



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
1650 Arch Street  
Philadelphia, Pennsylvania 19103-2029  
6/12/2007

Dr. Richard Eskin, Ph.D., Director  
Technical and Regulatory Services Administration  
Maryland Department of the Environment  
1800 Washington Boulevard, Suite 450  
Baltimore, MD 21230

Dear Dr. Eskin:

The U.S. Environmental Protection Agency (EPA), Region III, has reviewed the report, "Water Quality Analysis of Eutrophication for Bynum Run Watershed, Harford County, Maryland," which was submitted by the Maryland Department of the Environment (MDE) for final Agency review on August 29, 2006.

EPA agrees with MDE's determination that recent data show that a nutrient Total Maximum Daily Load (TMDL) is not necessary for Bynum Run. Bynum Run (basin code 02130704) is a non-tidal watershed and was first listed by Maryland on its 1996 section 303(d) list of water-quality limited segments as impaired by sediments and nutrients. A 2002 listing identified impacts to biological communities as a stream impairment. The water quality analysis addresses only the nutrient impairment. The listings for sediments and impacts to biological communities will be addressed separately at a future date.

The water column data collected from October 1998 through March 2004 at seven monitoring stations show that dissolved oxygen (DO) concentrations ranged from 7.0 mg/L to 14.3 mg/L. One sample, taken in March 2004 from an eighth monitoring station, fell below the criterion of 5 mg/L during the entire sampling period (2.5% of the monitoring measurements). Additionally, biological oxygen demand (BOD), chlorophyll *a*, total phosphorus (TP), and total nitrogen (TN) data were collected at three monitoring stations during October 1998 through September 1999, covering the algal growing season. BOD concentrations ranged from 0.6 mg/L to 4.7 mg/L. TP concentrations ranged from 0.0069 mg/L to 1 mg/L, and TN concentrations ranged from 0.55 mg/L to 2.64 mg/L. Chlorophyll *a* concentrations were low and did not reach levels higher than 9.0 µg/L. The low chlorophyll *a* concentrations found in Bynum Run suggest that chlorophyll *a* photosynthesis and respiration will not have a significant effect on observed DO values.



If future evidence suggests that nutrients from the Bynum Run Watershed are contributing to downstream water quality problems, then MDE will need to readdress the nutrient impairment.

If you have any questions or comments regarding these reports, please contact Mr. Thomas Henry, TMDL Program Manager, at (215) 814-5752.

Sincerely,

Signed

Jon M. Capacasa, Director  
Water Protection Division

cc: Melissa Chatham, MDE-TARSA  
Nauth Panday, MDE-TARSA

