North Carolina Pretreatment Consortium, Inc.

January 10, 2010

To: N.C. Environmental Management Commission Members

Re: NC-DENR Triennial Review
Proposed Water Quality Standards Revision

Dear Sir or Madam

The North Carolina Pretreatment Consortium, Inc. (NC-PC) and the North Carolina American Water Works Association and Water Environment Association (NC AWWA-WEA) is sending this letter in response to information presented in September, 2009 on the 2008-2010 North Carolina Triennial Review proposals. We worked together to develop the following comments and concerns pertaining to some of the proposed water quality standards and their potential affect on NPDES permit limits, Pretreatment Programs, and permitted industries in North Carolina.

The NC AWWA-WEA is a volunteer association of over 3,000 members dedicated to providing water and wastewater education, training, and service in an effort to protect public health and the environment. The NC-PC is a non-profit organization representing pretreatment professionals from 147 municipal wastewater treatment plants throughout the State of North Carolina.

Proposed Water Quality Standards Development

There is concern with the State's development and implementation of a 25 mg/L hardness value for the proposed cadmium, lead, and nickel water quality standards. Hardness is a factor that affects the bio-availability and toxicity of some metals, the lower the hardness value (softer) of the water the more bio-available and toxic a particular metal may be. NC DENR has indicated that waters of the state are very soft based on an analysis of a 10th percentile of stream hardness data collected prior to calendar year 2001. The metals standards seem to be based on a conservative approach by using data from a lower 10th percentile of data collected. While this may be protective of low hardness waters, we feel that it may be overly protective for effluent dominated streams where hardness may be significantly higher.

We are unaware of the data set used in determining the statewide 25 mg/L hardness value and the conditions in which sampling was conducted. Rain water is generally very soft (low in mineral content) resulting in lower hardness values in the stream. If hardness data was collected during significant rain events, the data set used for calculating the hardness value may include

lower values and may not be representative of typical conditions. If the hardness value is skewed low and is coupled with a conservative data set of the lower 10th percentile of data collected, the approach using the proposed hardness value may be overly conservative and more than what is necessary to protect the majority of NC waters.

A review of some other States approach to hardness dependent standards was conducted. Many select either average or mean levels to determine the hardness of the streams. For example:

Virginia, Georgia, Mississippi, and South Carolina – Calculated metals limit using average effluent hardness values with a minimum hardness of 25 mg/l and a maximum of 400 mg/l, calculated using the mean hardness value of the receiving stream. The Permittee may also develop site specific limits based on a Water Effects Ratio (WER) along with the hardness of the water (this option has not been proposed by the State of NC)

Tennessee – If there is no site specific data they use a hardness of 25 mg/l for the eastern part of the State, 50 mg/l for middle Tennessee and 100 mg/l for western Tennessee. When site specific data is available, Tennessee uses the average hardness.

NPDES Permit Limit Implementation

There is concern that with the adoption of the proposed water quality standards for cadmium, lead, and nickel that a significant percentage of wastewater treatment plants would realize a NPDES permit limit for one or more of the proposed metals standards. Concerns include:

1. WWTP's currently utilize analytical methods to measure cadmium, lead, and nickel to levels lower than the current water quality standards. A survey of commercial laboratories and metals analysts was conducted and there was indication that current methods for analyzing cadmium and lead were not reliable at or below the proposed standards, especially untreated wastewater and industrial wastes which may contain significant interferences. We believe that many municipalities would have difficulty accepting a new limit if it is unknown whether or not the limit can be measured reliably.

2. WWTP removal efficiencies and reasonable expectations for meeting the proposed standards are virtually unknown for typical municipal wastewater treatment technologies since current analytical detection levels are greater than the proposed water quality standards. We are also concerned with trace metals that may be inherent in treatment chemicals that are commonly used in process control and treatment. We believe that many municipalities would have difficulty accepting a new limit if it is unknown whether or not the limit is reasonably achievable and without potentially jeopardizing removal efficiencies and other permit limit criteria.

3. NC NPDES permitting policies typically utilize a reasonable potential analysis (RPA) to analyze and calculate a 99% probability of whether a WWTP will exceed the water quality standard. The high RPA probability threshold coupled with a very low standard and a WWTP with a low 7Q10 (7-day lowest flow in 10 years) would result

in a NPDES permit limit if just one test result is above the detection limit. We believe that many municipalities would have difficulty accepting the low standards given the likelihood of receiving a permit limit under the current conservative RPA approach and if analytical results are not reliable.

Pretreatment Programs Implications

The NC-PC conducted a survey of 46 North Carolina WWTP representing 632 million gallons of permitted flow in order to gauge the potential impact of the proposed standards with the NC DWQ Pretreatment Program policies. The NC-PC survey indicates that 74% of 46 WWTP surveyed will be affected and over allocated for at least one of the proposed metals.

The DWQ Pretreatment Unit requires the calculation of a Maximum Allowable Headworks Loading (MAHL) for each pollutant that has a water quality standard. A MAHL calculation results in the amount of a pollutant that can be permitted to enter the treatment plant and still mathematically and theoretically meet the water quality standard. Pretreatment programs allocate the MAHL between domestic and industrial users of the WWTP.

DWQ Pretreatment policy prohibits over allocation of pollutants and requires resolution of the over allocation situation. In the instance where domestic sources alone cause over allocation, there is no available capacity for any industrial user. The survey indicates that approximately 60% will over allocated for lead, 26% for cadmium, and 6% for nickel from domestic sources alone. Industrial users would not be allowed to discharge detectable levels of cadmium, lead, or nickel when allocation is not available. Of equal importance, no new industrial discharges with detectable levels of these metals could locate in a city that is over allocated. With the high percentage of those municipalities surveyed having over allocation for one or more of the metals, it would be difficult for the State and many cities to recruit or maintain industry in North Carolina with over allocation issues if the industrial wastewater contains cadmium, lead, or nickel.

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 and local economies certainly cannot afford to lose this segment of its workforce as well. 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, or nickel and if the pretreatment programs enforce the new water quality standards, resulting MAHLs, and local limits many of these facilities may be faced with closing or relocating to a municipality or state that has available allocation.

The NC Administrative Code (15A NCAC 2H.0903) defines Significant Industrial User (SIU) as an industrial user that discharges wastewater into a publicly owned treatment works and that contributes more than five percent (5%) of the MAHL of the WWTP for any pollutant of concern. NC DWQ Pretreatment Policy requires that all SIUs who discharge waste into a Publicly Owned Treatment Works (POTW) must obtain a wastewater discharge permit.

As noted above, the use of the proposed water quality standards for cadmium, lead and nickel when calculating a MAHL will result in significantly lower MAHL for these pollutants of concern. As a result, 5% of the MAHL will be significantly smaller and will likely result in the requirement for pretreatment programs to issue permits and limits to more industrial users.

This potential influx of SIUs would bring with it many financial obligations to be borne by both the POTW and the industry. Some of the obligations may include:

1. Regulatory (SIU permitting) oversight and implementation costs
2. Installation of industry site flow and pollutant monitoring facilities
3. Industrial wastewater pretreatment infrastructure for meeting lower permit limits
4. Increased costs for advanced compliance monitoring for low level clean sampling techniques
5. Increased monitoring requirements
6. Possible enforcement costs associated with non-compliance

In addition to municipal and industrial impacts, DWQ Pretreatment Unit staffing may also have to be increased to achieve proper oversight of POTW pretreatment staff activities.

Conclusion

Please understand that the NC-PC and the NC AWWA-WEA support the protection of the surface waters in North Carolina. However, based on the issues and concerns identified in this letter we would like to propose the development of a workgroup between NC DWQ and stakeholders to evaluate reasonable approaches and comprehensive impacts on water quality standard proposals prior to rule making and adoption of rules. Some of the workgroup initiatives may be:

- Work with DWQ's Environmental Sciences Section to evaluate and identify aquatic species that should be included in a recalculation of EPA's criterion for use in North Carolina to develop water quality standards.

- Consider alternative approaches for addressing hardness that provides more flexibility in the application of criteria use for NPDES permit development.

- Work with the NPDES Permitting Staff to determine if overly conservative approaches and policies are in place that will further complicate the permitting process.

- Work with DWQ's Pretreatment staff to evaluate policies that do not penalize industrial contributors for WWTP allocation assumptions.

The NC-PC and the NC AWWA – WEA believes that the proposed water quality standards in addition to current State policies will have a significant fiscal impact on municipalities, industry, and the State of North Carolina. We appreciate the opportunity to express our concerns and for your review and consideration of this letter.

Sincerely,

Donald Smith

Donald Smith
2010 NC-PC Chair

Brent Reuss

Brent Reuss
2010 NC AWWA-WEA Chair