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May 21, 2010

Clean Water Act Section 303(d):

Notice of Call for Public Comment on 303(d) Program and Ocean Acidification

U.S. Environmental Protection Agency

1200 Constitution Avenue, NW

Washington, DC 20460

Submitted Via [www.regulations.gov](http://www.regulations.gov)

**Re: Docket ID No. EPA-HQ-OW-2010-0175**

Dear Sir or Madam:

The National Association of Clean Water Agencies (NACWA) appreciates the opportunity to comment on the U.S. Environmental Protection Agency's (EPA or Agency) *Notice of Call for Public Comment on 303(d) Program and Ocean Acidification* (*Notice*) issued on March 22, 2010 (75 *Fed. Reg.* 13537). NACWA and its public wastewater treatment agency members have a direct interest in the issues on which the *Notice* seeks comment. Any policy regarding the placement of ocean waters on the Clean Water Act (CWA) section 303(d) lists of impaired waters based on pH levels that could result in the development of total maximum daily loads (TMDLs) would likely have an impact on National Pollutant Discharge Elimination System (NPDES) permits held by NACWA's coastal members.

While concern about ocean acidification and its potential for impact on aquatic communities is warranted, it is unclear how addressing these concerns in the context of the CWA's 303(d) program will bolster the current international, federal, and state efforts aimed at controlling atmospheric emissions of carbon dioxide (CO<sub>2</sub>), the presumptive cause of ocean acidification. The CWA, intended to control pollutant discharges to the water environment, is not designed to address airborne sources of pollution in an effective manner. The unfortunate outcome of such an approach would be the diversion of resources from state water quality improvement programs that are addressing locally controllable sources of pollution – programs that, in fact, have the potential to restore local water quality. Under such a scenario, point source dischargers that have no impact on the global concern of ocean acidification will be given more stringent pH limits, forcing dischargers to add unnecessary and costly chemicals to their discharge.

Neither the CWA nor the Clean Air Act on their own provide the appropriate regulatory framework to effectively address issues such as ocean acidification that result from a complex interaction of large-scale air and water quality issues. Global

problems such as excess CO<sub>2</sub> emissions must be dealt with on an international level, and the U.S. must develop legislation, national policies, and international mechanisms that will allow an integrated approach to multi-source pollution challenges.

## Critical Issues Regarding Ocean Acidification and the Clean Water Act

EPA is soliciting public comment on the effects of ocean acidification as it relates to the listing of impaired waters under section 303(d) of the CWA, including whether EPA should issue guidance on this issue and any other implications that ocean acidification may have for the 303(d) program. As EPA considers these matters, it must consider the following critical issues: 1) the current scientific understanding of ocean acidification is limited, 2) the Clean Water Act is not the appropriate tool for addressing acidification, and 3) listing waters as impaired for ocean acidification is not required by the Clean Water Act.

### **1. The current scientific understanding of ocean acidification is limited.**

As stated by the National Research Council (NRC) of the National Academy of Sciences, “ocean acidification research is still in its infancy.”<sup>1</sup> There is a significant uncertainty regarding the causes of ocean acidification, and in the normal fluctuations and ranges of pH levels in different geographic areas. As EPA acknowledged in recent Congressional testimony, “We don’t yet fully understand the specifics of all the possible impacts of ocean acidification to marine organisms and seawater composition, the scope of which organisms are affected, what the effects mean, and what actions might help to prevent, abate, or control them.”<sup>2</sup>

Changes in the pH of ocean waters may be related to atmospheric levels of CO<sub>2</sub>, with oceans absorbing atmospheric CO<sub>2</sub> and becoming more acidic. However, the correlation between ocean pH and atmospheric CO<sub>2</sub> is not well understood. Changes in pH may also result from natural processes. Deep ocean waters are naturally lower in pH, and when these waters rise in response to ocean currents, the pH of the surface waters can change. In addition, when phytoplankton die and sink from surface waters, the pH of coastal waters may decrease.

The natural variability in pH makes it difficult to determine trends and exact causes of changes in pH. This variability may also be much more significant in coastal surface water than in water that is farther offshore and at greater depths. Monitoring has shown natural variability of pH of up to 0.2 in an 8-hour period, and ranges in pH of up to 1.0 over a year of sampling in the ocean off of Southern California. This type of variability makes it difficult to draw conclusions about the causes of pH changes, and further monitoring and research is needed.

In April 2009, EPA sought comment on the need to revise its marine pH water quality criterion and published information on the issue of ocean acidification. After reviewing the data and information submitted in response to that request, EPA stated in its April 15, 2010 decision not to revise the marine pH water quality criterion that “in most coastal regions, the data to characterize diurnal and seasonal

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<sup>1</sup> National Research Council, *Ocean Acidification: A National Strategy to Meet the Challenges of a Changing Ocean*, Prepublication Copy, 2010.

<sup>2</sup> Testimony of Nancy Stoner, Deputy Assistant Administrator, EPA Office of Water, before the Subcommittees on Oversight and on Water and Wildlife of the Senate Environment and Public Works Committee, May 11, 2010.

variability are so limited that short term trends in carbon system parameters and pH cannot be determined.”

NACWA agrees that further research is required before regulatory decisions are made regarding pH changes in ocean waters and the potential impacts of ocean acidification.

## **2. The Clean Water Act is not an appropriate tool for addressing ocean acidification.**

The CWA is not the appropriate tool to address ocean acidification. CO<sub>2</sub> in the atmosphere can come from sources all over the globe and the CO<sub>2</sub> in ocean waters that may result in acidification may have been absorbed years or even decades earlier. This complex spatial and temporal variability in the sources of CO<sub>2</sub> make it impossible to link CO<sub>2</sub> levels in the atmosphere or from any particular air emissions to ocean water quality in any particular area. Even if the linkages could be established and the sources identified, the only sources that can be regulated under the CWA are point source discharges, which data show are not causing any adverse impacts.

The 303(d) impaired waters list triggers the development of a TMDL and the establishment of load and wasteload allocations. This TMDL or pollutant budget dictates how much a waterbody can handle before it is impaired and the permitting agency must somehow allocate that budget among the pollutant sources. The TMDL program relies on the ability to assign responsibility for making pollutant reductions. When pollutants are coming from sources beyond the control of the state regulatory agency, the TMDL program is extremely limited in its ability to impose controls. The likely cause of ocean acidification, excess atmospheric CO<sub>2</sub> levels, is an issue of global origin. Developing TMDL pollutant budgets for local coastal waters that are being impacted solely by global sources will not provide the sought-after benefit to water quality. The regulatory agency will be powerless to set limits on either national or international air emissions of CO<sub>2</sub>. Even if a state did identify CO<sub>2</sub> sources within the state that were contributing to the acidification of the ocean waters of the state, the CWA does not provide regulatory tools for enforcing controls on those sources.

The issue of ocean acidification is best addressed through the work that is already being done (e.g., work by the National Research Council and as mandated by the Federal Ocean Acidification Research and Monitoring Act). NACWA believes that the time, energy, and expense that would be used to develop TMDLs to address ocean acidification would not achieve the goals of the CWA.

## **3. Listing ocean waters for acidification is not required under the Clean Water Act.**

The Center for Biological Diversity (CBD) has sued EPA for failing to require Washington State to list its coastal waters as impaired for marine pH. NACWA agrees with the position taken by EPA and Washington State that listing of marine waters in any state for ocean acidification is not required by section 303(d) of the CWA.

Section 303(d) of the CWA requires listing of impaired waters only. EPA's current recommended criterion for pH in ocean waters is "pH range from 6.5 to 8.5 for marine aquatic life (but not varying more than 0.2 units outside of the normally occurring range)," and this criterion applies to waters within three nautical miles of shore. There is no monitoring data available to demonstrate that any ocean waters are currently failing to meet this criterion, and therefore listing of any waters under 303(d) is not justified.

CO<sub>2</sub> emissions to the air are not CWA pollutant discharges and neither listing nor TMDL development is required if the impairment is caused by “pollution” rather than a “pollutant”. Section 303(d)(1)(C) of the CWA states that:

*Each State shall establish for the waters identified in paragraph (1)(A) of this subsection, and in accordance with the priority ranking, the total maximum daily load, for those pollutants which the Administrator identifies under section 304(a)(2) as suitable for such calculation. Such load shall be established at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality.*

The CWA specifically defines the term “pollutant” as “dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.”

The term pollutant in 303(d) has a very specific and limited meaning. Where a “pollutant” is causing an impairment and a TMDL is developed, it is appropriate for the TMDL to take into account contributions from nonpoint, atmospheric sources of pollution such as mercury or nitrogen. In contrast, NACWA is not aware of any listing under section 303(d) based solely on emissions of a gas, such as CO<sub>2</sub>.

## Responses to EPA’s Specific Questions in the *Notice*

If EPA feels compelled to consider ocean acidification within the framework of the 303(d) program, which NACWA believes would be inconsistent with EPA’s CWA authority, NACWA provides the following in response to EPA’s specific questions in the *Notice*.

What considerations should EPA take into account when deciding how to address the listing of waters as threatened or impaired for ocean acidification under the 303(d) program? The primary consideration for addressing any source of impairment under the CWA must be the development of scientifically defensible water quality criteria against which to assess impairment. The criteria development process must follow EPA’s current “Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and their Uses”. This document, however, only addresses the more traditional endpoints of survival, growth, and reproduction. Given the potential threat of ocean acidification, it is important for EPA to prioritize the development of guidelines addressing non-traditional endpoints such as shell calcification. The challenge will be to relate these endpoints to population level effects, which should be a required goal of any new approach to developing water quality criteria. The initial investment of resources to establish the guidelines necessary to standardize testing and relevant endpoint evaluation is critical to the success of the resulting criteria. Without this basic information, the resulting criteria may be overprotective or underprotective. Obvious problems arise when criteria are underprotective. Less obvious are the problems associated with overprotective criteria. First and foremost would be the diversion of limited resources from the waters that are truly impaired to waters that are listed as impaired simply due to an inaccurate, overprotective standard. The work on methodologies and endpoint evaluation cannot be delayed given the implications of the recent research on the effects of ocean acidification.

Normal marine pH ranges can experience seasonal and, likely, even geographical variation; therefore, it seems critical that site-specific criteria in the form of acceptable pH ranges be developed. The development of suitable criteria will likely require the development of regional pH ranges which reflect natural conditions and which protect the resident populations. At a minimum, East Coast versus West Coast and southern versus northern latitude differences in acceptable pH ranges should be explored.

If waters were determined to be threatened or impaired for ocean acidification under 303(d), what issues should EPA take into account when deciding how to address TMDL development for such waters? Once a water has been designated as impaired, the CWA mandates the development of a TMDL report in an effort to restore the desired water quality. This is a resource-intensive process which again underscores the importance of developing appropriately protective criteria.

One of the first obstacles in the development of this report is to calculate an allowable load of the pollutant in the impaired ocean segment (a realistic segmentation scheme in itself will be a challenge). EPA would have to establish a link between CO<sub>2</sub> emissions and pH levels in the segment, a relationship which is expected to be site-specific given localized variability in buffering capacity. There is likely to be a great deal of uncertainty associated not only with this relationship but also with strategies adopted to achieve source reductions, suggesting reliance on an adaptive management approach.

Again, while concern about ocean acidification and its potential for impact on aquatic communities is warranted, the CWA is not the appropriate tool to address the underlying causes. Thank you for consideration of our comments. Please contact me at 202/833-9106 or [chornback@nacwa.org](mailto:chornback@nacwa.org) if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Chris Hornback", written in a cursive style.

Chris Hornback

Senior Director, Regulatory Affairs