Isophorone	78591	—	1000	1,800, [b]
Methoxychlor	72435	—	0.03	0.02
Mirex	2385855	—	0.001	—
Nitrobenzene	98953	—	1000	600
Nitrophenols	—	—	20	—
2-Methyl-4,6- Dinitrophenol	534521	—	—	30
2,4-Dinitrophenol	51285	—	—	300
Dinitrophenols	25550587	—	—	1,000
Nitrosamines	—	—	600	1.24, [b]
N-Nitrosodibutylamine	924163	—	—	0.22 [b]
N-Nitrosodiethylamine	55185	—	—	1.24, [b]
N-Nitrosodimethylamine	62759	—	—	3.0, [b]
N-Nitrosodi-n-Propylamine	621647	—	—	0.51, [b]
N-Nitrosodiphenylamine	86306	—	—	6.0, [b]
N-Nitrosopyrrolidine	930552	—	—	34, [b]
Nonylphenol	84852153	28	6.6	—
Organochlorides	—	—	—	—
4,4’-DDD	72548	1.1	0.001	0.00012, [b]
4,4’-DDE	72559	1.1	0.001	0.000018, [b]
4,4’-DDT	50293	1.1	0.001	0.000030, [b]
Organophosphates	—	—	—	—
Diazinon	333415	0.3397	0.1699	—
Guthion	86500	—	0.01	—
Malathion	121755	—	0.1	—
Parathion	56382	0.065	0.013	—
Phenol	108952	—	—	300,000
Phthalate Esters	—	—	100	—
Bis(2-Ethylhexyl) Phthalate	117817	—	—	0.37, [b]
Butylbenzyl Phthalate	85687	—	—	0.10, [b]
Diethyl Phthalate	84662	—	—	600
Dimethyl Phthalate	131113	—	—	2,000

Organic Constituent[a] (*µg*/L)	CAS Number	Class C		Class D
		CMC 1-Hour Avg (Acute)	CCC 4-Day Avg (Chronic)	30-Day Avg
Di-n-Butyl Phthalate	84742	—	—	30
Polychlorinated Biphenyls (PCB)[d]	—	—	0.014	0.000064, [b]
Polynuclear aromatic hydrocarbons (PAH)	—	—	—	—
Acenaphthene	83329	—	50	90
Acenaphthylene	208968	—	—	—
Anthracene	120127	—	—	400
Benzo(a)anthracene	56553	—	—	0.0013, [b]
Benzo(a)pyrene	50328	—	—	0.00013, [b]
Benzo(b)fluoranthene	205992	—	—	0.0013, [b]
Benzo(k)fluoranthene	207089	—	—	0.013, [b]
Chrysene	218019	—	—	0.13, [b]
Dibenzo(a,h)anthracene	53703	—	—	0.00013, [b]
Fluoranthene	206440	—	400	20
Fluorene	86737	—	—	70
Indeno(1,2,3-cd)pyrene	193395	—	—	0.0013, [b]
Naphthalene	91203	—	600	—
Pyrene	129000	—	—	30
Tetrachloroethylene	127184	—	800	29, [b]
Toluene	108883	—	600	520
Toxaphene	8001352	0.73	0.0002	0.00071, [b]
Tributyltin (TBT)	—	0.46	0.072	—
Trichloroethylene	79016	—	1000	7, [b]
Vinyl chloride	75014	—	—	1.6, [b]

Notes:

[a] For constituents with blank numeric criteria, EPA has not made a criteria recommendation under CWA 304(a) at this time. However, permit authorities will address these constituents in NPDES permit actions using the narrative criteria for toxics.

[b] The criteria are based on carcinogenicity of 10^{-6} risk level.

[c] The formulas for calculating the concentrations of substances indicated above are as follows:

Pentachlorophenol CMC (*µg*/L)	Pentachlorophenol CCC (*µg*/L)
$e^{(1.005(pH) - 4.869)}$	$e^{(1.005(pH) - 5.134)}$

[d] The polychlorinated biphenyls (PCB) criterion applies to total PCBs (*e.g.*, the sum of all

congener, isomer, homolog, or Aroclor analyses.)

Section 1105, IMPLEMENTATION AND APPLICABILITY, is amended as follows:

Subsection 1105.10 is amended to read as follows:

1105.10 The numerical criteria for dissolved cadmium, trivalent chromium, copper, lead, nickel, silver, and zinc shall be calculated by multiplying the criteria for these metals as specified in Table 2 of §1104.8 by the EPA Conversion Factors specified in Appendix A of the EPA National Recommended Water Quality Criteria: 2002, EPA-822-R-02-047, November 2002. This conversion is required to convert the metal criteria from total recoverable metals to dissolved metals.

Section 1155, GROUND WATER STANDARDS, is amended as follows:

Subsection 1155.3 is amended to read as follows:

1155.3 Numerical criteria for Class G1 ground waters shall be the most restrictive and are as follows:

Constituent	Criterion	Early Warning Value
Trace Metals & Inorganics (maximum mg/L unless noted otherwise)		
Primary		
Arsenic	0.01	0.002 **
Barium	1.0	0.2 **
Cadmium	0.005	0.002 **
Chromium, hexavalent	0.1	0.01 **
Chromium, trivalent	0.1	0.01 **
Cyanide, free	0.2	0.04 **
Fluoride	4.0	0.4 **
Lead	0.05	0.01 **
Mercury	0.002	0.0005 ‡
Nitrates	10.0	2.0 **
Nitrite	1.0	0.5 *
Selenium	0.05	0.002 **
Silver	0.05	0.05
Secondary		
Turbidity (NTU)	5.0	NA
Chloride	250.0	125.0 *
Copper	1.0	0.5 *
Iron	0.3	0.15 *
Manganese	0.05	0.025 *
Sulfate	250.0	125.0 *
Total dissolved solids	500.0	250.0 *

Constituent	Criterion	Early Warning Value
Zinc	5.0	2.5 *
Organics (maximum µg/L)		
Benzene	5.0	2.0 +
Carbon tetrachloride	5.0	1.0 +
Dichlorobenzene (para)	75.0	2.0 +
Dichloroethylene (1,1-)	7.0	1.0 +
Dichloroethylene (cis-1,2-)	70.0	1.0 +
Dichloroethylene (trans-1,2)	100.0	1.0 +
Endrin	0.2	0.1 +
Ethylbenzene	700.0	2.0 +
Hexachlorocyclohexane (Lindane)	4.0	0.2 +
Methoxychlor	100.0	2.0 +
1,1,1-Trichloroethane	200.0	5.0 +
1.2-Dichloroethane	5.0	0.5 +
Tetrachloroethylene	5.0	0.5 +
Toluene	1,000.0	2.0 +
Total Trihalomethanes	100.0	0.5 +
Toxaphene	5.0	2.0 +
Trichloroethylene	5.0	1.0 +
2,4-D	100.0	10.0 +
2,4,5-TP Silvex	10.0	2.0 +
Vinyl chloride	2.0	2.0 +
Xylenes	10,000.0	5.0 +
Radionuclides (maximum activity, pCi/L)		
Combined Radium-226 & Radium-228	5.0	1.0 **
Gross alpha particle activity	15.0	3.0 **
Gross beta particle activity	50.0	10.0 **
Microbiological (maximum organisms/ml)		
Fecal Coliform	1.0	NA
Acidity (allowable range, standard units)		
pH	6.5 to 8.5	NA

Notes:
**: Early Warning Value is 20% of criterion.

*: Early Warning Value is 50% of criterion.

+: Early Warning Value for synthetic chemicals that have no natural source is at the practical quantitation limit.

‡: The detection limit and minimum level of quantitation using EPA Method 1631.E, usually are dependent on the level of interferences rather than instrument limitations. The method detection limit (MDL; 40 CFR 136, Appendix B) for mercury has been determined to be 0.2 nanogram per

liter (ng/L) when no interferences are present. The minimum level of quantitation (ML) has been established as 0.5 ng/L. An MDL as low as 0.05 ng/L can be achieved for low mercury samples by using a larger sample volume, a lower bromium chloride level (0.2%), and extra caution in sample handling (EPA Method 1631.E, Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry EPA-821-R-02-019 dated August 2002 at https://www.epa.gov/sites/default/files/2015-08/documents/method_1631e_2002.pdf).

NA: Not Applicable.

All persons desiring to comment on this proposed rulemaking should file comments in writing not later than sixty (60) days after the publication of this notice in the *D.C. Register*. All comments will be treated as public documents and will be made available for public viewing on the Department's website at: https://doee.dc.gov/service/public-notices-hearings. If a comment is sent by e-mail, the email address will be automatically captured and included as part of the comment that is placed in the public record and made available on the Department's website. All comments should be labeled "**2021 Proposed WQS**" and filed with the Department of Energy and Environment, Water Quality Division, 1200 First Street, NE, 5th Floor, Washington, DC 20002, attention: Rebecca Diehl, rebecca.diehl@dc.gov.