



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

NOV 6 2017

Mr. Jeffrey Seltzer
Associate Director
D.C. Department of Energy & Environment
1200 First Street NE, 5th Floor
Washington, D.C. 20002

Re: EPA Comments on DOEE's Public Notice regarding D.C. Water Quality Standards

Dear Mr. Seltzer:

The U.S. Environmental Protection Agency (EPA) has reviewed the District of Columbia's Department of Energy & Environment (DOEE) notice of proposed rulemaking and public comment period to amend Chapter 11, "Water Quality Standards (WQS)", of Title 21, "Water and Sanitation", of the District of Columbia Municipal Regulations (D.C.MR), which was published in the September 15, 2017 edition of the District of Columbia (D.C.) Register. I am pleased to offer the following comments regarding the 2016 Triennial Review of D.C. Water Quality Standards:

- 1) DOEE proposes to revise D.C.'s aquatic life criteria for ammonia to reflect the 2013 Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater (EPA 822-R-13-001), published by EPA under Clean Water Act § 304(a). The ammonia criteria are based on EPA's latest scientific studies and toxicity data on freshwater mussels and gill-breathing snails. EPA supports and commends DOEE on its proposal to adopt the EPA-recommended water quality criteria, but EPA notes errors that should be revised to achieve consistency with EPA's 304(a) recommendations:
 - a. EPA's CMC recommendations provide one equation and associated table protective of Rainbow Trout and another equation and associated table not protective of Rainbow Trout. The CMC equation proposed by DOEE is protective of Rainbow Trout, but does not correspond to Table 2d, which tabulates an alternative CMC equation not protective of Rainbow Trout. Please revise the CMC equation and associated table to achieve consistency and explain whether DOEE intends to adopt the CMC protective of Rainbow Trout or not protective of Rainbow Trout. If DOEE's CMC is not protective of Rainbow Trout, please justify how it protects the designated use.
 - i. If DOEE intends to adopt the CMC protective of Rainbow Trout, please use the equation and associated table provided below, which are referenced from EPA's criteria recommendation document (EPA 822-R-13-001).

$$CMC = MIN \left(\left(\frac{0.275}{1 + 10^{7.204-pH}} + \frac{39.0}{1 + 10^{pH-7.204}} \right), \left(0.7249 \times \left(\frac{0.0114}{1 + 10^{7.204-pH}} + \frac{1.6181}{1 + 10^{pH-7.204}} \right) \times (23.12 \times 10^{0.036 \times (20-T)}) \right) \right)$$

Table 5a. Temperature and pH-Dependent Values of the CMC (Acute Criterion Magnitude) – *Oncorhynchus* spp. Present.

pH	Temperature (°C)																
	0-14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
6.5	33	33	32	29	27	25	23	21	19	18	16	15	14	13	12	11	9.9
6.6	31	31	30	28	26	24	22	20	18	17	16	14	13	12	11	10	9.5
6.7	30	30	29	27	24	22	21	19	18	16	15	14	13	12	11	9.8	9.0
6.8	28	28	27	25	23	21	20	18	17	15	14	13	12	11	10	9.2	8.5
6.9	26	26	25	23	21	20	18	17	15	14	13	12	11	10	9.4	8.6	7.9
7.0	24	24	23	21	20	18	17	15	14	13	12	11	10	9.4	8.6	8.0	7.3
7.1	22	22	21	20	18	17	15	14	13	12	11	10	9.3	8.5	7.9	7.2	6.7
7.2	20	20	19	18	16	15	14	13	12	11	9.8	9.1	8.3	7.7	7.1	6.5	6.0
7.3	18	18	17	16	14	13	12	11	10	9.5	8.7	8.0	7.4	6.8	6.3	5.8	5.3
7.4	15	15	15	14	13	12	11	9.8	9.0	8.3	7.7	7.0	6.5	6.0	5.5	5.1	4.7
7.5	13	13	13	12	11	10	9.2	8.5	7.8	7.2	6.6	6.1	5.6	5.2	4.8	4.4	4.0
7.6	11	11	11	10	9.3	8.6	7.9	7.3	6.7	6.2	5.7	5.2	4.8	4.4	4.1	3.8	3.5
7.7	9.6	9.6	9.3	8.6	7.9	7.3	6.7	6.2	5.7	5.2	4.8	4.4	4.1	3.8	3.5	3.2	3.0
7.8	8.1	8.1	7.9	7.2	6.7	6.1	5.6	5.2	4.8	4.4	4.0	3.7	3.4	3.2	2.9	2.7	2.5
7.9	6.8	6.8	6.6	6.0	5.6	5.1	4.7	4.3	4.0	3.7	3.4	3.1	2.9	2.6	2.4	2.2	2.1
8.0	5.6	5.6	5.4	5.0	4.6	4.2	3.9	3.6	3.3	3.0	2.8	2.6	2.4	2.2	2.0	1.9	1.7
8.1	4.6	4.6	4.5	4.1	3.8	3.5	3.2	3.0	2.7	2.5	2.3	2.1	2.0	1.8	1.7	1.5	1.4
8.2	3.8	3.8	3.7	3.5	3.1	2.9	2.7	2.4	2.3	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.2
8.3	3.1	3.1	3.1	2.8	2.6	2.4	2.2	2.0	1.9	1.7	1.6	1.4	1.3	1.2	1.1	1.0	0.96
8.4	2.6	2.6	2.5	2.3	2.1	2.0	1.8	1.7	1.5	1.4	1.3	1.2	1.1	1.0	0.93	0.86	0.79
8.5	2.1	2.1	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.2	1.1	0.98	0.90	0.83	0.77	0.71	0.65
8.6	1.8	1.8	1.7	1.6	1.5	1.3	1.2	1.1	1.0	0.96	0.88	0.81	0.75	0.69	0.63	0.59	0.54
8.7	1.5	1.5	1.4	1.3	1.2	1.1	1.0	0.94	0.87	0.80	0.74	0.68	0.62	0.57	0.53	0.49	0.45
8.8	1.2	1.2	1.2	1.1	1.0	0.93	0.86	0.79	0.73	0.67	0.62	0.57	0.52	0.48	0.44	0.41	0.37
8.9	1.0	1.0	1.0	0.93	0.85	0.79	0.72	0.67	0.61	0.56	0.52	0.48	0.44	0.40	0.37	0.34	0.32
9.0	0.88	0.88	0.86	0.79	0.73	0.67	0.62	0.57	0.52	0.48	0.44	0.41	0.37	0.34	0.32	0.29	0.27

- ii. If DOEE intends to adopt the CMC not protective of Rainbow Trout, please use the equation and associated table provided below, which are referenced from EPA's criteria recommendation document (EPA 822-R-13-001).

$$CMC = 0.7249 \times \frac{0.0114}{1 + 10^{7.204-pH}} + \frac{1.6181}{1 + 10^{pH-7.204}} \times MIN(51.93, 23.12 \times 10^{0.036 \times (20-T)})$$

Table 5b. Temperature and pH-Dependent Values of the CMC (Acute Criterion Magnitude) – *Oncorhynchus spp.* Absent.

pH	Temperature (°C)																				
	0-10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
6.5	51	48	44	41	37	34	32	29	27	25	23	21	19	18	16	15	14	13	12	11	9.9
6.6	49	46	42	39	36	33	30	28	26	24	22	20	18	17	16	14	13	12	11	10	9.5
6.7	46	44	40	37	34	31	29	27	24	22	21	19	18	16	15	14	13	12	11	9.8	9.0
6.8	44	41	38	35	32	30	27	25	23	21	20	18	17	15	14	13	12	11	10	9.2	8.5
6.9	41	38	35	32	30	28	25	23	21	20	18	17	15	14	13	12	11	10	9.4	8.6	7.9
7.0	38	35	33	30	28	25	23	21	20	18	17	15	14	13	12	11	10	9.4	8.6	7.9	7.3
7.1	34	32	30	27	25	23	21	20	18	17	15	14	13	12	11	10	9.3	8.5	7.9	7.2	6.7
7.2	31	29	27	25	23	21	19	18	16	15	14	13	12	11	9.8	9.1	8.3	7.7	7.1	6.5	6.0
7.3	27	26	24	22	20	18	17	16	14	13	12	11	10	9.5	8.7	8.0	7.4	6.8	6.3	5.8	5.3
7.4	24	22	21	19	18	16	15	14	13	12	11	9.8	9.0	8.3	7.7	7.0	6.5	6.0	5.5	5.1	4.7
7.5	21	19	18	17	15	14	13	12	11	10	9.2	8.5	7.8	7.2	6.6	6.1	5.6	5.2	4.8	4.4	4.0
7.6	18	17	15	14	13	12	11	10	9.3	8.6	7.9	7.3	6.7	6.2	5.7	5.2	4.8	4.4	4.1	3.8	3.5
7.7	15	14	13	12	11	10	9.3	8.6	7.9	7.3	6.7	6.2	5.7	5.2	4.8	4.4	4.1	3.8	3.5	3.2	2.9
7.8	13	12	11	10	9.3	8.5	7.9	7.2	6.7	6.1	5.6	5.2	4.8	4.4	4.0	3.7	3.4	3.2	2.9	2.7	2.5
7.9	11	9.9	9.1	8.4	7.7	7.1	6.6	6.0	5.6	5.1	4.7	4.3	4.0	3.7	3.4	3.1	2.9	2.6	2.4	2.2	2.1
8.0	8.8	8.2	7.6	7.0	6.4	5.9	5.4	5.0	4.6	4.2	3.9	3.6	3.3	3.0	2.8	2.6	2.4	2.2	2.0	1.9	1.7
8.1	7.2	6.8	6.3	5.8	5.3	4.9	4.5	4.1	3.8	3.5	3.2	3.0	2.7	2.5	2.3	2.1	2.0	1.8	1.7	1.5	1.4
8.2	6.0	5.6	5.2	4.8	4.4	4.0	3.7	3.4	3.1	2.9	2.7	2.4	2.3	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.2
8.3	4.9	4.6	4.3	3.9	3.6	3.3	3.1	2.8	2.6	2.4	2.2	2.0	1.9	1.7	1.6	1.4	1.3	1.2	1.1	1.0	0.96
8.4	4.1	3.8	3.5	3.2	3.0	2.7	2.5	2.3	2.1	2.0	1.8	1.7	1.5	1.4	1.3	1.2	1.1	1.0	0.93	0.86	0.79
8.5	3.3	3.1	2.9	2.7	2.4	2.3	2.1	1.9	1.8	1.6	1.5	1.4	1.3	1.2	1.1	0.98	0.90	0.83	0.77	0.71	0.65
8.6	2.8	2.6	2.4	2.2	2.0	1.9	1.7	1.6	1.5	1.3	1.2	1.1	1.0	0.96	0.88	0.81	0.75	0.69	0.63	0.58	0.54
8.7	2.3	2.2	2.0	1.8	1.7	1.6	1.4	1.3	1.2	1.1	1.0	0.94	0.87	0.80	0.74	0.68	0.62	0.57	0.53	0.49	0.45
8.8	1.9	1.8	1.7	1.5	1.4	1.3	1.2	1.1	1.0	0.93	0.86	0.79	0.73	0.67	0.62	0.57	0.52	0.48	0.44	0.41	0.37
8.9	1.6	1.5	1.4	1.3	1.2	1.1	1.0	0.93	0.85	0.79	0.72	0.67	0.61	0.56	0.52	0.48	0.44	0.40	0.37	0.34	0.32
9.0	1.4	1.3	1.2	1.1	1.0	0.93	0.86	0.79	0.73	0.67	0.62	0.57	0.52	0.48	0.44	0.41	0.37	0.34	0.32	0.29	0.27

- b. Table 2, note h, section (a): To be consistent with EPA’s 2013 freshwater ammonia criteria recommendation, the Criterion Maximum Concentration (CMC) should be the one-hour average concentration for total ammonia nitrogen (in mg TAN/L) and should account for the influence of **pH and temperature** as shown in DOEE’s Table 2d. The bolded words were not included in section (a). Please correct.
 - c. Table 2, note h, section (b): To be mathematically clear, the placement of the parentheses in the CMC equation, if protective of Rainbow Trout, should be revised to be consistent with EPA’s 2013 freshwater ammonia criteria recommendation, which is provided above in note (i.).
- 2) DOEE proposes to revise D.C.’s aquatic life criteria for cadmium to reflect the 2016 Aquatic Life Ambient Water Quality Criteria – Cadmium (EPA-820-R-16-002), published by EPA under Clean Water Act § 304(a). Chronic cadmium exposure leads to adverse effects in the growth, reproductive, immune, and endocrine systems of aquatic organisms, which impacts their development and behavior. The cadmium criteria are protective of the most sensitive aquatic species. EPA supports and commends DOEE on its proposal to adopt the EPA-recommended water quality criteria.
 - 3) DOEE proposes to revise D.C.’s human health criteria for ninety-four (94) chemical pollutants to reflect the 2015 Human Health Ambient Water Quality Criteria updates published by EPA under Clean Water Act § 304(a). These updated recommendations reflect the latest scientific information and EPA policies, including updated body weight,

drinking water consumption rate, fish consumption rate, bioaccumulation factors, health toxicity values, and relative source contributions. They are intended to protect residents and visitors from exposure to these pollutants, particularly for those who eat fish or shellfish from D.C. waters as a significant portion of their regular diet. EPA supports and commends DOEE on its proposal to adopt the EPA-recommended water quality criteria.

- 4) DOEE proposes to revise D.C.'s recreational water quality criteria for bacteria to reflect the 2012 Recreational Water Quality Criteria (EPA 820-F-12-058), published by EPA under Clean Water Act § 304(a). The revised criteria are intended to protect human health in waters designated for primary contact recreation. EPA supports and commends DOEE on its proposal to adopt the EPA-recommended water quality criteria. In addition, EPA notes that the added "footnote a" of Table 1 does not apply to the *E. coli* criteria, as the *E. coli* criteria duration and frequency are specifically addressed in "footnote f". EPA suggests that DOEE make it clearer that the geometric mean value cannot exceed the geometric mean criterion at the specified duration at any percent excursion frequency; therefore, "footnote a" is not applicable.
- 5) EPA published its 2007 Aquatic Life Ambient Freshwater Quality Criteria – Copper (EPA 822-R-07-001), which provides updated criteria and recommendations for the protection of freshwater aquatic life uses. This revision uses a Biotic Ligand Model (BLM) to incorporate receiving water body characteristics and develop site-specific water quality criteria for copper. These recommendations provide the best available science and guidance. As required by the 2015 Regulatory Revisions Rule, which revised 40 CFR Part 131.20, "if a State does not adopt new or revised criteria for parameters for which EPA has published new or updated CWA section 304(a) criteria recommendations, then the State shall provide an explanation when it submits the results of its triennial review to the Regional Administrator...". EPA requests that D.C. review its criteria in light of the new science and data and consider revising the criteria.
- 6) EPA published its 2016 Aquatic Life Ambient Water Quality Criterion for Selenium – Freshwater (EPA 822-R-16-006), which reflects the latest scientific knowledge that selenium toxicity to aquatic life is primarily based on the consumption of selenium-contaminated food rather than exposure to selenium only in dissolved water. Criteria are expressed in terms of fish tissue concentration and water concentration. These recommendations provide the best available science and guidance. As required by the 2015 Regulatory Revisions Rule, which revised 40 CFR Part 131.20, "if a State does not adopt new or revised criteria for parameters for which EPA has published new or updated CWA section 304(a) criteria recommendations, then the State shall provide an explanation when it submits the results of its triennial review to the Regional Administrator...". EPA requests that D.C. review its criteria in light of the new science and data and consider revising the criteria.
- 7) EPA published its 2005 Aquatic Life Ambient Water Quality Criteria – Diazinon (EPA-822-R-05-006), which reflects the latest scientific knowledge regarding the toxicity of diazinon to aquatic life. Criteria are expressed as a final acute value of 0.3397 µg/L and final chronic value of 0.1699 µg/L for freshwaters. These recommendations provide the best available science and guidance. As required by the 2015 Regulatory Revisions Rule, which revised 40 CFR Part 131.20, "if a State does not adopt new or revised criteria for parameters for which EPA has published new or updated CWA section 304(a) criteria recommendations, then the State shall provide an explanation when it submits the results

of its triennial review to the Regional Administrator...”. EPA requests that D.C. review its criteria in light of the new science and data and consider revising the criteria.

- 8) Table 1, footnote e: The footnote reads “At temperatures greater than in tidally influenced waters, an instantaneous minimum dissolved oxygen concentration of 4.3 mg/L shall apply”. This language revises the original statement which reads “At temperatures greater than 29°C, in tidally influenced waters, an instantaneous minimum dissolved oxygen concentration of 4.3 mg/L shall apply.” EPA requests that DOEE clarify the revision and explain how it is protective of the designated use.
- 9) Table 1, footnote a: This footnote does not include a water quality standard. Rather, the footnote refers to assessment methodology, which should be specified outside of the water quality standards regulations. EPA suggests that DOEE remove this footnote entirely.
- 10) Table 2: The only criterion magnitude listed for “Antimony, dissolved” is 640 µg/L for Class D waters, which are characterized by footnote b as “The Class D Human Health Criteria for metals will be based on Total Recoverable metals”. Because the only criteria for Antimony are based on total recoverable metals, EPA suggests removing “dissolved” from the “Antimony” title and adding “total recoverable”.
- 11) Table 2: For “Mercury, total recoverable”, footnote d is listed for the Class C and Class D waters criteria, but footnote d is not relevant to mercury in Class C or Class D waters. Therefore, EPA suggests removing footnote d from the Class C and Class D waters “Mercury, total recoverable” criteria and adding footnote e to the Class C waters “Mercury, total recoverable” criteria. In addition, EPA suggests revising the text of footnote e to be more clear. The proposed footnote text reads “The criterion **derived from the formulas under Note d** is multiplied by the conversion factor in Table 2d as specified in subsection 1105.10:” To ensure that footnote e is also applicable to the “Mercury, total recoverable” Class C waters criteria listed in Table 2, the footnote text may read, “The criterion is multiplied by the conversion factor in Table 2d as specified in subsection 1105.10:”.
- 12) Table 3, footnote b: Footnote b reads “The criteria is based on carcinogenicity of 10⁻⁶ risk level.” EPA notes that this footnote is included on several constituents where a 10⁻⁶ risk level was not used by EPA to develop the criteria and is not included on several constituents where a 10⁻⁶ risk level was used by EPA to develop the criteria. EPA suggests that DOEE revise these constituents to ensure consistency. Those constituents with footnote b where a 10⁻⁶ risk level was not used by EPA to develop the criteria are:

Chloroform
1,1-Dichloroethylene
gamma-BHC (Lindane)

Those constituents without footnote b where a 10⁻⁶ risk level was used by EPA to develop the criteria are:

Benzo(a)pyrene
Bis(Chloromethyl) Ether

Butylbenzyl Phthalate
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Bis(2-Chloroethyl) Ether
Hexachlorocyclohexane (HCH)- Technical
1,3-Dichloropropene
2,4-Dinitrotoluene
Nitrosamines
Nitrosodibutylamine, N
Nitrosodiethylamine, N

13) Table 3: The proposed revisions include the removal of criteria for several chemical families. These chemical families are listed as “headings” in D.C.’s current regulations with individual chemicals and criteria for those chemicals listed below the headings. DOEE proposes to remove the chemical family names and associated criteria, and not remove the individual chemicals and associated criteria. In the revised standards, a “Chemical Family Group” column is added to Table 3 to denote which family each individual chemical belongs to. None of the chemical family names are included as part of EPA’s recommended criteria under Clean Water Act § 304(a). Please provide justification as to how the removal of the chemical family names and associated criteria will protect the designated uses. Those chemical families and their associated criteria include:

Constituent ^a , Organics (µg/L)	CAS Number	Criteria for Classes		
		C		D ²
		CCC 4-Day Avg	CMC 1-Hour Avg	30-Day Avg
Chlorinated benzenes (except Di)		25.0		
Chlorinated ethanes		50		
Chloroalkyl ethers		1000		
Dichloroethylenes		1000		
Dichloropropenes		400		
Endosulfan		0.056	0.22	89
Halomethanes		1000		
Naphthalene	91203	600		
Nitrophenols		20		
Phthalate esters		100		

Footnote ^a: For constituents with blank numeric criteria, EPA has not calculated standards at this time. However, permit authorities will address constituents in NPDES permit actions using narrative criteria for toxics.

EPA notes that the removal of several chemical family names that previously did not have a criterion associated with them and solely functioned as a heading is appropriate and does not require approval under Clean Water Act § 303(c). EPA notes that DOEE should continue to cover these chemical families and other unnamed chemicals without

numeric criteria through their narrative criteria for toxics, as indicated by footnote a in Table 3. Those chemical families include:

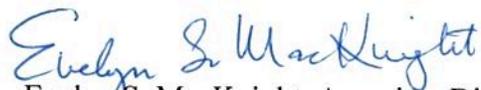
Constituent ^a , Organics (µg/L)	CAS Number	Criteria for Classes		
		C		D ²
		CCC 4-Day Avg	CMC 1-Hour Avg	30-Day Avg
Chlorinated naphthalene				
Chlorinated phenols				
Carbamates				
Organochlorides				
Organophosphates				
Polynuclear aromatic hydrocarbons				
Acenaphthylene				

Footnote ^a: For constituents with blank numeric criteria, EPA has not calculated standards at this time. However, permit authorities will address constituents in NPDES permit actions using narrative criteria for toxics.

Section 7 of the Endangered Species Act (ESA) requires that all Federal agencies ensure that any covered action, (including any approval or disapproval action under CWA Section 303(c)) is not likely to jeopardize the continued existence of any threatened or endangered species, or to result in the destruction or adverse modification of the habitat that has been designated as critical for species. DOEE can assist EPA in meeting the commitment by facilitating early exchange of information with the Services and helping in early identification of potential problems. This effort can contribute to a speedier review by EPA and decrease the likelihood of a nonoccurrence by the Services on an action to approve any new or revised adopted criteria.

Thank you for the opportunity to provide written comments on DOEE's notice of proposed rulemaking and public comment period concerning the 2016 Triennial Review of D.C. Water Quality Standards. Please note that the comments addressed above are preliminary in nature and do not constitute a determination by EPA under Clean Water Act § 303(c). Approval/disapproval decisions will be made by the Region following adoption of new and/or revised standards by DOEE and submittal to EPA. The Administrator may only make a determination pursuant to Clean Water Act § 304(c)(4)(B). Should you have any questions concerning these comments, please contact me at (215) 814-5717 or Jillian Adair at (215) 814-5713 or via e-mail at adair.jillian@epa.gov.

Sincerely,



Evelyn S. MacKnight, Associate Director
Office of Standards, Assessment and Total Maximum Daily Loads
Water Protection Division

