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November 23, 2010

Ms. Stephanie Sanzone
Designated Federal Officer (DFO)
EPA Science Advisory Board Staff Office (1400R)
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Re: Numeric Nutrient Criteria (NNC) for Florida

To: SAB NNC Review Panel

I am a professional engineer who has been registered in and has actively practiced in the State of Florida since 1983 and I represent the Niceville-Valparaiso-Okaloosa County (Florida) Regional Sewer Board (NVOCRSB). I have more than 27 years experience in wastewater treatment, reclamation and reuse in northwest Florida. Thank you for the opportunity to comment on the Numeric Nutrient Criteria proposed for the State of Florida. I have provided basically these same comments directly to the EPA on two occasions.

The NVOCRSB operates a wastewater treatment facility (WWTF) which utilizes the contact-stabilization mode of the activated sludge process. The effluent from the WWTF is applied to a 290-acre restricted access, slow-rate land application system (sprayfield). The sprayfield is divided into two parcels. A small creek flows between the two parcels. The WWTF effluent applied to the sprayfield seeps into the stream which bisects the two parcels. A significant portion of the flow in the stream is this effluent which has seeped into the stream.

Comments on the faulty science on which the NNC are based:

1. The USGS has stated that the model used by EPA, which was developed by the USGS, was not developed nor calibrated for streams with significant groundwater contribution and is therefore not applicable to the streams near the NVOC sprayfield.
2. The estimates of in-stream nitrogen losses in the model used by EPA are too low.
3. The proposal by EPA to use 75th and 90th percentile values of nutrient concentrations in healthy streams as protective is flawed. If the concentrations were measured in streams which showed no signs of degradation they are, by definition, healthy. In fact, higher concentrations could be protective. The problem is that EPA does not know what concentrations would be protective of individual streams because they have not developed the science required to make these determinations, i.e., they have not established the cause-effect relationship for any stream in Florida. In order to proceed in a manner supported by science, this cause-effect relationship would have to be determined for individual streams.

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4. In order to determine the nutrient concentration which would protect the downstream receiving waters, appropriate nutrient criteria would have to be established for the downstream water body. EPA has not done that. The assumption made by EPA that using 50% of the 75th percentile of the measured nutrients in healthy streams is required to protect the stream is grossly over conservative and has no scientific basis whatsoever.
5. EPA's proposed limits would result in streams showing no signs of impairment being placed on the list of impaired streams.
6. The proposal by EPA to divide the State into four (or five) sections in which the streams are considered to be homogenous is not supported by science because current available data demonstrates there is much variability in stream condition and health within these sections.
7. The proposed nutrient limits are not based on biological assessment of the stream or on biological responses and therefore has no demonstrated relationship to nutrient levels that actually cause nutrient impairment of the stream.

Comments which do not pertain to the science behind the proposed limits, but which should nonetheless be considered follow:

8. As stated above, a significant portion of the flow in the stream located between the parcels of the NVOC sprayfield is effluent, which seeps into the stream from the sprayfield. It is estimated that the WWTF effluent would have to contain less than 1.1 mg/L TN and 0.039 mg/L TP. There is currently no technology which has been demonstrated capable of meeting these limits on a consistent basis.
9. The technology most likely to be employed in an attempt to meet these limits would be chemical addition, filtration and reverse osmosis. A preliminary opinion of probable cost for the additional treatment is $30M capital cost and $2M per year for O&M cost. This would increase the average customer's sewer bill by $500 per year (132%).
10. NVOC has 10 years' data on the spring where the stream which bisects their sprayfield originates upgradient of the sprayfield. The land upgradient of the sprayfield is virgin timberland for miles. The pristine water emanating from this spring supports a virile and diverse biology and yet does not meet the proposed nitrogen limit proposed by EPA.
11. The approach used by EPA (basing limits on nutrients measured in healthy streams) penalizes northwest Florida, including NVOC, because of the excellent condition of our streams.

Thank you for the opportunity to present these comments on behalf of the NVOC Regional Sewer Board.

Sincerely,

POLYENGINEERING, INC.

Glenn D. Stephens, P.E.
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GDS/tdj

Cc: 40-131 C