



CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION

CONNECTICUT'S NITROGEN CONTROL PROGRAM

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Arthur J. Rocque, Jr.,
Commissioner

GENERAL PERMIT FOR NITROGEN DISCHARGES and Nitrogen Credit Exchange Program

Background

The Connecticut Department of Environmental Protection (CT DEP), in cooperation with New York State Department of Environmental Conservation (NYSDEC) and the federal EPA, has been investigating water quality problems in Long Island Sound through the National Estuary Program's Long Island Sound Study (LISS). Through those efforts, nitrogen has been identified as the primary pollutant causing low dissolved oxygen (DO) conditions, or *hypoxia*, that occur throughout much of the Sound's bottom waters each summer. Nitrogen fuels the growth of algae in the Sound, which eventually decays, consuming oxygen in the process. There is enough nitrogen added by human activity to cause severe hypoxia problems each summer, often with DO falling below 2 mg/l.

To address this important water quality problem, CTDEP and NYSDEC submitted a Total Maximum Daily Load (TMDL) analysis to EPA that specified how much nitrogen needs to be removed from the wastestream to meet state water quality standards. EPA approved the TMDL on April 3, 2001 in accordance with Section 303(d) of the federal Clean Water Act, providing the foundation for the nitrogen wasteload allocation (WLA) to be fully implemented by 2014.

The TMDL also left open the option for nitrogen trading among sources as a means for attaining the Sound-wide nitrogen reduction requirement, recognizing the significant cost savings that could be achieved through trading. In response, the Connecticut General Assembly passed, and the Governor signed, Public Act No. 01-180 in June 2001. PA 01-180 establishes the framework for a Nitrogen Credit Exchange Program to be directed by a Nitrogen Credit Advisory Board. A key component of the Program is a General Permit for Nitrogen to include all participating Publicly Owned Treatment Works (POTWs). The General Permit is necessary to establish annual nitrogen removal limits

and set monitoring and reporting protocols.

Coverage

The permit regulates the discharge of total nitrogen from each of the 79 Publicly Owned Treatment Works (POTW) in the General Permit. These facilities, in aggregate, must reduce the annual loading of total nitrogen to Long Island Sound by approximately 64% by 2014 in order to achieve the final wasteload allocation established in the TMDL.

Limits and Compliance

The following provides an overview of the provisions of Section 4 of the General Permit regarding how compliance will be determined. Permit language taken from the General Permit appears in *Italics*.

(a) Discharge Limits

- (1) *Annual discharge limits applicable to each POTW are set forth in Appendix 1, which is incorporated herein in its entirety, as part of this general permit.*
- (2) *Each permittee shall limit the discharge of nitrogen to the annual discharge limits set forth in Appendix 1, except as set forth in paragraph (b)(1)(b) of this Section.*

The annual limits for each facility in Appendix 1 are expressed in terms of pounds per day and represent the allocated "end-of-pipe" loading for each facility. These limits will be revised during the term of the permit as new information becomes available regarding progress towards achieving the final aggregate wasteload allocation established in the TMDL for Long Island Sound. Modification of the limits

will provide an opportunity for public participation and comment.

(b) Compliance During Term of Permit

- (1) *A permittee shall be in compliance with the annual discharge limits of this general permit if:*
 - (a) *the POTW's annual mass loading of total nitrogen is less than or equal to the discharge limit set forth in Appendix 1;*
or
 - (b) *the permittee has secured equivalent nitrogen credits equal to the amount the POTW exceeded the annual discharge limit set forth in Appendix 1 in accordance with the Nitrogen Credit Exchange Program and P.A. 01-180.*

Facilities that discharge less total nitrogen than the limit established in the General Permit 1 will be considered to be in compliance with the General Permit and be credited for the amount of nitrogen removed beyond the limit. The DEP will purchase all equivalent nitrogen credits generated by facilities that achieve compliance in this way in accordance with the Nitrogen Credit Trading Program established by PA 01-180.

Facilities may also achieve compliance by purchasing equivalent nitrogen credits from the state. DEP is obligated under the terms of PA 01-180 to sell municipalities sufficient credits to achieve compliance. The number of equivalent nitrogen credits required to achieve compliance is calculated by subtracting the annual mass loading of nitrogen discharged by the facility from the annual mass loading limit for that facility and multiplying the result by the equivalency factor for the facility.

Cost of Equivalent Nitrogen Credits

The price of an equivalent nitrogen credit has been determined for the year 2002 by the Nitrogen Credit Advisory Board at \$1.65 per equivalent nitrogen credit. This is based on the cost of reducing nitrogen discharged from Connecticut facilities in accordance with procedures established in PA 01-180. The attached Notice of Proposed Value of an Equivalent Nitrogen Credit for 2002 gives notice that the year 2002 cost is \$1.65 per an equivalent nitrogen credit. This a composite cost of capital construction costs and operation and maintenance costs of 23 nitrogen removal projects funded under the Clean Water Fund in Connecticut operating in the calendar year 2002. The project costs along with the total amount on nitrogen removed from the 79 permitted facilities results in the

cost of an equivalent nitrogen credit of \$1.65 for the calendar year 2002. DEP will notify each individual facility in writing of their equivalent nitrogen credit balance by March 31, 2003. Facilities must purchase the equivalent nitrogen credits needed to achieve a zero equivalent nitrogen credit balance by July 31 to remain in compliance with the permit.

The attached table *LIS Total Nitrogen Credit Exchange Final Balance - 2002* shows the facilities that will be selling nitrogen credits and the facilities that will be purchasing nitrogen credits based on the equivalent nitrogen credit cost of \$1.65 per credit. Many facilities that will be selling credits have completed significant improvements to their treatment processes to remove nitrogen. The facilities with a star have completed nitrogen removal improvements funded through the Clean Water Fund.

For more Information...

On the General Permit and Nitrogen Credit Exchange Program contact:

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