NACWA
A Clear Commitment to America's Waters

March 28, 2012

Leif Hockstad
U.S. Environmental Protection Agency
Climate Change Division, Office of Atmospheric Programs
Office of Air and Radiation
1200 Pennsylvania Ave, NW
Washington, DC 20460
Via Email: *Hockstad.Leif@epa.gov*

Re: NACWA Comments on Wastewater Treatment Emissions Estimates in EPA's Draft *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2010*

Dear Mr. Hockstad:

The National Association of Clean Water Agencies (NACWA) appreciates this opportunity to comment on the U.S. Environmental Protection Agency's (EPA) draft *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2010* (*Inventory*). NACWA represents the interests of nearly 300 publicly owned wastewater treatment agencies nationwide, serving the majority of the sewered population in the U.S. NACWA members are tracking EPA's new Clean Air Act (CAA) regulations on greenhouse gas (GHG) emissions and are concerned that emissions from wastewater treatment facilities be characterized correctly.

NACWA asks that EPA continue to improve the accuracy of GHG emissions estimates for publicly owned treatment works (POTWs) and ensure that these estimates are used by the Agency only for their intended informational purposes. NACWA's comments on the *Inventory* are specific to Section 8.2, *Wastewater Treatment*. The wastewater category is broad, including POTWs, septic systems, and industrial wastewater treatment systems. Although the emissions are much smaller in magnitude than for the highest ranked categories, the broadly-based wastewater category consistently ranks in the top ten emitters for nitrous oxide and methane emissions in the U.S. NACWA's review focused on emissions from POTWs, which are a fraction of the total wastewater treatment category emissions.

NACWA appreciates EPA's response to our comments submitted on the five previous *Inventories* and the Agency's willingness to work with NACWA to refine the GHG emissions estimates for POTWs. NACWA has supported the adjustments made in previous *Inventories* and is pleased that our recommended corrections were

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made to the nitrous oxide calculations in the 2010 *Draft Inventory* - specifically to the nitrogen sequestered in sludges (N_{SLUDGE}) and to the nitrous oxide emissions from effluent discharged to the aquatic environment ($N_2O_{EFFLUENT}$).

The Executive Summary of the *Inventory* should caution potential users that the *Inventory's* stated purpose is for information, not regulation. Although reliance on the *Inventory* methodologies was removed from the final version of EPA's *Prevention of Significant Deterioration and Title V GHG Tailoring Rule*, for example, it is troubling that the *Inventory* has been referred to by EPA staff as one method for determining Potential to Emit under the Tailoring Rule. More troubling is that the *Inventory*'s methodologies, meant to enable comparison between different countries, is mentioned as being "complementary" to those methods in EPA's Greenhouse Gas Reporting Program, and that "EPA is analyzing how to use facility-level GHGRP data to improve the national estimates presented in this inventory." These statements suggest an equivalency that may not hold true for wastewater treatment plants. The Office of Air and Radiation should ensure that all of its offices understand the purpose of the *Inventory* and recognize that the *Inventory*'s industry-wide methodologies are largely inadequate for facility level emissions.

NACWA encourages EPA to carry out its planned improvements to further refine the accuracy of emissions estimates. As EPA evaluates new research for use in the *Inventory* estimates, however, we urge caution in using results from studies that were not designed to produce nationally-applicable results. For example, EPA mentions that research is being conducted by the Water Environment Research Foundation (WERF) to measure nitrous oxide emissions from municipal treatment systems. The design of this WERF study is narrowly focused to analyze the mechanisms of nitrous oxide production at targeted areas of interest in the secondary treatment process. While innovative, this research would not be sufficient to develop a comprehensive emission factor representing wastewater treatment utility activities across the U.S. Although EPA may want to resolve some of the uncertainties related to nitrous oxide emissions, relying on studies that are not representative of utilities nationwide may actually increase the uncertainty of the estimates.

As NACWA has suggested in previous comments, the *Inventory*'s calculation methods for nitrous oxide emissions could be further improved to more accurately reflect actual emissions from POTWs. NACWA believes the nitrogen loading rates for $N_2O_{EFFLUENT}$ are sourced incorrectly and that using information from the existing National Pollution Discharge Elimination System (NPDES) database will yield more accurate and justifiable loading rates. The NPDES permitting program represents long-term, nationwide facility performance which would allow emissions estimate projections over the time series represented in the *Inventory*. Since EPA believes that further data of a broader and more representative scope are required before changing the *Inventory*, the NPDES database would certainly suffice as it represents every centralized POTW in the U.S. NACWA is encouraged to see that EPA has committed to reviewing the estimate of nitrogen entering municipal treatment systems (line 44, page 8-19) and supports EPA's efforts to follow through on addressing this uncertainty.

If EPA decides not to investigate its own databases, the average nitrogen loading rate of 15.1 g N/capita-day[1] represents the industry standard and is supported by a wealth of data widely confirmed in U.S. practice, as explained in our previous comments and supported by data collected by NACWA from 48 U.S. POTWs. This

[1] Tchobanoglous, G., F.L. Burton, and H.D. Stensel, *Wastewater Engineering: Treatment and Reuse, Metcalf & Eddy, Inc.* 4th Edition, McGraw-Hill, New York, 2003.

result represents all domestic sources of nitrogen, the use of other nitrogen-containing compounds, and both residential and commercial sources. For other key factors such as EF_1 and EF_2, EPA relies on other isolated studies with far less support. As NACWA pointed out previously, *IPCC Guidelines* do not necessarily reflect actual conditions at POTWs throughout the U.S. This is illustrated by the emission factor EF_1 of 3.2 g N_2O/person-year for plants with no intentional denitrification, which is used in the *Inventory* and *IPCC Guidelines* to calculate nitrous oxide emissions from centralized wastewater treatment plants. This value was obtained from a single study of a very small wastewater treatment plant (1.06 million gallons per day) in a small university town in New Hampshire. The population of this town drops to 6,200 in the summer months when most of the measurements for this study were made. If the IPCC and EPA reference this single study to define an emission factor for centralized treatment facilities all over the world, certainly EPA can justify changing the nitrogen loading rate for facilities in the U.S. based on literature values or data that it can collect from POTWs across the nation.

Finally, NACWA recommends that all values used in the equations should be provided in the factor definitions or in the text to enable the calculations to be easily reproduced. For example, the value for US_{POPND} is not provided – it is only referenced to the Clean Watershed Needs Survey (CWNS). EPA should provide the value that it used from the CWNS.

Thank you for consideration of our comments on the draft *Inventory*. Please contact me at 202-533-1836 or *cfinley@nacwa.org* if you have any questions about NACWA's comments.

Sincerely,

Cynthia A. Finley
Director, Regulatory Affairs