State of Connecticut
Department of Environmental Protection

Protecting and Restoring our Environment

Annual Report 2003

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Commissioner

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Cover Photo: *"Big Pines" area of Meshomasic State Forest in Portland. Planted in 1908. Oldest plantation of white pines on State Forest lands.*

It is the mission of the Department of Environmental Protection to conserve, improve, and protect the natural resources and environment of the State of Connecticut; to control air, land and water pollution in order to protect the health, safety and welfare of the people of Connecticut; and to preserve and enhance the quality of life for present and future generations.

Introduction

The publication of this year's annual report comes during a period of significant transformation within the Department of Environmental Protection. At no other point since its creation in the early 1970's has the agency faced at the same time and to the current degree issues related to staff and budget reductions as well as heightened demand for existing resources. The recent net loss of 10% of our workforce, including many experienced staff and 45% of the agency's managers has tested the agency's ability to fulfill its stated mission. Through interim appointments and modest program shifts designed to enhance efficiencies, the Department is currently meeting the day-to-day challenges while at the same time planning for a more focused and flexible agency capable of meeting its mission with fewer resources.

With Connecticut's environmental well-being in mind, the Department is in the midst of a critical assessment of its current structure to determine if gains might be realized through realignment of programs. The goal of the Department's structural evaluation is to find an agency orientation that will best provide for flexibility in terms of deploying staff and resources as efficiently as possible, and an agency that can continually assess and revise its priorities and evaluate the strategies we use to achieve our mission now and in the future. Two ideas integral to accomplishing this are centralized strategic planning that is directly linked to the agency's budget, and taking a new approach to and a broader view of our goals, as presented in the concept of ecosystem management. For current and detailed information related to the ongoing organizational evaluation, go to **http://www.dep.state.ct.us/org_eval/**

The Environmental Quality Branch Strategic Plan for FY 2002-2007 (Plan), available at **http://www.dep.state.ct.us/cmrsoffc/strategicplan/strategicplan02.pdf**, continues to guide the development and implementation of Department initiatives designed to further the agency's mission. The Plan identifies nine strategic priorities being pursued by the Department. They are: Air Quality Management; Watershed Management; Long Island Sound; Conservation and Development Planning and Management; Management of Toxic Pollutants; Materials Management; Emergency Response; Managing Environmental Compliance; and Promoting Environmental Stewardship. In addition to ongoing initiatives presented in previous annual reports and elsewhere, this report will introduce the reader to some of the current efforts being directed at agency priorities.

Air Quality Management

Goal: Protect and enhance ambient air quality to make the air safer to breathe for all citizens and to reduce the impact of air pollution on other environmental media, resulting in many benefits, such as restoring damaged ecosystems and reducing health risks to those whose subsistence depends directly on those ecosystems.

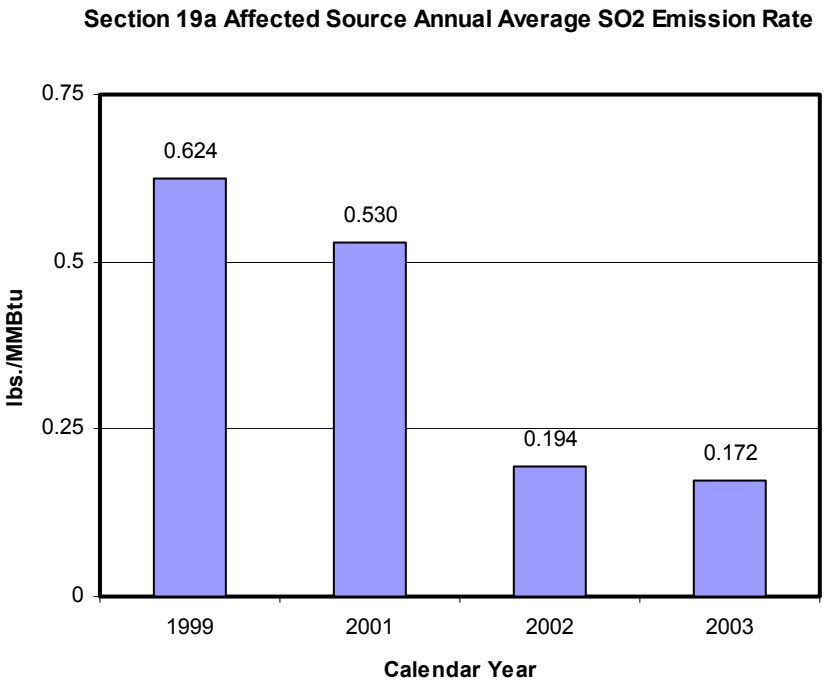
Connecticut's Sulfur Dioxide Reductions Exceed Expectations: In May 2000 Governor Rowland issued an Executive Order (EO) that required the Department to promulgate regulations to reduce emissions of nitrogen oxides (NOx) and sulfur dioxide (SO2) beyond existing commitments. The EO set goals for a 20-30% reduction in emissions of NOx and a 50% reduction in emissions of SO2 from 61 large combustion sources. Most notable among the affected sources were the so-called "Sooty Six" power plants, which accounted for over 90% of the total emissions from all affected sources prior to the issuance of the EO. In 1999, the "Sooty Six" alone were responsible for more than 42,000 tons of SO2.

In December 2000 the Department promulgated Regulation of Connecticut State Agencies Section 22a-174-19a, titled *Control of Sulfur Dioxide Emissions from Power Plants and other Large Stationary Sources of Air Pollution.* "Section 19a" established a phased approach to reduce emissions of SO2 using a combination of fuel sulfur content limitations, SO2 emissions limitations, and market-based emissions trading strategies. Phase 1 began on January 1, 2002 and Phase 2 began on January 1, 2003. As a result, Connecticut has achieved reductions in sulfur dioxide (SO2) emissions from power plants and other large stationary sources in excess of the 50% reduction goal set forth in the EO. Compliance with the emissions reductions strategies established in the regulation coupled with nearly two years of favorable prices for cleaner burning fuels has resulted in a 72% reduction in SO2 emissions between calendar years 1999 and 2003 from Connecticut's power plants and other large stationary sources. Annual emissions of SO2 from subject sources decreased from 43,946 tons in 1999 to 10,758 tons in 2003.

The following table illustrates the reductions in actual emissions of SO_2 achieved, primarily as the result of the implementation of Section 19a:

Calendar Year	SO2 Emitted Tons	Heat Input MMbtus	Average Annual Emission Rate (#/MMbtu)	% Reduction from 1999
1999	43,946	140,764,211	0.624	
2001	36,549	137,892,864	0.530	15%
2002	13,044	134,246,096	0.194	69%
2003	10,758	124,866,352	0.172	72%

Data Sources: CEMS data published in USEPA Emissions Tracking System for Title IV Acid Rain Program Sources; CT Annual Emissions Statements and NOx Emission Reduction Credit Reports for Non-Title IV Sources



Reduction of Air Pollution Transport: In April 2003 EPA and the State of Connecticut, among others, announced the largest federal Clean Air Act enforcement settlement against a utility. The action against Virginia Electric Power (VEPCO) was a well-coordinated effort between EPA, the Justice Department, the Connecticut Department of Environmental Protection, the Connecticut Attorney General's Office, and the states of New York, New Jersey, Virginia and West Virginia. The settlement resolves charges that the company violated applicable law by making major modifications to its power plants without installing equipment to control pollution that causes smog, acid rain and soot. The settlement requires VEPCO to install controls that will reduce nitrous oxide (NOx) emissions from 104,000 tons per year in 2003 to approximately 30,000 tons per year by 2013, reduce sulfur dioxide (SO2) emissions by 95% by 2013 and to reduce particulate matter. The settlement also includes 5.3 million dollars in penalties and 13.9 million dollars to fund supplemental environmental projects in affected states. Connecticut has received 1.1 million dollars from the VEPCO settlement to support the Department's Clean School Bus Program (see **Management of Toxic Pollutants** for details).

Watershed Management

Goal: To protect and restore the state's surface waters and ground waters, and water-related resources and habitats; protect the public water supply and human health and safety; and preserve and enhance water-based recreation, propagation of fish and aquatic life.

Water Quality Improvements in the Willimantic River: As a result of the Department's implementation of a Total Maximum Daily Load (TMDL) plan, water quality in a 1.5 mile section of the Willimantic River now meets established water quality criteria. TMDLs provide the framework to restore impaired waters by establishing the maximum amount of a pollutant that a waterbody can assimilate without adverse impact to aquatic life, recreation, or other public uses. A TMDL sets quantifiable pollutant targets to improve water quality with the goal of meeting criteria established in the state's Water Quality Standards (for more information, see **http://www.dep.state.ct.us/wtr/wq/wqs.pdf**).

Located in Stafford Springs, the stretch of river was listed on *Connecticut Waterbodies Not Meeting Water Quality Standards* for failing to meet aquatic life criteria. The suspected cause of the impairment was excessive copper, lead, and zinc. Further water quality sampling and site investigation by the Department determined that the impairment extended upstream to the Middle River, a tributary to the Willimantic.

Pretreatment Permitting

Connecticut is one of only a few states in the country that provides direct, state-level regulatory oversight of pretreated industrial wastewaters that discharge to Publicly Owned Treatment Works (POTWs). In most other states, regulatory oversight is at several local municipal levels and only for federally-regulated discharges. Regulatory oversight at the state-level enables Connecticut inspectors and permitting engineers to work synergistically with POTW operators to ensure that industrial pretreatment discharges do not adversely impact the POTW's operation or its ability to comply with its Clean Water Act (NPDES) permit. Statewide regulatory oversight also ensures consistent regulation of permitted discharges, regular inspection of facilities, and appropriate enforcement responses when necessary to assure environmental compliance.

After establishing TMDLs for the Willimantic River, the Department revised the Stafford Sewage Treatment Plant permit and engaged in a variety of compliance assistance activities aimed at reducing metals discharged to the plant. Department staff worked closely with the Stafford Sewage Treatment Plant operators to implement new permit limits and to conduct a mass balance study of metals loading to the plant (i.e., how much of which metals were coming from which sources). Staff also worked closely with industries to reduce metals influent loadings to the plant. At the request of the Department, the local water company voluntarily changed from a zinc-based corrosion inhibitor for the potable water supply to a less toxic substance. Local watershed groups were asked to focus on the problem area and they continue to perform stream walks and report potential problems to the Department. Finally, by sampling and analyzing aquatic life in the river, staff helped discover and cause the repair of a cracked pipe that was diverting wastewater to the Middle River instead of the Stafford Sewage Treatment Plant.

Today, the Willimantic River and the Middle River both meet aquatic life goals and have been recommended for delisting on the *2004 Connecticut Waterbodies Not Meeting Water Quality Standards* (**http://www.dep.state.ct.us/wtr/wq/tmdlbrief.htm**) (Figure 1).

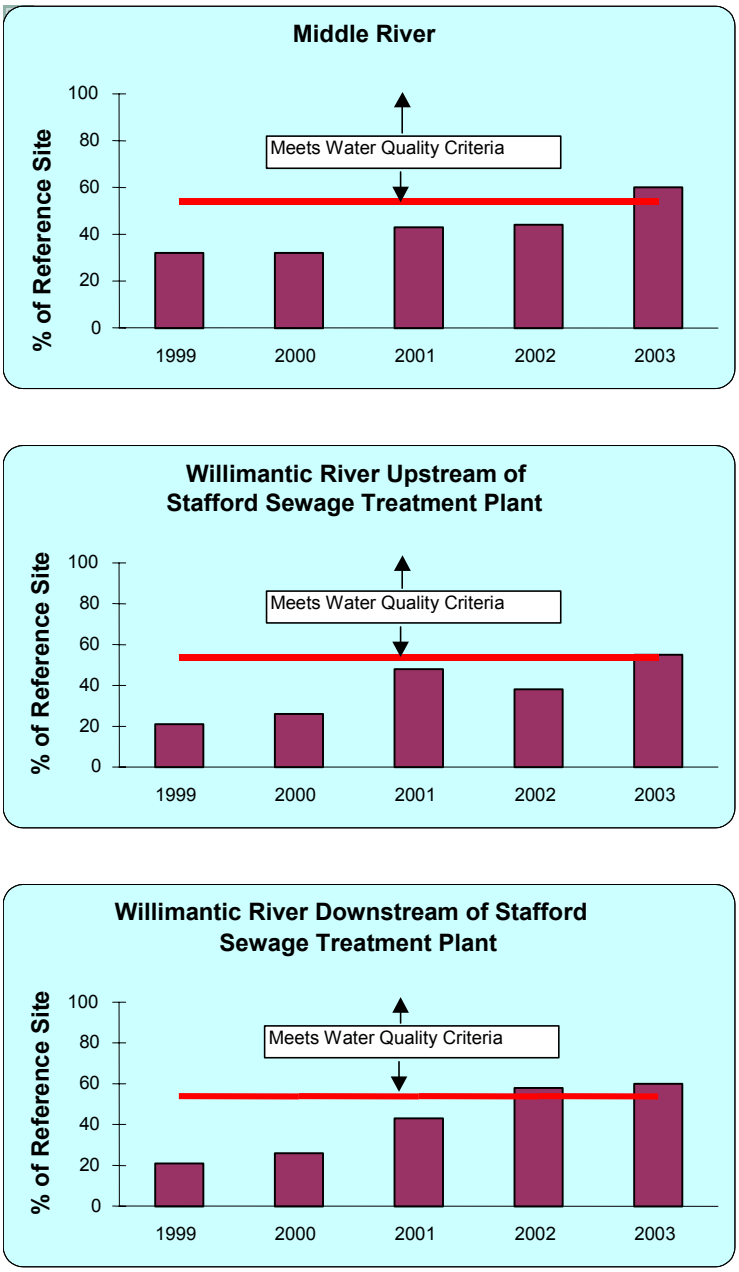


Figure 1. Comparison of benthic macroinvertebrates assessments at three locations in the upper Willimantic River watershed to reference site in Roaring Brook. A site with a value of 54% of reference site or greater (above the red line) meets the narrative Water Quality Criteria for benthic macroinvertebrates. By 2003, all three locations met the Water Quality Criteria and were recommended for delisting on the *2004 Connecticut Waterbodies Not Meeting Water Quality Standards*. For a more thorough discussion of how the Department evaluates these data, see **http://www.dep.state.ct.us/wtr/wq/calm/2004_calm.pdf**.

The Department regularly updates and reprioritizes the list of impaired waterbodies subject to the TMDL process. Revisions to the list include the addition and removal of water body segments, impairments, potential causes and potential sources, well as changes in use support category and priority. For a listing of current works in progress in addition to the Willimantic River project described above, go to **http://www.dep.state.ct.us/wtr/wq/tmdlbrief.htm** .

Long Island Sound

Goal: To protect, restore, and enhance the environmental quality of Long Island Sound and its resources, and to build capacity among all stakeholders to meet current and future challenges of resource and use management.

Nitrogen Credit Exchange Program Meets First Year Goals: Nitrogen is the primary pollutant impacting water quality in Long Island Sound. Excess nitrogen fuels a process that creates low dissolved oxygen levels during the summer in the bottom waters of the Sound that adversely affect aquatic life. Sewage treatment plants have been identified as a predominant source of nitrogen to Long Island Sound. In 2003 the Department's Nitrogen Credit Exchange Program successfully completed the first year of exchanges between Connecticut's 79 municipal sewage treatment plants participating in the program.The Department has issued a General Permit that assigns annually decreasing nitrogen discharge levels to each Connecticut plant that collectively will meet the 58.5% target reduction by 2014. Achieving this goal will dramatically improve water quality in the Sound.

To meet the 58.5% reduction goal, many treatment plants will need to modify, upgrade or build whole new treatment systems. However, not all individual plants will need to achieve the full 58.5% reduction. Under the Exchange Program, plants that are able to remove nitrogen in excess of their general permit requirements sell the earned credits to the credit exchange, providing a financial incentive for superior performance. Treatment plants that discharge in excess of their general permit requirements must purchase credits from the credit exchange in order to remain in compliance with the General Permit until their treatment plant is upgraded to provide additional nitrogen removal treatment.

Since 1993, the State has financed more than $470 million in sewage treatment plant upgrades. In that time, nearly 30 plants have been upgraded and are now achieving significant nitrogen reductions. As a result, Connecticut sewage treatment plants removed 800,000 more pounds of nitrogen than was required to meet the statewide annual nitrogen reduction goal for 2002. This superior performance generated more credits to sell to sewage treatment plants that did not meet their permit limits than these plants were required to buy to remain in compliance with the general permit. These excess credits were purchased and retained by the credit exchange. Data for 2003 shows that the nitrogen reduction target goal for 2003 was also exceeded, albeit by a smaller margin of 146,365 pounds. The actual exchange of nitrogen credits based on 2003 performance will occur during the summer of 2004.

EPA Designates Connecticut's First No-Discharge Area: In August 2003 the U.S. Environmental Protection Agency (EPA) approved the designation of Connecticut's first federally approved No Discharge Area (NDA). The discharge of all boat sewage, treated or untreated, from boats is now prohibited in the Connecticut portions of the Pawcatuck River and Little Narragansett Bay, Stonington Harbor and portions of Fishers Island Sound. The EPA approval means that the 1,300 boats based in the area as well as those that visit must now use pumpout facilities to discharge their septic waste. Eliminating the release of treated and untreated sewage from boats in the NDA will reduce manmade nutrient loading and exposure to bacterial pathogens in swimming areas, shellfish beds, and other environmentally-sensitive aquatic habitats. The Department initiated the NDA designation for the Stonington Harbor area

early in 2002. Before granting such status, EPA must ensure that there are sufficient pumpout facilities available for the boating population within the NDA. There are three pumpout facilities now operating in the Stonington area, including two shoreside facilities and one mobile pumpout boat. In April 2003, the Department initiated the application process for the state's second NDA for the waters from Wamphassuc Point in Stonington west to Avery Point in Groton**.**

Clean Vessel Act Grant Program (CVA)

The CVA Grant Program provides federally funded matching grants for projects that make available boat sewage disposal facilities. Up to 75% of the cost of an approved project may be reimbursed. Since the inception of the grant program in 1993, the U.S. Fish and Wildlife Service has provided over $4.6 million in grant funds to build, operate, and maintain boat sewage pumpout and dump station facilities in Connecticut waters. In 2003, $874,000 in grant funds was provided for projects in Connecticut. By the end of 2003, there were ninety pumpout facilities statewide, including eleven pumpout boats. Sixteen dump stations (including one floating rest room) are also available to boaters in Connecticut waters.

Coastal Nonpoint Source Pollution Control Program Receives Approval: In November 2003 the Department's program to protect coastal waters from nonpoint sources of pollution received full approval from the federal Environmental Protection Agency and the National Oceanic and Atmospheric Administration. Nonpoint source (NPS) pollution is the pollution picked-up and carried by rain and melting snow from diffuse sources including lawns, parking lots, farms, and city streets, and ultimately discharged into wetlands, watercourses, and coastal waters. NPS pollution can contain nutrients, sediments, oil, heavy metals, bacteria, and viruses.

Federal law identifies six categories of NPS pollution to be addressed by Connecticut's coastal nonpoint source pollution control program (CNP program): agriculture, forestry, urban, hydromodifications (e.g., dams), marinas and recreational boating, and the NPS pollution caused when wetlands are impaired and cannot treat pollution.

The CNP program will be implemented over the next ten years within a management area established by the Department. The area is based, in part, on the presence of impervious cover in urban areas and its proximity to Long Island Sound. Within the ten-year implementation period, the Department will continue to monitor water quality to ensure that coastal water quality improvement goals are being met.

Conservation and Development Planning and Management

Goal: To achieve a future for Connecticut that:

- Conserves and restores the natural environment and traditional rural and urban landscape.
- Restores and revitalizes the urban environment.
- Guides future growth in an efficient, cost effective, and sustainable manner fostering diverse, cohesive, walkable communities that respect and preserve their open lands and natural resources.
- Preserves Connecticut's rich fabric of cultural and historic resources.
- Promotes and maintains a vibrant and sustainable economy.
- Affords a high quality of life for all residents.

Department Acts to Protect State Aquifers: The recent adoption of the Aquifer Protection Land Use Regulations marks a milestone in the Department's effort to protect public ground water drinking supplies. The regulations are a critical component of the State's Aquifer Protection Program, the purpose of which is to identify and map critical water supply aquifer areas and to protect them from pollution by managing land use around them.

The Aquifer Protection Land Use Regulations provide protection for large public water supply wells in stratified drift aquifers. The Department, municipalities, and water companies will share protection responsibilities. The Department is charged with overall program administration and the water companies are, as owners of the wells, required to map Aquifer Protection Areas according to Department requirements and approval. Once mapped and approved, aquifer protection areas must be adopted by the towns. The municipalities will then appoint an existing board or agency to serve as the local Aquifer Protection Agency and adopt regulations to control high-risk land use activities (e.g. use, storage, handling or disposal of hazardous materials and wastes) that have the potential to contaminate ground water in these areas. The Department will develop a Model Municipal Ordinance to assist the towns with translating the state land use regulations into a local regulation that can be adopted by the town. The model will set the deadlines for completion of the final mapping by the water companies.

Once local regulations are in place, existing businesses within the mapped areas will be required to register their activities. The Department is also initiating a number of training and technical assistance for towns, providing public education about ground water protection.

Department Facilitates Remediation of an Urban Polluted Site in Bridgeport: The Urban Sites Remedial Action Program (USRAP) facilitates the transfer, reuse and redevelopment of polluted commercial and industrial properties which otherwise would remain vacant and unproductive. The USRAP is a partnership program between the Department of Environmental Protection and the Department of Economic and Community Development (DECD). Since the inception of the program over a decade ago, more than 50 sites have entered into the program.

In 2002, DECD and the Department entered the former Carpenter Technologies Inc. site situated along the shoreline of Yellow Mill Channel and Bridgeport Harbor into the USRAP. The objective was to provide for all necessary remediation of polluted soil, sediment and groundwater as part of redeveloping 23 acres of the 44-acre site owned by the City of Bridgeport and operated by the Bridgeport Port Authority. As a result of over 100 years of heavy industrial

use (primarily steel production), the parcel was polluted with, among other things, arsenic, lead chromium, nickel, and petroleum hydrocarbons from releases of fuel oil.

The project consisted of redeveloping a portion of this polluted vacant waterfront site into a world-class shipbuilding and repair facility under a lease agreement with the Derecktor Shipyards Conn., LLC (Derecktor Shipyards). Redevelopment costs exceeded $18 million dollars, supported by public fund investments that included DECD ($6.4 million), Department of Environmental Protection ($2.5 million), Connecticut Development Authority ($2.7 million) and the Federal Economic Development Administration ($1.25 million). Private funding sources and support were provided to the project by Derecktor Shipyards ($5.3 million).

In November 2003, Derecktor Shipyards launched the first of two high-speed ferries for the State of Alaska in a contract worth a total of $68 million dollars. Ongoing environmental monitoring and further remediation by the Bridgeport Port Authority is planned to include other areas for additional future commercial and industrial tenants.

Management of Toxic Pollutants

Goal: Reduce toxic emissions and discharges through reduction strategies that include product stewardship, pollution prevention, emission controls and effective waste management.

Clean School Bus Program: Every school day in Connecticut some 6,137 school buses transport nearly 387,000 children to and from school. Collectively, Connecticut school children spend 50 million hours on buses each year. Diesel fuel powers 99% of these buses. Diesel exhaust contains fine particulate matter and forty chemicals that are classified as hazardous air pollutants under the Clean Air Act. Classified as a probable human carcinogen by EPA, diesel emissions are a likely contributor to the prevalence of childhood asthma in the State. According to a 1999 survey by Environment and Human Health, Inc., 44,571 (one in eleven) children who attended public schools in Connecticut were reported by school nurses to have prescribed medication for asthma.

The Department's Clean School Bus Program ("program") is a pilot project designed to reduce diesel emissions from school buses and other sources. Relying on cleaner fuels and new bus retrofit technology to significantly cut harmful bus emissions, the program is expected to reduce risk exposure to children and improve air quality. The Department completed a pilot program in Norwich resulting in emission control equipment being installed on all forty-one school buses in the Norwich system. The program is expanding to the cities of New Haven, Hartford and Bridgeport and will be funded by supplemental environmental project monies. Through these efforts, the Department anticipates that approximately 220 school buses will be retrofitted and approximately 500 school buses will run on clean fuel.

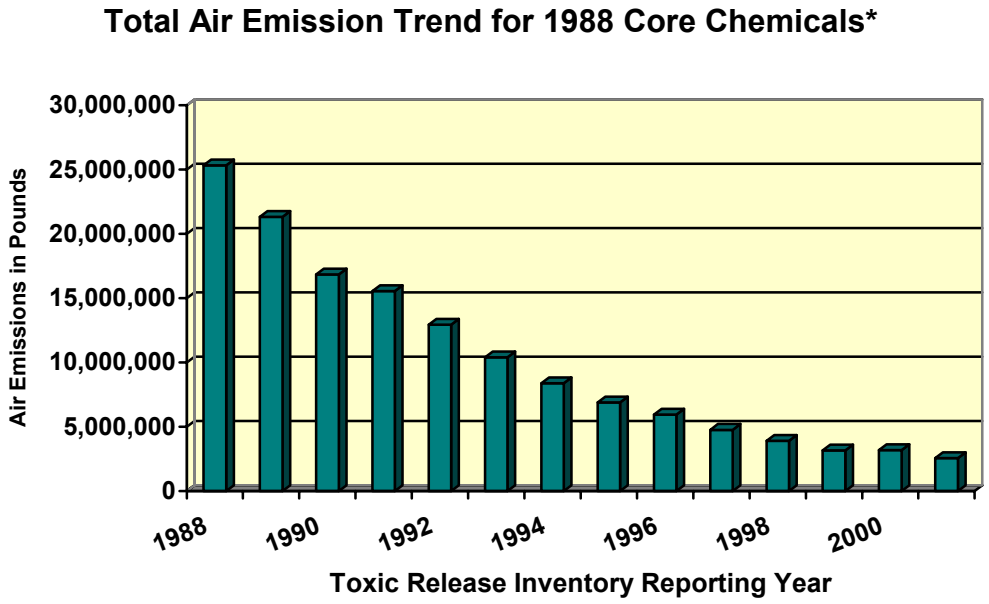
Mercury Action: In its 2002/2003 session the General Assembly passed Public Act 03-72, An Act Concerning Mercury Emissions from Coal-Fired Electricity Generators. This law requires the Bridgeport and AES Thames generating plants to reduce the amount of mercury they emit, starting July 1, 2008, according to specific statutorily set standards. The law also requires the Department to review mercury emission limits applicable to all units in the state by July 1, 2012 and authorizes the Department to adopt regulations imposing more stringent mercury emission limits on or after that date. This legislation sets the most stringent mercury emission limit for power plants in the country.

Reduction in Releases of Toxic Pollutants: Each year, facilities that meet certain thresholds must report their releases and other waste management activities for listed toxic chemicals to EPA and the state. The Toxic Release Inventory (TRI) Program is a national database that identifies facilities, chemicals manufactured, processed and used at the identified facilities, and the annual amount of theses chemicals released (in routine operations including spills and in catastrophic accidents) and otherwise managed on and off-site in wastes. The TRI list for 2001 included more than 600 chemicals and 30 chemical categories.

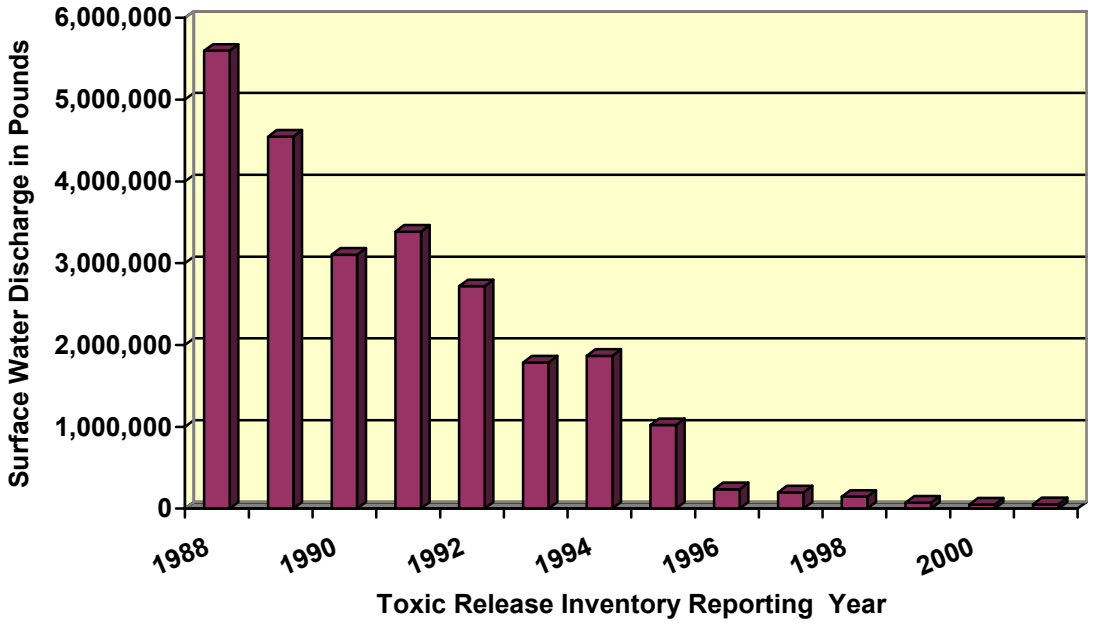
The following graphs show that Connecticut continues to make progress in reducing toxic releases. The graphs depict the significant downward trend from the beginning of the Toxic Release Inventory reporting requirement in 1988, through 2001. All data reported cannot be compared year to year due to the fact that over the years additional reporting requirements have

been added such as additional chemicals to report, revised thresholds and extension of the reporting requirement to include additional industry categories. Therefore, the graphs illustrate the reduction in releases for only the 1988 core chemicals.

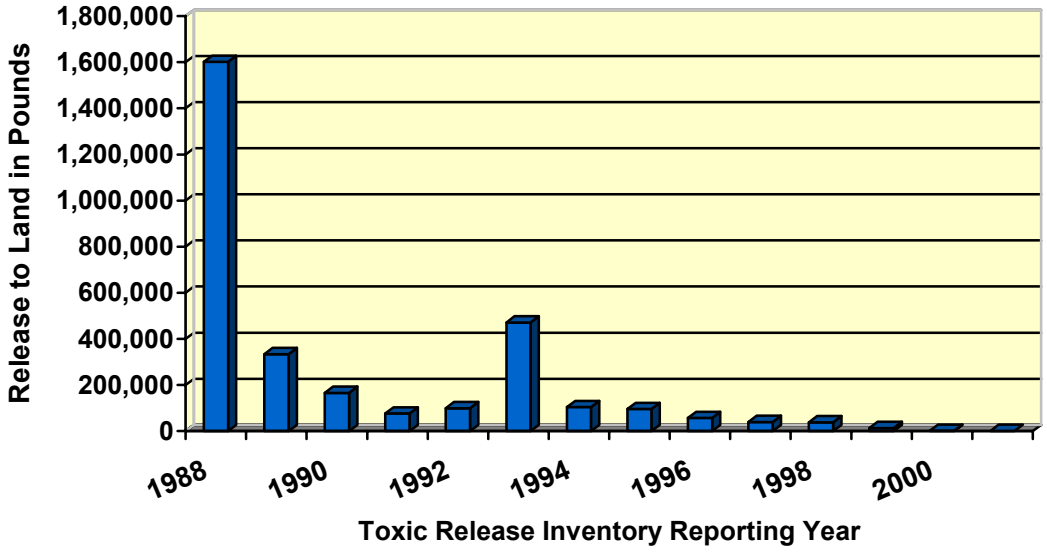
From 1988 to 2001, Connecticut reduced total air emissions of the 1988 core chemicals by 90% or 11,372 tons, surface water discharges by 99% or 2,772 tons and releases to land by 99% or 800 tons.



Surface Water Discharge Trend for 1988 Core Chemicals*



Releases to Land Trend for 1988 Core Chemicals*



*For a list of 1988 core chemicals go to **http://www.epa.gov/triexplorer/list-chemical-core-88.htm**.

Materials Management

Goal: To minimize impacts to public health and the environment by promoting proper storage, handling and usage of materials and the minimization of waste disposal by the promotion of recycling and beneficial use of waste products.

State Adopts More Stringent Underground Storage Tank Requirements: Recognizing a critical need to protect ground water from the harmful effects of leaking underground storage tanks, in 2003 the Department pursued legislation designed to insure the structural integrity of all new non-residential underground storage tanks installed in the State. Effective October 1, 2003, Connecticut law requires double walled containment and continuous monitoring for all new non-residential underground storage systems. By continuously monitoring the space between inner and outer walls of double-walled tanks and piping, underground storage tank (UST) owners will be alerted to breaches of outer walls (entry of groundwater into the interstitial spaces) or breaches of inner walls (entry of chemicals and petroleum products into the interstitial spaces) before contaminants enter the environment and threaten public health and safety. This "failsafe" provided by the additional containment wall and continuous interstitial monitoring will alert the UST owner/operator to looming problems and to repair or replace the failed UST components before environmental damage occurs.

Radiation Division Oversees Decommissioning of Former Combustion Engineering Site: During 2003 the Division of Radiation (Division) vigorously monitored ongoing radiological remediation at the former Combustion Engineering (CE) site in Windsor. The Division's activities included intensive document review, negotiations with federal agencies and onsite radiological confirmatory measurements to ensure that the State's interests were represented.

Document review focused on CE's Decommissioning Plan (DP), originally submitted to the US Nuclear Regulatory Commission (NRC) on December 31, 2001, with revised plans submitted in November 2002 and in April 2003. The Division concentrated their review on the dose modeling proposed in the DP. Dose modeling is a complex assessment tool used to estimate the radiation exposure to future inhabitants at the remediated site. The Division's reviews determined that certain essential input parameters such as the consumption of meat and milk to be harvested at the site in the future were omitted. The Division also argued strongly that other input parameters such as building shielding factors and soil dispersion coefficients were not as conservative as they needed to be. With assistance from the Office of the Attorney General, the Division pointed out for the NRC technical and legal staff deficiencies that greatly influenced NRC's decision to reject CE's first two submittals. Following further revision and with the support of the Division, in April 2003 CE submitted a DP that was approved by the NRC.

In addition to document review related to the CE site, in 2003 the Division took over 350 fixed radiation measurements, 300 loose radioactive surface activity measurements and scanned for radiation over 30% of all building area surfaces scheduled to be demolished in 2004. The Division also performed extensive environmental monitoring of ground water and soil/sediment for radiological contamination with analysis of samples performed by its independent consultant.

Emergency Response

Goal: To minimize the impact on the environment, and public health and safety that may result from natural and manmade disasters.

Managing Threats Posed by Radiation: In 2003, the Division was called upon nearly one hundred and fifty times to secure uncontrolled radioactive material, approximately three times the average prior to 2001. The vast majority of responses involved orphan radioactive material that is not under appropriate control or radioactive waste deregulated by the U.S. Nuclear Regulatory Commission found at resource recovery facilities and waste transfer stations.

To improve the Division's response capability for an increasing range of incidents, existing emergency response plans have been revaluated and new plans developed with the assistance of the U.S. Department of Energy. Increased training has also been conducted with nuclear power plants and the US Navy to hone emergency responder skills in the detection of radiation and response to radiological incidents. The Division has also increased its coordination with other state agencies, including: the Department of Public Safety, Department of Public Health, Department of Motor Vehicles, and the Office of Emergency Management; federal agencies such as the Department of Energy, Nuclear Regulatory Commission, US Navy, Environmental Protection Agency, and the Food and Drug Administration; private corporations such as Electric Boat Corporation, Dominion Nuclear Connecticut, and Connecticut Yankee Atomic Power Company. The Division has also taken on a leadership role in the New England Radiological Health Compact.

These increased responsibilities and activities require that new sources of funding and improved control of radioactive material be developed. To this end, the Department has repeatedly proposed legislation authorizing Connecticut to enter into an agreement with the US Nuclear Regulatory Commission to incorporate the regulation of radioactive material under federal jurisdiction with the state's existing authority. Passage of this legislation is necessary to provide the Division with stable funding for activities it is already performing to protect public health and safety and the environment. The proposed legislation would also establish a single regulatory program for sources of radiation, improving Connecticut's ability to control and secure all sources of ionizing radiation. In the 2003-2004 session the General Assembly has declined, for the fifth consecutive year, to enact such legislation.

Managing Environmental Compliance

Goal: Maintain and further enhance environmental protection in Connecticut by using permitting, assistance and enforcement resources in an integrated manner to solve the environmental problems identified as priorities.

Reducing the PCB Threat from Abandoned Equipment: The Department is tackling a longstanding threat to public health and the environment posed by abandoned PCB-containing electrical equipment. The goal of this project is to reduce the risk of human and environmental exposure to PCBs by effecting removal of derelict PCB-bearing equipment *before* a release occurs. Not to be lost in this effort is the potentially huge cost savings to taxpayers. EPA and the State have expended millions of dollars to clean up PCB releases at unoccupied former industrial sites. For instance, the cleanup of a release from a small transformer at the Belden-Corticelli site in Thompson, Connecticut took months to complete and cost in excess of $250,000. In contrast, the disposal cost for a small transformer and its contents prior to a release is approximately $3000 - $5000. In addition to the cost of cleanup, this release put a significant amount of PCBs into a prime waterway, disrupted a trout derby marking the start of fishing season, and necessitated the reconstruction of a century-old field stone retaining wall along one bank of the river.

The Department is currently piloting the effort in the eleven towns within the Farmington River watershed, and, in coordination with EPA, is targeting a major city within the Mattabasset River watershed. Within the Farmington River watershed, the Department is:

- Creating a working inventory of unoccupied industrial facilities using information currently available within the Department and with the assistance of the Connecticut Department of Economic and Community Development, the Connecticut Development Authority, the Connecticut Department of Public Utility Control and others;
- Within the defined universe of unoccupied industrial sites, identifying facilities housing transformers or other electrical equipment containing PCBs;
- Determining if a responsible party is available to actuate the removal of the equipment;
- If a responsible party is identified, the Department is first notifying such party of its regulatory obligations and seeking voluntary removal. Failing voluntary removal, the Department will use its enforcement authority to coerce equipment removal.
- If a responsible party is not identified, the Department will effectuate equipment removal through the use of supplemental environmental project (SEP) funds. In cases where the Department becomes aware of a PCB release at an abandoned site, the Department may use emergency spill response account funds to secure removal.

The primary measures will be outcome-based and reflective of risks reduced as a result of the project, including but not limited to: (1) the number of sites from which PCB-containing electrical equipment has been eliminated; (2) the number of gallons of PCB-containing fluids removed and properly disposed of; (3) the number of transformers and capacitors removed and properly disposed of; and (4) the reduction in the number of spills from PCB-containing electrical equipment at abandoned industrial sites over time, together with the response costs savings realized.

The project is in its infancy, the Department having conducted the first ten inspections in the Farmington River watershed project area. Removals have taken place at two sites. At the first site, the local utility company removed four transformers containing 317 gallons of PCB-contaminated fluid. The site of the second removal site had one unused transformer containing 145 gallons of PCB-contaminated fluid. Even though the customer (not the utility) owned this transformer, the utility removed it anyway. As a result of the first ten site inspections, 462 gallons of PCB-contaminated fluid were removed and properly disposed.

Promoting Environmental Stewardship

Goal: Improve environmental quality in the State of Connecticut by fostering communications between the Department and *all* stakeholders; increasing access to information; and providing appropriate outreach and assistance.

Clean Marina Program Launched: Connecticut's Clean Marina Program is a voluntary program that encourages inland and coastal marina operators to minimize pollution by certifying as "Clean Marinas" those marinas, boatyards, and yacht clubs that operate at environmental standards above and beyond regulatory compliance.

The Department introduced the program to the State's 350 marina operators in the winter of 2003 by hosting five informational sessions about the Clean Marina Program in Greenwich, Old Lyme, Essex, Groton and Brookfield. Approximately fifty people participated in the workshops. In the first year of implementation of the program, the Department certified two marinas and an additional twenty-eight facilities have taken a pledge to become certified within one year. The Department's goal is to certify seventy marinas by 2005. Clean Marina certification is based on a self-assessment that is field-verified by Department staff. Certified marinas must demonstrate that they are not only in compliance with all applicable environmental laws, regulations, and permits, but that they also meet 90% of the certification criteria applicable to their facility in the seven categories of operation.

Through the associated Clean Boater Program, seasonal boating education assistants distributed clean boating information to boaters at boat launch ramps and at marinas throughout Connecticut. The boating education assistants distributed "Clean Boater Packets" which include an oil absorbent spill pad, a "Waste Wheel" that provides information about the proper disposal of certain wastes that may be generated while boating, a Clean Boater Tip card that provides basic information about clean boating practices, a pumpout map and other related materials. Boaters were also asked to take a pledge to be a Clean Boater. Approximately 900 boaters took a Clean Boater Pledge in the 2003 boating season. More information about the Clean Marina and Clean Boater Programs are available online at: **http://www.dep.state.ct.us/olisp/cleanmarina/index.htm**.

Enhanced Focus on Environmental Stewardship: The Department is committed to assistance and innovation strategies that will help all stakeholders - business, industry, municipalities, and the public – maximize environmental protection. Highlights of some stewardship activities currently underway include the following:

Working with urban communities:

- The Department is working with five neighborhood groups from Hartford, New Haven, Bridgeport and Waterbury to improve public participation in the Department's permit decision-making process. The first component of this effort, funded by a US EPA grant, involves developing and providing training on this process to representatives from the neighborhoods. Once this training is complete, these neighborhood groups will provide

feedback and ideas on how to improve the process to allow for more active public participation.

- Through the Hartford Neighborhood Environmental Project, the Department continues to work cooperatively with a coalition of neighborhood revitalization zones to develop and deliver a model smart growth training program. Recommended actions for smarter development include focusing on parking, greening neighborhoods, zoning, creating pedestrian, biking and transit-friendly streets, and filling in the vacant spaces in streetscapes.

Working with business sectors:

- In cooperation with EPA and various hospital associations, the Department is providing technical assistance to help hospitals eliminate the use of mercury and to reduce overall waste generation. Additional mercury reduction-related activities include collaborating with the Connecticut State Dental Association to finalize Best Management Practices Guidelines for Dental Offices and Dental Training Schools, including requiring the use of amalgam separators.

- As a part of the Connecticut Green Building Council, the Department is working to raise the level of knowledge about "green" buildings in the state. The Department works with the Connecticut Green Building Council to encourage the use of voluntary, national green building standards that have been developed by the members of the US Green Building Council. Based on well-founded scientific standards, the Leadership in Energy Design Standards (LEED) emphasize state of the art strategies for sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality.

Working with individuals:

- The Connecticut Climate Change Committee conducted a vigorous stakeholder dialogue to identify options for reducing the State's emissions of greenhouse gases. More information on the Connecticut Climate Change Action Plan is available at **www.ctclimatechange.com**.

Finally, through the GreenCircle Award Program, the Department continues to recognize businesses, institutions, individuals and civic organizations that have undertaken pollution prevention, waste reduction or other projects promoting natural resource conservation and environmental awareness. GreenCircle Award Program information is available at **www.dep.state.ct.us/pao/grncrc/greencircle.htm.**

Appendix A

Compliance Profiles by Industry Sector or Facility Type

The following tables depict compliance rates for particular industry sectors. An enforcement action is initiated by the issuance of an informal Notice of Violation ("NOV") or a Unilateral Order, Consent Order or Attorney General Referral. Multiple actions issued for the same case (i.e. a consent order issued following issuance of a NOV) are not counted as they will produce a higher rate of non-compliance than actually exists. For most programs, the rate of compliance for each category was calculated as follows:

$$\% \text{ Compliance} = 100 - \frac{\#\text{ enforcement cases initiated}}{\#\text{ facilities inspected}} \times 100$$

Waste Management Bureau

Pesticides Program

Inspection Category	Inspections Projected FFY 04	Inspections Conducted FFY 03	# of Facilities By Category	# of Enforcement Cases Initiated in FFY 03	% Inspected Facilities in Compliance
Agricultural Use & Complaint Follow-Up	15	14	N/A	5	64%
Non-Agricultural Complaint/Concern Follow-Up & use investigation	60	58	N/A	30	48%
Producer Establishment	5	4	N/A	0	100%
Market Place	75	106	N/A	54	49%
Certified Applicator Records	100	167	N/A	80	52%
Restricted Use Dealers	10	15	N/A	0	100%

Note: Two common pesticides, diazinon and chlorpyrifos (Dursban), were in the phase out process during this time period. The resulting inspections and actions upon finding these products in the marketplace was the cause for many of the cases in the marketplace category.

Waste Engineering & Enforcement Division

Inspection Category	Inspections Projected FFY03	Inspections Conducted FFY03	Total # of Facilities by Category	# of NOVs FFY03 **	% Inspected Facilities in Compliance	# of Inspections with SNC*	% of SNC Non-compliance
TSF	5	10	163	0	100%	0	0%
LQG	95	98	499	34	65%	10	10%
SQG	15	28	1711	57	40%	23	8%
Transporter	5	5	265	5++%	0%	0	0
Volume Reduction Facility	N/A	34	31	11	70%	1	30%
Resource Recovery Facility	N/A	7	7	1	86%	1	14%
Transfer Station	N/A	31	126	9	70%	0	0
Land Disposal Facility/ Solid Waste	N/A	48	44	2	96%	5	10%

*SNC (Significant Non-compliance) - The violator/violation is significant enough to require a formal enforcement response. In addition to assessing compliance rates based upon Notices of Violation ("NOVs"), the Waste Management Bureau also chose to provide a non-compliance rate based upon Significant Non-compliance as defined by the Environmental Protection Agency. This rate is indicative of violations that the Waste Bureau has determined require formal enforcement action in accordance with the Department's Enforcement Response Policy.

** Does not include 26 NOVs resulting from complaint investigations, records review, or prior year inspections.

++% Does not include 4 NOVs issued to transporters that were not issued in response to an inspection.

UST Enforcement Program

Inspection Category	Inspections Projected FFY 03	Inspections Conducted FFY 03	# of Facilities By Category if applicable	# of Enforcement Cases Initiated in FFY 03	% Inspected Facilities in Compliance
98 Deadline Target List/ Complaints	150	263	N/A	51	94%/59%*

*94% are compliant with the 1998 federal deadline for closure of antiquated tank systems; 59% are compliant with leak detection/operational requirements

PCB Program

Inspection Category	Inspections Projected FFY 03	Inspections Conducted FFY 03	# of Facilities By Category	# of Enforcement Cases Initiated in FFY 03	% Inspected Facilities in Compliance
Neutral Scheme	15-25	4	N/A	1	75%
Complaints and Referrals	10-20	27	N/A	7	74%
Clean-up Sites	10-25	14	N/A	1	93%

Water Management Bureau

Inspection Category	# of Facilities	Inspections Projected FFY03	Actual Inspections FFY03	%Facilities in Compliance based on inspections*	%Facilities in Compliance based on DMR review (not in SNC)
NPDES Industrial Majors	42	41	38	92%*	91%**
NPDES Sewage Treatment Plant (STP) - Majors	67	67	54	91%	82%**
Pretreatment SIU-Significant Industrial Users	233	186	197	87%	Not Available
NPDES Industrial-Minors	56	6	18	78%*	Not Available
NPDES- STP-Minors	32	3	28	94%	Not Available
Stormwater	NA	NA	146	40%***	Not Available

* Based on whether a NOV was issued from the inspection.
** Only NPDES majors are entered in PCS-SNC numbers can only be generated for these categories.
***87 NOV's were issued for stormwater violations. Many of the stormwater inspections are initiated by complaints regarding erosion problems at construction sites.

Air Management Bureau -Compliance & Field Operations Division

The Compliance & Field Operations Division conducts source surveillance using various techniques, including on-site inspections report reviews and record requests. The following table depicts compliance monitoring activity and compliance rates tracked by the Bureau of Air Management for key facility categories or industry sectors. Unless otherwise noted below, non-compliance means that an enforcement action (e.g., an NOV, Consent Order, Unilateral Order or AG referral) was taken at a facility during Federal Fiscal Year (FFY) 2003.

Facility/ Inspection Category	Reports Reviewed FFY 03[1]	Inspections Projected FFY 03	Inspections Conducted FFY 03	# of Facilities in Category	# of Facilities w/ Non-Compliance	Compliance Rate[6]	# of Facilities w/ Significant Non-Compliance (SNC)[7]	SNC Rate
Title V Sources	140	65	65	117[2]	23	80%	8	7%
General Permit to Limit Potential to Emit	327	92	95	378[2]	14	96%	2	0.5%
Minor Sources	40	150	150	1500	41	97%	5	0.3%
Stage II		1500[3]	2035[3]	1600	623[5]	61%	31	1.9%
State of Connecticut Sulfur Dioxide Regulations[4]	25	0	14	25	4	84%		
Complaints		500	573					
Other (Enforcement follow-up inspections, routine investigations)		100	455					

Footnotes:

1. Includes quarterly Continuous Emissions Monitoring reports, semi-annual monitoring reports and compliance certifications.
2. Number of facilities in category means both those who have applied and those who have received permits under the applicable program.
3. Summation of Department of Consumer Protection (DCP) and DEP inspections.
4. Facilities subject to Section 22a-174-19a of the Regulations of Connecticut State Agencies.
5. Violations comprise DCP red tags, DCP repair orders (multiple repair orders issued to the same station on the same day are counted as a single violation), and NOVs.

6. Compliance Rate Calculation:

$$Compliance\ Rate = \left[\frac{\#\ of\ \ facilities\ in\ category - \#\ of\ \ facilities\ w/\ non-compliance}{\#\ of\ \ facilities\ in\ category} \right] \times 100$$

7. SNC is defined as follows:

   (a) For Title V, General Permit to Limit Potential to Emit and Minor Sources, SNC means the facility was either a State of Connecticut Definitive HPV or Federal HPV during FFY 2003.
   (b) For Stage II facilities, SNC means there was either an actual failure of the vapor recovery equipment or a failure to demonstrate that the facility was maintaining a properly operating vapor recovery system.

   SNC is calculated as follows:

$$Non-Compliance\ Rate = \left[\frac{\#\ of\ \ facilities\ w/\ SNC}{\#\ of\ \ facilities\ in\ category} \right] \times 100$$

Sulfur Dioxide Compliance Rates

The 84% compliance rate reported for section 22a-174-19a of the RCSA (Sulfur Dioxide) was solely due to four (4) Notices of Violation issued to various utility companies subject to the Acid Rain Program under Title IV of the CAAAs of 1990. The NOVs all were related to their failure to retire SO2 allowances in accordance with subsection 22a-174-19a(d).

Section 22a-174-19a(d) requires that "the owner or operator of an affected unit that is also a Title IV Source shall retire one SO2 allowance, rounded up to the next whole ton for each ton of SO2 emitted in the state of Connecticut." These allowances are in addition to any allowances retired to comply with the Federal Acid Rain Program and must be retired to the Connecticut State SO2 Retirement Account by March 1 for emissions occurring during the previous calendar year, starting with calendar year 2002.

After an Air Bureau staff engineer checked the Federal Emission Tracking System and found that these sources did not retire the allowances, NOVs were issued to bring the affected units into compliance. The NOVs were all closed with the sources in compliance, shortly thereafter, due to the fact that the allowances were retired as the regulation requires. The shortfalls were all very small, with the largest amount of SO2 that had to be retired being 11 tons and the smallest being 1 ton.

Radiation Division

# of Facilities	# of Inspections	Inspection Rate	NOVs Issued	Compliance Rate
3674	484	13.2%	6	98.8%

1. Inspection Rate Calculation:

$$Inspection\ Rate = \left[\frac{\#\ of\ \ facilities\ inspected}{\#\ of\ \ facilities}\right] \times 100$$

2. Compliance Rate Calculation

$$Compliance\ Rate = \left[\frac{\#\ of\ \ inspections - \#\ of\ \ NOVs\ \ Issued}{\#\ of\ \ inspections}\right] \times 100$$

Summary of Enforcement Statistics
Five Year Average 1999-2003

Air Management Bureau

Program Activity	1999 CY	2000 FY	2001 FY	2002 FY	2003 FY	Five Year Average
Warning Notices						
Notices of Violations	429	292	218	233	**134***	261
Orders	35	48	40	88	**111**	64
Referrals(AG/EPA/CSA)	7	6	4	1	**5**	4

*Prior to FY2003, the Radiation Division reported NOVs issued under the federal mammography program. This data is not included for FY 2003.

Waste Management Bureau

Program Activity	1999 CY	2000 FY	2001 FY	2002 FY	2003 FY	Five Year Average
Warning Notices	27	24	20	5	**1**	15
Notices of Violations	501	524	490	384	**355**	451
Orders	61	127	112	103	**66**	94
Referrals(AG/EPA/CSA)	42	38	35	28	**34**	35

Water Management Bureau

Program Activity	1999 CY	2000 FY	2001 FY	2002 FY	2003 FY	Five Year Average
Warning Notices						
Notices of Violations	486	356	347	384	**259**	366
Orders	39	41	50	45	**42**	43
Referrals(AG/EPA/CSA)	17	14	10	6	**6**	11

Department-Wide Five Year Average 1999-2003

Activity	1999* CY	2000* FY	2001* FY	2002* FY	2003 FY	Five Year Average
Referrals(AG/EPA/CSA)	66	63	53	35	**45**	52
Orders	146	230	215	244	**236**	214
Notices of Violation	1439	1258	1100	1023	**782**	1120
Total Enforcement Actions**	1651	1551	1368	1302	**1063**	1387

*Including the Office of Long Island Sound Programs
**Does not include Warning Notices

Enforcement Statistics - FY 2003

(October 1, 2002-September 30, 2003)

Actions	Air Management Bureau	Water Management Bureau	Waste Management Bureau	Office of Long Island Sound Programs	Total for Year (10/01/02-9/30/03)
Warning Notices Issued under CGS 22a-6s	N/A	N/A	1	N/A	1
Notices of Violation Issued	134	259	355	34	782
Consent Orders Issued	111[1]	31	64[2]	17	223
Administrative Penalties Assessed (# cases)	$83,871(19)	$407,668.50(14)	$751,203(52)	$54,718(14)	$1,297,460.50(99)
Supplemental Environmental Projects (# cases)	$525,353(5)	$163,092(11)	$739,000(18)	$0.00	$1,472,194(38)
Unilateral Orders Issued	0	11	2	0	13
Attorney General Referrals	5	6	22	0	33
Judicial Settlements	$134,800	$1,217,152	$1,756,841	$0.00	$3,108,793
Penalties		$335,000	$104,375	$0.00	$439,375
Supplemental Environmental Projects					
Chief State's Attorney Referrals	0	0	4	0	4
Referrals to EPA	0	0	8	0	8
Inspections Conducted	3,766	1,242	1,823	184	7,015

[1] Includes 82 Trading Orders and 11 expedited consent orders to address non-compliance with Stage II testing requirements.

[2] Includes 20 expedited consent orders to address UST non-compliance.

Appendix B

Permitting

In accordance with Section 22a-6r of the Connecticut General Statutes, the following section provides information on permit applications received, permit decisions, and permit application fee revenues.

Department Permit Application Summary Data

The following tables summarize application and permit activity, as recorded in the Permit Application Management System (PAMS), for the federal fiscal year (FFY = October 1, 2002 through September 30, 2003).

Federal Fiscal Year 02/03 Statistics

Bureau		Applications Received	Permits Issued	Applications Closed[1]	Applications Pending (As of 09/30/03)
Air	General Permits	61	219	293	110
	Individual	131	164	242	211
	Short Process	65	37	48	24
Office of Long Island Sound Programs	General Permits	42	31	38	19
	Individual	129	100	112	232
	COP[2]	207	174	202	35
Water	General Permits	1756	1359	1509	533
	Individual	405	232	287	723
Waste	General Permits	90	61	77	33
	Individual	43	39	46	113
	Short Process	787	749	779	42
All DEP	General Permits	**1949**	**1670**	**1917**	**695**
	Individual	**708**	**535**	**687**	**1279**
	Short Process	**1059**	**960**	**1029**	**101**
	Totals All Apps	**3716**	**3165**	**3633**	**2075**

[1] Applications Closed represents the total number of applications that were closed including: permits issued; applications that were withdrawn, rejected for insufficiency, or denied on the technical merits of the application; and applications that were received but no permit was required.
[2] COP = Certificate of Permission

Average Processing Times

Average Time in Days							
Bureau	**Sufficiency Decision**	**Sufficiency After Notice of Insufficiency**	**Tentative Determination** (N.B.: this statistic only includes individual permit applications)	**Issue Permit DEP Time**	**Issue Permit Total Time**	**Close Application DEP Time**	**Close Application Total Time**
Air	151	7	331	347	397	383	479
OLISP	62	27	56	56	82	61	97
Water	49	21	265	67	96	93	184
Waste	21	25	555	59	68	72	87
All DEP[3]	**53**	**21**	**166**	**101**	**127**	**131**	**198**

Timeliness

Bureau	On Schedule (vs. Plan)	On Schedule (vs. Revised)
Air	**64%**	**76%**
OLISP	**62%**	**86%**
Water	**89%**	**91%**
Waste	**93%**	**96%**
All DEP	**84%**	**90%**

[3] All DEP averages are weighted averages

Permit Related Revenue Information

CGS Section 22a-6r states the Commissioner shall report on the revenues received from permit application fees and any revenues derived from the processing of such applications as set forth in Chapter 439 of the General Statutes; the Department's appropriation from the general fund for permitting activities; and the number and amount of permit application fees refunded.

Revenues Received from Permit Application Fees and Any Revenues Derived from the Processing of Such Applications[4]	
10/01/2002 - 09/30/2003	**$1,686,653**

General Fund Appropriation[5]	
07/01/2002 - 06/30/2003	**$911,379**

Amount of Permit Application Fees Refunded[6]
$28,468

[4] This amount represents application fees due with the submission of the application and subsequent permit issuance fees. The amount does not include annual fees and other registration fees such as medical and industrial X-ray, pesticide registrations, USTs, property transfer, LEP, etc.
[5] There is no specific state budget appropriation for department permit programs. This figure reflects actual expenses, drawn from the general fund, for Air, Water, and Waste permitting and enforcement staff.
[6] Refunds reflect withdrawn applications and instances where submitted fees are in excess of required fees.