

DIVISION OF WATER RESOURCES  
Statutory Authority: 7 Delaware Code, Chapter 60 (7 Del.C. Ch. 60)

**Amended Total Maximum Daily Load (TMDL) for Zinc in the Red Clay Creek,  
Delaware**

**REGISTER NOTICE**

**Brief Synopsis of the Subject, Substance, and Issues**

The Department of Natural Resources and Environmental Control (DNREC) is proposing to adopt an amended Total Maximum Daily Load (TMDL) Regulation for zinc in the Red Clay Creek. The original TMDL Regulation for zinc in the Red Clay Creek was published in the Delaware Register of Regulations on December 1, 1999 (3 **DE Reg.** 806 (12/1/99)). That TMDL Regulation was appealed by the National Vulcanized Fiber (NVF) Company to the State Environmental Appeals Board and the State Superior Court. The Department entered into a Settlement Agreement with the NVF Company in February of 2007, thereby resolving the appeal subject to the conditions of the Agreement. One condition of the Settlement Agreement was for the Department to consider an amended TMDL based upon a lognormal probability modeling approach. Such an approach provides an improved match between the strength, location, and timing of zinc mass loading to the Red Clay Creek with the inherent ability of the Red Clay Creek to assimilate the zinc loading without adverse impact. The lognormal probability modeling has been completed and the Department is now proposing to adopt an amended TMDL based upon the approach.

**Possible Terms of the Agency Action**

Following adoption of the amended Total Maximum Daily Load for zinc in the Red Clay Creek, the Department will submit the Final TMDL Regulation to the U.S. Environmental Protection Agency (EPA) for their review and approval. The Department will also monitor compliance with the terms of the Settlement Agreement between the Department and the NVF Company to ensure commitments are being met.

**Statutory Basis or Legal Authority to Act**

The authority to develop (and amend) a TMDL is provided by Title 7 of the Delaware Code, Chapter 60, and Section 303(d) of the federal Clean water Act, 33 U.S.C. 1251 et. seq., as amended.

**Other Legislation That May Be Impacted**

None

## Notice of Public Comment

A public hearing will be held on the proposed regulation to amend the Department of Natural Resources and Environmental Control's Total Maximum Daily Load regulation for zinc in the Red Clay Creek, Delaware. The public hearing will be held on Tuesday, October 28, 2008, beginning at 6:00 p.m., at the Delaware Department of Natural Resources and Environmental Control, 391 Lukens Drive, New Castle, Delaware.

If you are unable or do not wish to attend the hearing, you may submit written comments to the Department by 4:30 p.m., November 5, 2008. Comments should be directed to the attention of Maryann Pielmeier, DNREC, Watershed Assessment Section, 820 Silver Lake Blvd., Suite 220, Dover, DE, 19904-2464, ([maryann.pielmeier@state.de.us](mailto:maryann.pielmeier@state.de.us)), fax: (302) 739-6140.

Additional information and supporting technical documents may be obtained from the Watershed Assessment Section, Division of Water Resources, Department of Natural Resources and Environmental Control, Silver Lake Plaza, Suite 220, 820 Silver Lake Blvd, Dover, DE 19904-2464, (302) 739-9939. Supporting technical documents will also be available beginning October 1, 2008 at the following DNREC web site: <http://www.dnrec.state.de.us/water2000/Sections/Watershed/TMDL/tmdlinfo.htm>.

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### Amended Total Maximum Daily Load (TMDL) for Zinc in the Red Clay Creek, Delaware

#### A. INTRODUCTION and BACKGROUND

A TMDL specifies the maximum allowable mass loading of a pollutant (e.g., pounds per day) that can be delivered to a waterbody while still assuring that applicable water quality standards are met. A TMDL is composed of three components, including a Waste Load Allocation (WLA) for point source discharges, a Load Allocation (LA) for nonpoint sources, and a Margin of Safety (MOS) to account for uncertainties regarding the relationship between mass loading and resulting water quality. In simple terms, a TMDL attempts to match the strength, location, and timing of pollution sources within a watershed with the inherent ability of the receiving water to assimilate the pollutant without adverse impact.

On December 1, 1999, a Final TMDL Regulation for zinc in the Red Clay Creek was published in the Delaware Register of Regulations (3 **DE Reg.** 806 (12/1/99)). That TMDL Regulation was appealed by the National Vulcanized Fiber (NVF) Company to

the State Environmental Appeals Board and the State Superior Court. The NVF Company owns and operates a manufacturing facility in Yorklyn, DE along the banks of the Red Clay Creek. The Department entered into a Settlement Agreement with the NVF Company in February of 2007, thereby resolving the appeal subject to the conditions of the Agreement. One condition of the Settlement Agreement was for the Department to propose an amended TMDL based upon a lognormal probability modeling approach. Such an approach provides an improved match between the strength, location, and timing of zinc mass loading to the Red Clay Creek with the inherent ability of the Red Clay Creek to assimilate the zinc loading without adverse impact. The lognormal probability modeling has been completed and the Department is now proposing to adopt an amended TMDL based upon the approach.

B. Amended Total Maximum Daily Load (TMDL) Regulation for Zinc in the Red Clay Creek, Delaware

Article 1. The TMDL for zinc in the Red Clay Creek shall be 55.93 pounds per day, measured as total zinc.

Article 2. The combined mass loading of zinc to the Red Clay Creek from NVF Yorklyn's permitted discharge 002 (i.e., WLA<sub>002</sub>), plus the mass loading of zinc to the Red Clay Creek from contaminated groundwater beneath the NVF Yorklyn property (i.e., LA<sub>g.w.</sub>) shall not exceed 25.17 pounds of zinc per day, measured as total zinc.

Article 3. The load allocation of zinc originating from upstream of Yorklyn (i.e., LA<sub>up</sub>) shall not exceed 25.17 pounds of zinc per day, measured as total zinc.

Article 4. The margin of safety (MOS) for the TMDL listed in Article 1 has been set at 5.59 pounds of zinc per day, measured as total zinc. This MOS represents 10% of the TMDL and accounts for uncertainties in the overall TMDL analysis.

Article 5. DNREC has determined with a reasonable degree of certainty that water quality standards for zinc will be met in the Red Clay Creek once the mass loading requirements of Articles 1 through 3 are met.