



North Carolina Pretreatment Consortium, Inc.

November 30, 2009

Ms. Connie Brower  
DWQ Planning Section  
NC Dept. of Environment & Natural Resources  
1617 Mail Service Center  
Raleigh, NC 27699-1617

Subject: Comments on the NC Triennial Review: Proposed Revisions to the Aquatic Life Standards for Cadmium, Lead and Nickel

Dear Ms. Brower:

The North Carolina Pretreatment Consortium, Inc. (NC-PC) is a non-profit organization representing over 140 pretreatment professionals from municipalities throughout the State of North Carolina. Since its inception in 1997, the Pretreatment Consortium has grown to represent 120 of the state's 125 pretreatment programs. North Carolina's pretreatment programs cover 147 municipal wastewater treatment plants with a combined NPDES permitted flow of over 900 MGD, more than 90% of all municipal NPDES permitted flow in the state. Our organization is writing to express concerns about the proposed revisions to the water quality standards, in particular cadmium, lead and nickel, and the fiscal impacts we foresee with the adoption of these standards as proposed.

The NC-PC is concerned about these impacts on three fronts: laboratory issues, implementation of NPDES permit limits and, certainly, the implications for the pretreatment programs in North Carolina.

❖ **Laboratory Issues**

Currently there is no EPA approved wastewater laboratory method that can measure cadmium and lead down to 0.2 ppb and 0.5ppb respectively. The NC-PC surveyed eight out-of-state and nine in-state NC Wastewater Certified labs regarding their detection levels for these metals. Of these 17 labs, eight stated that it was *possible* to reach the proposed level of 0.2 ug/L for cadmium and five stated it was *possible* to reach the proposed level of 0.5ug/L for lead.

However, these survey participants stressed that these detection levels were *possible*, not necessarily *reliable*.

In order to consistently and reliably obtain these detection levels, samples will likely have to be analyzed in a clean-room environment with the use of ultra pure reagents thus resulting in a tremendous increase in analytical cost. If one uses low-level mercury analysis as a predictor, a currently \$10.00 cadmium or lead analysis is likely to increase nine-fold to \$90.00 (or \$180.00 per analysis when the cost of field blank analytical is included).

In turn, more costly and time-consuming clean sampling techniques will have to be employed to insure samples are not contaminated during sample collection. These clean sampling techniques require the collection of grab samples rather than the more representative composite samples currently utilized for cadmium and nickel, possibly resulting in an inaccurate representation of POTW effluents.

#### ❖ **Implementation of NPDES Permit Limits**

Wastewater treatment plants located on very low flow streams typically receive the water quality standard as an NPDES permit limit since there is no dilution factor. If the water quality standards for cadmium and lead are adopted as proposed, those limits will be placed in the permits of plants on low flow streams. Because there is currently no reliable analytical method to measure to the new limits, a municipality is in the very uncomfortable legal position of being asked by DWQ to accept an NPDES limit that the town has no idea whether they can meet or not.

In addition, water quality standards in North Carolina have generally been based on a hardness of 50mg/L. However 25mg/L has been used as basis for the currently proposed standards. While this may be protective of the low hardness streams in the State, it may be overly protective for effluent dominated streams where hardness may be significantly higher than 25mg/L. As stated above, it is the very POTWs discharging to these effluent dominated streams that may be asked to accept the proposed water quality standards as their permit limits!

#### ❖ **Implications for Pretreatment Programs**

##### ➤ Maximum Allowable Headworks Loading (MAHL)

Regardless of whether a NPDES permit limit is imposed or whether that value can be measured in a laboratory, the DWQ Pretreatment Unit requires the use of the applicable water quality standard when calculating a Maximum Allowable Headworks Loading (MAHL). A Maximum Allowable Headworks Loading calculation results in the amount of a pollutant of concern that can be permitted to enter the treatment plant and still mathematically and theoretically have the plant effluent meet the water quality standard.

The use of the proposed water quality standards will result in overallocation at most wastewater treatment plants with *just* the cadmium, lead and nickel coming from domestic sources. The NC-PC conducted a survey of 42 of its member wastewater treatment plants representing a total combined permitted flow of 614 MGD. Of those surveyed, 74% will be immediately

overallocated for cadmium, lead and/or nickel if the water quality standards for these metals are changed as proposed. Of that 74%, 48% will be overallocated for cadmium, 84% will be overallocated for lead, and 33% will be overallocated for nickel with just the amount of these metals being discharged from domestic sources.

Current DWQ Pretreatment Unit policy prohibits overallocation of any pollutant and requires immediate resolution of the overallocation situation. In the instance where domestic sources alone cause an overallocation, there is absolutely no capacity for industrial users. No industrial user would be allowed to discharge a detectable level of cadmium, lead and/or nickel at any time. Of equal importance, no new industrial discharges with detectable levels of these metals could locate in any city with overallocations for them. The North Carolina Department of Commerce will not be able to recruit any new industry to North Carolina if the industrial wastewater contains detectable amounts of cadmium, lead, and/or nickel because these new standards will be state-wide and as noted above most wastewater treatment plants will have no cadmium, lead, or nickel allocation to give.

“Well surely this will only affect the metal finishers and electroplaters,” one might say. However, it is important to note that the metal finishing/electroplating industry constitutes roughly 50% of the currently permitted significant industrial users in NC. Given the current economic environment and the already tremendous loss of industrial jobs in North Carolina in the past 10 years, the State certainly cannot afford to lose this segment of its workforce as well.

It is also important to note that metal finishers and electroplaters are *not* the only industrial category discharging detectable quantities of cadmium, lead and nickel. A review of historical industrial user data in North Carolina cities has shown trace/detectable levels of cadmium, lead and/or nickel in the wastewater discharges from the following categories of industries:

Soft Drink Manufacturing	Meat Packing	Potato Chip Manufacturing
Personal Care/Personal Hygiene Products	Industrial/Commercial Laundries	Bread/Bakery Product Manufacturing
Pharmaceutical Manufacturing	Circuit Board Manufacturing	Electrical & Electronic Components Manufacturing
Centralized Waste Treatment	Transportation Equipment Cleaning	Textiles
Photofinishing	Metal Products & Machinery	Organic Chemical Manufacturing
Inorganic Chemical Manufacturing	Chemical Repackaging	Tire Manufacturing
Printing & Publishing		

Many of these facilities will not be able to control these trace levels of cadmium, lead and/or nickel and if the pretreatment programs across the State must enforce the new water quality standards and resulting MAHLs and local limits, these facilities will have no choice but to close their doors.

- Definition of Significant Industrial User

A portion of the definition for Significant Industrial User (SIU) found in 15A NCAC 2H.0903 states that a Significant Industrial User (SIU) is an industrial user that discharges wastewater into a publicly owned treatment works and that contributes more than five percent (5%) of the maximum allowable headworks loading of the POTW treatment plant for any pollutant of concern. As well, 15A NCAC 2H.0916 states that all Significant Industrial Users who discharge waste into a POTW must obtain a permit from the Control Authority.

As noted above, the use of the proposed water quality standards for cadmium, lead and nickel when calculating a Maximum Allowable Headworks Loading will result in significantly lower MAHLs for these pollutants of concern. In turn, five percent of those MAHLs will be significantly smaller and will likely result in the requirement for pretreatment programs to permit a substantial number of new SIUs.

This potential influx of SIUs would bring with it many financial obligations to be borne by both the POTW and the industry. Included among these is the installation of monitoring locations at the industry site and the required compliance monitoring that, as stated earlier, will be significantly more expensive due to the clean sampling techniques that must be employed. In addition, POTW pretreatment staff will likely have to be increased to ensure proper management of the increased number of SIUs (i.e. permit writing, sampling, compliance judgment, enforcement, inspection, etc.) In turn, DWQ Pretreatment Unit staffing may also have to be increased to achieve proper oversight of POTW pretreatment staff activities.

❖ Recommendations

Please understand that the North Carolina Pretreatment Consortium supports the protection of the surface waters of North Carolina. However, based on the issues identified above we would like to propose the following recommendations:

- Work with DWQ's Environmental Sciences Section to identify aquatic species that should be included in the recalculation of EPA's criterion for use in North Carolina
- Consider an alternative approach for addressing hardness that provides more flexibility in the application of criteria to NPDES permits.
- Work with DWQ's Pretreatment staff to evaluate procedures that do not penalize industrial contributors for allocation assumptions when the standard and majority of the analytical data is below detectable levels.

The NC-PC is certain that these standards will have more unanticipated impacts on the regulated community than those presented in this correspondence. However, we appreciate this opportunity to express our concerns about the proposed revisions to the water quality standards and the fiscal impacts we can foresee.

Sincerely,

*Amy Varinoski*

Amy Varinoski  
2009 NC-PC Chair

NC-PC Triennial Review Workgroup

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