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February 25, 2021

By Electronic Mail

Danny Smith
Director
Division of Water Resources
North Carolina Department of Environmental Quality
Archdale Building
Room, #1106X
1628 Mail Service Center
Raleigh, NC 27699-1628

Re: 15A NCAC 2B.0211(11)(c)(ix)
150B-20 **Petition to Remove DEQ's Freshwater, Chronic Aquatic Life
Standard for Silver**

Dear Director Smith:

I hope this finds you doing well.

I am writing on behalf of the North Carolina Water Quality Association (NCWQA) to resubmit this petition, which was originally sent to DWR and the EMC on October 12, 2020. In early March 2021, we were informed that the Petition was invalid because it was not submitted directly to you and because we did not submit the page of the surface water quality standards showing the chronic silver criteria in strikeout. Those technicalities were a surprise to us because (1) clearly both DEQ management and the EMC had the petition and (2) **we don't see why** the simple deletion of the chronic silver standard requires a redline to allow the Division to understand our proposed change.

Nevertheless, we hereby resubmit our Petition to you and have also attached the page from the Surface Water Standards showing the strikeout of the chronic silver criterion for freshwater.

The Water Quality Association is a statewide association of public water, sewer, and stormwater utilities which serve a significant majority of the State's population. The Association strives to ensure that North Carolina's water quality programs are based on sound science and regulatory

policy so that our members can protect public health and the environment in the most affordable and cost-effective manner possible.

The water quality standards include an acute freshwater (aquatic life) silver criterion represented by an equation using instream hardness as an independent variable. It is based on (and identical to) an EPA acute water quality criterion published pursuant to federal Clean Water Act section 303, 33 U.S.C § 1313. However, EPA's water quality criteria do not include a freshwater chronic criterion for silver. We are not aware of the basis for the State's current chronic criterion, which is set at a very low 0.06 micrograms per liter (0.06 parts per billion, or 60 parts per trillion). For the reasons that follow, the chronic criterion is unsupported, unnecessary and contrary to State law.

Under the Clean Water Act the states have the responsibility for adopting water quality standards. States must adopt standards that specify designated uses of their surface waters (aquatic life protection, recreation, etc.), and water quality criteria sufficient to protect the designated uses. 40 C.F.R. § 131.6(c). Criteria may be either numeric (like the chronic silver criterion at issue here) or narrative. The states may use and adopt EPA's published numeric criteria as their standards, or they may adopt standards based on other scientifically defensible methods or data. *Id.* § 131.11(b)(1).

As noted initially, EPA does not have (and has never had) a freshwater chronic criterion for silver. When it set out to develop metals criteria, it decided on and published its still current acute criteria, but concluded that "neither a Final Acute-Chronic Ratio [a procedure for determining a chronic criterion from acute data] nor a freshwater or salt water Final Chronic Value can be determined for silver. Ambient Water Quality Criteria for Silver (EPA 440/5-8-071 Oct. 1980) (EPA "Gold Book" criteria). Although EPA had some chronic aquatic life toxicity data for silver, it concluded that those data were insufficient. The lowest EPA data were, in any event, for Rainbow Trout (which would have little applicability for North Carolina waters) and the lowest indicated standard for trout was at 0.12 ug/l, - twice the generally applicable North Carolina chronic standard of 0.06 ug/L.

Based on EPA materials we have examined it is not apparent that EPA has, since its original work, acquired data that would allow it to determine and publish a chronic silver criterion, and it also does not appear that EPA has received information that would suggest to it the necessity for such a criterion. That is, EPA's presumptive conclusion throughout the years has been that protection of the aquatic life designated use of waters does not require the adoption by the states of chronic silver standards.

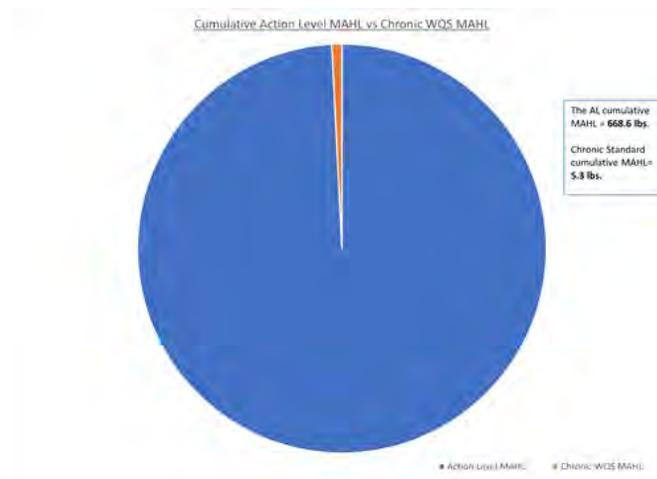
These EPA conclusions have been borne out by the actions of the states. Although some states adopt numeric standards that are in addition to or different from EPA's published criteria, to our knowledge no other state has adopted a freshwater chronic standard for silver. This is strong evidence that such standards are unnecessary for the protection of aquatic life. We also note that the states have a comfort level in their decisions to not attempt to develop chronic silver or other standards that lack applicable EPA criteria, as a result of the applicability in all 50 states of narrative criteria. Narrative criteria ("no toxics in toxic amounts," and other provisions) allow the Department and NPDES permit writers to determine site specific or discharger specific

criteria or action levels and apply them as permit conditions in cases in which it is apparent that controls for silver or another pollutant parameter are necessary. It also appears that until recently the chronic silver standard was never applied in North Carolina. This was due to the use of the prior Action Level for silver. The absence of cases in which the Department found it necessary over several decades to develop and apply permit limits based on the 0.06 ug/L chronic silver criterion emphatically reinforces the fact that the chronic standard is as unnecessary today as it has been during the action level decades. We further note that the literally thousands of Whole Effluent Toxicity (“WET”) tests performed by permittees under the prior Action Level approach, and performed more recently under more general permit requirements, have demonstrated that silver is not a chronic toxicity problem, either alone or in combination with other potentially toxic parameters in treatment plant effluents.

The more recent application of the chronic standard by the Department in NPDES permits has forced many permittees to perform Water Effects Ratio (“WER”) testing and procedures (a procedure that more accurately looks at potential toxicity on a site-specific, and discharge-specific basis), with costs typically in the \$10,000 range or higher. These WERs have generally led to a determination that a much higher level of silver discharge (higher than the level dictated by the current standard) is allowable. In a recent example that we are aware of, the WER procedure resulted in a standard multiplier of greater than ten. This means that DWR’s default 0.06 ug/L standard was more than 10 times too stringent – again reinforcing the fact that it is unnecessary.

Application of the unnecessary silver chronic criterion will also have significant impact on non-domestic users of POTWs statewide as businesses are forced to unnecessarily reduce their silver loadings into treatment works. This will impose unnecessary regulatory compliance costs on businesses statewide.

A recent survey of North Carolina treatment facilities highlights the impact of this unnecessary standard. Those 46 had previously been allocated 668.6 pounds per day of silver under the action level approach – all without any silver-related toxicity issues. Applying DWR’s unnecessary chronic silver criterion will reduce the allowable pounds per day to 5.3 among the 46 communities.



Further, as to mitigating factors, the recently applicable Dental Amalgam Rule (a technology-based standard) will accelerate the relentless reduction of silver levels in POTW effluents across North Carolina.

Finally, we believe DEQ's chronic silver criterion contravenes NC General Statute § 150B-19.3(a). That Statute prohibits NPDES discharge standards which go beyond federal requirements. Because EPA has expressly declined to adopt a chronic criterion for Silver, NC DEQ cannot do so unless it demonstrates that one of the exceptions applies. **We don't see any that are even close to being applicable here.**

For these reasons the current freshwater chronic silver standard (aquatic life) is unnecessary and inappropriate to protect water quality. It imposes entirely unnecessary regulatory costs, along with wasted efforts and time and costs on the Division of Water Resources that would be better utilized addressing true environmental concerns. These costs include Water Effect Ratio studies which have yielded significantly higher (order of magnitude) silver values.

Accordingly, we ask that the Division promptly initiate a rulemaking to rescind the chronic silver standard.

Thank you for considering our request. We will be happy to provide any further information that you may require.

Sincerely,



F. Paul Calamita
General Counsel

Attachment: Redline Showing Strikeout of Chronic Freshwater Silver Criterion

C: NCWQA Members
Mr. Jeff Poupart

File Home Insert Page Layout Formulas Data Review View Help ACROBAT Share Comments

Clipboard Font Alignment Number Styles Cells Editing Analysis

E63 Acute: Calc (d,h) Chronic: 0.06 (d)

North Carolina 15A NCAC 02B Water Quality Standards for Surface Waters														
		Freshwater			Fresh & Salt		Saltwater			Supplemental Classifications				
		Class B	Class WS (I - V)	All waters (Class C)	All waters (Class C & SC)	All waters (Class SC)	Class SB	Class SA						
Pollutant or Parameter	CAS #	Primary Recreation ¹	Water Supply ⁶	Aquatic Life & Secondary Recreation ⁴	Fish Consumption ³	Aquatic Life & Secondary Recreation ⁴	Primary Recreation ⁸	Shellfish ⁹	Trout ²	Swamp Waters ⁵	High Quality Waters ⁷	Synonyms & Other Information	Cancer Endpoint ¹⁰	Reference Source (See supporting info tab)
All values reported as ug/L unless labeled otherwise.														
Selenium	7782-49-2			5 (t)		71 (t)							NA	EPA AWQC 1987
Sewage & other wastes	NA		(N)	(N)		(N)		(N)				See 15A NCAC 02B .0211, .0220 & .0221. Includes sewage, industrial wastes, non-process industrial waste, or other wastes	NA	
Silver ¹¹	7440-22-4			Acute: Calc (d,h) Chronic: 0.06 (d)		Acute: 1.9 (d) Chronic: 0.1 (d)						Click to calculate acute freshwater aquatic life standard	NA	EPA AWQC 1980
Silvex	93-72-1		10									2,4,5-TP, 2,4,5-Trichlorophenoxypropionic Acid	No	EPA QCW 1986
												See 15A NCAC 02B .0211, .0220 & .0221. Includes	NA	EPA QCW 1986