

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION I
BOSTON, MASSACHUSETTS 02203

DATE: September 17, 1984
SUBJ: Environmental Management Report Update - Region I
FROM: Michael R. Deland
Regional Administrator
TO: Alvin L. Alm
Deputy Administrator

We are pleased to submit to you the Environmental Management Report Update from Region I. We hope you will find the document useful for Agency planning and budgeting processes; it will certainly be useful to me in directing our Region I initiatives and activities over the next year.

ENVIRONMENTAL MANAGEMENT REPORT UPDATE - REGION I

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PART I Regional Administrator's Overview

A. MOST SIGNIFICANT ENVIRONMENTAL PROBLEMS

New England is faced with a variety of different and sometimes connected environmental and public health problems. In this Environmental Management Report we explore New England's most significant environmental problems and propose actions that Region I and Headquarters should initiate to resolve them. While many of these problems are shared by other parts of the country, some are unique to New England. In all instances, however, public concern is extraordinarily high and demand for action is growing.

Region I is building a formidable environmental protection presence in New England. We incorporate strong and balanced enforcement and compliance efforts into all our activities. We invite citizens, environmental and business groups, states and other federal agencies to participate in our deliberations and become partners in solutions. And, we pursue improved resource distribution, planning and administrative management practices to enhance our capacity to manage for environmental results.

The following is a brief description of the ten highest priority issues in Region I. This list is presented in order of priority.

Ground Water Protection - Ground water is one of New England's greatest natural resources. This rich resource supplies drinking water to approximately 20% of our population and fully three-fourths of our community water systems rely on ground water.

Yet, our ground water is in peril - threatened by a variety of contamination sources, including leaking underground storage tanks, pesticides residues, surface impoundments and leachate from landfills.

Boston Harbor - Current sewer discharges from 43 Massachusetts cities and towns throughout the Metropolitan District Commission's Boston Harbor facilities create the most serious water pollution problem in New England. The discharges regularly close beaches, cause disease in fish and other organisms and threaten the public health.

Boston Harbor is a great public resource. We cannot allow its use as a public sewer to continue. In the next twelve months, the "Year of Decision", we and the Commonwealth of Massachusetts will make a series of critical decisions that will determine the fate of this resource for the long term.

Toxic Substances - Complex toxic pollutants in the air, water and land has become a serious national challenge. Exposure to toxic substances can cause serious health effects and long term environmental damage.

Public apprehension over toxic substances stems from our inability to adequately assess health implications associated with exposure to low levels of contaminants and awareness that many of these substances are suspected carcinogens.

Long-Range Transport: Acid Rain and Ozone -

Acid Rain - Long-range transport of acidic deposition is contributing to aquatic and forest changes throughout New England. The three northern New England states are most threatened by this phenomena because of geologic characteristics which cannot effectively neutralize the acidity in the deposition.

The New England environmental community, states, news media and general public have a heightened awareness of the problem and are deeply convinced that tough action to reduce emission levels is essential to the solution of this problem.

Ozone - New England has the nation's second most severe problem of elevated episodes of ozone. In 1983, Connecticut, where the problem is most severe, suffered through 46 days when the ozone level exceeded the standard. Solution to the region's ozone problem will require inter-state and inter-regional cooperation since emissions from the Washington-Philadelphia-New York corridor combine with local emissions to form our ozone hazards.

New Bedford Harbor - The inter-media nature of the problems that we face at Superfund sites has led to the development and coordination of inter-program responses. The New Bedford Harbor site is an excellent example of a multi-media problem that requires integrated technical, public interest and management responses.

New Bedford Harbor and the surrounding environment is extensively contaminated with PCBs. The presence of PCBs and heavy metals in the Harbor has lead to great concern for public health, fishing bans and closing of large commerical fishing areas, and loss or delay in the development of the Harbor's tremendous recreational and economic potential.

Hazardous Waste Management Facility Permitting and Compliance - The issuance of Resource Conservation and Recovery Act permits to treatment, storage and disposal facilities is a high priority for Region I and the New England states. Failure to call for permit applications and issue permits unnecessarily endangers ground water, soil and human health.

Asbestos and Public Health - Much of the building stock in New England is old and many of our schools and public buildings contain asbestos insulation and/or decoration. Our greatest environmental and public health concern centers on renovation and demolition, because much of the work being conducted is in violation of one or more provisions of NESHAP, and the risk of human exposure is thereby significantly increased. Since asbestos is a known human carcinogen with no known safe level of exposure, our concern is considerable.

National Municipal Strategy - Region I is aggressively pursuing major enforcement actions to improve municipal compliance rates, construction of needed wastewater treatment plants and implementation of a regional pretreatment program. Our goal is to achieve marked improvement in water quality across New England, especially along the coast.

Marine Water Quality - Outer Continental Shelf oil exploration on George's Bank, dredging of waterways in southern New England and the cumulative effect of long-term point and non-point source discharges to our estuaries are New England's greatest marine water quality concerns.

In the next year, we will focus our efforts on five of the highest priority marine and estuarine resources in the northeast United States - Boston Harbor, New Bedford Harbor, Narragansett Bay, Buzzards Bay and Long Island Sound.

Non-point Source Pollution/Combined Sewer Overflows - The New England environment is confronted by every form of non-point source pollution. Urban runoff, improper construction practices, on-site waste disposal systems, agricultural activities and forest management activities all contribute to serious cumulative impacts on our environmental resources.

Combined sewer overflows from major city and small town sewer systems result in significant discharges of untreated wastewater during periods of wet weather. Frequently, combined sewer overflows result in the closing of shellfish harvesting areas and inhibit the complete cleanup of important rivers.

B. REGIONAL ACCOMPLISHMENTS

We are proud of our accomplishments over the past year in Region I. You will soon receive a Region I publication discussing Region I's achievements in greater detail than is possible here. What follows are a few highlights selected from that document.

Enforcement has been our number one priority in Region I. Over the past year we took more than 250 formal enforcement actions, including notices of violation, administrative orders and penalty assessments, and civil and criminal court cases. Some results of these vigorous enforcement efforts are:

- o Two hundred tons daily of sewage sludge are no longer being dumped into Salem Harbor.
- o Residents of Canob Park in Richmond, Rhode Island, have clean drinking water today instead of water contaminated with service station gasoline.
- o School systems and communities in New England are newly attentive to their responsibility to protect school children from asbestos, after Region I assessed the nation's first civil penalties for violations of the asbestos-in-school regulations.
- o Region I prepared the first federal criminal environmental case filed in Massachusetts in the past ten years. The case involved violations of PCB rules and falsification of information reported to EPA. The company entered a plea of guilty in May of this year.
- o The nation's first Superfund liability trial against seventeen defendants continues in U.S. District Court in Concord, New Hampshire.
- o Federal judges approved an EPA proposal that a portion of a large civil penalty assessed against the City of Providence for air and water pollution violations be used to fund an environmental health study that will benefit the people of Rhode Island.

The pace of these and other enforcement efforts in this Region means that by the end of the year Region I will have achieved the highest level of enforcement actions in its history.

Our record on the program side is one we're also very proud of. A few of our accomplishments over the past year are outlined below.

- o To date, we have put over \$50 million of Superfund money to work to clean up New England's abandoned and uncontrolled hazardous waste sites.
- o We have spent more than \$150 million to help local governments across New England improve surface water quality conditions through the construction of wastewater treatment plants.
- o Our six New England states are in the vanguard in developing groundwater protection strategies and were instrumental in the development of EPA's groundwater policy. Region I has actively supported state efforts in this area through its program grants, training sessions and pioneering efforts in emerging national issues, such as the control of leaking underground storage tanks.
- o New automobile inspection and maintenance programs are in place in Connecticut and Massachusetts, the result of EPA-state cooperation.
- o We reestablished relationships with our various constituencies in New England, meeting with the Congressional delegations, the governors, state environmental directors, the press media, and environmental and industry and business groups to heighten public awareness of the environmental issues facing this Region, and to encourage widespread participation in solving them.

We have not lacked environmental challenges, and we have working on behalf of the New England environment a group of highly competent, dedicated and able professionals. A significant increase in our resources this year enabled us to hire a number of well-trained engineers, scientists and attorneys at the staff level. We were also able to bring on several outstanding individuals to fill key policy positions; these individuals complete our senior staff and add new strength and experience to the senior management team.

C. EMERGING ENVIRONMENTAL PROBLEMS

We are committed to looking ahead, interpreting current trends to identify new problems before they are widely known. Dartmouth College, funded by EPA, will complete in October an assessment of how demographic, economic and social forces in New England will affect our Region's environment in the next decade. For example, a growing population, principally in rural areas and small towns, and a flourishing economy combined to create emerging environmental problems that the Agency should begin to address now. What follows is a brief description of some of the issues that we are most concerned with.

- New Englanders are very concerned with the growing effects of pesticides use and its impacts on human health as it percolates into the ground water that we drink and drifts along in the air we breathe. Pesticides application, designed to control one dimension of our environment, is spilling over into others. As a result, our concern for the complex and confusing problem of pesticides contamination is increasing.
- As we tighten our homes to make them more energy efficient and convert more home heating systems to wood and coal, we are asking questions about the quality of our indoor air environments. We spend most of our time indoors, where air quality is

frequently lower than outside - what long-term health effects does this hold? What are the appropriate policy alternatives?

- The expanding high-technology economy of New England prompts concern over the direct and indirect environmental and public health impacts of these industries. How will planned releases of new genetically engineered organisms effect public health and how are exotic chemicals used in the research and production of high-technology components effecting our environment?

The horizon of emerging environmental and public health problems is expanding as fast as our curiosity and ability to consider their existence grows. EPA should invest time and effort now to discover these problems, exploring their consequences and debating alternative policy responses. All the while, however, we cannot lose sight of the older problems already stacked high on our plate.

This Environmental Management Report communicates not only our perception of the most significant environmental problems facing New Englanders but it also carries a commitment by Region I staff to take actions to address these problems. In that sense, the EMR describes Region I's vision for fulfilling our part of the Agency's mission to protect the nation's environment.

Michael R. Deland
Regional Administrator

Part II. Regional Environmental Problems

GROUND WATER PROTECTION:

I. PROBLEM STATEMENT

Approximately 20% of New England's population (nearly 3 million people) depend on ground water as their sole source of water supply. Moreover, 2,026 community water systems (77%) utilize ground or combined ground and surface water sources. Over the past 10 years there has been steadily mounting evidence that New England's shallow aquifers are vulnerable to contamination from a variety of sources. These include: uncontrolled hazardous waste sites, landfills and surface impoundments (some of which have already become Superfund sites), pesticides, and leaking underground storage tanks (LUST).

II. PROBLEM ASSESSMENT

- a. Background: New England has soil types especially susceptible to the leaching of contaminants through the surficial geology to the bedrock layer. The soil tends to have high permeability. This coupled with the generally high ground water table, allows foreign materials such as spent solvents, pesticide residue, and petroleum products to quickly penetrate the soil layer and reach the ground water. In the case of uncontrolled hazardous waste sites, the wastes were disposed of improperly. With pesticide residues however, the way in which the pesticides were applied were, in most cases, proper. Leaking underground gasoline storage tanks result primarily from the installation of bare steel tanks, unprotected against corrosion, fifteen or more years ago. The emerging problem of leakage from landfills and surface impoundments, regulated under the RCRA statute, are primarily due to siting without taking ground water into consideration, and improper design. Many landfills have accepted hazardous waste from small quantity generators in the past. In addition, commercial and household wastes often contain small quantities of hazardous materials which, in aggregate, can be significant. This presents a special problem for the Agency because under RCRA subtitle "D", landfills are controlled by the States, not EPA, and the States in general do not have the resources to undertake an effective regulatory process.
- b. Geographic Scope: Ground Water contamination is a Regionwide problem. Existing and potential problem with contamination from hazardous wastes appears to be most dominant in Massachusetts and Connecticut (practically all the land disposal systems in New England are in these two states). Connecticut, Maine, Massachusetts and Rhode Island have had problems with pesticide residue, and Maine, based on preliminary information, appears to have the most far-reaching threats of contamination from leaking storage tanks.
- c. Major Impacts: Contaminants will render both current and potential sources of drinking water unpotable. In addition, health risks from the toxicity of these contaminants may cause a severe impact on the human condition.

- d. Public Concern: Public concern is very high from the health-related aspect of this problem.
- e. Major Sources: Unprotected steel gasoline tanks belonging to either major oil companies, small oil companies or individual station owners; potato fields and tobacco fields; lagoons; landfills; drums/tanks; piles; sludges; leachfields.
- f. Contaminants of Concern: Benzene, ethylbenzene, toluene and xylene (tanks); aldicarb, ethylene dibromide (EDB) and carbonfuron (pesticides); volatiles, heavy metals, PCB's and sludges/oils (surface impoundments, landfills, drums/tanks sludges, leachfields).
- g. Expected Environmental Results: Protection of current and potential sources of drinking water supply, as well as ecologically vital ground waters.

III. REGIONAL AGENDA

a. Past Responses:

- Active coordination with the New England Interstate Water Pollution Control Commission to bring the various states together and create a forum for technical and regulatory discussions.
- Formation of an interdivisional L.U.S.T. committee to collect and share information and assist the region and states in formulating L.U.S.T. policy.
- Investigation by regional laboratory personnel into means of detecting leaking underground storage tanks.
- Verified selected positive samples from pesticide residues.
- Supported state activities by supplying technical background on toxicological and health effects from pesticides.
- Supported state activities by providing information on treatment techniques, recent pilot studies, and national incidents of pesticide contamination.
- Initiated a pesticide sampling program at 50 sites in the Connecticut River Valley assessing the extent of contamination and the total population impacted.
- Surface Impoundment Assessment inventoried impoundments and assessed their potential to contaminate ground water (late 1970's).
- Open Dump Inventory conducted in the late 1970's.
- Established the Office of Ground Water Protection to coordinate the several ground water programs within EPA's statutory authority.
- Included ground water protection as an issue in each New England State State-EPA Agreement.

- Establish the Regional Ground Water Steering Committee to develop overall policy and oversee the Ground Water Office
- Ground water contamination plumes studied at more than half of the National Priority List sites.
- A 20-acre slurry wall and clay cap installed at the Sylvester site in Nashua, New Hampshire to limit further ground water contamination.
- A 9-square mile hydrogeologic study of Woburn, Massachusetts assessed the contamination of an aquifer which once supplied two major municipal wells; feasibility studies on aquifer restoration are underway.

b. Recommended Regional Actions:

- Develop detection technique for leaking tanks currently being investigated by the Regional lab, and utilize in actual field cases; this will uncover current problems and may be used by the states on a wider scale; no state involvement during development stage; finalize results by Summer, 1985.
- Continue to provide a source of information for the states in their regulatory development; this will facilitate control programs at the State level; ongoing.
- Investigate and develop new data and information on underground storage tanks; work directly with states in ongoing effort.
- Present a L.U.S.T. technical conference to apprise all interested parties, including states, of the current technology available to help monitor the problem; complete within next six months.
- Provide oversight of significant agricultural pesticide use and coordinate findings with other regional programs; this will help identify pesticide residue problems unique to the region and provide data useful to the registration process; the states will be active in this effort by providing information; conduct during FY-1985.
- Develop policy to provide technical assistance and emergency response measures in support of state actions involving pesticide contaminated public water supplies; this will aid the states in decisions involving the closing of wells and the establishment of emergency procedures; develop during FY-1985.
- Assure that the Region develops effective coordinating procedures for ground water management.
- Assure that the States also develop effective coordinating procedures for ground water management.

c. Barriers to Overcome:

- ° Lack of comprehensive regional data on the number and age of underground storage tanks.
- ° The tremendous costs to the oil companies to rectify the problem, and the possibility of passing these costs on to consumers.
- ° Utilization of existing pesticide enforcement laboratories would significantly reduce the start up costs associated with a major monitoring effort.
- ° Recognition that pesticide residue monitoring should be assigned a much higher priority than in the past.
- ° Resources needed to develop and implement a National Monitoring Plan (NMP), which would provide baseline data to assess environmental results, are unavailable. In addition, state funding to support the state/federal partnership in implementing the NMP is not available.
- ° Widespread lack of understanding of clean-up technologies and the degree of clean-up attainable in aquifer restoration program.
- ° Data currently available on health effects of many hazardous compounds is insufficient to set standards for clean-up and aquifer restoration.
- ° The public does not trust government's ability to establish "how clean is clean" criteria.
- ° At present, there is virtually no EPA oversight or financial support of State Solid Waste Programs; the effect is that most landfills in New England will continue to pose a threat to ground water quality.

IV. HEADQUARTERS ACTIONS NEEDED

- ° Develop a Quality Assurance/Quality Control and effectiveness evaluation of present methods for testing underground storage tanks. (Office of Toxic Substances)
- ° Select a contact in Washington who can relay current Headquarters and Congressional positions and policies on L.U.S.T. to the Regional Offices. (Office of Ground Water Protection)
- ° Develop a methodology for gaining information from the private sector on tanks, leaks, removals, and abandonments. (Office of Toxic Substances and Office of Ground Water Protection)
- ° Designate a central clearinghouse (i.e. computer information system) for collecting and summarizing existing data and statistics on underground storage tanks. (Office of Ground Water Protection)

- ° Develop a model cost and manpower needs to implement effective underground storage tank regulatory programs at the state and regional levels. (Office of Ground Water Protection)
- ° Support residue monitoring of pesticides that are likely to migrate to groundwater supplies. Soil and climatic conditions favorable to pesticide residue and accumulation migration, especially for degradation-resistant pesticides, should be considered. (Office of Pesticides Programs)
- ° Amend labels or cancel uses when monitoring data and/or experimentation indicate ground water contamination from pesticides. (Office of Pesticides Programs)
- ° Develop policy regarding the types of control measures necessary to mitigate the risks from pesticide leaching. Also, develop a plan on how to implement various control measures. (office of Pesticide Programs and Office of Ground Water Protection)
- ° Conduct a National Monitoring Program to help define the extent and nature of the pesticide program. (Office of Pesticide Program)
- ° Develop health advisories and/or Drinking Water Standards for use by EPA and the states in responding to contamination incidents. (Office of Drinking Water)
- ° Ensure that resources are available to complete the work of the Headquarters task force to evaluate the environmental impacts of non-hazardous waste management facilities; complete by the end of FY-1985. (Office of Solid Waste)
- ° Aggressively pursue research into health and environmental impacts of the hazardous wastes most commonly found in ground water (usually volatile organics). (Office of Research and Development)
- ° Establish criteria on levels of contaminants in ground water which should trigger Superfund involvement. (Office of Drinking Water)
- ° Develop a national inventory of types of contaminants found in ground water should also be established and priority compounds identified. (Office of Research and Development)
- ° Establish a national technology transfer program for ground water investigation and restoration. (Office of Research and Development)
- ° Revise policies, guidelines and regulations to reflect the use of the ground water strategy to manage programs and establish priorities.

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BOSTON HARBOR

I. PROBLEM STATEMENT

The water quality of Boston Harbor is degraded by the daily discharge of 600 million gallons of wastewater and 2500 wet tons of sludge from the Metropolitan District Commission's (MDC's) two wastewater treatment plants which often fail to meet NPDES permit conditions. In addition, the combined sewer system overflows discharge untreated wastewater at some 110 locations along the Harbor's edge to create serious near shore environmental and health problems.

II. PROBLEM ASSESSMENT

- a. Background - The MDC is a Massachusetts state agency that provides wastewater collection and treatment to 43 greater Boston communities with a service population of over 2 million or about 40% of the total state population. It operates two out-moded, overloaded primary treatment plants (Nut Island—1952 and Deer Island—1968) and two Combined Sewer Overflow (CSO) treatment facilities (Cottage Farm—1971 and Prison Point—1981). Historically, the agency has been underfunded and understaffed, conditions which have consistently contributed to operational problems experienced at the facilities.
- b. Geographic Scope - The treatment plant and sludge discharges have an impact on the water quality of the harbor and in the vicinity of the islands in the harbor which are being proposed as a Boston Harbor Islands State Park. The CSO discharges impact the entire near shore area from the Town of Winthrop to the north to the City of Quincy to the South and the city beaches.
- c. Major Impacts - The discharge of inadequately treated wastewater from the treatment facilities and untreated wastewater from the CSO's are aesthetically offensive, create a risk to the public health, result in periods of closed swimming beaches during the recreational bathing season, closed shellfish harvesting areas and potential environmental damage to the aquatic environment. Direct contact with the contaminated waters can result in a variety of illnesses attributable to waterborne organisms, eye and ear infections and a general feeling of discomfort. Consumption of contaminated shellfish can result in contracting hepatitis and ingesting heavy metals and PCBs which could lead to a number of health problems. Pollutants discharged to the harbor can also result in a change in the marine life of the harbor and through bio-accumulation preclude the consumption of fish taken from Boston Harbor.
- d. Level of Public Concern - There is a high level of public concern about the pollution of Boston Harbor and the solutions under consideration. This concern can be described as two-faceted which complicates the cleanup process. The Town of Winthrop is opposed to treatment facilities at Deer Island and opposes any expansion or upgrading of that facility. The residents also oppose the construction of sludge incineration facilities at Deer Island. The residents of the City of Quincy object to any expansion of the Nut Island treatment facility.

Among the options being evaluated in upgrading the MDC's treatment facilities is locating treatment works on Long Island which is owned by the City of Boston. The City Administration has voiced its objection to the use of Long Island for wastewater treatment facilities. Notwithstanding the opposition to the various options, the residents of the communities bordering the harbor aggressively seek the abatement of pollution in the harbor.

On the other hand, residents of the inland communities served by the MDC, while sympathetic to the harbor cleanup, strongly oppose needed increases in user charges and the assessment of a share of the capital cost for construction of upgraded and new treatment facilities.

Public participation in the Boston Harbor cleanup effort has been intense with many public meetings scheduled and some 15 advisory groups and committees meeting on different issues involved in correcting the Boston Harbor problems.

- e. Major Sources - The most significant sources of the problem are the discharge of sludge and inadequately treated wastewater from the two treatment facilities and the untreated discharges from the CSOs. A considerable portion of the overload to the system is attributed to high infiltration/inflow into the sewerage system which, especially during rainy weather, results in loads exceeding the capacity of the treatment works.

Past studies have indicated that 34 CSOs discharge continually. These discharges are generally due to sewer blockages, accumulated sediments within the pipes which reduce their capacity, improperly functioning regulators within the system and tidegate failures.

- f. Contaminants of Concern - The pollutants in the discharges to Boston Harbor include total and fecal coliform bacteria, floating materials, oil, grease, suspended and settleable solids, biochemical oxygen demand, nutrients, PCBs and heavy metals.
- g. Expected Environmental Results - Correction of the problems contributing to pollution of the harbor will result in improved aesthetics of the harbor and of all the beaches in the area, reduce beach closings from once or twice a week to once per bathing season, possibly allow reopening of closed shellfishing areas, improve water quality which would reduce risks to the public health, improve the quality of the fish and increase the recreational potential of the harbor, its beaches and the proposed Boston Harbor Islands State Park.

III. REGIONAL AGENDA

a. Past Responses

- Six EPA Administrative Orders have been issued since August 8, 1980.

- Completion of a Draft Environmental Impact Statement (DEIS) in 1978 on the Upgrading of the Boston Metropolitan Area Sewerage System. The recommendations were controversial and led to the preparation of a Supplemental DEIS (SDEIS).
- Completion of a Sludge Management EIS by EPA in 1979 and issuance of a Record of Decision in 1980 directing continued environmental evaluation of sludge incineration and examining further the feasibility of composting.
- Issuance by the MDC of a Sludge Management Update Report in 1982 focusing on alternate disposal methods of composting, incineration and ocean disposal.
- Implementation by the MDC in 1983 of the immediate upgrade of the Deer Island and Nut Island facilities to correct chronic operational problems.
- Initiation of corrective measures in 1983 by the MDC and the Boston Water and Sewer Commission on priority CSO projects.
- The filing of a lawsuit in 1983 by EPA against the MDC for violations of monitoring and reporting requirements. The case was settled with the MDC agreeing to comply with the monitoring and reporting requirements and paying a civil penalty of \$15,000.
- Institution of a lawsuit in 1983 by the City of Quincy against the MDC because of pollution of Quincy Bay by the Nut Island Treatment Plant. EPA has participated in this suit in a "friend of the court status." The court has issued a ruling outlining a 10-year plan to clean up the harbor.
- Institution of a separate lawsuit in 1983 by the Conservation Law Foundation against EPA, the MDC and the Massachusetts Division of Water Pollution Control (DWPC) alleging deficiencies in required administrative and regulatory reviews. This legal suit has been stayed.
- EPA issuance in June 1983 of a tentative decision denying an MDC application for a waiver from secondary treatment requirements under Section 301(h) of the Clean Water Act.
- MDC submission in June 1984 of an application for EPA reconsideration of the 301(h) waiver based on a reexamination of the water quality impacts which led to the denial.
- Issuance in June 1984 by the Commonwealth of Massachusetts of a Sludge Management Strategy listing composting as the preferred option with ocean disposal and incineration as the second and third preferences, respectively.
- Completion in October 1984 of the SDEIS on site options for the Upgrading of the Boston Metropolitan Area Sewerage System to supplement the DEIS issued in 1978.

- Continuation by the MDC of facilities planning development and prosecution of design for Deer Island and Nut Island facilities, relief sewers, pump stations and interceptors and CSO facilities.
- Submission of legislation to the State Legislature by the Governor of the Commonwealth of Massachusetts creating a Metropolitan Water Resources Authority having the responsibility of providing water supply services and sewage collection treatment and disposal services to the cities and towns now served by the MDC.
- Other Studies by the Department of Environmental Quality Engineering (DEQE) and the MDC address:
 - The feasibility of reducing the amount of infiltration inflow into the MDC's sewer systems.
 - Development of incentives to encourage MDC member communities to reduce their flows to the treatment systems.
 - Staffing and financial structures to determine the MDC's ability to operate and manage the wastewater collection and treatment systems.
 - Existing and needed rate structures for adequately financing the construction, operation, maintenance and future replacement of the MDC's wastewater collection and treatment systems.
- Based on planning and design accomplished to date, the approximate costs for the major components of the harbor cleanup are:

Primary/Ocean Discharge	\$660M
Secondary/Harbor Discharge	\$760M.
Sludge Management/Primary	\$ 67M.
Sludge Management/Secondary	\$107M.
CSO Corrections	\$111M.
Interceptors, I/I, Separations	\$577M.

- EPA has awarded \$169 million in construction grants to the MDC for planning, design and construction of facilities which directly and indirectly relate to Boston Harbor.

b. Recommended Regional Actions

- Schedule public hearings in November 1984 on the SNEIS with final decisions made in March 1985. This action will result in EPA identifying sites for the MDC's wastewater treatment facilities which will have the least adverse environmental impact.
- Evaluate the MDC's resubmitted 301(h) waiver application with a final decision made in March 1985. This decision will determine the level of treatment required for the MDC's wastewater facility.

- Require implementation by the MDC of interim sludge disposal approaches to terminate the existing sludge discharge to Boston Harbor. This action would eliminate a source of pollution to the harbor and result in improved water quality.
- Require implementation by the MDC of a permanent long-range solution to the disposal of sludge generated by the MDC's wastewater treatment facility.
- Preparation of the sludge management EIS in cooperation with the MDC and concurrently with prosecution of the compost marketability study and preparation of the facilities plan for sludge management facilities.
- Develop a revised legally enforceable schedule reflecting final EIS and 301(h) decisions as well as actions necessary for the ultimate elimination of pollution from Boston Harbor.
- Continue to track MDC progress and communicate problems on a regular basis to senior management to assure compliance with established schedules.
- Continue the timely processing of required EPA actions related to the award of construction grants, and other Clean Water Act requirements, for Boston Harbor related projects.

c. Barriers to Overcome

- State construction grant allotment inadequate to cover MDC needs in a timely fashion.
- Lack of EPA policy on ocean dumping of sludge.
- MDC track record in operation and maintenance is weak.
- The public and many elected officials are unwilling to accept any impacts associated with potential projects.
- Resolution of CSO correction jurisdiction and responsibility between MDC and member communities.

IV. HEADQUARTERS ACTIONS NEEDED

- Issue agency policy on ocean dumping of sludge. (OW)
- Issue guidance on acceptable interim sludge disposal methods pending final decisions on ocean dumping. This issue is critical to implementing an interim sludge disposal plan for Boston Harbor. (OW)
- Issue agency guidelines and state program and technical regulations for the management and disposal of sludges generated at wastewater treatment facilities. (OW)

- Expedite any needed concurrences on EPA's final decisions relative to the MDC's 301(h) waiver reapplication. (Ov)
- Pursue regulatory reforms to address "big city" funding problems through the use of set aside or carryover accounts. (Ov)

Issue Coordinator: Alfred Peloquin (223-3909) Water Management Division

TOXICS

Region I
Issue #3

I. Problem Statement

Toxic Substances - The most difficult problem facing EPA and the states today involves toxic pollutants in air, land or water. Toxics includes a wide range of substances that may cause health effects ranging from cancer to birth defects to nervous system disorders. Toxics can include common building materials such as asbestos, volatile solvents used for cleaning, waste materials dumped into landfills and industrial discharges pumped into rivers.

Specific problems include: 1) addressing air toxics emissions, 2) reducing toxic industrial discharges, 3) protecting underground sources of drinking water from toxic contamination from controlled and uncontrolled solid and hazardous waste disposal sites, 4) identifying the risks of toxic substances prior to their marketing and abating risks of currently "in use" substances such as those found in industrial or consumer products, 5) addressing intermedia contamination problems and 6) assessing and responding to intermedia impacts from toxics on human health.

II. Problem Assessments

Air - Few toxic pollutants are currently regulated by EPA. State agencies in New England are developing guidelines for controlling hundreds of air toxics. Currently, state programs address only six criteria pollutants for which federally promulgated standards exist. Compounds that states intend to regulate include heavy metals and organic compounds which may be emitted from large industrial sources or small sources such as dry cleaners or degreasers. The need to address public concern has been a major factor in state agencies' decision to develop air toxics control programs. States need assistance in identifying and controlling sources of air toxics.

Water - Toxic substances, primarily metals, have been discharged to New England waters since the early days of the Industrial Revolution. Treatment processes have been developed to remove these chemicals, but even industrial and municipal effluents treated to BAT levels can cause toxicity problems in the waters where they are discharged. This is particularly true throughout the New England states where plants have historically located on small streams with very little capacity for diluting the wastes they receive. The effects of these toxic discharges can be seen in the reduced quality of downstream biological communities and elevated levels of specific chemicals at potential drinking water intakes. Region I has instituted a review of all NPDES permits to ensure that water quality standards in the receiving waters will not be violated. The goal of the policy is to increase the number of river miles which meet water quality standards.

Drinking Water - The problem of toxic pollutants contaminating drinking water sources, particularly ground water, is an existing and continuing threat throughout New England. Because of the geological configuration, ground water in New England lies close to the surface, thus making it more susceptible to impacts from disposal practices, landfills, land applications and discharges.

By examining the documented contamination incidents, we find the majority of the affected areas are located in less densely populated areas (less than 500 people per square mile). Many times the severity of the contamination is difficult to quantify because of two major reasons: one being the fact that the contamination problem often occurs in private systems which are unregulated and secondly, even if the system was protected by statutes, there is insufficient scientific data and knowledge to substantiate the assessment.

Since it is difficult to assess the health implications of exposure to low levels of contaminants, there exists a high level of public concern. Another fact in heightening the level of public concern is that often the contaminants are suspected carcinogens such as industrial solvents, e.g. tetrachloroethylene, dichloroethylene, and trichloroethylene.

Intermedia Toxics - Although the range of potentially toxic substances is quite broad, regulation of toxics as a whole involves some common problems and uncertainties. Data needed to make good regulatory decisions is often incomplete or missing. Testing has been done for only a small percentage of the estimated 60,000 chemicals in the market place. Most tests are based on animal studies using high doses, and extrapolation to humans exposed to low doses is quite complex. Exposure assessments to determine the scope of the affected population can be expensive and time consuming. Vital statistics that measure morbidity and mortality and which could be used to do epidemiological studies are often incomplete or missing. All of these problems and more are common in attempts to understand and manage human exposure to toxic pollutants.

The Toxic Substance Control Act (TSCA) enacted in October of 1976 gave EPA broad powers to control the manufacture and use of toxic substances. Currently only polychlorinated biphenyls (PCBs) and chlorofluorocarbons (CFC's) are comprehensively controlled. Asbestos reporting requirements have been imposed for schools. These are, of course just a few of the many toxic substances that have found their way into the environment through normal use. More controls are necessary. One of the major problems in developing regulations to control the manufacture and use of toxic substances is the availability of data to perform risk/benefit analyses.

Intermedia problems are by their nature difficult to deal with. For example, industrial dump sites may be releasing toxics and odors to the ambient air; toxics may also be leaching to groundwater and contaminating drinking water supplies. Air stripping to remove toxic organic chemicals from polluted water may be a source of ambient air toxic contamination. All program offices need to be aware of practices, regulations or clean-up measures that may be transferring a toxic problem from one media to another.

In addition, EPA's current organization makes a thorough understanding and coordinated response to toxics difficult. Total human exposure to a toxic pollutant is rarely considered. Statutes, regulations, organization,

and grants were established to respond to problems in isolation from each other. Risk assessment and management have emerged as tools that could be used to create more consistent programs, but they have not been used to a great extent. Dealing with these uncertainties and cutting across these boundaries to create a consistent and effective regulatory program is a major challenge facing EPA.

III. Regional Agenda

a) Past Responses

Air:

- ° Participated in air toxics advisory committees in Massachusetts and Connecticut (ongoing)
- ° Sponsored a workshop on air toxics emissions inventories
- ° Conducted ambient monitoring at states' request

Water:

- ° Reviewed NPDES permits for preservation of water quality standards in receiving waters (ongoing)
- ° Developed acute toxicity testing policy for review of NPDES permits. States participated in policy development through New England Interstate Water Pollution Control Commission (1983)

Drinking Water:

- ° Maintained close communication with the Waste Management Division by establishing a memorandum of understanding to address overlapping activities (ongoing)
- ° Coordinated with state counterparts to establish a similar memorandum of understanding
- ° Provided health assessments and advisories

Intermedia:

- ° Established a regional toxics coordinating committee to act as a clearinghouse for multimedia issues, to coordinate division activities and to provide a forum for identifying overlaps and resolving inconsistencies
- ° Encouraged development of an integrated environmental management program in Rhode Island

b) Recommended Regional Actions

Air:

- ° Provide support for state air toxics programs through risk assessment workshops, and air toxics monitoring support.

- Increase ability to respond to air toxics health effects question.

Water:

- Develop a program to attack problem of sediment contamination and subsequent leaching to the water column.
- Develop chronic toxicity testing
- Assess practical effectiveness of toxicity policies
- Determine effect of toxicity policy on affected streams through work of the states on field validation Drinking Water:
- Provide contaminated source treatment technical assistance
- Provide technical assistance for State Health Advisory Programs
- Provide technical and resource support to states in gathering information on toxic substances
- Provide technical assistance to Superfund Endangerment Assessments

Intermedia:

- Strengthen the Regional Toxics Coordinating Committee with a more formal structure and mandate from the Regional Administrator and Deputy Regional Administrator
- Expand toxics integration and coordination efforts with state and interstate agencies
- Develop a regional policy on risk assessment and risk management
- Give greater consideration to use of an intermedia environmental management approach in certain areas.

c) Barriers to Overcome

- Lack of resources, standards/guidelines and general data continue to hinder resolution of toxics problems
- Lack of incentives for regional managers to consider intermedia impacts and risk
- Current resistance among divisions to coordinate where intermedia effects exist

IV Headquarters Actions Needed

Air:

- Provide Regions and states with information on risk assessment methodology and risk management (OARIS)

- Expand air toxics emissions factors program (OAQPS)
- Expand toxics monitoring program
- Provide guidance on reducing toxic emissions, including dioxin, from municipal resource recovery facilities (OAQPS)

Water:

- Develop further criteria for water toxics (Criteria and Standards Division)
- Develop sediment criteria (Criteria and Standards Division)
- Develop standards for NPDES permit process to ensure consistent procedure to draft acute and chronic effluent limits (OWEP, OWS)
- Develop guidelines for relationship between the amount of toxicity which will still allow streams to meet a lower classification (OWEP, OWS)

Drinking Water:

- Provide resources for regional toxicologists to evaluate toxic related health effects in every medium. Provide guidance on evaluating health effects of monitored ambient levels
- Direct and/or sponsor research on the health effects of commonly detected organics and their possible synergistic effects (ODW, ORD)
- Develop federal regulations and/or guidance to control or eliminate organic contamination in drinking water (ODW; Criteria and Standards)
- Develop health advisories for dermal exposure to organic compounds in drinking water used for bathing (ODW; Health Advisory Program)

Intermedia:

- Strengthen program coordination in Headquarters
- Incorporate intermedia coordination in workload models and operating guidance
- Develop a uniform approach to assessing multimedia problems (ORD)
- Develop controls on the manufacture and use of toxic substances via TSCA Section 6 authority (OTS)

Issue Coordinator: Margaret McDonough, Air Management Division
(223-4870)

LONG RANGE TRANSPORT - ACID RAIN

I. Problem Title

"Acid Rain" is a term used widely throughout New England to describe a set of environmental problems of concern to the scientific community and the public. Acidic deposition is contributing to aquatic and forest changes throughout in New England. Although the Northeast is the most severely affected area, the problem is national due to its long range transport aspects, which are not addressed effectively under the state-specific, ambient standards framework of the existing Clean Air Act.

II. Problem Assessment

A. Scope, Impacts, and Public Concern

"Acid Rain" is a household word throughout New England, and evidence is growing that the wet and dry deposition of acidic materials is damaging the region's environment. Some lakes and streams are reaching pH (acidity) levels that cannot support freshwater ecologies. Many aquatic ecosystems are being threatened, especially in our three northern states, because much of our geology cannot effectively neutralize the acidity of deposited sulfur and nitrogen oxides (SO_x , NO_x). Other damage has been monitored in our forests, particularly at the higher elevations where airborne pollution becomes acidic in clouds. EPA, the environmental community, and the public are worried because the relatively large changes in these normally stable environments may be extremely difficult to reverse.

Although the small, airborne particles of acidic precursors can directly impair visibility, most effects become apparent only after these materials have combined with water to become sulfuric and nitric acids. Increased water acidity is known to cause material deterioration, such as rock weathering or materials damage. It also increases the ability of groundwater to leach metals and other chemicals from soils.

Under the Clean Air Act, each state develops its own implementation plan (SIP) to meet the national ambient air quality standards for NO_x and SO_2 set by EPA. For the most part, these SIP's have been adequate to meet the ambient standards, but they do not directly limit the tons of acid precursors emitted. In fact, the tall smokestacks erected to solve local ambient problems have exacerbated the problem. Also, the problem does not stop at state or national borders. Some agencies have suggested setting tighter ambient standards, but many of the control proposals attempt to limit or reduce the quantity of SO_x emissions directly. The Commonwealth of Massachusetts is currently developing legislation to enact an acid rain program.

B. Sources

A review of the air emission inventories (from the National Emissions Data System) shows that utilities and industries contribute nearly 88% of the SO_x emissions in New England. Of our six states, only Vermont can attribute more than one third of its emissions to other miscellaneous sources. In

Massachusetts and Connecticut, electric power stations account for more than half the SO_x inventory; area sources (principally cars) account for more than half of the NO_x inventory in every state.

Upwind states also contribute to acidic deposition. In 1981, New England sources emitted less than 3% of the U.S. SO_x and NO_x inventories (665,000 and 596,000 tons respectively). New York State's SO_x emissions (1,035,000 tons) are greater than the emissions from all New England sources. The annual SO_x inventories of several, individual, midwestern states are ten times greater than the New England state inventories. Baldwinville Station in Illinois emitted over 250,000 tons of SO_x in 1981, as did the four other electric generation stations in Ohio, Indiana, and Illinois which rank in the top five. In Indiana, coal-burning electric power stations contribute more than 80% of the SO₂ emissions, 1.49 million tons out of a total of 1.84 million tons.

(see attached charts)

C. Expected Environmental Results

If and when an acid rain control plan is implemented, sulfate and possibly nitrate deposition will decrease, and this should enable our ecosystems to stop acidifying and hopefully return to their natural state. The recreational and commercial activities that depend on our forests and lakes, such as fisheries, will no longer be in as much jeopardy. Acid rain controls would also help solve other environmental problems such as visibility impairment and ambient levels of fine particulates.

III. Regional Agenda

Because EPA does not believe that we know enough about acid rain to propose controls at this time, major research projects, like the National Acid Precipitation Assessment Program (NAPAP), are studying the effects and mechanisms of acid deposition. The Region participates in a national task force that is studying the implementation issues which would arise under an acid rain control program. Through the SEA's and NESCAUM, we are working with states in the region to characterize the problem, and coordinate the exchange of information, and encourage regional strategies.

a. Past Responses

Research

- Lake Survey -- Because we do not know the extent of the damage to our aquatic resources from acid deposition, EPA is sampling 2500 lakes nationwide as one of the NAPAP projects. Some 500 of these are located in New England. The pilot program for our lakes was completed in June.
- Forest Research -- Researchers have discovered that forest dieback is occurring in the upper elevation mountain forests of New England and other parts of the U.S. Because these forests are often cloud-covered, environmental acidity levels are high. However, the effects of acid rain on forests are difficult to isolate because of other damage factors, e.g. drought, disease, ozone, heavy metals such as lead.

- Response Rate to Acidic Deposition -Lakes and their watersheds are interconnected through complex physical and biological systems. It may not be the total acidic deposition that acidifies a particular lake but an increase in the rate of deposition. If this direct response mechanism is accurate, we may have some time before additional irreparable harm will be done. On the other hand, if watersheds contain a limited amount of neutralizing capacity (buffering) and historical acidic deposition has depleted some of that capacity, a delayed acidification response could be triggered by continued deposition at the same or even lower rates. Some of the NRPAC laboratory and field studies are trying to answer this question.

Task Force

- The Region participates in the national task force that is investigating the implementation issues associated with an air pollution control program that would track tons of SO₂ reduced.
- EPA's Task Force has prepared an outline and statement of critical program issues that will be discussed with state agencies and the public shortly.
- The outline and report of this Task Force planning work is being used to set priorities for further efforts.
- Region I also participates in the local Acid Rain Task Force sponsored by NESCAUM and NEIWPCC, the Northeast air and water directors groups. We report on research findings and compliance activities.

b. Recommended Actions

- Continue to follow and report on the lake survey. Final Phase One sampling will be conducted in October. A second phase of the lake survey will sample streams, soil, fish life, and other biota. The results of this project will provide a basis for long term acid rain monitoring stations.
- Continue to participate in studies to establish a dry deposition monitoring technique.
- Continue to participate on local and national task forces. Encourage our regional groups to propose control strategy development studies that can be funded by a new Congressional appropriation (\$2.6m) for this purpose. Work on emission data bases and control strategies can begin almost immediately.

c. Barriers to Overcome

- Resources
- Interstate differences in programs, politics, emissions and impacts.

- Uncertainty about damage causes and mechanisms. Also, there are few standard measurement techniques or quality assurance procedures for monitoring acidic deposition or its impacts.

IV. Headquarters Actions Needed

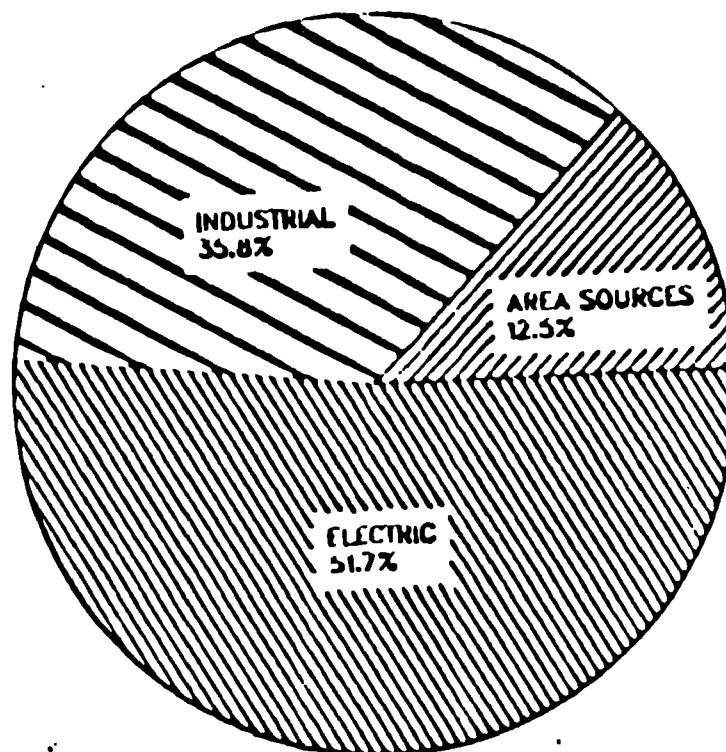
- Continue full support of NRPAP projects, ensuring that adequate resources are committed to long-term research projects and environmental monitoring. The OAD acid rain budget must be fully funded and monitored.
- A monitoring methodology for dry deposition must be developed. Other research results must be used to develop control plans.
- EPA must use our regulatory review and approval experience to guide program planning. Headquarters must assure efficient coordination of acid-rain issues. The Office of Air and Radiation must continue to analyze issues and control options.
- EPA should take immediate steps to improve the procedures for developing emission data bases and for approving them.
- EPA should provide a forum for discussion of strategies and research findings by different government and industry groups.
- EPA should also encourage regional strategies and innovative institutions that could implement control plans on a regional or national basis.
- OAR must make state support and regional implementation assistance available.
- EPA should recommend and implement an acid rain control program as soon as possible.

Issue Coordinator: Sarah Simon, Air Management Division
(223-4561)

SJS027 Sarah Simon 2313 3-5633

NEW ENGLAND SO₂ INVENTORY

665,000 TONS



Prepared by Sarah Simon on 08/26/84

SO2 EMISSIONS

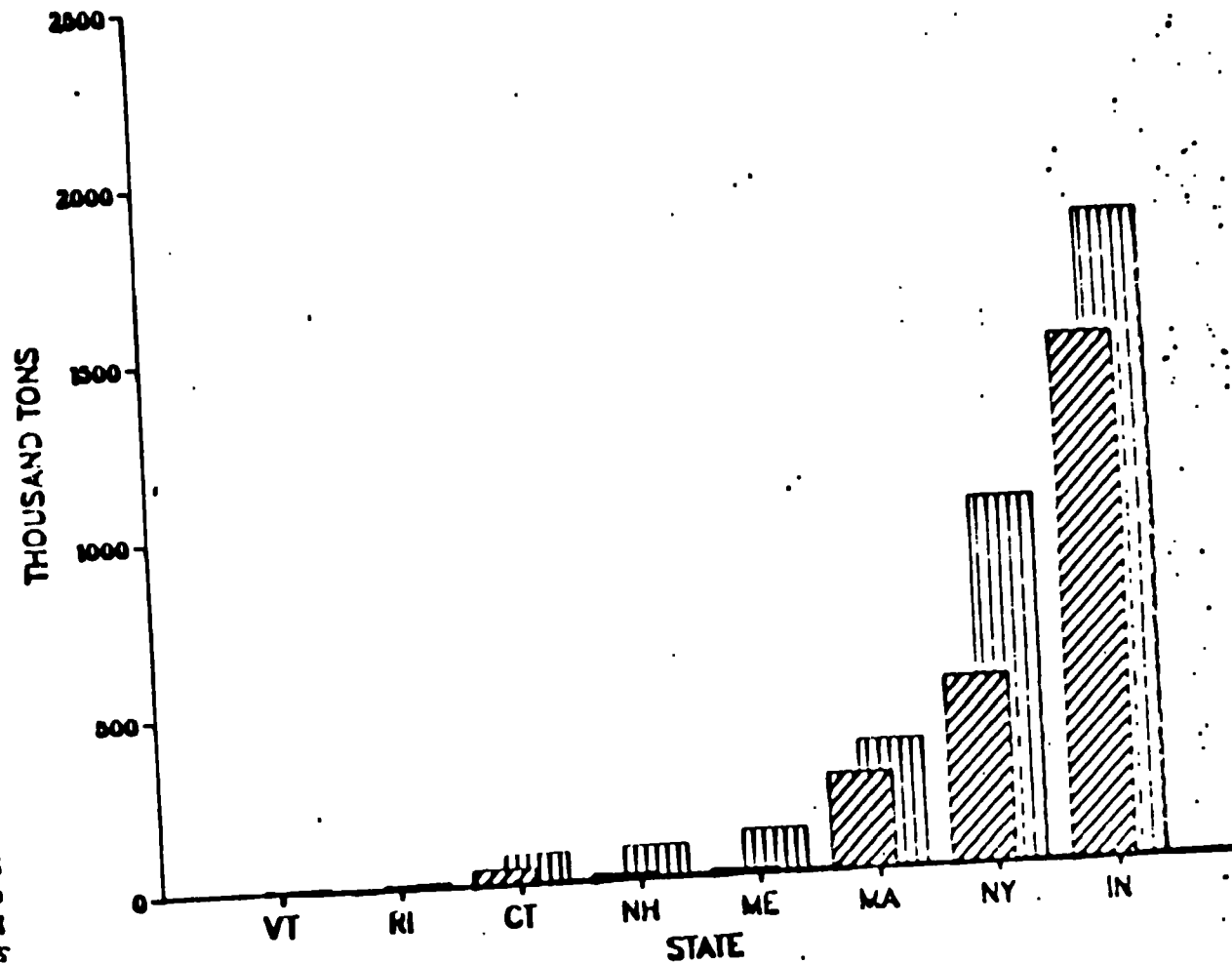


Fig. 10-10 SO2 emissions by state

LONG RANGE TRANSPORT - OZONE IN NEW ENGLAND

I. Problem Statement

Attainment of the one hour ozone standard (.12ppm) continues to be one of the major environmental problems here in New England. In Connecticut, where the problem is most severe, there were 46 days in 1983 when the ozone standard was exceeded and levels were recorded as high as .246 ppm. Ozone is formed when volatile organic compounds (VOC) and nitrogen oxides (NO_x) chemically react in the presence of sunlight. The reaction time varies, but usually it is on the order of 3 to 6 hours, and the peak ozone levels occur anywhere from 60 to 600 miles from where the VOC and NO_x originated. This transport phenomena means that emissions from the Washington/Philadelphia/New York corridor contribute, along with local emissions, to ozone formation in New England. As a result, New England has the second most severe ozone episodes in the nation.

II. Problem assessment

The ozone standard is being violated essentially everywhere in the three southern states of Connecticut, Massachusetts and Rhode Island. It is also being violated in southern New Hampshire and southern Maine. Using data supplied by the American Lung Association, EPA estimates there are over 1.95 million people in these areas that are "at risk" when there is an episode. The "at risk" group includes:

- infants less than 2 years old
- people with emphysema, bronchitis or asthma
- people over age 65

The effects of ozone on humans are well documented. Some of the adverse health symptoms associated with ozone are: shortness of breath, coughing, choking, burning eyes, and reduced resistance to infection. Even in healthy adults, high levels of ozone make exercise difficult and sometimes impossible. Ozone is also responsible for reduced growth in some vegetation, including crops, and cracking in rubber products.

Most of the "at risk" population is aware when there is an ozone problem. The newspapers, radio and TV all report when levels are expected to be above the standard and warn the "at risk" group to stay indoors and do minimal exercise. During these high ozone periods, the frequency of hospital emergency visits for respiratory problems usually increases.

EPA has chosen to control ozone by focusing its attention on reducing VOC emissions. VOC emissions are about equally split between industrial sources and mobile sources (principally cars). The industrial sources include the gasoline marketing industry (from bulk terminals to gasoline stations), coating facilities (paper, fabric, metal, can, coil), chemical manufacturers, and users of degreasers and other solvents. EPA has worked with the states to develop controls for over 25 categories of industrial sources. Additionally, other sources which emit over 100 tons per year are required to reduce emissions through the addition of control equipment or conversion to less polluting processes.

Mobile sources are also being controlled. The Federal Motor Vehicle Emission Control Program has resulted in significant reductions in VOC from new cars; while the Inspection and Maintenance programs in Connecticut, Massachusetts and Rhode Island are designed to help insure that vehicle emission controls are maintained in good working order.

However, there have been problems getting sources to comply with existing regulations, and there are people who are tampering with their automobile emission control devices. For example, just two tank fulls of leaded gasoline will poison the catalyst in the catalytic converter and make it ineffective.

Region I is in the process of transferring responsibility for the VOC program from the planning stage to the implementation and enforcement stage. Once EPA has established a strong compliance program with the New England states, we expect to see the VOC emission levels reduced to the levels projected in the attainment plans, and we expect ozone levels to drop below the standard. However, that goal is still several years away.

III. Regional Agenda

- States have developed plans (SIPs) to attain reduce VOC emissions
- EPA has worked with states to develop SIPs and to approve SIPs
- Region has initiated a Task Force to identify and resolve problems related to implementation of the Stationary source control strategies in SIPs.

The Task Force is developing an enforcement strategy - the next step is to discuss possible strategies with the State Air Directors.

- It will be several years before all sources must be in compliance. However, there are over 50% of the sources which should be in compliance now, and we hope to work with states to determine compliance. We are planning a series of workshops over the next year to train the inspectors on particular source category compliance inspection techniques.
- The I/M programs in Connecticut and Massachusetts are also an integral part of the VOC reduction strategy and we are working with these states to assess their programs.

IV. Headquarters Actions

- Since ozone is a regional air pollution problem rather than a source-specific problem, we have requested that headquarters continue to fund the Northeast Corridor Regional Modeling Project (NECRMP) which was designed to assess how the emissions from the entire East Coast are interacting. Unfortunately, headquarters has informed us they will not provide this support.
- The technical issues involved in determining compliance for each industrial source are complex and headquarters needs to continue to provide technical assistance in these determinations.

Issue Coordinator: John Hanisch, Air Management Division
(223-5130)

NEW BEDFORD HARBOR

Introduction

Implementation of the Superfund Program will be a major environmental issue in FY86 and following years from technical, environmental and legal points of view. Implementation of the program at the many eligible sites in Region I will be an extraordinarily complex undertaking, involving not only the Superfund Program but also impacting decisions and actions undertaken by a number of other EPA media programs.

Such issues as CERCLA compliance with other environmental statutes, especially RCRA and implementation of the National Ground-water Strategy will require much more intensive multiprogram involvement than in the past. EPA needs to develop the inter-program relationships to assure CERCLA decisions reflect the view of our expertise in drinking water, air pollution and grants administration. Further, sites such as New Bedford Harbor which discharges to and impacts Buzzards Bay, may become directly involved in general interest problems (e.g. the Congressionally mandated Bay study).

Of particular concern will be those sites at which EPA studies will be concluding and decisions will be made on the extent of remedy during FY86. In Region I we expect to be addressing 25 sites during that period. The following sites are expected to be those for which decisions on extensive remedy will be made during 1986:

Ct: Beacon Heights	Mass: Charles George (final)	Me: O'Connor
Kellog-Deering	Iron Horse Park	Saco
Yaworski	New Bedford (final)	
Laurel Park	Wells G & H	NH: Dover
Old Southington	Cannon - Bridgewater	Somersworth
	Cannon - Plymouth	Kearsarge
RI: Davis	Silresim	S. Municipal
Stamina Mills		Tinkham
Western Sand (final)	Vt: Springfield	Savage
		Keefe

There will continue to be a high level of public concern about the problems at Superfund sites and continued activity by citizen's groups designed to both stimulate and encourage increased Agency activity in the clean-up and to provide public comments on proposed clean-ups to the Agency. In addition, implementation of the expected reauthorization and great expansion of the Superfund Program will be coming into focus in FY86.

The more detailed description which follows of New Bedford Harbor, possibly one of the most complicated Superfund sites in the country, illustrates the complexities and issues involved, and is presented to illustrate the types of problems that can be expected to occur at a number of other sites by the time 1986 arrives.

I. Problem Statement

New Bedford Harbor and the surrounding environment is extensively contaminated with PCBs. Technically and environmentally the New Bedford situation is extraordinarily complex. Multi-media contamination and exposure pathways include: ambient air; surface and groundwaters; soils; sediments; food chain; and industrial plant sites. New Bedford is a National Priority List (NPL) site for Superfund action.

There is a high level of public concern with the problem, manifested by the establishment of several citizen groups created to focus public comments to the Agency. There is consistently high attendance at public meetings and the agency has received a large number of comments from the public on proposed planning activities.

II. Problem Assessment

Background: Polychlorinated biphenyls (PCBs) were used by two electrical capacitor manufacturers, the Aerovox Company and Cornell-Dubilier Incorporated, in New Bedford, Massachusetts over a period of time spanning several decades up until the late 1970's. As a result of poor disposal practices, PCB contamination in the New Bedford area is widespread.

Upland sites of contamination include Sullivan's Ledge and the New Bedford Municipal Landfill, which received approximately 500,000 pounds of PCBs, mainly as reject capacitors. PCBs were also directly discharged by the companies to surface waters resulting in high concentrations of PCBs in sediments. Sediment concentrations in the Aerovox mudflats range from 500 ppm to over 1000 ppm, with a reported maximum value of 190,000 ppm.

Historically, the New Bedford Wastewater Treatment Facility received PCB contaminated waste from the companies via their wastewater discharges to the plant. Currently, an estimated 200 to 700 pounds per year of PCBs are being discharged from the Clark's point outfall because of residual contamination in the sewer lines. An unknown additional amount is contributed from 27 combined sewer overflows which discharge to the Acushnet River and Buzzards Bay.

As a result of direct and indirect discharges of PCBs into the estuary, elevated levels of PCBs in fish tissue have been reported. This led to a fishing ban being imposed on over 18,000 acres of the harbor. The Food and Drug Administration (FDA) has set a maximum limit of 5 ppm in fish for human consumption. Migratory fish taken from the area have levels as high as 16 ppm and bottom feeding fish, excluding eels, up to 57 ppm. Lobster samples have been reported as high as 51 ppm in the inner harbor. The closing of large areas of commercial fisheries has had an adverse impact on the local fishing industry. Other adverse impacts include delaying proposed harbor development projects, delaying planned maintenance and developmental dredging projects, loss of recreational potential of the harbor, and possible public health and welfare effects. There is also concern for the presence of heavy metal contaminants in the New Bedford area. Although little is

currently known about their occurrence and distribution, the history of heavy metals in the area parallels that of PCBs and will, therefore, be included in future Superfund Investigations.

Past Responses:

- Negotiated a Consent Agreement with Cornell-Dubilier Electric (CDE) to take remedial actions at their facility. CDE has completed the major tasks outlined in the Agreement.
- Negotiated a Consent Order with Aerovox Incorporated to characterize their site, submit a plan for on-site remedial actions, and implement the plan. Aerovox has completed the onsite remedial activities.
- Conducted a comprehensive multi-media field investigation in the New Bedford area to more clearly delineate the problem areas.
- Issued an Administrative Order to CDE to clean out contaminated sewer lines in the vicinity of their facilities.
- Issued an Administrative Order to the City of New Bedford to provide technical assistance to CDE during the sewerline project for monitoring of the effluent and sludge from the sewage plant for PCBs.

Expected Environmental Results:

A successful resolution of the problems in the New Bedford area will have many positive effects on the area including:

- Protecting the health and welfare of the public.
- The return of commercial fishing to some of the PCB impacted areas.
- Commencing previously proposed maintenance and developmental dredging projects.
- Restoration of the recreational potential of the harbor.
- Protecting the environment of the New Bedford Harbor/Buzzards Bay system.

III Regional Agenda/Actions

- Finalized the RAIP in August, 1984.
- Completed draft feasibility study for the Acushnet River Estuary Hot Spot; released for public review in August, 1984.
- Filed suit in Federal District Court against Potentially Responsible Parties.
- Continue aggressive ongoing Community Relations Program that has solicited input from the public and also informed them on present and proposed activities. Initiated bilingual monthly fact sheet.

- Continue operation and development of data management system developed for New Bedford Harbor.
- Massachusetts Department of Environmental Quality Engineering (MA DEQE) will continue to coordinate the actions of other state agencies involved in the New Bedford cleanup.
- MA DEQE will play a specific role in the selection of remedial alternatives.
- Under the Superfund statute it is the states' responsibility to provide the Agency with off-site disposal areas. The Agency is working closely with the state to investigate potential off-site disposal areas. However, to date no specific disposal sites have been selected.

Barriers to Overcome:

- There could be significant political and community relations problems in selecting disposal sites for highly contaminated dredge spoils, should dredging become a selected remedial alternative. The MA DEQE has informally indicated that there are no acceptable upland disposal sites. The community has expressed concern over the potential impact of this problem.
- Cost estimates for remedial actions for cleanup of Hot Spot areas of the Harbor range from \$25 - 80 million. Estimates for the remainder of the Harbor will likely be at least as high.
- The problems of environmental complexity, timing, and to some extent funding have been overcome by dividing the area into specific sub-sites which can be independently managed. Each sub-site has milestones for remedial investigations, feasibility studies, implementation and funding allocation requests. While completion of all remedial actions taken under this strategy will take several years, the agency will be able to demonstrate steady progress towards an overall "cleanup" of the area.
- Although EPA has taken the position that CERCLA actions do not require EPA environmental permits or EIS's, New Bedford Harbor actions could be deemed by the State or by other Federal agencies as subject to certain permit actions and/or EIS reviews under those permit programs. Such determinations could impact the timing as well as the ultimate acceptance of the selected remedial action.
- The extensive involvement of other EPA program offices may present institutional barriers to rapid decision making, to the extent that those programs are asked to concur in CERCLA decisions.

IV Headquarters Actions Needed

Provide typical program support for this Superfund site. The Office of Waste Programs Enforcement coordinates enforcement activities, and the Office of Emergency and Remedial Response provides program guidance and technical support.

Region I will submit to Headquarters the proposed Record of Decision after finalization of the feasibility study for the Acushnet River Estuary Hot Spot. The Region requests a reasonable turnaround time from Headquarters for a response or decision on the proposed Record of Decision.

Issue Coordinator: Gerard Sotolongo (223-1951), Waste Management Division

HAZARDOUS WASTE PERMITTING AND COMPLIANCE

A. Hazardous Waste Management Facility Permitting

IA. Problem Statement

Beginning in FY-82 Region I and the states in a cooperative effort formally initiated calling hazardous waste facility Part "B" permit applications. During FY-83 and 84 the states and Region I worked together to review permit applications and point out deficiencies to applicants so that complete applications could be developed. Also during FY-83 and FY-84 Region I authorized all of the six New England States to make permit decisions in lieu of EPA while EPA provided technical support for the emerging state permit programs

IIA. Problem Assessment

- a. Background: The permit program was designed to first bring under regulation the most environmentally significant facilities in the Region (ie off-site commercial facilities, incinerators and land disposal facilities). Because of the complexity of the facilities; the necessary learning period for both the regulated community and the regulators and the time necessary for development of implementation guidance in the formative years of the program the issuance of permits has been a resource intensive and difficult task.
- b. Geographic Scope: The greatest concentration of major facilities are located in the more highly industrialized states of Connecticut, Massachusetts and Rhode Island. A high level of public concern is generated by permit development activities for commercial facilities, incinerators and landfills. Often the public's concerns are related to problems which cannot be directly addressed by EPA RCRA regulations such as location, traffic patterns, air emission standards and regulation of recycling or commercial processes.
- c. Major Impacts: Of primary concern to the Region and the state agencies is the abatement of or corrective action of ground water contamination thru the application of technical standards via the permit requirements. In this area of concern the lack of ground water monitoring data and poor quality of the data that has been generated has hampered our efforts to identify and solve problems.

IIIA. Regional Agenda

- a. Past Responses: The Region has made a major effort during FY-83 and FY-84 to tailor state requests for Part "B" applications for the land disposal facilities. The expected results of applying the RCRA regulations to existing land disposal operations is that those land disposal facilities which did not or do not operate hazardous waste land disposal as their principal business will close their land disposal facility in accordance with an approved closure plan under the direction of the state environmental agencies. The remaining land disposal facilities which will continue to operate can be regulated by applying technical standards through the permit process during the latter part of the decade.

Progress in RCRA permitting in Region I since the beginning of the program is shown in Table I.

IVA. Headquarters Action Needed

Headquarters must address in the near future the national ground water policy and strategy in concert with the national permit strategy and state ground water policies and strategies. Everyone agrees that more emphasis in control of ground water contamination is necessary through permitting disposal facilities. However, with the limited resources available, it is not clear that a resource intensive permit strategy will achieve the goals of effective ground water management.

Table I

Region I RCRA Permit Actions FY-82 thru FY-84

	<u>Cumulative FY-82 and 83</u>		<u>Permit Actions</u>		
	<u>Called</u>	<u>Received</u>	<u>Draft</u>	<u>Issued</u>	<u>Withdrawn Closed</u>
S&T	69	33	1	0	32
Inc	7	4	0	0	1
Disposal	19	6	0	0	1

	<u>Only FY-84</u>		<u>Permit Actions</u>		
	<u>Called</u>	<u>Received</u>	<u>Draft</u>	<u>Issued</u>	<u>Withdrawn Closed</u>
S&T	15	6	6	1	5
Inc	0	0	0	0	0
Disposal	2	0	4	0	4

	<u>Cumulative Thru 7/1/84</u>		<u>Permit Actions</u>		
	<u>Called</u>	<u>Received</u>	<u>Draft</u>	<u>Issued</u>	<u>Withdrawn Closed</u>
S&T	84	39	7	1	37
Inc	7	4	0	0	1
Disposal	21	6	4	0	5

B. Hazardous Waste Compliance Monitoring and Enforcement

IB. Problem Statement

During FY-84 Region I continued its RCRA Subtitle C compliance and enforcement efforts while at the same time implementing an enhanced state enforcement oversight program. This latter initiative is intended to better define the Federal/State enforcement relationship under RCRA by establishing acceptable levels of enforcement response for certain types of violations, the result being a consistent and aggressive state enforcement and EPA program regionwide. The following statistics reflect EPA's enforcement efforts for FY-84 (as of July 31, 1984):

• Inspections conducted	148
• §3006 Complaints issued	14
• §3008 Final Orders issued	13
• §3008 Penalties assessed	\$223,127
• §3008 Penalties collected	\$ 44,820

The level of state inspection and enforcement activity has steadily increased since the November 1980 effective date of RCRA as a result of their assuming the compliance monitoring and enforcement lead after receiving Phase I authorization from EPA. The following are regionwide state enforcement statistics for FY-84 (as of July 31, 1984):

• Inspections conducted	1,030
• Enforcement actions initiated	272

In the area of state oversight, Region I developed an enforcement response policy which establishes the appropriate action for various classes of violations, and sets out those enforcement time frames necessary for such actions to be considered timely. We have implemented this policy in all six New England States, and initial indications are that it has more than met its intent of swift, effective and consistent enforcement actions at both the state and federal levels. EPA Washington is in the process of developing a national RCRA enforcement response policy and will use the Region I approach as a basis for that effort.

IIB. Problem Assessment

- a. Background: Much progress has been made over the past few years in bringing industries into compliance with RCRA. State and EPA field surveillance activities have shown that the most serious violations, those with the greatest potential for environmental harm, have been corrected. Such situations are uncovered occasionally. However, planning and record keeping type violations are clearly the most prevalent. Over the next fiscal year, compliance and enforcement attention will focus on the ground water monitoring, financial, and closure/post closure requirements of RCRA. In doing so we will address what is considered to be the priority enforcement initiatives of the program. We will at the same time facilitate the permitting process via our ground water efforts and address the facility closures which will result as additional permit applications are called in.

IIIB. Regional Agenda

As has always been the case, a successful RCRA compliance program is a joint State/EPA effort. We expect that the result of our FY-85 initiatives will be consistent and aggressive State enforcement programs regionwide, increasing levels of compliance with RCRA's ground water monitoring and financial requirements, and environmentally sound clean-up actions at those facilities who choose to close rather than receive final operating permits. Although, as always, it will be necessary that we and our states exercise judicious use of our resources in order to meet these objectives, the one area where we may nevertheless fall short is that of analytical support for the ground water monitoring program. Sampling and analysis of well systems in place is not only costly but the RCRA work is in competition with other media for laboratory support which is insufficient to meet everyone's needs. It is important that this issue be resolved as soon as possible so that we can proceed in an expeditious and comprehensive manner. With most clear cut violations of RCRA previously addressed, what we have found to remain are those cases most difficult to prove and often requiring some amount of drum, soil and waste stream sampling. This will serve to further exacerbate an already strained laboratory resource.

IVB. Headquarters Actions Needed

Headquarters must address as quickly as possible the short fall in analytical resources to support the RCRA program. This is a problem for both EPA and the states and must be resolved if we are to adequately deal with the priority RCRA enforcement initiatives in FY-85.

Issue Coordinator : Richard Boynton, Waste Management Division (223-4445)

ASBESTOS AND PUBLIC HEALTH

I. Problem Statement

This issue focuses on two separate and distinct, although inter-related problems which are regulated under the authorities of two separate statutes, ie, CAA-NESHAP and TSCA. Heightened public awareness of the potential dangers associated with asbestos exposure, potentiated by school districts asbestos hazard abatement programs, is resulting in significantly increased numbers of asbestos related renovation operations.

There is sufficient evidence to support a conclusion that the majority of asbestos demolition and renovation operations are performed in violation of one or more provisions of NESHAP. The increased rate of renovation operations, which may be done improperly, significantly increase the risk of exposure to asbestos by workers, building occupants, and the general public.

II. Problem Assessment

a. Geographic scope - The problem of potential environmental contamination by asbestos, as a result of faulty work practices, is Region wide. The affected population varies but could range from several people to entire neighborhoods in any single situation.

b. Major impacts - Asbestos is a known human carcinogen. There is no known safe level of exposure. Contamination of the environment with a high potential for human exposure increases the risk of illness in the exposed population.

c. Level of concern - There is a relatively high public and news media concern over the dangers associated with asbestos exposure, as evidenced by media coverage of the subject and the number of asbestos-related inquiries made to the Regional Office.

d. Major sources - The most significant sources of environmental release of asbestos would be renovation and demolition of public and private buildings, and to a lesser extent from private dwellings.

e. Contaminant of concern - Asbestos.

f. Expected environmental results - Implementation of an aggressive enforcement program targeted to those who remove asbestos from buildings would be an increase in compliance with applicable regulations leading to the elimination of human and environmental exposure to this carcinogen.

III. Regional Agenda

A close working relationship of long standing has been developed between the asbestos programs under TSCA and NESHAP. Referrals of potential violators are routinely made between the two programs. However, in the past there has been a disproportionate enforcement response policy between the two. The TSCA regulations have been aggressively enforced since

promulgation of the applicable rules. NESHAP enforcement has been hindered by both a lack of adequate resources and an inability to initiate enforcement actions for violations of the work practice standards due to a Supreme Court decision which ruled that the CAA did not give EPA the authority to promulgate such standards.

An amendment to the CAA permitted the reprmulgation of the work practice standards on April 5, 1984. This action now permits the Agency to increase its enforcement effort. While additional resources have recently been allocated for NESHAP enforcement, more are needed to adequately address the situation. NESHAP - Asbestos enforcement resources need to be allocated separately from other NESHAP activities, and be increased significantly.

Effective enforcement of asbestos demolition/renovation operations is also complicated by the delegation of only portions of NESHAP authorities to most Region I states, and full delegation to only 1 or 2. The Region is actively working toward attaining a viable program in each state, and has now developed a comprehensive region-wide strategy under which EPA and the states will increase enforcement efforts.

The Air Management Division, in which both TSCA and NESHAP programs are located, is considering a coordinated program encompassing both activities under one office. Lack of adequate resources has been a deterrent to coordination, although cooperative efforts do continue. Additionally, the regional asbestos programs jointly conducted an asbestos demo/reno workshop for state inspectors. All states except Vermont attended the workshop. Increased state activity is anticipated.

A viable asbestos enforcement program, with demonstrable results, is possible. With adequate resources and continued cooperative and coordinated efforts, the presence of an EPA enforcement posture will put the regulated community on notice, and is certain to decrease the occurrence of poor work practice operations.

On an interagency level, significant progress toward reducing human exposure to asbestos during demo/reno operations was made this year through a Memorandum of Understanding between the regional offices of EPA and OSHA. The MOU sets forth a program of mutual exchange of information regarding asbestos demolition/renovation. EPA informs OSHA of all asbestos operations for which notices have been received under the requirements of the NESHAP regulations, and refers potential violations of OSHA regulations discovered during the course of an EPA investigation. Similarly, OSHA will, in the course of regular programmed and special emphasis inspections, ascertain whether a contractor has complied with the EPA requirements, and inform EPA if a violation is suspected.

In a non-regulatory activity, the Regional TSCA asbestos program provides technical assistance, literature, and training aids to building owners, state and local governments, and the public to enable them to safely and adequately deal with asbestos hazards.

IV. Headquarters Actions

Additional resources need to be allocated to the region by both the Office of Air, Noise and Radiation and the Office of Toxic Substances to allow an expansion of enforcement and technical assistance capabilities. Headquarters should evaluate the possible disproportionate occurrence of asbestos demo/reno operations between regions, as influenced by building size, number, types and age, and provide increased resources to regions having large number of asbestos operations performed regularly.

Throughout Region I, asbestos demolition/renovation operations far exceed the agency's ability to monitor. Resources are needed now, at a time when the potential for human exposure to asbestos is greatest.

Issue Coordinator: Paul Heffernan (223-0585), Air Management Division

I. Problem Statement

The major enforcement areas are to improve the compliance rate of municipalities with their NPDES permits and to implement a Regional Pretreatment Program. EPA developed a National Municipal Policy (NMP) which requires all municipalities comply with the Clean Water Act by constructing wastewater treatment plants in accordance with their NPDES permit by July 1, 1988 whether or not federal funds are available or to insure their constructed facility is in compliance with their NPDES discharge permit. The NMP also requests that each State develop a State Municipal Strategy that evaluates all municipal discharges; determines which constructed facilities cannot meet existing permits; which unconstructed facilities will not receive federal funds; and how the State will require unfunded communities to construct WWT without federal assistance. The National and Regional Pretreatment program has two major priorities the first is to have all necessary municipalities develop and implement approved pretreatment programs to insure that indirect industrial discharges pretreat their waste so as not to upset the municipal wastewater treatment, cause pass through of pollutants, or inhibit sludge disposal practices and secondly that all indirect industrial discharges as a minimum comply with Federal Categorical Effluent limits where appropriate.

II. Problem Assessment

The Municipal Compliance problem is a combination of two problems 1) that a number of constructed municipal WWT are not meeting their NPDES permit and 2) that a number of communities have not constructed the necessary treatment facilities in order to comply with the requirements of the Clean Water Act (CWA). The NMP set up a procedure to insure all municipalities come into compliance with the CWA by July 1, 1988. However, it specifically states that federal funds are not a prerequisite to compliance. Therefore, EPA and the New England States are requiring communities to develop Municipal Compliance Plans (MCP) to determine the type of treatment a community needs and the funding mechanism available in order to complete construction by July 1, 1988. The goal of the Region and States is to have all major facilities in the above category submit a MCP by October 1, 1985. The Region and/or States will then require the community to comply with the MCP through an enforcement action. The Region or State will work with communities to show them that they can afford to build a WWT without federal funds.

The Region and States will continue their enforcement effort to insure all constructed wastewater treatment plants comply with their NPDES permit. Any constructed facility that is not in compliance will be required through an enforcement action to set up a plan that addresses the reasons for noncompliance and places the facility on a expeditious schedule to take all steps necessary to insure long term compliance.

Through this extensive effort all major municipalities will be in compliance with the CWA. This will result in a marked improvement in the water quality throughout New England especially along the coast.

The pretreatment enforcement effort is also a combination of two efforts. The first is to insure all communities develop and implement programs. EPA and the States of Massachusetts, Maine, New Hampshire and Rhode Island designated 79 communities as needing to develop pretreatment programs in order to control the potential discharge of toxics from industrial contributors. The States of Connecticut and Vermont have developed pretreatment programs at the State level. The Region has approved approximately 1/2 of the 77 programs to date although all programs were to be submitted for approval by July 1, 1983. The other communities have either not submitted or submitted unapprovable programs. The Region has initiated a strong enforcement effort including administrative orders and press releases naming the communities in an effort to have all programs submitted by September 30, 1984.

The implementation of approved pretreatment programs will control the discharge of toxic into municipal sewers and the pass through into waterways. Each community will require the industries to properly pretreat their wastewater and dispose of the sludge in an approved manner. Each community must set up a program to inspect, monitor, and enforce both federal and local pretreatment standards against all indirect discharges.

The other part of the enforcement efforts is to insure that the Federal Categorical Standards requiring specific industries to meet national pretreatment standards by a certain date are fully complied with. An example of this is that the electroplaters were required to install treatment by April 28, 1984 and meet national standards. EPA has initiated a strong enforcement program to insure that these dates and standards are met and is taking appropriate enforcement action including civil penalties. The Region is developing a strong field inspection program to verify compliance throughout the Region. The Region has also begun auditing communities with approved programs to insure that they properly implement these programs.

III. Regional Agenda

- The Region has discussed with each State the NMF and each State has developed a State Municipal Strategy. The Region and/or State have prioritized those WWTW that will not receive federal funds and are requiring them to submit funding options and schedules to construct the necessary facilities by July 1, 1988.
- The Region and State will require all constructed WWTW that cannot meet the permit conditions to submit a composite correction Plan (CCP) that identifies the reasons for noncompliance and proposes a plan to insure the facility is returned to compliance.

- Continue to require communities to submit pretreatment programs as quickly as possible.
- Review and approve all pretreatment programs upon acceptability.
- Initiate enforcement action against recalcitrant municipalities
- Initiate field inspections on a systematic basis to insure industries comply with categorical standards
- Seek penalties for all non-complying industries to help make the regulated community aware of EPA aggressive enforcement efforts.

IV. Headquarters Action

- o Office of Water Enforcement and Permits should issue a National Pretreatment Compliance Strategy to insure a consistent National Program is adopted.
- o EPA Headquarters must review the National Municipal Policy if Federal funding for municipal wastewater construction is extended beyond 1985 and modify it appropriately.
- o EPA Office of Water Enforcement and Permits must increase Regional resources to fully implement an enforcement effort for pretreatment and municipal compliance.

Issue Coordinator Larry Brill (223 - 5330) - Water Management Division

MARINE WATER QUALITY

I. PROBLEM STATEMENT

Two major environmental issues impacting the New England Coast are estuarine water quality problems caused by industrial and domestic waste effluents, combined sewer overflows and non-point source runoff and ocean disposal of dredged material.

II. PROBLEM ASSESSMENT

IIA. ESTUARIES

- a. Background - The major pollutants effecting New England estuaries are coliform bacteria, heavy metals, nutrients and organic chemicals. The bacteria, nutrients and metals originate from nonpoint source runoff, wastewater treatment plants and combined sewer overflows.
- b. Geographic scope - Under a recent congressional action, four million dollars was appropriated for studies of four estuaries: Puget Sound, Long Island Sound, Narragansett Bay and Buzzards Bay. Of these monies, approximately 2.6 million dollars will be administered by EPA in assessing the problems, identifying corrective measures and implementing these measures in the New England estuaries.
- c. Major impacts - Estuarine pollution is most exemplified by the closure of shellfishing grounds, loss of the use of beaches for contact recreation, and a general demise of aesthetic quality.
- d. Level of public concern - There is a very high level of public concern over the degradation of estuarine water quality. For instance, Save the Bay, a private environmental group formed approximately ten years ago to address the problems of Narragansett Bay, has 10,000 dues paying families listed in their membership and has established itself as a viable political faction.
- e. Major sources - The majority of marine pollution to these urban estuaries originates from malfunctioning wastewater treatment plants, combined sewer overflows, non-point source runoff, dredging activities and oil transport and distribution.
- f. Contaminants of concern - Heavy metals, organic chemicals, coliform bacteria, nutrients, BOD₅, and petroleum hydrocarbons.

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- e. Major sources - The majority of marine pollution to these urban estuaries originates from malfunctioning wastewater treatment plants, combined sewer overflows, non-point source runoff, dredging activities and oil transport and distribution.
- f. Contaminants of concern - Heavy metals, organic chemicals, coliform bacteria, nutrients, BOD₅, and petroleum hydrocarbons.

g. Expected environmental results - As the above mentioned problems are alleviated, the benefits to be expected are:

- An increase in both contact and non-contact water use.
- An increase in recreational and commercial shellfishing.
- An increase in property values bordering the polluted areas.
- Rehabilitation of areas by populations of health and diverse marine organisms.
- An increase in the aesthetic quality of the water.

III. OCEAN DISPOSAL OF DREDGED MATERIALS

- a. Background - New England waters have been used for the disposal of dredged materials. Approximately 75t (or 19 million cubic yards) of the total amount of material dredged in New England between 1971 and 1980 was disposed in open waters off New England's coast. Of this total, 3,280,843 cubic yards were disposed at two EPA approved interim sites over the past four years. The demand for disposal at these and other open water sites is expected to continue and possibly increase over the next decade because of the need to maintain and enhance regional harbors and ports.
- b. Geographic scope - Major dredging efforts in New England will be the harbors in Rhode Island and Southeastern Massachusetts; mainly Providence, the Mount Hope Bay area, Fall River, and New Bedford.
- c. Major impacts - Impacts due to the disposal of dredged material are not totally predictable as yet. The potential for affecting recreational and commercial resources and general water quality is always present when discharging contaminated dredged materials.
- d. Level of public concern - There is a high level of public concern regarding the environmental impacts of dredged material disposal into the ocean as well as the socio-economic impacts if no new dredged disposal sites are identified. As public meetings are held on specific projects, public testimony helps to select which alternative(s) are most acceptable.
- e. Expected environmental results
 - Minimize effect on recreational and commercial resources and general water quality degradation.
 - Protection of the ocean environment while allowing commerce-related activities such as maintenance of ship and marina channels.

III. REGIONAL AGENDA

IIIA. ESTUARIES

a. Past responses

- Research on estuarine pollution and the development of computer models capable of pollutant dispersion prediction. For instance, in 1982, EPA developed a dispersion model for Narragansett Bay. The model has been used by the Rhode Island Department of Environmental Management to justify the State's application for CSO funds during the first round of funding and will be employed for future yearly applications for CSO funds. The model has also been used in an EPA Headquarter's study of the benefits of cleaner water in Upper Narragansett Bay.

b. Recommended regional actions

- Administer the Special Bay and Estuary Studies of the three estuaries recently funded through Congressional action.

c. Barriers to overcome

- Cleanup of these estuaries will require a large public commitment and investment for non-point source, CSO and point source controls.

IIIB. OCEAN DISPOSAL OF DREDGED MATERIALS

a. Past Responses

- EPA - Corps of Engineers coordination on dredge and fill projects.

b. Recommended regional actions

- Designation of a southeastern regional dredged material disposal site for projects in Rhode Island and Southeastern Massachusetts.

c. Barriers to overcome

- There is a need to expand our present knowledge of the impacts of material disposal in the marine environment, and to appropriately condition our regulatory framework based on the extend of present knowledge.

IV. HEADQUARTERS ACTIONS NEEDED

IVA. ESTUARIES

- Establish a federal priority for the control of combined sewer overflows (Assistant Administrator for Water).

- Increase federal support of marine research. Funding of this work will make possible continued refinement of the dispersion models.
- Coordination of a mutual assistance program with other federal agencies involved in oceanographic or estuarine research (Assistant Administrator for Water).
- Continued funding for support of estuarine water quality improvement programs (Office of Marine and Estuarine Protection).

IV. OCEAN DISPOSAL OF DREDGED MATERIALS

- Continue national dredge disposal site impacts characterization program through continued monitoring (Office of Marine Discharge Evaluation).

Issue Coordinator: Don Porteous (223-5043), Water Management Division

COMBINED SEWER OVERFLOWS AND NONPOINT SOURCES

I. Problem Statement

Combined Sewer Overflows (CSO's) located in most larger cities and numerous rural communities in New England degrade the water quality of major rivers, coastal areas and several lakes.

Nonpoint Sources (NPS) of pollution impair high quality drinking, fishing and recreation waters in New England.

II. Problem Assessment

- a. Background - Most major cities and numerous rural communities in New England have combined sewers. During periods of wet weather the sewers become surcharged overflowing untreated wastewater into rivers, lakes and coastal waters resulting in degraded water quality and impairment of beneficial uses.

Nonpoint problems are generally localized or sporadic in contrast to gross, wide-spread point source pollution loadings. Agricultural runoff from manure handling and cropping practices, erosion and sedimentation associated with large scale construction and urban storm runoff all impair lakes, ponds, estuaries, bays and otherwise high quality waters. A mounting priority issue is groundwater contamination from faulty on-site systems, landfill leachate, urban storm runoff, leaking storage tanks, pesticides/herbicides, and materials storage sites.

- b. Geographic Scope - Although the problem is New England-wide, most of the communities having CSOs are located astride major rivers or adjacent to coastal waters. Approximately forty percent of the population of New England is served by combined sewer systems.

Urban runoff and construction problems occur mainly in southern New England, as well as in areas undergoing rapid urbanization, resort development and large-scale construction projects. Agricultural and forestry NPS are concentrated in northern New England, e.g., Champlain Valley and Maine lakes country. NPS groundwater contamination occurs through New England.

- c. Major Impacts - Among the serious adverse economic and environmental impacts of combined sewer overflows and nonpoint sources are the following:

Combined Sewer Overflows

- ° CSOs result in the closure of shellfish harvesting areas and swimming beaches and often preclude other recreational uses. They can aesthetically degrade waterbodies. The impact of precluded uses is often substantial since urban areas where use pressures are most intensive, are most commonly affected.

- CSOs prevent final clean-up of major rivers and river segments. Oft-times river clean-up has proceeded to an advanced stage - major wastewater treatment facilities have been completed, but CSOs produce water quality problems.
- The total cost of combined sewer control in New England estimated by the 1983 Needs Survey to Congress is \$4.5 billion.

Urban runoff - Runoff from paved areas, rooftops and lawns carries sediments, nutrients, pathogens, toxics and debris into streams, ponds, water supply reservoirs and estuaries.

Construction activities - Improper construction practices at particular sites cause erosion and sedimentation and associated runoff of nutrients and toxic substances into streams, lakes, water supplies and estuaries. Silt, nutrients, and toxics runoff from construction practices directly impair critical waters, sensitive aquatic ecosystems, spawning areas and prime recreation/aesthetic values. Further, these silt/toxic loads successively settle and shift with the currents for years to come, accelerating bank erosion and flooding.

On-site waste disposal systems - Suburban and rural communities continue to rely on individual subsurface disposal systems. Approximately 35% of the region's population utilize subsurface systems to dispose of their domestic wastes. Although such systems are often the most effective and economical waste treatment alternatives, they can create water quality problems in both ground and surface waters if they are improperly sited, designed, or maintained.

Agricultural activities - Agriculture-related pollution poses significant water quality problems where animal waste handling, cropping practices, and pesticide/herbicide applications degrade high quality waters prized for their recreation, fish and wildlife, water supply and aesthetic values.

Forest management activities - On a scattered basis, improperly designed logging roads and skidding practices impair high quality uses.

- d. Level of Public Concern - There is a high degree of public concern for the clean-up and reclamation of public water uses in urban areas such as Boston Harbor, Narragansett Bay and New Haven Harbor which are impacted by CSOs and urban storm runoff. Concern runs high to maintain New England's assets of high quality lakes and streams, and water supplies.

- e. Major sources - The major source of CSOs are older combined urban sewer systems which were designed to convey both stormwater and wastewater. However, during wet weather these systems are hydraulically overloaded and they overflow into adjacent waterways. Major NPS sources are urban storm runoff, agriculture, forestry, and construction, and on-site waste disposal.
- f. Contaminants of concern - CSO discharges include a mixture of all the contaminants in wastewater and stormwater. NPS contaminants include sediments, nutrients, heavy metals, toxic substances and debris.
- g. Expected environmental results

Combined Sewer Overflows

- Control of CSOs, when implemented in combination with other basic water pollution control measures, will result in reclamation of the desired uses along the major rivers and many miles of the coastline in New England.
- Shellfish beds may be opened; swimming and recreational areas can be fully utilized; fishing, canoeing and general use and development of the rivers and coastal areas will be substantially enhanced; the aesthetic qualities of the water will be restored.
- Since the New England economy is so closely linked to the environmental quality of the region, significant economic benefits will accrue as a result of the completed clean-up.

Nonpoint Sources

- Pollutant loads from nonpoint sources can be expected to be reduced by implementation of Best Management Practices (BMP's) thus minimizing the water uses impaired and providing insurance against costly, disruptive incidents and need for expensive remedial measures.
- Construction - reduced erosion and sedimentation of streams, ponds and estuaries during residential, commercial, and highway construction.
- Urban storm runoff - Significant reduction in sediment, nutrient, and metals runoff, restoring and maintaining water uses.
- On-site wastewater disposal - Prevention of pollution to wells, aquifers, streams, and ponds currently contaminated or threatened by improper on-site disposal.

- Agriculture - Reduced sedimentation, pesticide/herbicide contamination, phosphorous loadings and lake eutrophication.
- Forestry - Decreased erosion and sedimentation into quality lakes and streams from improper forestry activities.

III. REGIONAL AGENDA

a. Past Responses

Combined Sewer Overflows

- New England - New Haven, Hartford, Bridgeport (CT), Providence (RI), Boston, Springfield, Worcester (MA), Concord, Manchester (NH), Portland, Bangor (ME), and Burlington (VT) are among the major cities in New England that have combined sewer systems discharging overflows into adjoining waterbodies-rivers, lakes and coastal waters. In northern New England a small number of smaller communities are also served by CSOs. Many municipalities have taken limited remedial action to reduce the frequency of the CSOs, and several communities have eliminated the overflows by means of sewer separation. Eight CSO projects located in MA, CT, ME, NH, totaling \$18.5 million in construction cost, are currently being considered for funding under Section 201(n)(2) of the CWA (Marine CSOs). Construction on these projects can be initiated immediately upon issuance of the grants. This provision of the CWA can provide a powerful tool for dealing with CSOs in New England.

Nonpoint Sources

- Prevention is a prime objective in NPS programs. The focus is on building BMP's into the daily activities that potentially contribute to nonpoint pollution.
- Restoration measures and intensified BMP's are directed at problem areas impacting priority water. The St. Albans, Rural Clean Water Project (RCWP) on Lake Champlain and the Westport River Estuary (Massachusetts) RCWP project have enrolled problem farms in manure handling and cropping BMP's.
- All New England states have nonpoint source assessments and implementation in Water Quality Management Plans and State work plans.
- The Region has been working with the states; soil and water conservation interests; the agricultural construction and forestry community; and the host of sister agencies, organizations, and interests in whose hands lie the implementation of BMP's. Several New England Soil Conservation Service State Conservationists have refocused the Small Watershed Program under P.L. 566 to fund BMP's in critical lake watersheds, in combination with Agricultural Conservation Program cost-sharing and EPA Clean Lakes Restoration Grants.

b. Recommended Regional Actions

Combined Sewer Overflows

- In conjunction with the State water pollution control agencies, modify NPDES permits to require definitive implementation of combined sewer overflow control programs.
- Work with the State and communities to develop sound applications for securing maximum funding under Section 201(n)(2) of the CWA.
- Encourage States and local communities to develop low cost-high benefit CSO control operational and maintenance programs.
- Encourage States and local communities to implement CSO control programs utilizing Federal, State and local funds.

Nonpoint Sources

- Work with the states to beef up state NPS implementation plans, outlining specific activities, geographic areas, programs, responsibilities, funding and scheduling.
- Assist state water quality agencies in refining water quality standards to reflect use impairment from NPS and to incorporate criteria for NPS pollution.
- Encourage state water quality agencies to involve sister agencies and to furnish them water quality information
- Involve environmental, commercial and industry groups, e.g., construction.
- Support the states in assisting local officials responsible for local planning, zoning, subdivision controls, site development, code enforcement, and road and street maintenance.
- Foster state and local action to monitor and enforce BMP's.
- Promote state and local cost-sharing and tax incentives for BMP's.

c. Barriers to overcome

Combined Sewer Overflows

- Federal, State and local governments have focused their attention on the task of providing basic collection and treatment of wastewater. The control of combined sewers has been given secondary priority primarily due to the limited concern placed on them by federal statutes, regulations, guidelines and programs. This reduced priority has resulted in limited implementation of programs to reduce CSOs.

- The technology for control of overflows, within reasonable financial framework, is available. The application and implementation of the technology is a critical factor.
- The primary barriers to solution of the problem are federal, state and local governmental priority for control of the overflows and governmental financial resources to construct the required CSO control systems.

Nonpoint Sources

- The diffuse, intermittent nature of NPS sources makes it difficult to recognize their water quality impacts and mount effective abatement strategies.
- The diversity of management agencies requires coordinated efforts to develop and implement pollution abatement measures.
- Since BMP's usually involve changing ingrained habits and operations, long lead times are often required in the adoption process. Local autonomy may impede adoption.
- Diminishing support funds make abatement efforts more difficult to implement.

IV. HEADQUARTERS ACTIONS NEEDED

Combined Sewer Overflows

- Establish as a federal priority the control of combined sewer overflows; (Assistant Administrator for Water).
- Provide policy and operational guidance to the regions which recommends definitive implementation of CSO programs through NPDES permits; (Office of Water Enforcement and Permits).
- Aggressively implement Section 201(n)(2) of the CWA; (Office of Water Programs Operations).

Nonpoint Sources

- Enunciate a clearcut NPS Policy and Implementation Program.
- Work with federal agencies and national organizations to reach the diversity of interests involved in controlling the sources of nonpoint pollution; (agriculture, forestry, construction, and transportation).
- Assure federal projects, grants, and loans incorporate BMP's.

- Provide national leadership, guidance and technical assistance, with "last resort" back-up enforcement (e.g., construction).
- Furnish model legislation, guidance and technical assistance to build up state-local-private sector capability.
- Refocus existing agricultural cost-sharing programs to support water quality objectives.
- Provide funding, tax incentives, and other incentives for demonstrative programs.
- Arrange details of seasoned experts to facilitate National and Regional programs.

Issue coordinators: Walter Newman (223-3917) and Bart Hague (223-3917)
Water Management Division

Part III. Regional Recommendations for the Agency Priority
List FY 86-87

Part III

Region I Recommendations for the Agency Priority List FY86-87

The Priority List Process and Purpose:

1. A large number of environmental laws are up for reauthorization. Amendments may bring significant new or shifted requirements. It is therefore difficult (and rather risky) at this time to make suggestions for what our priorities should be for Agency action.
2. No one has indicated what the criteria are for selection of items for inclusion on the List. What assumptions underlie the List and its preparation? How are the regions' views incorporated in the Priority List?
3. How is the Priority List used? How should it be used in the regions and at HQ. The answers could shed light on the preceding question. In some cases, items high on the List are not budgeted for by the Agency while some lower on the List are.
4. The Priority List is too long; it should be shortened to about 18-20 Issues.
5. We should consider a ranking by medium; it would be easier to prepare the List and make it more meaningful.
6. In some cases, one item higher on the List cannot be attacked until a one lower has been satisfactorily addressed (eg. #23 must be completed before the Region can address #4)
7. Should the List be used to drive planning in the Agency? Should the process be further refined to factor List entries into our workplans? Should we incorporate some specific activities and milestones?

Region I Part III cont'd

Suggested Changes:

1. The List should give more emphasis to enforcement and compliance. These are important and necessary components to many of the current entries and should be expressly addressed in the List (eg. #s 7, 9, 12, 13, 16, 18, 21, 22, and 25).
2. Long-range transport (broader than "acid rain" or "acid precipitation") needs to appear near the top. It should encompass acid deposition, ozone, and other transportable materials that threaten public health, buildings and structures, waters, and crops, trees and vegetation. New reports and studies point to the need for controls and for research. We should be in an implementation stage by 1986-87. This issue is of critical importance to the people of New England.
3. Entry for Air Toxics monitoring and strategy should appear earlier on the List. See previous suggestion.
4. The List should include marine water quality-related issues. A goodly number of regions possess major coastal and ocean resources and depend on the sea, bays and estuarine areas for fishing, aquatic nurseries, ecological cycles and recreation. Action on the CWA appropriations suggests this will be a major focus of attention.
5. Dioxin might drop down. The Agency could well be at the end of its Dioxin Strategy project in a couple of years.
6. An item should be included which links pesticides and drinking water protection. Leaking underground storage tanks, landfills, and surface impoundments also affect drinking water supplies. Monitoring for ambient pesticides will be important. These matters are of rapidly increasing public concern in this Region. We therefore need to amend item 6.
7. Amend item 7. Much of item 7 should be completed in 1985. However, monitoring for toxics impacts and the enforcement/compliance components will still be important priorities.
8. We need to include indoor air pollution fairly high up on the List. This is a particularly important public health issue in New England because of the high fuel/energy costs in this part of the country, and because of the heavy and growing reliance on wood and coal burning stoves for winter heating of residences.

Part IV. Most Significant Environmental Problems - Region I Chart

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Most Significant Environmental Problems

REGIONAL OFFICE: Region I

Rank/Problem	Geographic Scope	Major Impacts	Level of Public Concern	Major Sources	Contaminants of Concern
1 Groundwater Contamination	<p>Regionwide due to soils, geology and hydrology of New England</p> <p>3 million New Englanders depend on groundwater as sole source of drinking water (20% of population) and >2,000 (77%) of our community water systems rely on ground or combined ground & surface waters for drinking</p>	<p>Risks to current and future (potential) drinking water supplies; could be rendered unsafe/unfit to drink</p> <p>Risks to public health</p> <p>Need clean water sources for industrial/commercial growth</p> <p>Closing of wells in many communities in New England</p> <p>Potential threats to aquifers and recharge areas</p>	<p>Very High and Rapidly Rising</p>	<p>Uncontrolled h.w. sites</p> <p>Leaking tanks, pipes & drums</p> <p>Landfills & leachfields</p> <p>Surface impoundments, piles, sludges, lagoons</p> <p>Chemical spills</p> <p>Improper handling and disposal of household & commercial products containing hazardous and toxic materials</p>	<p>Spent solvents</p> <p>Pesticide residues</p> <p>Gasoline and petroleum products</p> <p>Other</p>
2 Boston Harbor	<p>2 million people in metro-Boston (40% of the population of Massachusetts and 43 communities)</p> <p>Harbor area and nearby ocean areas</p> <p>Discharge of 600 million gallons/day of wastewater and 2,500 wet</p>	<p>Risks to public health</p> <p>Adverse effects on commercial & recreational uses</p> <p>Aquatic eco-systems</p> <p>Shellfish beds</p> <p>Fisheries</p> <p>Closed beaches</p> <p>Aesthetically offensive</p> <p>Impacts and conditions are particularly severe during and after storms</p>	<p>High--viewed by the involved public as the number one site-specific environmental problem in New England, and until recently seen as a major environmental failure of all levels of government</p>	<p>Inadequately treated wastewater from Boston & surrounding cities & towns</p> <p>Sludge & Effluent Discharges</p> <p>CSO's</p> <p>Lack of adequate wastewater treatment capacity & malfunctioning equipment</p>	<p>Bacteria and pathogens</p> <p>Heavy metals</p> <p>PCB's</p> <p>Organics</p> <p>Nutrients</p> <p>Greases and oils</p> <p>Floating and settleable solids</p>

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Most Significant Environmental Problems

REGIONAL OFFICE: Region 1

Rank/Problem	Geographic Scope	Major Impacts	Level of Public Concern	Major Sources	Contaminants of Concern
<u>3</u> Toxics	Regionwide	<p>Air, surface water, ground-water, drinking water, land contamination</p> <p>Can occur in all media & shift from one to another</p> <p>Can affect virtually all life forms and interrupt ecological systems:</p> <ul style="list-style-type: none"> human beings animals fish & aquatic life insects vegetation forests croplands micro-organisms other living things <p>Effects of toxics on health of humans and other organisms can range from death, cancer, birth defects, reproductive problems, nervous system disorders to such more mild symptoms as nausea or skin or eye irritation</p> <p>At this point we have only a limited knowledge of the effects of toxics on life forms, individually, synergistically, and in small concentrations. We will certainly discover new ones.</p> <p>Agricultural production, products, foodstuffs & additives</p> <p>Stream, river, lake, harbor, estuarine, bay, ocean sediments</p>	Very High and Growing Concern	<p>Many known, suspected, & unknown:</p> <ul style="list-style-type: none"> large industrial facilities utilities dry cleaners municipal & industrial effluents waste materials in landfills hazardous waste sites consumer/household cleaning products, paints, solvents chemical manufacturing & processing commercial & home use of pesticides food additives coal & petroleum processing & combustion leaking tanks, drums, & pipes laboratories hospitals mining wastes batteries finishing materials & wastes gasoline & diesel product processing & combustion 	<p>Many & varied v.o.c.'s</p> <ul style="list-style-type: none"> metals solvents di-,tri- & tetrachlor-ethylene PCH'S dioxin alcarb asbestos EDH D&S hazardous wastes new & existing chemicals development, manufacturing processing, handling, use product components radionuclides <p>Combinations of the above</p> <p>Other</p>

1984 EIR Update

Most Significant Environmental Problems

REGIONAL OFFICE: Region I

<u>Rank/Problem</u>	<u>Geographic Scope</u>	<u>Major Impacts</u>	<u>Level of Public Concern</u>	<u>Major Sources</u>	<u>Contaminants of Concern</u>
Combined Sewer Overflows/ Nonpoint Sources	<u>CSO</u> All major cities of New England and numerous smaller communities (400 of population in region)	Closed beaches and shellfish areas Health hazard Prevent reclamation for desired uses	High	Combined sewer systems	Same as those contained in waste water
	<u>NPS</u> Region wide with urban & rural runoff differing in source.	Impairment of water uses in populated urban areas and quality waters and ecosystems in rural areas	High	Urban runoff Agriculture Construction On-site waste systems	Sediment Nutrients Metals

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Most Significant Environmental Problems

REGIONAL OFFICE: Region I

Rank/Problem	Geographic Scope	Major Impacts	Level of Public Concern	Major Sources	Contaminants of Concern
8 National Municipal Policy/ Pretreatment	NMP All municipal- ities must comply with CWA by 7/1/88	Significant financial import- ance to communities if CWA funding not reauthorized.	Moderate	Waste water treatment plants	Any waste water discharge
	<u>Pretreatment</u> 79 communities in Me., Mass., N.H., and R.I. require pre- treatment pro- grams	If pretreatment programs are not in place, communities may not control toxic discharges.		79 affected communities	Toxics
	Industries which must pretreat waste water & dispose of sludge	Significant cost to some industries to control toxic waste		All industries requiring pretreatment	Toxics
9 Marine Water Quality	Estuaries - Boston Harbor Long Island Sound Narragansett Bay Buzzard's Bay	Closure of shell fishing grounds, loss of use of beaches, demise of aesthetic quality.	High	Majority of marine poll- ution originates from malfunctioning sewage treatment plants, combined sewer overflows, non-point source runoff, dredging activities and oil transport and distribution	Heavy metals Organic chemicals Coliform bacteria Nutrients BOD ₅ Petroleum hydrocarbons
	Dredging in harbors in R.I. and SE Mass., (Providence, Mt. Hope Bay, Fall River, New Bedford	Major dredging always has potential for affecting recreational and commercial resources and general water degradation.			

1984 FMR Update

Most Significant Environmental Problems

REGIONAL OFFICE: Region I

Rank/Problem	Geographic Scope	Major Impacts	Level of Public Concern	Major Sources	Contaminants of Concern
Implementation of Superfund Program/New Bedford Harbor	New Bedford area	High concentrations of PCB's in sediments. Fishing ban imposed over 18,000 acres of Harbor - closing large areas of commercial fisheries. Harbor development delayed	High	Two electrical capacitor manufacturers with poor disposal practices	PCB's
RCRA Permitting and Compliance	Region-wide Concentration of major facilities in industrialized states.	Abatement or corrective action to protect ground water	High	Plating and metal finishing industries. Chemical formulation and manufacturing Land disposal facilities	Metal salts & metal sludges Solvents - halogenated & non-halogenated Waste pesticide residues
Asbestos and Public Health	Region-wide	Known human carcinogen with no known safe level of exposure	Relatively high	Renovation/demolition of public and private buildings. Private dwellings to a lesser degree	Asbestos

1984 EMR Update

Most Significant Environmental Problems

REGIONAL OFFICE: Region I

<u>Rank/Problem</u>	<u>Geographic Scope</u>	<u>Major Impacts</u>	<u>Level of Public Concern</u>	<u>Major Sources</u>	<u>Contaminants of Concern</u>
1 Toxics (cont'd)		<p>Institutional impacts too:</p> <p>Difficult for federal and state lawmakers and regulators to establish standards and criteria and to devise implementation programs</p> <p>Difficult for public to understand these matters</p>			
2 Long Range Transport of Pollutants; ozone & other air pollutants, & acid deposition	<p>Ozone is a particularly serious problem in Conn, Mass, RI, So. NH & So. Maine</p> <p>Region I is the victim of the nation's 2nd most severe <u>ozone/air pollution</u> levels</p> <p><u>Acid deposition</u> is an especially severe problem in New England due to the limited buffering capacity of our soils and geology</p> <p>We are directly downwind of the nation's major sources of acid</p>	<p>1.95 million people in New England are at risk of respiratory problems due to ozone/air pollution episodes, especially:</p> <ul style="list-style-type: none"> - the elderly - people who have asthma, emphysema, bronchitis - infants under 2 yrs. old <p>Public health impacts, including respiratory symptoms & reduced resistance to infection. More hospitalizations during episodes.</p> <p>Lost work time</p> <p>Stunted growth of vegetation</p> <p><u>Acid deposition</u> - serious, widespread, growing & perhaps irreversible adverse impacts: streams, rivers, lakes, reservoirs; fisheries & aquatic life & life systems; terrestrial systems, including forests, vegetation, soils, micro-organisms; buildings, structures & materials; enhanced ability of groundwater to leach metals & chemicals; particulate respiratory effects</p>	<p>Ozone - Moderate to High for the general public & High to Highest among public health officials, the medical community & environmental officials</p> <p>Ozone - A growing concern to all; during the ozone season levels are routinely reported by newspapers, TV, and radio</p> <p><u>Acid deposition</u> - Highest. It is viewed as the most pervasive & serious environmental problem in New England.</p>	<p>Ozone/other - About 1/2 vehicles & 1/2 industrial sources</p> <p>Motor vehicle use in NYC, Jersey, Phila., Wash. D.C. corridor</p> <p>25 categories of industrial sources, eg. gasoline industry from bulk storage to end-retailers & vehicle owners; chemical manufacturing, processing, etc.</p> <p>Users of solvents and degreasers</p> <p><u>Acid deposition</u> - SO₂: Midwestern and local electric utilities, Mid-western and Canadian industry NO_x: Motor vehicles and coal-burning utilities</p>	<p>VOC</p> <p>SO₂</p> <p>NO_x</p> <p>Acidic rain, groundwater, and surface waters</p>