



## NUTRIENT CONTROL POSITION PAPER

### Overview:

Nutrient pollution represents one of the top three significant impairments to waterways in the United States, and elsewhere in the world. This paper focuses on the lack of numeric nutrient standards in the United States, and addresses the position WWEMA might represent on behalf of manufactures in order to reduce the chaos and indefinite delays currently experienced in the industry.

To date regulations and the adoption and enforcement of regulations vary across the country. By 2008 only 7 states had actually adopted numeric nutrient standards, and 18 states had adopted standards for one or more parameters for part of one or more water body types.<sup>1</sup> Implementation of standards can be seen in high profile cases like the Chesapeake Bay, or state wide cases like Florida, where numeric standards have been seen as eminent for years. However, there are very few cases where there is an adoption of a set of standards along with implementation and enforcement. The EPA put out a paper on adoption of numeric standards that sites the absolute lack of progress and ineffectiveness of a ten year period from 1998-2008. This Paper, "State Adoption of Numeric Nutrient Standards (1998-2008)" makes it quite apparent that the EPA failed to live up to its pledge to enforce federal nutrient pollution standards if the states did not develop their own by 2004.

Each state is on its own with regard to nutrient standards, and even within each state there are different locals developing their own standards. The permit writers at a given office can have differing interpretations of the permit guidelines and how they would write them based off the technology they have been presented.<sup>2</sup> This is leading to a very fragmented and diverse spectrum of standards from the unachievable to the immeasurable. As equipment manufacturers we experience an enormous amount of frustration due to the divergence of achievable and unachievable expectations placed on technology. A reasonable level for total nitrogen would be 6 ppm, 3ppm is achievable as we see in the Chesapeake Bay, but <2 ppm of TN is not reasonable considering 1-2 ppm are believed to be untreatable. Achieving a phosphorous limit of 0.5 is achievable and reasonable, a limit of 0.1 mg/l is questionable even at double the price, but levels that are appearing in local waterways of .05 mg/l are irresponsible given technology on the market today, and will only further delay implementation. Discussions, such as those occurring in Florida, around sole use of reverse osmosis to handle the extremely low levels would not be economically feasible or responsible. On another note, the visible progress(good and bad) on implementation of standards made on the Chesapeake Bay and Florida seem to be areas where advocacy groups (example: Chesapeake Bay Foundation Lawsuit 2008) have applied significant pressure on EPA. This seems to lead to more variance in the levels being required for nutrients such as nitrogen and phosphorous.

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<sup>1</sup> EPAs "State Adoption of Numeric Nutrient Standards(1998-2008)"

<sup>2</sup> EPA NPDES Permit Writers' Manual-Technology Based Limits

There are numerous sources of opposition to the adoption of numeric nutrient standards resulting in indefinite delays in most states. Ranging from cost prohibitive technology based opposition to philosophical and political based opposition. A cost prohibitive based example would be in states where consultants and engineers have recommended reverse osmosis as the only method of reaching desired enhance regulatory levels. A philosophical example would be a perception that significantly <1ppm should be achieved, and that in some cases regulations are already in place where states have acted to meet the local needs, not the feds. Many of the political examples are being driven by local or regional advocacy groups on specific watersheds. The resulting situation is that states, municipalities, and agricultural and industrial entities become concerned that any changes to enhanced regulations will severely harm them financially. They don't directly oppose enhanced nutrient limits, but they try to avoid action and will mitigate proposed actions due to lack of direction and financial stability, especially in a down economy like we exist in today.

Another area of concern is the apparent lack of balance in attention to point vs. nonpoint discharge; point being the discharges from a wastewater treatment facility and nonpoint being from industrial or agricultural runoff to water ways. Both state and federal agencies seem very weak in this area, and the lobbyist groups oppose limits due to the perceived impact on the economy and to their constituents. Nonpoint represents a greater problem than point discharge, and it is not reasonable to expect that the overall nutrient problem will be solved by 100% removal from public treatment facilities. This is a battle the Chesapeake has faced, where the wastewater treatment plants have been asked to do the lion's share of the work under a TMDL plan, and it's not been enough due to the nonpoint discharge constantly entering the tributaries and bay unabated. The current system does not focus enough attention on these nonpoint sources because they are tough and expensive to regulate. Once again the minimal progress to date on nonpoint seems to come from advocacy groups applying pressure on the industries. Organizations such as the Southern Environmental Law Center have thriving businesses supporting these advocacy groups by placing lawsuits on companies that are either violating existing permits or polluting into the streams or air.

Outside of the EPA Guidelines issued in 2001 under the Clean Water Act, the examples listed above, and the few state adoptions, numeric standards still seem to be in the distant future. As technology companies we stand to benefit as a whole if some form of base level standards are agreed to and implemented. The consistency of the measurement and the expectation of enforcement will give manufacturers a base line to innovate, and allow an increased speed to market with new and improved technologies. Under the current environment, the waterways will become more fragmented and enforcement will become more and more difficult, inevitably leading to less and less progress, and more impaired waterways.

### **WWEMA Position:**

Over the last 10 years manufacturers have largely been on the side lines, except when called on because of violations in a watershed or when a particular permit writer is developing a local permit. It is mutually beneficial to the community and the industry for manufacturers to actively participate in the development of numerical nutrient limits and measurement standards. Manufacturers along with the consulting engineer community need to work in concert to bring practical solutions to the discussions with the EPA. WWEMA's role is to ensure that the manufacturers have a position at the table during these discussions. Other associations such as WEF or AWWA are not as manufacturer driven, and seem to have a consulting engineer focus. In August 2009, a State-EPA Innovation Task Group developed a report named "An Urgent Call To Action". This report focused on nutrient issues, questions and ways to improve nutrient pollution prevention. There are areas in this report that may be suitable to WWEMA's involvement as well. It's not the intent of this paper to propose that WWEMA should take on this task alone or recreate the wheel on this project. There are organizations with similar intent that WWEMA can work with such as the Innovation Task Group from EPA as an example.

It is acknowledged that EPA must be involved at both the national and state level for consistency and guidance, and for driving the strategy of nutrient limits. This involvement is critical today and in the future. What is up for debate is whether enforcement should remain at the state level or be driven at a national level, and given the right strategy that may be irrelevant. The last 10 years of failure has been seen at the local level with failure of implementation and enforcement of nutrient limits, and ultimately the lack of priority and funding to get the projects off the ground. At the national level a lack of strategy, guidance, funding and follow up have been missing. Fundamentally the carrot has not been put out there to incent states to adopt.

WWEMA should take the position that the EPA establish a base set of nutrient standards, expanded to include technology based criteria for nitrogen and phosphorous removal that all our waterways be held to, and then focus a more personalized approach to our most impaired waterways. This strategy results in our most at risk waterways obtaining priority attention, rather than waterways that are supported by the strongest advocacy groups. These water quality based limits would most likely be more stringent than technology based limits, but would be derived through our technical expertise and could move at a slower and more thoughtful pace. Limited resources could be applied where they are most needed today, and state bias would be avoided for waterways encompassing several states. EPA's leadership is critical in establishing and implementing these standards. Measurement and enforcement of standards will require both State and EPA actions together, and both must be held accountable.

To support the WWMEA position we can reference, and perhaps piggy back on a few recommendations made in the State-EPA Nutrient Task groups' paper, "An Urgent Call To Action". This task force had three main recommendations.

- Fuller utilization of existing point source tools; some tools are being only partially used, and others could be expanded in scope.
- A national framework of accountability for nonpoint sources is necessary to make a significant and essential difference, without which long-term success is doubtful.
- Broader reliance on incentives, trading and corporate stewardship—but only within a multistate framework of public transparency, common responsibility, and both point and nonpoint source accountability for meeting water quality and drinking water goals.

Examples of common ground would be that NPDES permits be redefined to include technology based standards for nitrogen and phosphorous (currently just BOD, TSS, pH). They further recommend to "provide guidance on specific N & P reduction technologies that can meet the technology-based requirement to promote broad-scale implementation of available and economically achievable technologies..." They propose an alternative "limits-of-technology" approach that could incorporate the flexibility to consider the cost in combination with the loadings reduction. Another key point is the broader accountability measures for both point and nonpoint source discharges. The paper calls out that all "new permits must ensure compliance with downstream standards", and that "technology based nitrogen and phosphorous limits" be instilled under CAFO regulations.<sup>3</sup>

WWEMA is positioned to provide relevant and realistic advice and direction to the discussion of numeric nutrient standards for point and nonpoint discharges. WWEMA's members are experts on the capabilities of technologies and on the measurement of the systems. The direction could be technology based, and focused on what is possible today, given existing commercialized technologies, and what is possible in the future, given consistency of measurements and expectations. Using technology based limits can allow a much more affordable implementation

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<sup>3</sup> State EPA Nutrient Innovations Task Group August 2009, "An Urgent Call To Action"

of standards given the numerous technologies that can achieve excellent results. In areas where water quality based limits are required such as the Chesapeake or in certain Florida watersheds, there would be a balance between technology based and water quality based limits derived on practical technological practices. The question has to be asked: what is more beneficial a 0.5 mg/l phosphorous level in the majority of the country at affordable prices or a 0.05 mg/l at unaffordable prices, across a state or region, with very little implementation and years of debate? Technology based limits would drive innovation because the manufacturers could gauge what they are innovating towards. Adaptation and speed to market would be much greater given the attention that would be garnered by the manufactures and the engineering communities to meet the goals. Ultimately these market forces would drive affordability, as mass production would come at a much quicker speed.

### **Conclusion:**

As manufacturers, we have largely been on the sidelines responding to local initiatives, and as an association we have not mounted an effort to weigh in on the subject of nutrient limits. It is the opinion of this task force that the EPA's nutrient strategies over the last 10 years have failed and a new approach must be taken. WWEMA's call to action is to ensure that manufacturers have a seat at the table, with a voice expressing the technology based limits of equipment and measuring devices today and in the future. WWEMA's members working in conjunction with the EPA and the engineering community could deliver mechanical and biological expertise to help develop a set of numeric nutrient standards that are achievable, measurable, and fiscally reasonable.

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