



Connecticut Department of Environmental Protection

Arthur J. Rocque, Jr. Commissioner



Lighthouse Point, New Haven

Report of the Nitrogen Credit Advisory Board
To the Joint Standing Environmental Committee
Of the General Assembly

September 2003

79 Elm Street
Hartford, CT 06106-5127

Second Annual

**REPORT OF THE NITROGEN CREDIT ADVISORY BOARD
TO THE JOINT STANDING ENVIRONMENT COMMITTEE
OF THE GENERAL ASSEMBLY**

Concerning the

NITROGEN CREDIT EXCHANGE PROGRAM

**As required by
Section 22a-521-527
Connecticut General Statutes**

September 25, 2003

Report to the Joint Standing Environment Committee of the General Assembly

Concerning the Nitrogen Credit Exchange Program

**As required by
Section 22a-521-527 of the Connecticut General Statutes**

This report has been prepared by the Nitrogen Credit Advisory Board and is respectfully submitted to the Joint Standing Environment Committee of the General Assembly pursuant to the requirements of Section 22a-521-527 CGS. This statute requires that the Nitrogen Credit Advisory Board submit to the Joint Standing Environment Committee of the General Assembly a report that addresses issues associated with the implementation of the Nitrogen Credit Exchange Program authorized by the statute.

Executive Summary

The Nitrogen Credit Advisory Board achieved a number of important milestones in the second full year of the program. Most importantly, the Board successfully oversaw the completion of the first annual nitrogen credit exchange authorized by Section 22a-524 of the Connecticut General Statutes. This report provides a summary of the major actions of the Board and identifies important issues:

- o Two Board positions remain unfilled pending appointments.
- o All 79 municipalities regulated under the General Permit for Nitrogen Discharges cooperated fully in implementing the Nitrogen Credit Exchange program.
- o Connecticut sewage treatment facilities discharged an average of 15,840 equalized pounds of nitrogen per day during 2002, 13% less than projected.
- o Three facilities completed nitrogen removal upgrades in 2002 and five additional sewage treatment facilities are scheduled to complete upgrades in 2003.
- o Facilities with completed nitrogen removal projects financed by the Clean Water Fund removed 2,861,852 equalized pounds of nitrogen in 2002 at a combined capital and operation and maintenance cost of \$4,709,445.
- o The Nitrogen Credit Advisory Board's recommended value of \$1.65 per equalized pound of nitrogen in 2002 was accepted by the Commissioner of DEP.
- o 38 municipalities purchased credits to remain in compliance with the General Permit at a total cost of \$1,317,223. 39 municipalities sold credits generated when they removed more nitrogen than required to comply with the General Permit for a total value of \$2,757,323. The State purchased all excess nitrogen credits generated during 2002 at a cost of \$1,440,100.
- o A number of technical assistance and outreach activities were conducted.
- o All sewage treatment facilities were inspected at least once during 2002 and discrepancies or problems affecting monitoring data quality were resolved in cooperation with the municipal officials responsible for operation of the facilities.
- o The continued availability of Clean Water Fund financing to support nitrogen removal projects is the single most critical factor relative to the continued success of this program.
- o Distressed communities have received priority for additional funding provided by the federal Long Island Sound Restoration Act of 2000 for planning and design of nitrogen removal treatment upgrades.
- o No changes to the program are recommended at this time.

Background

In April 2001, the federal Environmental Protection Agency (EPA) approved Connecticut and New York's joint plan to correct one of Long Island Sound's (LIS) most pressing water quality problems. Each summer, bottom waters over an extensive portion of western and central LIS experience low levels of dissolved oxygen, a condition commonly called "hypoxia." Oxygen levels during the July through September period are inadequate to support healthy populations of fish and shellfish. The joint plan, called a Total Maximum Daily Load, or TMDL, identified nitrogen as the pollutant most responsible for the hypoxic condition. Excess loads of nitrogen from sewage treatment plants (STP), stormwater runoff, and atmospheric deposition over enrich the Sound with microscopic plant life, which eventually dies, sinks to the bottom and decays. During decay, oxygen is consumed driving dissolved oxygen to unhealthy levels, well below state water quality standards.

The TMDL requires the two states to attain a 58.5% collective reduction of nitrogen loading from all sources to LIS from an established baseline by 2014. A 64% reduction goal was set for Connecticut STPs, a major source of nitrogen, through a wasteload allocation process. Nitrogen "trading" was identified as a mechanism for cost-effectively attaining the aggregate goal for Connecticut STPs, which led to development and passage of Public Act 01-180, codified in the Connecticut General Statutes in Sections 22a-521 through 527. The statute established a Nitrogen Credit Exchange overseen by a Nitrogen Credit Advisory Board, and authorized issuance of a Nitrogen General Permit. Collectively, the General Permit, the Credit Exchange and the Board form the foundation for the successful nitrogen trading program instituted in Connecticut for publicly owned STPs.

A summary of the nitrogen credit exchange program's progress in achieving the total maximum daily load. (Sec 22a-523(c)(1))

Appointment of Board Members: The statute provides for a Nitrogen Credit Advisory Board comprised of 12 members. The General Assembly and Governor have appointed a total of seven members. Two positions on the Board are currently vacant pending appointments by the majority leaders in the Senate and House. The Board has chosen the length of service terms for the members of the Board as required by the Act. Two members of the Board resigned in 2003 due to retirements and both vacancies were refilled. A list of appointees identifying the appointing authority and length of term is provided in Attachment A.

The General Permit for Nitrogen Discharges: The Department of Environmental Protection issued a General Permit on January 1, 2002 that regulates the discharge of total nitrogen from each of 79 publicly owned STP's in Connecticut. The General Permit includes requirements that will insure compliance with the Total Maximum Daily Load (TMDL) for nitrogen discharged into Long Island Sound.

The General Permit establishes annual nitrogen limits for each facility based on the expectation that the cumulative amount of nitrogen discharged from all of Connecticut's publicly owned STPs will decrease annually as nitrogen treatment projects are completed. The Nitrogen Credit Exchange Program provides an incentive to facilities that complete nitrogen treatment projects while allowing facilities that elect to defer construction of nitrogen treatment to remain in compliance with the General Permit by purchasing nitrogen credits. The General Permit includes provisions regarding monitoring and reporting protocols to insure proper accounting of nitrogen credits and debits among

publicly owned treatment works. For each participating facility, the General Permit also establishes an “equalization factor” that accounts for each facility’s geographic location relative to the impact of nitrogen discharged at that location to the area in western Long Island Sound where the impact of excess nitrogen is most severe. The equalization factor is used to convert nitrogen loadings that are measured “end-of-pipe” to “equalized pounds” on which compliance with the TMDL is determined.

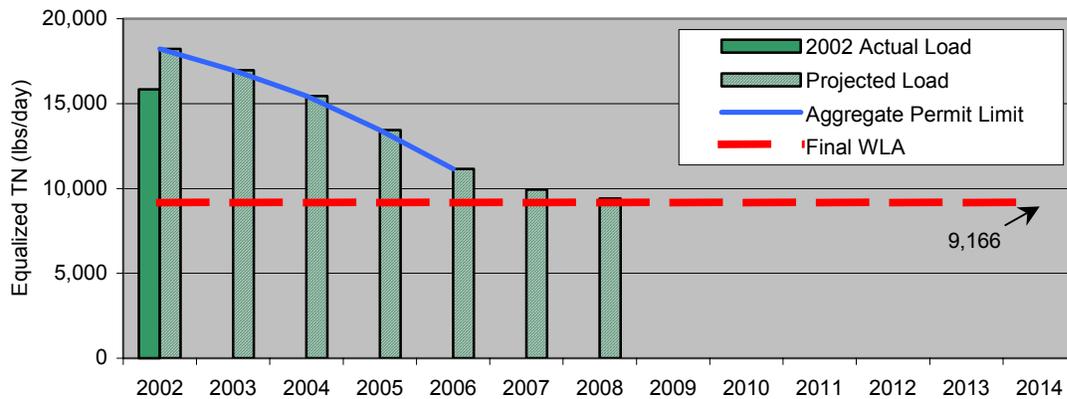
All 79 municipal STPs regulated under the general permit have been providing the necessary discharge monitoring data required by the permit. A copy of the General Permit is attached (Attachment B).

Progress in removing nitrogen by STPs during 2002 was better than expected. Based on a treatment plant capability analysis performed by DEP, the aggregate permit limit for 2002 was set at 18,220 equalized pounds per day. Monitoring data submitted by municipalities in accordance with the provisions of the General Permit indicated that Connecticut STPs discharged only 15,840 equalized pounds per day to western Long Island Sound during 2002. Much of the 13% difference between expected and actual performance can be explained by the unusually warm and dry conditions that prevailed during much of 2002 and the efforts of treatment plant operators to maximize the nitrogen removal efficiency of existing treatment capacity. In addition, no significant upsets affecting nitrogen treatment were reported by facilities covered under the General Permit during 2002.

Early data for 2003 indicates that performance for this year will be closer to the projected level of 16,955 equalized pounds per day. It is important to note that the projected performance for 2003 is based on the anticipated increase in the ability of Connecticut STPs to remove additional nitrogen as nitrogen removal upgrade projects become operational. Although the capability of Connecticut STP’s to remove nitrogen increased in 2003, the State experienced a significantly colder and wetter winter and spring in 2003 than 2002 and hence, discharge volumes were elevated and nitrogen treatment was depressed at many facilities. Several facilities also reported difficulties in maintaining nitrogen treatment during the early portion of 2003 and were unable to remove nitrogen at their full capability. Reestablishing nitrogen treatment following an upset was complicated by the cold, wet weather further depressing nitrogen removal rates.

While significant variability year-to-year can be anticipated, a downward trend in the amount of nitrogen discharged to LIS is expected based on the gradual increase in the capability of Connecticut STPs to remove more nitrogen as additional nitrogen treatment projects are completed. The projected trend in nitrogen discharged to LIS for the period 2002-2006 based on the completion of nitrogen removal projects currently anticipated to become operational over the next several years is shown in Figure 1 below.

Figure 1 -- Projected Progress Relative To Meeting Final WLA



The TMDL establishes a maximum nitrogen loading, termed a wasteload allocation (WLA), from Connecticut treatment plants to the critical area of western Long Island Sound of 9,166 equalized pounds per day to be achieved by 2014 (red line Fig. 1 above). For 2002, the General Permit established an aggregate limit of 18,220 equalized pounds per day based on the expected performance of Connecticut facilities during 2002 (blue line).

Three facilities completed nitrogen treatment upgrades in 2002 (Branford, Fairfield, and Windsor Locks) and five additional facilities are scheduled to complete upgrades in 2003 (Bridgeport East, Bridgeport West, Bristol, Enfield, and Litchfield). By the end of 2003, a total of 30 facilities will be providing either full or partial nitrogen treatment with 25 facilities projected to complete upgrades over the next 4 years. The effect of the additional nitrogen removal at these facilities on the aggregate loading to Long Island Sound is reflected in decreasing slope of the blue line in the figure, which terminates at the projected performance for the year 2006 when the permit must be renewed of 11,162 equalized pounds per day.

The performance of individual facilities during 2002 is provided in Attachment C, *Total Nitrogen Balance Sheet – Monthly Averages by Plant, 2002*. The data were audited by the Department of Environmental Protection and serve as the basis for determining the number of equalized nitrogen credits for sale and the number of equalized nitrogen credits to be purchased for 2002.

Nitrogen Trading: The Nitrogen Credit Advisory Board has met monthly throughout the year. Among the major tasks accomplished by the Board during 2002 was establishing the value of an Equalized Nitrogen Credit for 2002.

Sections 22a-521 through 527 CGS requires that the Nitrogen Credit Advisory Board propose an annual value for equalized nitrogen credits to the Commissioner of DEP. The Board is directed to derive this value by dividing the total annual project cost by the reduction in equalized pounds of nitrogen. The statute further specifies that the total project cost is composed of two components: 1) capital expenditures to construct treatment facilities for nitrogen removal, and 2) ongoing operation and maintenance costs for nitrogen removal treatment.

The Board defined a “Nitrogen Removal Project” as any alteration of the physical structure of a treatment facility specifically to remove nitrogen that was financed by the Clean Water Fund. “Project Facility” was further defined as any facility that was fully operational on January 1 of the trading year. Under this definition, 23 facilities were considered to be Project Facilities during 2002. “Capital Cost” was defined by the Board as the annual Clean Water Fund repayment amount associated with construction of nitrogen treatment facilities as established in the loan agreement between the municipality and DEP. Financing derived from grants to municipalities was not considered to be a capital cost. Using this procedure, the Board established the annual capital cost for nitrogen treatment in 2002 at \$1,765,432. Operation and maintenance costs were estimated by means of a survey sent to all Project Facilities. Department staff reviewed all survey data for consistency and reasonableness and an estimate of \$2,944,013 was adopted by the Board as the annual operation and maintenance costs for nitrogen removal in 2002. Combining capital and operation and maintenance cost yielded a total cost for nitrogen removal in 2002 of \$4,709,445.

The reduction in equalized pounds of nitrogen was calculated by subtracting the actual end-of-pipe pounds of nitrogen discharged by each of the Project Facilities from the “baseline” loading established for the facility in the TMDL for Long Island Sound. The baseline loading represents the loading of nitrogen each facility would have discharged if no nitrogen treatment were provided. Load reductions for each facility were multiplied by the equalization factor for that facility (converting the pounds reduced to equalized pounds reduced) and the statewide reduction calculated by summing the equalized pounds reduced for all Project Facilities. Using this procedure, a total of 2,861,852 equalized pounds of nitrogen were reduced by Project Facilities in 2002. An itemized accounting of costs and nitrogen removal at the 23 Project Facilities is provided in Attachment D.

In January 2003, the Board formally submitted a recommendation to the Commissioner that he establish the value of an equalized nitrogen credit at \$1.65 for trading in 2002 based on dividing the Total Project Cost of \$4,709,445 by 2,861,852 pounds of equalized nitrogen removed. The Commissioner accepted this recommendation and issued a draft ruling pursuant to 22a-521-527 CGS. Since no municipality petitioned for a review of the Commissioner’s draft ruling during the statutory 15-day review period, the draft ruling became final establishing the value of an equalized nitrogen credit at \$1.65 for 2002.

The Board previously provided an estimated balance sheet to all 79 municipalities covered under the General Permit in October 2002. The balance sheet was based on and included a summary of performance data for each facility through the first eight months of the year and the estimated dollar amount each municipality would be required to submit or would likely receive as a result of credit exchanges in 2002. This effort was intended to allow municipalities to include possible costs or revenue generated through this program into Water Pollution Control Authority budget deliberations.

Final Invoices based on the audited monitoring data for the period January through December 2002 and the established value of a credit were mailed to all municipalities on March 27, 2003. A total of 38 municipalities were required to purchase credits in order to remain in compliance with the General Permit. Municipalities purchasing credits contributed a total of \$1,317,223 with individual municipal

payment ranging between \$272,602 and \$217. Thirty-nine municipalities received payments totaling \$2,757,323 from the sale of Nitrogen Credits. Two facilities discharged an amount exactly equal to their permit limit and were not required to purchase or sell credits. Due to the exceptional performance of Connecticut facilities in 2002, the State disbursed \$1,440,100 to purchase Nitrogen Credits in excess of the amount received from municipalities purchasing credits. An itemized accounting of the final balances for individual municipalities is provided in Attachment D.

The Board convened a banking/financial subcommittee to assist with the fiduciary requirements of the Board. The Bond Commission approved funds for the purchasing of excess credits on August 11, 2003. Though extraordinary efforts, complicated by a new State accounting system, checks were issued on August 16, 2003, two days past the August 14 deadline.

The Board is currently preparing recommendations regarding the value of an equalized nitrogen credit for trading in 2003. As noted earlier in this report, nitrogen treatment during the early part of 2003 was diminished due in large part to unfavorable weather conditions during the winter and spring months. Although the cost of nitrogen treatment has not increased dramatically this year, less nitrogen may be removed than would be expected based on a colder wetter spring and early summer than in 2002. As a result, early projections for 2003 suggest that the value of a nitrogen credit may increase significantly. The higher value of a credit, plus the lower permit limit in 2003, is expected to result in higher costs to municipalities that do not provide nitrogen treatment. Municipal facilities that are successful in removing more nitrogen than is required to comply with permit limits will receive higher payments for the credits generated. Overall, in 2003 payments to credit sellers are expected to more closely approximate monies received from credit purchasers than was the case in 2002.

Outreach and Training: A number of technical assistance outreach projects and presentations were completed in 2002 and 2003 to assist the communities covered by the General Permit in operating their treatment facilities to remove nitrogen more efficiently.

A team of researchers led by Barth Smets at the University of Connecticut, Jeanette Brown of the City of Stamford, and Robert Sharp of Manhattan College completed an assessment of the causes of nitrification and denitrification failure at sewage treatment plants. The study identified operational, process and toxic chemical causes of treatment failure and proposed assays that would help diagnose problems. The findings were presented at a one-day workshop held at the University of Connecticut's Stamford campus in February 2003 that was attended by over 100 wastewater treatment plant staff and other professionals from Connecticut and New York. Funding for this effort was provided by the Water Resource Institute at the University of Connecticut and by the Long Island Sound Study.

The Department in June 2003 held two 2-day training sessions titled "Optimizing the Activated Sludge and Secondary Clarifier Systems for Nitrogen Removal". The training sessions were held in Hartford and Old Lyme and attended by 70 treatment plant personnel from throughout the state. The classes provided additional training to treatment plant operators to enhance nitrogen removal efficiency at treatment facilities covered under the General Permit for Nitrogen Discharges. The Department utilized funding through a U.S. EPA outreach operator training program under Section 104(g) of the Clean Water Act to assist in funding the sessions.

In January 2003, the U.S. EPA released its final policy for water pollutant trading. The policy reflected many of the experiences of Connecticut's Nitrogen Credit Exchange and resolved some of the obstacles and gray areas Connecticut encountered during the development of its program. In particular, issues of anti-degradation, backsliding, flexibility and applicability of NPDES permitting, and the legal framework within which trading could function were addressed in the EPA policy. Department staff members were invited by U.S. EPA to speak on Connecticut's nitrogen trading program at several national conferences and workshops that EPA held on watershed based trading programs. The conferences included the State-EPA Environmental Innovation Symposium held in Washington D.C. in June and the National Forum on Water Quality Trading held in Chicago in July. U. S. EPA has recognized the Connecticut Nitrogen Trading Program as a national model for watershed based trading programs (see letter from Tracy Mehan, Assistant Administrator for Water, U.S. EPA included as Attachment E).

Data Quality: DEP staff inspected each of the 79 municipal facilities regulated under the General Permit at least once during 2002. Inspections consisted of a comprehensive evaluation of all aspects of the facility's operation and monitoring procedures and included:

Inspection at the site: verification and calibration of flow meters, checking the proper functioning of flow proportional samplers, confirming proper sample location and inspection of equipment that is used to remove nitrogen.

Inspection documentation: An inspection form was filled out with the superintendent in order to determine if there were any problems previous to the inspection.

Review of analytical results and Nutrient Analysis Reports (NAR): The Analytical results were reviewed to determine if they were consistent with data reported on the NAR's. The bench sheets provided by the labs were examined in order to determine if they were consistent with methodology and preservation under EPA regulations.

Collection and analysis of split samples: Composite samples of the final effluent were split between the Department of Public Health (DPH) lab and labs used by the municipalities. If the results were not similar, another composite sample was taken and samples were split between DPH, Stamford Regional lab and the lab used by the municipality.

Any discrepancies or problems that might affect the quality of the data used to support the Trading Program were investigated and resolved in cooperation with municipal officials responsible for the facilities operation and maintenance.

The adequacy of the Clean Water Fund financing pursuant to section 22a-477 of the general statutes, as amended by this act, to support the nitrogen credit exchange program and the total maximum daily load (Sec 22a-523(c)(2)).

Nitrogen Removal Projects: - Since 1993, a total of 27 nitrogen removal construction projects at municipal wastewater treatment plants have been completed. Nine projects involved major construction of facilities designed to achieve maximum nitrogen removal to meet the long-term

nitrogen reduction goal of 4 mg/l for the facility. The remaining 18 projects involved retrofits of existing facilities that are designed to achieve at least 8 mg/l for total nitrogen discharged. There are seven nitrogen removal projects currently under construction. A complete list of nitrogen removal projects that have been completed or currently approved for funding by the Clean Water Fund is provided in Attachment F.

The better than expected performance of the completed projects identified in Attachment F, combined with favorable weather conditions, resulted in nitrogen removal at a level greater than the year 2002 limits in the General Permit. However, several years of performance data is needed to establish the rate at which nitrogen removal is being accomplished. Year-to-year variation in the aggregate statewide nitrogen loading to Long Island Sound is expected to be significant due to the influence of weather conditions on treatment efficiency. Variability may be particularly high in the early years of the trading program as STP operators gain experience in operating the more sophisticated treatment technologies need for nitrogen removal under a variety of conditions. However, as additional facilities install nitrogen removal treatment technology, the potential to remove greater amounts of nitrogen is achieved and a downward long-term trend in loading to Long Island Sound is anticipated.

The availability of Clean Water Funds is the most critical factor controlling the number of facilities that can move forward to upgrade treatment to remove nitrogen. Presently, the projected demand for Clean Water Fund financing to support construction projects is more than twice the amount projected to be available.

There are 48 municipal treatment facilities in Connecticut covered under the general permit that have not completed or presently have a nitrogen removal project under construction and funded by the Clean Water Fund. As illustrated by attachment F, the total project cost for completed nitrogen removal projects have ranged from several hundred thousand to over 100 million dollars for large municipal plants. The estimated nitrogen removal construction costs for the remaining 48 facilities are in excess of five hundred million dollars as based on a 2000 report, "Nitrogen Credit Trading in the Long Island Sound Watershed" published by the Water Environment Research Foundation. It is anticipated that by the end of 2004 all municipal treatment facilities covered under the general permit will have completed a detailed nitrogen removal engineering study. The studies will result in the evaluation of each facility's potential to cost effectively remove nitrogen. They will also provide detailed construction cost estimates for each facility which will be used to forecast the level of Clean Water Fund financing necessary over the next ten years in order to reach the limits in the general permit.

Difficulties surrounding the adoption of a State budget for FY03/04 have introduced even greater uncertainty into the availability of future bond funds to support nitrogen removal projects. Upgrades to municipal pollution control infrastructure typically require multi-year, stable funding to progress from initial planning and design phases to completion of construction activity. Maintaining a steady flow of capital into nitrogen removal infrastructure projects is critical to the success of this program.

Recommendations for changes to the program including but not limited to: (A) Exchanging nitrogen credits with entities outside the state; (B) expanding the general permit for nitrogen discharges and the nitrogen credit exchange program to include additional point and non-point sources; and (C) exchange transactions executed outside of the nitrogen credit exchange program (Sec 22a-523(c)(3)).

At this time the Board believes it is premature to expand or alter the program. There will be no out-of-state market for excess Connecticut credits until 2004 when the first reduction target for New York treatment plants begins. Potential expansion of the credit exchange to include other point and non-point sources is being explored by DEP in an EPA-funded project, scheduled for completion by the fall of 2003.

Identification of any other issues that need to be resolved (Sec 22a-523(c)(4)).

At this time the Board has not identified any additional issues that require the attention of the General Assembly. However, the Board has resolved that a special report to the General Assembly shall be made at any time when, in the judgement of the majority of Board members, such a report is necessary to enlist the assistance of the General Assembly in resolving a problem associated with implementing the Nitrogen Credit Exchange Program.

Recommendations relating to the use of federal funding to assist distressed municipalities in the planning, design and construction of nitrogen removal facilities in implementing the provisions of this act (Sec 22a-523(c)(5)).

The Long Island Sound Restoration Act of 2000 created an authorization of additional federal funds for upgrading of wastewater treatment facilities to protect Long Island Sound. Distressed communities receive priority for awarding of funds. The 1.58 million dollars Connecticut received in fiscal year 2002 is being used for nitrogen removal planning grants. A total of 13 distressed municipalities have applied for the use of the funds to conduct nitrogen removal facilities planning:

Putnam
Windham
West Haven
Norwich
Winsted

Plainville
Meriden
Killingly
Ansonia

Metropolitan District
New Haven
Torrington
Sprague

It is anticipated that 7 additional facilities may undertake nitrogen-planning projects in the future. The planning projects will provide an important first step in evaluating wastewater treatment facilities ability to remove nitrogen and provide options to a municipality for complying with the General Permit. The federal funds will be used to augment the existing state Clean Water Fund grant such that 100% of the cost of planning will be funded. Priority will be given to any distressed community, as defined by the Commissioner of Economic and Community Development. The approximately 3.8 million dollars that were appropriated for FY 02-03 will be used to fund design grants to distressed municipalities. The increased design grants will be available on first come first served bases to enable treatment plant projects in distressed municipalities to move in to the design phase of improvements.

This is a summary of the major actions of the Board. The detailed minutes of the meetings are available to outline all of actions of the Board.

Respectfully submitted,

Yvonne Bolton, Chairman
Nitrogen Credit Advisory Board

September 25, 2003

Attachments:

- A List of Appointees to Nitrogen Credit Advisory Board
- B General Permit for Nitrogen Discharges
- C Total Nitrogen Balance Sheet – Monthly Averages by Plant 2002
- D D1. Total Annual Project Costs, 2002
D2. E Pounds Reduced by Project Facilities, 2002
D3. LIS Total Nitrogen Credit Exchange Final Balance – 2002
- E Mehan letter
- F Projects Funded by CWF

ATTACHMENT A

LIST OF APPOINTEES

	Name	Appointing Authority	Term	Term Expires
1.	Jeanette Brown Executive Director Stamford WPCF Harbor View Ave. Stamford, CT 06902 Phone: 203-977-5809	Sen. Jepsen	3 years	November 2004
2.	John Mengacci Assistant Director Office of Policy Management 450 Capitol Avenue Hartford, CT 06106 Phone: (860) 418-6343	Marc Ryan, Secretary OPM	No specific term	
3.	Robert Moore 555 Main St. PO Box 800 Hartford, CT 06142-0800 Phone: 278-7850	Sen. Sullivan President of Senate	3 year	November 2005
4.	Yvonne Bolton Interim Chief Betsey Wingfield (Alternate) DEP 79 Elm Street Hartford, CT 06016 Phone: (860) 424-3704	Commissioner Rocque Environment Protection	No specific term	
5.	Sharon Dixon Peay 55 Elm Street Debt Management Specialist Office of the Treasurer 55 Elm Street Clean Water Fund Hartford, CT 06106 Phone: 860-702-3134	Denise Nappier Treasurer	No specific term	
6.	Astrid T. Hanzalek 155 South Main Street Suffield, CT 06078 Phone: 860-668-2739	Rep. Ward, House Minority Leader	2 years	November 2003

	Name	Appointing Authority	Term	Term Expires
7.	Martin Overton City of Norwalk Dept. of Public Works PO Box 5125 125 East Avenue Norwalk, CT 06856-5125 203-854-7797	Rep. Lyons Speaker of the House	3 years	November 2004
8.	Brian Armet Executive Director Mattabassett District 245 Main Street Cromwell, CT 06416 Phone: 860-635-5550	Rep. Pudlin Majority Leader of the House	3 years	November 2005
9.	Richard Cellar 83 Lawrence Road Fairfield, CT 06824-3039 Phone: 203-255-5017	Sen. DeLuca Minority Leader of the Senate	3 year	November 2005
10.	Carl Almquist Town Hall Annex 134 Groton Long Point Road Groton, CT 06340-4873 Phone: 860-448-4083	Governor Rowland	3 years	November 2004
11.	VACANT Towns less than 20,000 Population	Rep James Amen Majority Leader of the House	3 year	
12.	VACANT Towns less than 20,000 Population	Sen. Martin Looney Majority Leader of the Senate	2 years	

Attachment B

General Permit for Nitrogen Discharges

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General Permit for Nitrogen Discharges

Section 1. Authority

This general permit is issued under the authority of Public Act 01-180 and Chapter 446k of the Connecticut General Statutes.

Section 2. Definitions

As used in this general permit, and as defined or modified from Section 1 of P.A. 01-180:

“Annual mass loading of total nitrogen” (expressed in pounds per day) means the sum of monthly mass loading of total nitrogen for each month from January through December divided by 12 and rounded to the nearest whole number.

“Authorized activity” means any activity authorized by this general permit.

“CFR” means Code of Federal Regulations.

“Commissioner” means Commissioner as defined by Section 22a-2(b) of the General Statutes.

“Daily composite” means a composite sample taken over a full operating day consisting of grab samples collected at equal intervals of no more than sixty (60) minutes and combined proportionally to flow; or, a composite sample continuously collected over a full operating day proportional to flow.

“Daily mass loading of total nitrogen” (expressed in pounds per day) means the total nitrogen concentration (expressed in mg/L to the nearest 0.1 mg/L) multiplied by the daily flow volume (expressed as MGD, to the nearest 0.1 MGD for facilities with a design capacity of 1.0 MGD or greater and to the nearest 0.01 MGD for facilities with a design capacity of less than 1.0 MGD) multiplied by 8.34 and rounded to the nearest whole number to convert to pounds per day units.

“Department” means the Department of Environmental Protection.

“Discharge Monitoring Report” or *“DMR”* means a report form provided or approved by the Commissioner for use by a permittee to submit discharge monitoring data to the Department relating to compliance with limits and conditions established in the individual permit for a facility.

“Equivalency factor” means a ratio of the unit response of dissolved oxygen to nitrogen in Long Island Sound for each POTW based on the geographic location of the specific POTW's discharge point divided by the unit response of the geographic area with the highest impact.

“Equivalent nitrogen credit” means a nitrogen credit multiplied by the equivalency factor.

“Individual permit” means a permit issued to a named permittee under Section 22a-430-4 of the Regulations of Connecticut State Agencies.

“Monthly mass loading of total nitrogen” (expressed in pounds per day) means the sum of the daily mass loading of total nitrogen for each monitored day during the month divided by the number of monitoring days during the month and rounded to the nearest whole number.

“Monthly Operating Report” or *“MOR”* means a report form provided or approved by the Commissioner for use by a permittee in submitting data to the Department related to the operation of a facility.

“Municipality” means municipality as defined by Section 22a-423 of the Connecticut General Statutes.

“Nitrogen Analysis Report” or *“NAR”* means a report form provided or approved by the Commissioner for use by a permittee in submitting monitoring data to the Department related to the discharge of nitrogen from a facility.

“Nitrogen credit” means the difference between the annual mass loading of total nitrogen specified for a POTW in the general permit for treated nitrogen discharges and the monitored annual mass loading of total nitrogen discharged by that POTW expressed as pounds of nitrogen per day.

“Nitrogen credit exchange program” means the program within the Department established pursuant to Section 4 of P.A. 01-180.

“Nitrogen Wasteload Allocation” means a total load of nitrogen assigned to a discharger expressed in pounds per day of total nitrogen discharged.

“Permittee” means a municipality or person discharging nitrogen as authorized by the general permit.

“Person” means person as defined by Section 22a-423 of the Connecticut General Statutes.

“Publicly Owned Treatment Works” or *“POTW”* means a system used for the collection, treatment or disposal of sewage from one or more parcels of land and that discharges to the waters of the state and is owned by a municipality of the state.

“TMDL” means the Total Maximum Daily Load analysis to achieve water quality standards for dissolved oxygen in Long Island Sound as established by the Department and as approved by the United States Environmental Protection Agency on April 3, 2001.

“Total nitrogen” means the total of the concentrations of ammonia nitrogen, organic nitrogen, nitrite nitrogen, and nitrate nitrogen expressed as milligrams of nitrogen per liter.

Section 3. Authorization Under This General Permit

(a) *Eligible Activities or Discharges*

This general permit authorizes the discharge of total nitrogen from the POTWs listed in Appendix 1, provided the activities are conducted in accordance with this general permit.

This general permit does not authorize any discharge of water, substance or material into the waters of the state other than the one specified in this section. Any person or municipality which initiates, creates, originates or maintains such a discharge must first apply for and obtain authorization under Section 22a-430 of the General Statutes.

(b) *Geographic Area*

This general permit applies throughout the State of Connecticut.

(c) *Effective Date and Expiration Date of this General Permit*

This general permit is effective on January 1, 2002, and expires on December 31, 2006.

(d) *Effective Date of Authorization*

An activity is authorized by this general permit on the date the general permit is issued.

Section 4. Conditions of this General Permit

A permittee shall conduct activities authorized by this general permit in accordance with the following conditions:

(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.

(b) *Compliance During Term of Permit*

- (1) A permittee shall be in compliance with its 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 state-owned 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.
- (2) A permittee shall be out of compliance with the annual discharge limits of the general permit and subject to the enforcement provisions of chapter 446k of the Connecticut General Statutes if:
- (a) the POTW's annual mass loading of total nitrogen is greater than the discharge limit set forth in Appendix 1; and
 - (b) the permittee fails to secure sufficient state-owned equivalent nitrogen credits in a timely manner in accordance with the Nitrogen Credit Exchange Program and P.A. 01-180.

(c) *Operation of Nitrogen Removal Process Equipment*

The permittee shall not bypass or fail to operate any of the approved nitrogen removal equipment or processes without the written approval of the Commissioner. The permittee shall operate all necessary equipment to optimize nitrogen removal so as to reduce nitrogen discharges to the maximum extent practicable. This includes but is not limited to all recycle pumping systems, aeration equipment, aeration tank cycling, mixing equipment, anoxic basins, chemical feed systems or any other process equipment necessary for the optimal removal of nitrogen.

(d) *Monitoring Requirements*

- (1) Effective upon issuance of this general permit, the permittee shall monitor total nitrogen in the final effluent in accordance with the following frequency:
- (a) POTWs with a design flow rate specified in the individual permit for the facility of less than 10,000,000 gallons per day shall monitor the final effluent at a minimum frequency of weekly.
 - (b) POTWs with a design flow rate specified in the individual permit for the facility equal to or greater than 10,000,000 gallons per day shall monitor the final effluent at a minimum frequency of twice per week.

- (3) Monitoring requirements shall commence on January 1, 2002.
- (4) Final effluent and monitoring location shall be identical to that used to determine compliance with final effluent limitations and monitoring conditions established in the individual permit for the facility.
- (5) All samples analyzed to determine compliance with limits on total nitrogen shall be daily composite samples unless otherwise approved in writing by the Commissioner.
- (6) Chemical analyses to determine compliance with effluent limits and conditions established in this general permit shall be performed using the methods approved in or pursuant to 40 CFR 136 unless an alternative method has been approved in writing pursuant to 40 CFR 136.4.
- (7) The permittee shall measure average daily volume of flow of wastewater received by the facility at the main flow meter as set forth in the individual permit for the facility.
- (8) In the event of a flow meter malfunction on a day when a sample for total nitrogen analysis is collected, the permittee shall utilize the arithmetic average of the 7 highest daily flows measured during the previous 30-day period to calculate the total daily nitrogen loading unless an alternative procedure has been agreed to by the Commissioner.

(e) *Reporting Requirements*

The results of chemical analyses for the total nitrogen in all samples collected during the month and the average daily flow volume of effluent for each day during the month shall be entered on the Monthly Operating Reports (MOR) and Nitrogen Analysis Reports (NAR) and reported to the Department. Results must also be entered in Discharge Monitoring Reports (DMR) as a calculated monthly mass loading of total nitrogen. The MOR, NAR and DMR must be received at the following address by the 15th day of the month following the month samples are collected.

ATTN: Municipal Wastewater Monitoring Coordinator
Connecticut Department of Environmental Protection
Bureau of Water Management, Planning and Standards Division
79 Elm Street
Hartford, CT 06106-5127

(f) *Record Keeping Requirements*

The permittee shall retain copies of all reports required by this general permit, and records of all data used to compile these reports for a period of at least five years from the date of the report submission to the Department.

(g) *Duty to Correct and Report Violations*

Upon learning of a violation of a condition of this general permit, including any failure of flow monitoring equipment, the permittee shall immediately take all reasonable action to determine the cause of such violation, correct such violation and mitigate its results, prevent further such violation, and report in writing such violation and such corrective action to the Commissioner within five (5) days of the permittee learning of such violation. Such report shall be certified in accordance with subsection 4(i) of this general permit.

(h) *Duty to Provide Information*

If the Commissioner requests any information pertinent to the authorized activity or to compliance with this general permit, the permittee shall provide such information in writing within thirty (30) days of such request. Such information shall be certified in accordance with subsection 4(i) of this general permit.

(i) *Certification of Documents*

Any document, including but not limited to any notice, which is submitted to the Commissioner under this general permit shall be signed by, as applicable, the permittee in accordance with Section 22a-430-3(b)(2) of the Regulations of Connecticut State Agencies, and by the individual or individuals responsible for actually preparing such document, each of whom shall certify in writing as follows:

“I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in the submitted information may be punishable as a criminal offense, in accordance with Section 22a-6 of the General Statutes, pursuant to Section 53a-157b of the General Statutes, and in accordance with any other applicable statute.”

(j) *Date of Filing*

For purposes of this general permit, the date of filing with the Commissioner of any document is the date such document is received by

the Commissioner. The word “day” as used in this general permit means the calendar day; if any date specified in the general permit falls on a Saturday, Sunday, or legal holiday, such deadline shall be the next business day thereafter.

(k) *False Statements*

Any false statement in any information submitted pursuant to this general permit may be punishable as a criminal offense, in accordance with Section 22a-6, under Section 53a-157b of the General Statutes.

(l) *Correction of Inaccuracies*

Within fifteen days after the date a permittee becomes aware of a change in any information in any material submitted pursuant to this general permit, or becomes aware that any such information is inaccurate or misleading or that any relevant information has been omitted, such permittee shall correct the inaccurate or misleading information or supply the omitted information in writing to the Commissioner. Such information shall be certified in accordance with subsection 4(i) of this general permit.

(m) *Other Applicable Law*

Nothing in this general permit shall relieve the permittee of the obligation to comply with any applicable federal, state and local law, including but not limited to the obligation to obtain and comply with any authorizations required by such law. In the event a POTW is subject to a more stringent nitrogen limitation than set forth in this general permit, the Permittee shall comply with that more stringent limitation and may not purchase or transfer nitrogen credits to comply with that additional limitation.

(n) *Other Rights*

This general permit is subject to and does not derogate any present or future rights or powers of the State of Connecticut and conveys no rights in real or personal property nor any exclusive privileges, and is subject to all public and private rights and to any federal, state, and local laws pertinent to the property or activity affected by such general permit. In conducting any discharge authorized hereunder, the permittee may not cause pollution, impairment, or destruction of the air, water, or other natural resources of this state.

Section 5. Commissioner’s Powers

(a) *Abatement of Violations*

The Commissioner may take any action provided by law to abate a violation of this general permit, including the commencement of proceedings to collect penalties for such violation. The Commissioner may, by summary proceedings or otherwise and for any reason provided by law, including violation of this general permit, revoke a permittee's authorization hereunder in accordance with Sections 22a-3a-2 through 22a-3a-6, inclusive, of the Regulations of Connecticut State Agencies. Nothing herein shall be construed to affect any remedy available to the Commissioner by law.

(b) *General Permit Revocation, Suspension, or Modification*

The Commissioner may, for any reason provided by law, by summary proceedings or otherwise, revoke or suspend this general permit or modify it to establish any appropriate conditions, schedules of compliance, or other provisions which may be necessary to protect human health or the environment or to implement the 15 year TMDL.

Issued: January 2, 2002

Arthur J. Rocque, Jr.
Commissioner

APPENDIX 1
ANNUAL DISCHARGE LIMITS FOR TOTAL NITROGEN

Zone	Publicly Owned Treatment Works	Equivalency Factor	TOTAL NITROGEN (POUNDS/DAY)					
			2002	2003	2004	2005	2006	2014
1	JEWETT CITY WPCF	0.17	31	28	26	23	19	15
1	GROTON CITY WPCF	0.18	198	184	168	146	121	99
1	GROTON TOWN WPCF	0.18	306	285	259	226	187	153
1	KILLINGLY WPCF	0.14	262	243	222	193	160	131
1	LEDYARD WPC	0.18	15	14	12	11	9	7
1	MONTVILLE WPCF	0.18	235	219	199	174	144	118
1	NEW LONDON WPCF	0.18	770	717	653	568	472	386
1	NORWICH WPCF	0.18	401	373	340	295	245	201
1	STONINGTON PAWCATUCK WPCF	0.17	48	45	41	35	29	24
1	PLAINFIELD NORTH WPCF	0.14	68	64	58	50	42	34
1	PLAINFIELD VILLAGE WPCF	0.14	47	44	40	35	29	24
1	PUTNAM WPCF	0.14	106	98	90	78	65	53
1	SPRAGUE WPCF	0.16	15	14	12	11	9	7
1	STAFFORD SPRINGS WPCF	0.15	119	111	101	88	73	60
1	STONINGTON BOROUGH WPCF	0.18	27	25	23	20	17	14
1	STONINGTON MYSTIC WPCF	0.18	54	50	46	40	33	27
1	THOMPSON WPCF	0.18	20	19	17	15	12	10
1	UCONN WPCF	0.15	87	81	74	64	54	44
1	WINDHAM WPCF	0.15	251	233	212	185	153	125
2	BRISTOL WPCF	0.18	795	740	674	586	487	398
2	CANTON WPCF	0.18	48	45	41	35	29	24
2	EAST HAMPTON WPCF	0.20	108	100	91	80	66	54
2	EAST HARTFORD WPCF	0.19	584	543	495	430	357	292
2	EAST WINDSOR WPCF	0.19	119	110	101	88	73	59
2	ENFIELD WPCF	0.19	556	517	471	410	340	278
2	FARMINGTON WPCF	0.18	354	329	300	261	217	178
2	GLASTONBURY WPCF	0.20	195	182	165	144	120	98
2	HARTFORD WPCF	0.20	4744	4414	4021	3498	2906	2377
2	MANCHESTER WPCF	0.19	623	580	528	459	381	312
2	MATTABASSET WPCF	0.20	1665	1549	1411	1227	1020	834
2	MIDDLETOWN WPCF	0.20	415	386	351	306	254	208
2	PLAINVILLE WPCF	0.18	202	188	171	149	124	101
2	PLYMOUTH WPCF	0.18	83	77	70	61	51	42
2	WINDSOR POQUONOCK WPCF	0.19	195	182	165	144	120	98
2	PORTLAND WPCF	0.20	63	58	53	46	38	31
2	ROCKY HILL WPCF	0.20	575	535	487	424	352	288
2	SIMSBURY WPCF	0.18	213	199	181	157	131	107
2	SOUTH WINDSOR WPCF	0.19	211	196	178	155	129	106
2	SUFFIELD WPCF	0.19	89	83	75	66	54	45

Zone	Publicly Owned Treatment Works	Equivalency Factor	TOTAL NITROGEN (POUNDS/DAY)					
			2002	2003	2004	2005	2006	2014
2	VERNON WPCF	0.19	367	342	311	271	225	184
2	WINDSOR LOCKS WPCF	0.19	131	122	111	97	80	66
2	WINSTED WPCF	0.18	127	119	108	94	78	64
3	BRANFORD WPCF	0.60	383	357	325	283	235	192
3	CHESHIRE WPCF	0.49	205	190	174	151	125	103
3	MERIDEN WPCF	0.49	896	834	760	661	549	449
3	NEW HAVEN EAST WPCF	0.60	3128	2911	2652	2307	1916	1568
3	NORTH HAVEN WPCF	0.60	315	294	267	233	193	158
3	SOUTHINGTON WPCF	0.49	406	378	344	299	249	204
3	WALLINGFORD WPCF	0.60	537	500	455	396	329	269
3	WEST HAVEN WPCF	0.60	705	655	597	519	431	353
4	ANSONIA WPCF	0.67	229	213	194	169	140	115
4	BEACON FALLS WPCF	0.67	24	22	20	18	15	12
4	DANBURY WPCF	0.46	882	821	748	651	540	442
4	DERBY WPCF	0.67	142	132	120	105	87	71
4	LITCHFIELD WPCF	0.35	47	43	40	34	29	24
4	MILFORD BEAVER BROOK WPCF	0.67	188	175	159	139	115	94
4	MILFORD HOUSATONIC WPCF	0.67	615	572	521	453	377	307
4	NAUGATUCK TREATMENT Co.	0.60	492	458	417	363	301	246
4	NEW MILFORD WPCF	0.46	55	52	47	41	34	28
4	NEWTOWN WPCF	0.46	33	31	28	24	20	42
4	NORFOLK WPCF	0.35	22	20	19	16	13	11
4	NORTH CANAAN WPCF	0.35	26	24	22	19	16	13
4	SALISBURY WPCF	0.35	42	39	36	31	26	21
4	SEYMOUR WPCF	0.67	122	113	103	90	75	61
4	SHELTON WPCF	0.67	211	197	179	156	129	106
4	SOUTHBURY TR. SCHOOL WPCF	0.46	30	28	25	22	18	15
4	STRATFORD WPCF	0.67	710	660	601	523	435	356
4	THOMASTON WPCF	0.60	83	77	70	61	51	42
4	TORRINGTON WPCF	0.60	495	461	420	365	303	248
4	WATERBURY WPCF	0.60	2015	1875	1708	1486	1234	1049
5	BRIDGEPORT EAST WPCF	0.85	722	672	612	532	442	362
5	BRIDGEPORT WEST WPCF	0.85	2078	1933	1761	1532	1273	1041
5	FAIRFIELD WPCF	0.85	811	754	687	598	497	406
5	WESTPORT WPCF	0.85	173	161	147	128	106	87
6	GREENWICH WPCF	1.00	957	890	811	705	586	479
6	NEW CANAAN WPCF	1.00	127	119	108	94	78	64
6	NORWALK WPCF	1.00	1433	1333	1215	1057	878	718
6	RIDGEFIELD SOUTH ST. WPCF	1.00	58	54	49	43	36	29
6	STAMFORD WPCF	1.00	1848	1719	1566	1362	1132	926

Attachment C - Total Nitrogen Balance Sheet - Monthly Averages by Plant, 2002

	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
ZONE: 1												
GROTON CITY WPCF	223	326	348	360	232	157	127	124	160	161	166	134
GROTON TOWN WPCF	584	607	707	675	726	591	605	526	425	433	443	474
JEWETT CITY WPCF	39	36	39	27	39	39	16	32	28	35	44	62
KILLINGLY WPCF	112	170	275	181	131	162	134	168	140	126	159	190
LEDYARD WPCF	6	7	9	3	4	3	2	4	5	5	5	4
MONTVILLE WPCF	261	332	101	183	206	122	121	150	90	276	335	64
NEW LONDON WPCF	562	565	509	797	804	329	330	282	290	328	234	359
NORWICH WPCF	686	782	625	668	713	962	684	818	1241	608	624	682
PLAINFIELD NORTH WPCF	58	52	59	80	58	50	24	12	25	53	59	73
PLAINFIELD VILLAGE WPCF	36	38	40	41	29	15	13	15	30	49	39	45
PUTNAM WPCF	196	171	145	169	172	153	131	133	152	174	166	203
SPRAGUE WPCF	26	25	12	12	14	15	20	20	14	6	10	8
STAFFORD SPRINGS WPCF	139	155	135	128	152	146	136	148	137	130	98	124
STONINGTON BOROUGH	63	77	77	46	58	61	52	32	63	54	39	45
STONINGTON MYSTIC WPCF	30	38	28	45	40	52	50	38	32	29	32	28
STONINGTON PAWCATUCK	45	39	45	38	29	25	22	71	58	35	43	38
THOMPSON WPCF	28	23	26	34	23	21	11	5	21	16	21	34
UCONN WPCF	78	47	95	110	102	86	67	51	38	47	99	118
WINDHAM WPCF	130	104	111	134	155	265	322	342	409	458	398	351
ZONE: 2												
BRISTOL WPCF	1243	834	880	940	1144	835	698	828	831	983	1093	1077
CANTON WPCF	70	69	62	63	84	70	61	62	75	72	82	73
EAST HAMPTON WPCF	119	119	104	106	126	80	64	43	58	54	68	85
EAST HARTFORD WPCF	863	951	1052	911	673	607	535	609	578	548	819	918
EAST WINDSOR WPCF	23	42	19	17	16	13	13	16	18	13	18	34
ENFIELD WPCF	1026	899	762	786	914	1039	821	910	841	861	967	1143
FARMINGTON WPCF	451	468	456	397	414	347	357	327	326	363	397	332
GLASTONBURY WPCF	389	372	317	267	255	213	272	201	210	227	192	243
HARTFORD WPCF	6966	7075	6647	6960	6617	6418	5502	5346	4352	3933	5610	6305
MANCHESTER WPCF	801	925	1375	947	722	723	621	632	701	781	846	790
MATTABASSET WPCF	2594	2278	2333	2390	2457	1992	2364	2206	2021	1832	1606	1363
MIDDLETOWN WPCF	403	536	608	471	449	376	189	218	327	294	449	380
PLAINVILLE WPCF	312	248	257	275	217	242	210	219	225	246	274	299

Total Nitrogen Balance Sheet - Monthly Averages by Plant, 2002 - Continued

	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
PLYMOUTH WPCF	61	86	43	55	59	72	68	89	79	91	119	53
PORTLAND WPCF	65	50	28	18	16	11	6	9	14	10	30	30
ROCKY HILL WPCF	719	690	671	675	633	564	537	524	487	548	647	879
SIMSBURY WPCF	346	374	412	441	390	326	260	249	342	282	262	444
SOUTH WINDSOR WPCF	308	288	296	323	358	357	307	233	259	222	290	315
SUFFIELD WPCF	67	55	64	66	48	20	11	11	12	18	10	23
VERNON WPCF	423	384	427	461	439	536	425	424	609	589	552	527
WINDSOR LOCKS WPCF	155	189	210	255	138	107	86	69	69	69	93	127
WINDSOR POQUONOCK	415	455	463	421	472	393	408	416	349	468	449	416
WINSTED WPCF	302	309	201	165	266	208	237	291	287	271	249	215
ZONE: 3												
BRANFORD WPCF	150	193	505	78	157	96	94	97	48	82	111	92
CHESHIRE WPCF	446	496	492	490	433	392	537	450	495	470	459	460
MERIDEN WPCF	625	655	687	990	830	843	785	685	593	1072	1347	1205
NEW HAVEN EAST WPCF	1400	1400	1400	1400	1400	1284	1285	1164	1612	1483	1632	1343
NORTH HAVEN WPCF	573	765	535	449	414	409	450	443	577	577	606	614
SOUTHINGTON WPCF	848	690	745	879	982	876	872	793	814	736	775	812
WALLINGFORD WPCF	643	576	665	656	611	666	473	472	474	398	457	493
WEST HAVEN WPCF	660	805	958	1086	980	924	741	885	559	820	499	638
ZONE: 4												
ANSONIA WPCF	251	272	292	258	290	304	276	169	259	227	329	352
BEACON FALLS WPCF	53	55	41	40	47	33	32	30	36	42	42	43
DANBURY WPCF	1597	1727	1523	1833	1908	2135	1759	1461	1907	2409	2208	1920
DERBY WPCF	39	39	54	47	67	45	48	45	67	57	84	49
LITCHFIELD WPCF	81	74	69	61	63	70	59	64	73	68	51	67

Total Nitrogen Balance Sheet - Monthly Averages by Plant, 2002 - Continued

	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
MILFORD BEAVER BROOK	126	112	102	113	143	142	134	117	118	123	156	174
MILFORD HOUSATONIC	355	442	420	497	656	464	352	277	405	452	440	513
NAUGATUCK TREATMENT	441	364	378	420	429	550	459	433	415	590	766	503
NEW MILFORD WPCF	67	114	140	149	72	50	65	54	34	34	55	81
NEWTOWN WPCF	38	47	29	31	30	28	17	23	32	43	38	51
NORFOLK WPCF	7	10	12	9	9	10	5	7	7	7	10	12
NORTH CANAAN WPCF	14	17	19	18	24	22	13	11	14	18	18	33
SALISBURY WPCF	22	25	31	30	34	34	21	25	25	27	25	29
SEYMOUR WPCF	39	32	37	50	70	91	48	53	76	49	51	59
SHELTON WPCF	407	436	462	440	474	456	505	483	419	497	421	425
SOUTHBURY TR. SCHOOL	17	18	20	20	16	16	16	13	13	12	17	21
STRATFORD WPCF	438	431	410	445	596	473	378	516	550	484	754	947
THOMASTON WPCF	29	27	31	40	54	34	28	28	38	34	34	43
TORRINGTON WPCF	223	200	230	282	341	395	267	267	279	248	323	336
WATERBURY WPCF	790	856	841	604	996	793	704	553	600	718	805	1073
ZONE: 5												
BRIDGEPORT EAST WPCF	708	562	466	509	519	633	552	570	539	519	677	562
BRIDGEPORT WEST WPCF	3407	2683	3513	2223	2546	2135	1726	1903	1709	1625	1579	2613
FAIRFIELD WPCF	817	794	799	991	1040	872	769	568	567	659	451	489
WESTPORT WPCF	185	86	84	106	169	116	140	156	131	175	183	145
ZONE: 6												
GREENWICH WPCF	365	381	361	378	335	314	371	420	509	498	563	425
NEW CANAAN WPCF	20	28	25	13	21	15	15	12	16	24	32	29
NORWALK WPCF	515	444	637	465	674	517	581	542	761	588	799	742
RIDGEFIELD SOUTH ST.	25	31	19	17	27	61	19	8	13	8	22	23
STAMFORD WPCF	1997	1918	1886	1640	1802	1697	1359	1236	1487	1547	1518	1740
End-Of-Pipe Total	39,835	39,090	39,988	38,894	39,855	36,787	32,870	31,927	32,692	33,213	36,465	38,256
Equalized Total	17,227	16,528	17,401	16,209	17,297	15,919	14,131	13,581	14,339	14,747	15,861	16,837
End-Of-Pipe Permit:	36,767	End-Of-Pipe Average: 36,656										
Equalized Permit:	18,220	Equalized Average: 15,840										

ATTACHMENT D

Total Annual Project Cost – 2002

Project Facilities	Total Annual Capital Cost	Total Annual O&M Cost	Total Annual Project Cost
EAST HAMPTON WPCF*	\$ 30,144	\$ 76,362	\$ 106,506
DERBY WPCF	31,785	56,817	88,602
EAST WINDSOR WPCF	61,136	30,014	91,150
FAIRFIELD WPCF	96,158	172,119	268,277
GREENWICH WPCF	0	150,360	150,360
LEDYARD WPCF	18,062	1,755	19,817
MILFORD BEAVER BROOK WPCF	9,074	56,760	65,834
MILFORD HOUSATONIC WPCF	0	229,370	229,370
NEW CANAAN WPCF	56,656	24,229	80,885
NEW HAVEN EAST WPCF	151,122	658,204	809,326
NEW LONDON WPCF	54,978	109,284	164,262
NEWTOWN WPCF	72,954	11,198	84,152
NORWALK WPCF	276,853	160,748	437,601
PORTLAND WPCF	44,740	27,531	72,271
RIDGEFIELD SOUTH ST. WPCF	0	8,480	8,480
SEYMOUR WPCF	14,654	24,736	39,390
STAMFORD WPCF	52,773	222,624	275,397
STRATFORD WPCF	0	287,061	287,061
THOMASTON WPCF	56,408	11,208	67,616
UCONN WPCF	0	40,055	40,055
WATERBURY WPCF	737,935	407,967	1,145,902
WEST HAVEN WPCF	0	165,631	165,631
WESTPORT WPCF	0	11,500	11,500
TOTAL	\$ 1,765,432	\$ 2,944,013	\$ 4,709,445
* New Project for year 2002			

Attachment E



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

APR 10 2003

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APR 16 2003

Dept. of Environmental Protection
Office of the Commissioner

Arthur J. Rocque, Jr., Commissioner
Connecticut Department of Environmental Protection
79 Elm Street
Hartford CT 06106-5127

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OFFICE OF
WATER

APR 24 2003

Dear Commissioner Rocque:

WATER MANAGEMENT BUREAU

I am writing to commend you and the State of Connecticut for the state's creative and cost-effective approach to improving the waters of Long Island Sound. Connecticut's Nitrogen Trading program is serving as a national model of holistic planning based on sound science, watershed permitting of multiple dischargers, and the use of water quality trading to achieve necessary nitrogen reductions at lower cost. I am a strong advocate for using market-based approaches where they create greater collaboration and efficiency in attaining water quality goals. The Office of Water recently released its Water Quality Trading Policy and is showcasing water quality trading in a variety of forums to acquaint more people with the potential and implementation of trading. I hope you will be pleased to learn that Connecticut's nitrogen trading program features prominently in the Environmental Protection Agency's (EPA's) outreach efforts on water quality trading.

I also want to express my appreciation for your staff's time and expertise in explaining Connecticut's trading program to others. In particular, Senior Environmental Engineer Gary Johnson has graciously agreed to participate in three EPA-sponsored forums this year to describe Connecticut's nitrogen credit exchange and the impressive results achieved in the program's first year. On April 8 Gary spoke to a group of high-level EPA managers from across the country. We have also invited Gary to speak at the State-EPA National Innovations Symposium in Washington, D.C. in June and to share Connecticut's experience at the National Forum on Water Quality Trading in Chicago this July. I greatly appreciate Gary's time and the Department of Environmental Protection's willingness to share his expertise and the state's experience in nitrogen trading. Connecticut is a national leader in the area of point source nitrogen trading and an important example for other states and watersheds.

Again, thank you for your leadership in establishing a successful nitrogen trading program and providing a shining example for others of the efficiencies and environmental benefits from nutrient trading.

Best Regards,

G. Tracy Mehan, III

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APR 16 2003

cc: Yvonne Bolton, Esq.

DEPT. OF ENVIRONMENTAL PROTECTION
OFFICE OF DEPUTY COMMISSIONER
FOR WATER AND WATER

Attachment F

Nitrogen Removal Projects Financed by the Clean Water Fund

<i>City/Town</i>	<i>npdes</i>	<i>Total Project Cost</i>	<i>Nitrogen Cost Portion</i>	<i>*Loan Portion to Towns</i>	<i>Year Project Placed in Service</i>	<i>Pounds of TN Reduced by Project</i>
Seymour	CT0100501	\$9,800,000	\$250,000	\$200,000	1993	91
East Windsor	CT0100196	\$10,000,000	\$1,000,000	\$800,000	1996	110
Fairfield (1)	CT0101044	\$4,700,000	\$4,700,000	\$1,605,500	1996	389
Greenwich	CT0100234	\$500,000	\$500,000	\$0	1996	630
Milford Beaver Brook	CT0100749	\$1,000,000	\$1,000,000	\$200,000	1996	124
Milford Housatonic	CT0101656	\$650,000	\$650,000	\$0	1996	297
Norwalk (1)	CT0101249	\$1,100,000	\$1,100,000	\$0	1996	943
Ridgefield South Street	CT0100854	\$200,000	\$200,000	\$0	1996	51
Stratford	CT0101036	\$800,000	\$800,000	\$0	1996	467
UCONN	CT0101320	\$12,000,000	\$1,058,500	\$0	1996	65
West Haven	CT0101079	\$750,000	\$750,000	\$0	1996	338
Westport	CT0100684	\$400,000	\$400,000	\$0	1996	114
Ledyard	CT0101681	\$3,500,000	\$350,000	\$280,000	1997	11
New Haven	CT0100366	\$8,200,000	\$8,200,000	\$3,360,000	1997	2,339
Newtown	CT0101788	\$12,000,000	\$1,058,504	\$846,803	1997	28
Stamford (1)	CT0101087	\$3,500,000	\$3,500,000	\$960,000	1997	556
Derby	CT0100161	\$2,762,275	\$677,150	\$474,005	2000	106
New Canaan	CT0101273	\$14,000,000	\$1,234,921	\$864,445	2000	111
Norwalk (2)	CT0101249	\$56,000,000	\$5,537,645	\$3,876,352	2000	256
Waterbury	CT0100625	\$120,000,000	\$17,359,005	\$12,151,304	2000	1823
East Hampton	CT0024694	\$689,725	\$689,725	\$482,808	2001	62
Thomaston	CT0100781	\$9,313,158	\$1,163,896	\$814,727	2001	69
New London	CT0100382	\$3,068,637	\$2,668,637	\$2,032,981	2002	576
Portland	CT0101150	\$5,200,000	\$1,046,750	\$732,725	2002	47
Branford	CT0100048	\$21,542,414	\$3,157,876	\$2,210,513	2003	390
Fairfield (2)	CT0101044	\$37,500,000	\$11,262,503	\$7,883,752	2003	318
Windsor Locks	CT0101591	\$2,348,678	\$1,841,252	\$1,288,876	2003	100
Bridgeport East	CT0101010	\$2,089,800	\$2,089,800	\$1,462,860	2004	540
Bridgeport West	CT0100056	\$2,375,150	\$2,375,150	\$1,312,605	2004	1544
Bristol	CT0100374	\$583,700	\$583,700	\$408,590	2004	575
Enfield	CT0100200	\$2,390,000	\$1,757,000	\$1,229,900	2004	430
Litchfield	CT0100803	\$4,000,000	\$1,000,000	\$700,000	2004	32
Jewett City	CT0100269	\$10,000,000	\$1,500,000	\$750,000	2005	27
Stamford (2)	CT0101087	\$97,223,000	\$59,500,000	\$42,000,000	2005	1320

*Construction only loan cost, design loan cost is not included.