



*Conference of
New England Governors
and
Eastern Canadian Premiers*



Implementation of the
Conference of New England Governors
and Eastern Canadian Premiers

Mercury Action Plan

A Report of the

NEG/ECP Committee on the Environment

Submitted to the

**26th Conference of New England Governors
and Eastern Canadian Premiers**

August 27, 2001
Westbrook, Connecticut

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Supplement: Fish Tissue Sampling Report and Matrix

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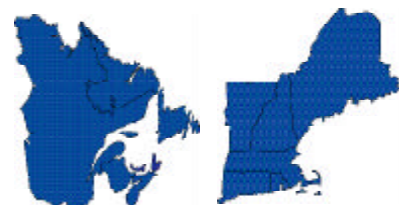
FORWARD

In June 1998, the Conference of New England Governors and Eastern Canadian Premiers (NEG/ECP) adopted the landmark *Mercury Action Plan (MAP)*, which specifies actions to protect its citizens and its environment from the toxin mercury. The MAP was organized into 6 broad action categories including a Mercury Task Force (MTF), source emission reduction, pollution prevention and waste management, research and monitoring, education and outreach, and mercury stockpile management. The Plan provides the New England states and Eastern Canadian provinces with a coordinated and powerful set of tools to reduce anthropogenic releases of mercury in our region and remove mercury from our waste streams.

Since the adoption of the Plan, representatives of state and provincial environmental agencies on the Mercury Task Force, in conjunction with partnering organizations including the U.S. Environmental Protection Agency, Environment Canada, Northeast States for Coordinated Air Use Management (NESCAUM), the Northeast Waste Management Officials' Association (NEWMOA) and the Commission for Environmental Cooperation (CEC), have aggressively implemented the spirit and commitments of the Plan. Under the direction of the NEG/ECP Committee on the Environment and reporting to the Secretariats of the NEG/ECP and the Coordinating Committee on the Conference, the Mercury Task Force focused its efforts in the first two years on the major mercury emission sources in our region, and have reported on considerable success in addressing these sources at the last two meetings of the Conference of New England Governors and Eastern Canadian Premiers.

The Mercury Action Plan is a historic undertaking in the area of progressive bi-national environmental policy-making at the jurisdictional level. The Plan has earned commendations from numerous groups and has served as a model for other regional and international efforts, such as the CEC's North American Regional Action Plan (NARAP) on Mercury.

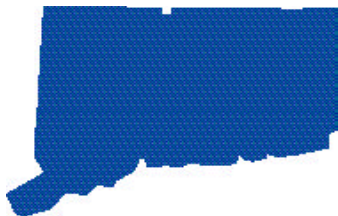
**Conference of
New England Governors
and Eastern Canadian
Premiers**



The Conference of New England Governors and Eastern Canadian Premiers adopted its historic Mercury Action Plan in June 1998, at its meeting in Fredericton, New Brunswick. Since that time, this document has served as a model for other multi-jurisdictional efforts in this area, such as the CEC's North American Regional Action Plan (NARAP) for Mercury.

EXECUTIVE SUMMARY

Connecticut



'2001 in 2001'

The state of Connecticut announced an ambitious goal of collecting 2,001 pounds of mercury by the fall of 2001. This target is on its way to being achieved through a state-wide series of school sweeps, thermometer exchanges, dairy manometer collections and other activities.

In addition to continued work to implement the region's aggressive mercury emission reduction policies, over the past year the Mercury Task Force and its partnering agencies have focused considerable efforts on the MAP action categories relating to education and outreach, pollution prevention, research and monitoring, and advocating for mercury stockpile management. These efforts are the focus of the first portion of this report, which addresses regional activities in the third year of the Plan's implementation (July 2000 to August 2001). A brief update of ongoing emission reduction activities and accomplishments is then presented. Lastly, in order to motivate regional actions and provide an additional milestone to evaluate progress, a new interim reduction goal for the year 2010 is discussed.

In the outreach and education area the jurisdictions have focused on such activities as increasing public awareness of fish consumption advisories, particularly with respect to sensitive populations; working with the healthcare sector, including hospitals and dental offices, to reduce mercury releases and use; increasing local efforts to divert mercury from the waste stream through source separation and recycling; and working with schools to eliminate mercury hazards in the classroom. Pollution prevention activities have focused on significant efforts to address the mercury content of consumer and commercial products through implementation of state legislation and through development of the Canada-Wide Standards. Mercury collection programs and thermometer exchanges have also contributed to successful efforts to reduce the mercury burden in the solid waste stream as well as educate the public about mercury.

Research and monitoring were also a focus of this past year's implementation activities. Some of these activities included evaluating innovative technologies related to mercury monitoring and reduction and developing a set of regional environmental indicators in order to evaluate progress in addressing the mercury problem. Included in this report is a brief summary of the work of the Fish Tissue Workgroup of the Mercury Task Force. This group has compiled a matrix of jurisdictional fish tissue sampling protocols and practices, and a short report summarizing the issue and recommending further cooperation on this topic.

Ongoing efforts to address the major sources of mercury emissions in the region, including municipal waste combustors, medical waste incinerators and utility boilers are also described in the Year Three Report. Last year, the MTF estimated that actions underway at that time would result in a 40% or greater reduction in regional mercury emissions by 2003. The jurisdictions have continued to make substantial

progress in this area and the MTF currently estimates that regional mercury emissions will be reduced between 50% and 55% by 2003, exceeding the MAP interim reduction goal. Major reductions from the region's biggest sources have been achieved, in many cases ahead of schedule. Over the past year, municipal waste combustor facilities across the region have installed new state-of-the-art pollution control equipment to address mercury emissions. As a result of these new controls, combined with mercury source separation and source reduction efforts to get mercury out of the municipal waste stream, these facilities are now meeting, and in most cases, exceeding the required emission limits for mercury. This has resulted in substantial reductions in mercury emissions, which were achieved well ahead of the schedule in the Plan. Mercury emissions from medical waste incinerators have also been substantially reduced. Other regional sources of mercury releases are being addressed including utilities, wastewater discharges and releases attributable to broken and disposed mercury-added products.

Finally, Year Three efforts have also included activities which focus on advocating for the safe management of mercury stockpiles at the federal level and dealing with the issue of safely "retiring" excess mercury.

One important recommendation of the NEG/ECP Mercury Task Force and Committee on the Environment contained in the Year Three report is the establishment of a new interim reduction goal of 75% or greater by 2010, based on the 1998 inventory of mercury emissions in our region. With the Plan's short-term goal of a 50% emission reduction target from identified sources by 2003 expected to be achieved on-schedule or earlier, a new goal is now needed to serve as an aggressive next step towards the virtual elimination target established in the MAP. The rationale for this target is set forth in this report.

The Year Three report is in no way intended as a comprehensive review of the ongoing efforts in the region that are being implemented in conjunction with the *Mercury Action Plan*. Rather, this report provides a snapshot of some of the important activities taking place in the states and provinces and the high level of involvement and coordination of the jurisdictions in our region.

The second part of this report is a brief review of the work priorities for the coming year, Year Four, as identified by the Mercury Task Force under the direction of the Committee on the Environment. These include continuing the work of the Joint Boiler Workgroup (a partnership of the Mercury Task Force and Acid Rain Steering Committee) to achieve the goals set forth by the group in its report to the Conference last year. The Task Force is also directed to begin development of an updated inventory of mercury emissions in the region, assess the status

New Brunswick



'New Brunswick Mercury Reduction Strategy'

New Brunswick recently completed its 'Mercury Reduction Strategy', which outlines policies and programs for further reducing mercury emissions and other issues.

Maine



‘Waste Collection Program’

The Maine Department of Environmental Protection and the State Planning Office have worked on infrastructure development to collect and properly manage universal wastes and mercury-added products. By late Summer 2001, approximately 45 sheds of various sizes will be located throughout the state to collect universal wastes and mercury. These sheds were funded through a one-time allocation from the Maine State Legislature.

and needs of the regional mercury monitoring network, and explore options for scientific and policy workshops on important topics such as mercury retirement.

As the *Mercury Action Plan* enters its fourth year of implementation, the NEG/ECP Committee on the Environment reports to the 26th Conference of New England Governors and Eastern Canadian Premiers that not only has major progress been made in reducing the emissions of mercury in our region and the threat of this toxin to our citizens and our environment, but that the Plan will continue to be aggressively implemented throughout our region.

PROPOSED 2010 REGIONAL MERCURY REDUCTION GOAL

In June 1998 the New England Governors and Eastern Canadian Premiers (NEG-ECP) adopted a regional Mercury Action Plan with a long-term goal of virtually eliminating mercury emissions in the region. The plan also established an intermediate goal committing to actions to reduce regional mercury emissions by 50% by 2003. This intermediate goal has provided an important benchmark to motivate and track progress towards virtual elimination.

At their September, 2000 meeting in Massachusetts, the New England Governors Conference, Inc. asked its state Mercury Task Force (MTF) representatives to work with their Canadian colleagues to evaluate post 2003 mercury reduction targets and timelines. Specifically, the resolution set forth the following charge:

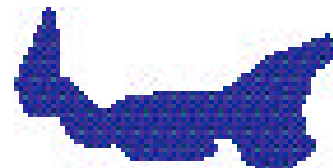
“that in an effort to continue toward the goal of virtual elimination of anthropogenic mercury as expeditiously as feasible, the NEG/ECP directs its Committee on the Environment and the New England members of the NEG/ECP Mercury Task Force to work with their Eastern Canadian counterparts to evaluate new reduction targets beyond the 50% reduction by 2003 and to report to the next meeting of the Conference of New England Governors and Eastern Canadian Premiers about specific targets and timelines to be achieved between now and 2010”;

As requested, the joint NEG/ECP Mercury Task Force has evaluated this issue and recommends the adoption of a post-2003 interim reduction target of 75%, or greater, by 2010 with a mid course reevaluation in 2005 to allow for new information to be considered. The MTF relied upon two basic principles in developing this proposal. These were that the new reduction goal should be *challenging* but also be *feasible* to achieve. The MTF believes that this reduction target and timeline is consistent with both of these principles.

Proposed Language for 2010 Regional Mercury Reduction Goal:

By 2010, the jurisdictions will identify and implement actions to achieve an overall 75%, or greater, reduction in anthropogenic mercury releases to the environment from regional sources, based on the emission inventory presented in the 1998 Northeast States and Eastern Canadian Provinces Mercury Study. This regional goal will be re-evaluated in 2005 to allow for new data on emissions, control options and other factors to be taken into account, and the target will be revised if necessary to reflect this new information.

Prince Edward Island



‘Waste Watch’

Prince Edward Island’s highly successful Waste Watch program, which collects and separates wastes into recyclables, compostables and waste, is being expanded beyond the Charlottetown area to include the entire province.

Vermont



‘Thermometer Collection Program’

Vermont conducted a two-week fever thermometer exchange across the state, distributing 33,000 digital thermometers through pharmacies. Nearly 100 pounds of mercury was collected from 45,000 mercury fever thermometers and other items.

Basis for the Recommendation:

The recommended reduction target is based on an analysis by the NEG/ECP Mercury Task Force. Potential emission reductions for identified sources of mercury were estimated, using the regional emission inventory presented in the 1998 Northeast States and Eastern Canadian Provinces Mercury Study as a baseline. This analysis indicates that it should be possible to reduce anthropogenic releases of mercury to the environment by 75% by 2010. The reductions will, however, be challenging, necessitating continued aggressive actions to reduce mercury releases from remaining sources. Adoption of this reduction target will help to ensure continued progress towards the ultimate goal of virtually eliminating anthropogenic mercury releases in the region. Reductions in excess of 75% are possible but would require substantial reductions from sources such as residential oil heat, which are not deemed feasible by 2010. Excluding this source, the proposed reduction target equates to an overall reduction in emissions from other sources in excess of 84%.

The goal of virtually eliminating mercury releases within the region will continue to be the ultimate objective of the NEG-ECP Mercury Action Plan. Although it is anticipated that virtual elimination of mercury releases will be achieved from many of the major sources in the region before 2010 (e.g. medical waste incinerators), the virtual elimination of releases from other sources, such as oil boilers used for residential heating, is unlikely to be achievable within that timeframe. Although individual units are small sources of mercury emissions, as a group oil-fired residential heating units were estimated to be a significant overall emission source in the 1998 Regional Mercury Study. Such boilers are a difficult source to address because of their sheer number, small size, lack of viable control options and the regional dependency on oil boilers for basic heat. At this time, options for reducing emissions from these diverse and small sources have not been well evaluated. Thus, there is little “visibility” regarding the potential timeline for future regional reductions from this category. Possible ways to reduce emission from these sources include energy conservation, fuel switching to natural gas, other alternative energy sources and potential options to reduce the mercury content of fuels. Further national and regional efforts in these areas are needed. In conclusion, because of these factors, establishing a defensible date certain for achieving virtual elimination of mercury releases in the region is not possible at this time.

The re-evaluation called for in 2005 will allow for the incorporation of new information on regional mercury sources and reduction options, including residential heating, using data that will be derived as part of the update of the regional emissions inventory. The re-evaluation will allow the MTF to revisit the 2010 target and adjust it if necessary.

OUTREACH AND EDUCATION

Overview:

Substantial regional efforts to implement the Mercury Action Plan over the past year were focused on education and outreach programs. These programs followed the Regional Mercury Communications Strategy developed by the MTF and approved by the Environment Committee last year. The overall goals of this Strategy are to enhance the implementation of the Mercury Action Plan by raising public awareness of mercury issues, including fish consumption advisories, informing and educating key target audiences about environmentally preferable alternatives to mercury containing products and about proper disposal and safe handling options, developing broader support for the Plan, and advocating for further national and international actions.

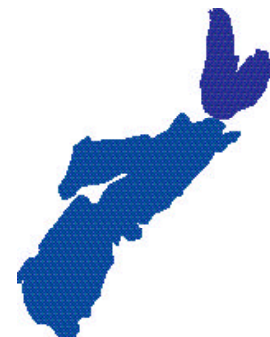
The Strategy is being implemented on a jurisdictional basis to allow for messages to be customized to better reach and meet the unique education needs of the region's diverse target audiences and to take advantage of multiple and differing communication channels. The MTF has provided the mechanism to share information and experiences about successful programs and challenges, as well as to coordinate programs to enhance the consistency of messages being communicated to the public.

All jurisdictions are implementing education programs designed to inform the general public and other affected parties about mercury, focusing on those elements noted previously. In addition to the general public, programs have been instituted to reach sensitive populations including women of childbearing age, children, and native peoples, and non-English speaking peoples in New England. Efforts have been made through the MTF to expand coordination and interactions regarding mercury outreach and education initiatives between the jurisdictions' Public Health and Environmental Departments.

Through outreach efforts to businesses and organizations that use mercury or come in contact with the toxin – such as schools, hospitals, dental offices, recyclers, waste handlers and many others – jurisdictional programs have been developed to reduce mercury use, remove mercury from waste streams and ensure that individuals are not accidentally exposed to mercury.

The following sections, organized loosely by target audience, summarize some of the education and outreach initiatives underway in the region. Because of the breadth and scope of these efforts in the New England states and Eastern Canada provinces, the programmatic examples provided below are presented as a snapshot overview of regional activities - they are by no means exhaustive nor are the program descriptions

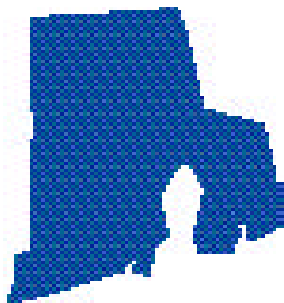
Nova Scotia



'Health Facility Program'

Nova Scotia will extend the successful mercury management program at the Cape Breton Regional Health Care Complex to all other provincial hospitals. Partnering with Environment Canada, mercury use and policies related to mercury use, handling and disposal will be assessed and appropriate changes introduced. This program will include sampling for mercury in hospital sanitary sewers.

Rhode Island



‘Mercury Legislation’

Rhode Island passed historic mercury education and reduction legislation (S-0661 & H-6161) that is intended to provide a framework for Rhode Island to minimize mercury in products sold and distributed in the state, and manage mercury-containing wastes.

comprehensive. More detailed information on specific programs can be obtained from the individual jurisdictions. In addition to this summary report, examples of outreach and education materials being used in the region will be either distributed or displayed at the NEG/ECP meeting. These will include a selection of the following: digital thermometers with accompanying mercury brochures; fish consumption advisory information; promotional items such as mercury awareness magnets and pencils; fact sheets; posters; displays; videos and written articles.

Program Summaries

The states and provinces have developed and utilized numerous communication mechanisms and media for increasing the public’s awareness of mercury as a toxin, how to properly dispose of mercury-containing products, and how to safely handle them, as well as what to do in the event of an accidental spillage of mercury (such as from a broken thermometer). These include television and radio spots, newspaper advertisements, brochures, web pages, special events, school programs, outreach through specialized channels such as the medical community, linked pollution prevention and education programs such as thermometer exchanges; and toll-free mercury numbers. The following sections briefly summarize regional outreach and education efforts by target audience.

The General Public:

Examples of states and provinces reaching out to the public to build mercury awareness are numerous. Many states and provinces are implementing extensive outreach and education programs as an integral part of their jurisdictional mercury strategies. A few specific examples of such outreach efforts follow.

As part of New Hampshire’s state-wide mercury outreach program, an “Ecowatch” television piece describing the hazardous nature of mercury and proper management of mercury containing wastes was produced in collaboration with a local television station and aired state-wide. New Hampshire has also developed a series of fact sheets for individuals on mercury and has written several newspaper articles for the general public.

Prince Edward Island has printed a number of mercury-related articles in local newspapers, and Newfoundland’s ‘Mercury Fact Sheet’ explains mercury sources, transport and detrimental impacts on human health. New Brunswick developed and published an article about mercury in the Gulf of Maine newsletter.

Massachusetts has established a hotline (1-866-9 MERCURY) to provide the public with information on mercury. Massachusetts is also implementing a statewide Mercury Awareness Campaign. This is a

multi-agency effort including radio spots to educate the public, businesses, sensitive populations and municipal officials about mercury. The campaign includes special events such as Mercury Awareness Day at the New England Aquarium and a press event on the State's Zero Mercury Strategy at Walden Pond.

Rhode Island, which recently passed comprehensive mercury products legislation, will be instituting outreach programs in support of the legislation and to increase public awareness about mercury.

In addition to these efforts, the jurisdictions have also developed a number of mercury displays appropriate for different target audiences. These are being used to educate the public about mercury at special events. A few examples of these displays will be shown at the NEG/ECP meeting in August, 2001.

The internet has proven to be another highly effective tool for disseminating information on mercury issues. All the jurisdictions in the region currently have mercury information available on websites. In addition, Environment Canada is currently developing a dedicated mercury site, and the U.S. EPA (New England) mercury website is operational. Linkages between jurisdictional sites within the region, interstate sites such as the Northeast Waste Management Officials' Association (NEWMOA) webpage, focusing on mercury pollution prevention, and national sites, facilitate public access to the large body of information available on mercury.

These efforts and similar ones in other states and provinces are increasing the general public's knowledge of mercury in their daily lives, and support other outreach programs targeting specialized audiences that are discussed below. In particular, building grass-roots awareness of mercury facilitates many of the mercury source separation and pollution prevention programs the jurisdictions are undertaking. In turn these programs provide a mechanism to reach key target audiences and to distribute more detailed or specialized educational materials. Among such programs are the thermometer exchanges noted above, household and business hazardous waste collection programs and events, hospital and health-care facility mercury programs, dental programs (described in more detail later in this report), and school mercury clean-outs.

Thermometer Exchange Programs:

Thermometer exchange programs, in which mercury-containing thermometers are exchanged for non-mercury thermometers, are being implemented by most jurisdictions and have been extremely successful outreach and education vehicles in our region. For example, Vermont and Connecticut have closely linked their outreach and education efforts to the general public with thermometer exchange programs. This has

Quebec



'Dental Mercury Program'

The Montreal Urban Community has developed an innovative and successful program with its dental facilities to reduce the amount of mercury released into the community's waste water by dental offices. It includes regulations promoting the most recent technologies for dental waste water treatment and mercury capture.

Massachusetts



'Zero Mercury Strategy'

The Massachusetts Executive Office of Environmental Affairs (EOEA) has been aggressively implementing a statewide, multi-agency Zero Mercury Strategy. As a result of the Strategy, the public in the state is now better informed about mercury, over 2,000 pounds of mercury was recycled, emissions from incinerators were reduced over 95%, and a strategic environmental monitoring program was established.

proven to be an excellent mechanism to both collect mercury and educate the public. In Vermont's program, 45,000 thermometers were collected containing over 100 pounds of mercury. In addition to reducing the risk of accidental breakage, with resulting environmental releases and the potential for exposures in the home, this program was also a highly successful educational vehicle. Vermont used the exchange program as a mechanism to distribute a mercury educational brochure, reaching a significant percentage of Vermont's population. Vermont has also developed mercury product board displays and informational materials, which have been displayed or handed-out at numerous State House, home show and business show events throughout the state. Among other efforts, the Connecticut statewide mercury education campaign has included a television ad on mercury and a large replica of a thermometer in front of the DEP offices, used as a mechanism to communicate to the public about the amount of mercury recycled through the state's thermometer exchange and mercury collection program. In part based on the success of these programs Massachusetts, New Hampshire and Maine are also implementing thermometer exchange programs.

Municipalities:

Many jurisdictions are implementing programs to educate municipal officials and assist them in outreach efforts to our citizens about mercury. Other collection programs have also been used to conduct outreach and education at the municipal level. For example, Maine sponsors workshops for municipalities on mercury waste issues; Massachusetts provides assistance to municipalities to provide outreach to citizens; New Hampshire encourages municipalities to provide outreach about their collection activities and provides one half the funding for local collection campaigns.

Fluorescent lamps, if not disposed of properly, can break and emit mercury into the environment. In Nova Scotia, outreach efforts have focused on keeping such lamps out of solid waste. Prince Edward Island is also working with its Island Waste Management Corporation and Newfoundland with its Interdepartmental Recycling Committee to address this mercury source, including outreach efforts.

Outreach efforts have also been implemented on collection programs for other products that contain mercury. For example, Vermont, Connecticut, and Maine have programs to recover and remove mercury from dairy manometers.

Hospitals and the Health Care Sector:

Hospitals and health-care facilities have traditionally used mercury-containing products, such as thermometers and other instruments. The eleven states and provinces have all engaged their health care facili-

ties in dialogues and programs to remove or substitute mercury-containing products, manage mercury wastes and train staff in proper handling and disposal techniques. Mercury reduction workshops in New Hampshire co-sponsored by the state's Hospital Association and Nova Scotia's 'Operation Green' (which audited healthcare facilities for mercury use and led to new mercury procedures and policies) are two examples of this type of outreach in our region. The Montréal Urban Community has initiated cooperative efforts with the Québec Department of Public Health to address mercury in the Community's hospitals. Massachusetts state hospitals are working to educate facility managers and purchasing agents to reduce the use of mercury containing devices. Maine has also partnered with the Maine Hospital Association to develop Pollution Prevention Plans and to conduct mercury awareness training. Also, the U.S. EPA's 'Mercury Challenge' for hospitals has involved numerous hospitals in the region.

Dentists Offices:

The use of dental amalgams in fillings and other dental work results in significant mercury discharges into waste-water. Programs are in-place or being developed throughout the region to educate the dental community about the environmental hazards of mercury, approaches to minimizing mercury releases, available options to collect and properly dispose of mercury in dental offices, and non-mercury alternatives to mercury-containing amalgams. A Memorandum of Understanding (MOU) between Nova Scotia and the provincial dental association has promoted the collection and recycling of mercury in that province. Vermont, in cooperation with the National Wildlife Federation and the state's Dental Association, has developed a Best Management Practices guide for dental offices. Massachusetts also has instituted an elemental mercury collection program through a cooperative program with the Massachusetts Dental Society and Stericycle, Inc, which has collected over 1,600 pounds of mercury from dental office in the state. The Massachusetts MOU with the state's Dental Society commits to cooperative efforts between the dental society and state environmental agencies to educate dentists about best management practices and to evaluate technology options for removing mercury from wastewater. Other states have also distributed Best Management Practices information to dentists; Maine and New Brunswick are working with their dental community to develop and provide outreach to dentists on mercury pollution prevention plans and best management practices.

Schools:

Schools have long used mercury in their science curriculums, and as a result have been sources of accidental spills, often resulting in costly clean-up efforts and unnecessary exposures to mercury in the classroom. The region has undertaken a number of programs to educate school

**Newfoundland
and Labrador**



**'Science Safety
Resource Manual'**

The provinces Department of Education played a lead role in the development of the "Science Safety Resource Manual", which addresses mercury spills, exposure and storage. The document also lists all compounds of mercury, excluding encapsulated elemental mercury, as chemicals that should not be present in school laboratories.

New Hampshire



‘Medical Waste Incinerator Emissions Reductions’

As of April 10, 2001 all medical waste incinerators were required to be in compliance with New Hampshire’s Hospital Medical Infectious Waste Incinerator (HMIWI) Rule. Prior to adoption of the rule, which sets a .055 mg/dscm mercury emissions limit (ten times more stringent than the federal limit), there were thirteen medical waste incinerators operating in the state. Implementation of the HMIWI rule resulted in the closure of eleven incinerators and a 98% reduction in mercury emissions from these sources.

personnel and students about mercury, to remove mercury from school science programs and to organize ‘clean-outs’ of elemental mercury. Vermont has implemented a ‘School Science Lab Chemical and Mercury Clean-out Program’. As part of this program all schools will have completed two day-long training sessions, including information on mercury. Over 625 pounds of mercury from 83 participating schools have been collected as a result of this program. Newfoundland helped develop a ‘Science Safety Resource Manual’ for schools that addresses mercury spills, exposure and storage. Connecticut has performed school clean-outs at twenty schools, New Brunswick and Nova Scotia has removed mercury from their schools and revised curriculums accordingly, and Prince Edward Island has developed a Mercury Management Plan for Schools. New Hampshire and Massachusetts environmental agencies are working with their state Department of Education to eliminate mercury in schools. Massachusetts has completed cleanouts on 30 schools, plans to complete an additional 50 this next year and has also developed educational materials on mercury for use in school classrooms. Maine has also developed training materials for school personnel about mercury and hazardous waste management.

Sensitive Populations: Fish Consumption Advisories:

Each jurisdiction in New England and Eastern Canada currently has in place some form of fish advisory program to alert fishermen and consumers of fish about hazardous levels of mercury. Certain populations, such as pregnant women and small children, are particularly at risk from elevated mercury levels in fish. With interagency funding from the Department of Environmental Protection, the Massachusetts Department of Public Health has expanded its efforts to educate the public about fish consumption advisories, including translations of its advisories and educational materials into several languages to better reach sensitive populations; public service announcements; focus groups; and adds on public transportation. Québec has updated the “Guide to Eating Sportfish” with the most recent data on mercury (and other targeted contaminants) in fish tissue, with information from over 600 surveyed lakes and streams. This information is also available on the website of the Quebec Ministry of Environment. New Hampshire produced a second Ecowatch television commercial concerning the states freshwater fish advisory. The Maine Department of Public Health has developed a very informative guide to mercury levels in various fish species in the state, which they will be sharing with other jurisdictions in the region. Because anglers may fish in many areas and fish consumers may vacation away from their home states, the Northeast States for Coordinated Air Use Management is working with regional Departments of Public Health and Environmental Agencies to develop a unified fish consumption brochure alerting the public about the potential risks of mercury in fish and about national fish consumption advisories. The brochure also pro-

vides contacts for information on advisories in each state.

Commercial and Institutional Sectors:

Outreach to salvage yards, waste operators and recyclers has also been an important component of the regional strategy to address mercury in the waste stream. The proper removal and handling of mercury-containing auto switches is included in a Best Management Practices manual being developed in New Hampshire, and a similar document addressing appliances, entitled 'Household Appliance Mercury Switch Removal' is being drafted in Vermont. Two major vehicle fleets in Connecticut have agreed to collect mercury-containing switches in their vehicles and replace them with ball-bearing switches. A Waste Management Advisory Committee in Newfoundland has been tasked with addressing issues related to mercury-containing waste in that province. Massachusetts has completed a project targeting mercury switches in "white-goods." Vermont, Maine, New Hampshire and Rhode Island are implementing or developing outreach initiatives to the commercial sector about their resective mercury product legislation.

An important component of many programs is outreach and education to facility managers, operators and workers. Rhode Island has provided training for workers in the proper handling of mercury wastes as part of its hospital outreach efforts. Massachusetts has worked with federal facilities managers on a regional project funded by USEPA to survey and reduce mercury use, collect existing mercury inventory, and improve handling and disposal practices in federal buildings, as well as raise the awareness of mercury issues among building managers. New Hampshire has added information on mercury into the Solid Waste Operator Training Certification Program.

Conclusion:

In conclusion, this section has provided a snapshot of the spectrum and diversity of the extensive mercury outreach and education activities underway in the New England States and Eastern Canadian provinces. As noted earlier, in order to be brief, this summary was not intended to be all-inclusive; many programs have not been covered and descriptions of all have been abbreviated. The states and provinces have learned a great deal from each other about successful (and some unsuccessful) activities, and continue to share important information about their programs with each other allowing them to be adapted to meet individual jurisdictional needs and practices.

MERCURY SOURCE REDUCTION & SAFE WASTE HANDLING

Introduction and Overview

During the past year, the New England states and Eastern Canadian provinces have initiated a number of successful programs to reduce mercury releases attributable to products. These efforts are consistent with the report endorsed at last year's NEG/ECP meeting in Halifax, N.S. Mercury-containing products, including fever thermometers, thermostats, fluorescent light bulbs, switches, dairy manometers, button cell batteries, and medical devices are pervasive in municipal solid waste. To address the environmental problems associated with mercury in products, the states and provinces have undertaken many types of programs. These have included:

- source separation and mercury collection initiatives for mercury-added products, including programs through household hazardous waste collection centers;
- coordinated proposals for state legislation to require mercury product phase-outs, product bans, disposal bans, labeling, and manufacturer-sponsored collection of mercury-added products;
- mercury clean-outs of schools, dairy farms, hospitals, and dental clinics;
- partnership programs with medical and dental associations to reduce mercury releases from health care facilities;
- thermometer exchanges;
- infrastructure development and expansion in support of source separation programs;
- out-reach and education to the public, municipal, institutional and business sectors.

Although there is much work that remains to be done in this area, these programs have been very successful thus far. Although final tallies of the amounts of mercury collected regionally will not be completed until the end of this year, preliminary information indicates that the state and provincial environmental agencies have collected thousands of pounds of mercury and diverted them from disposal in municipal solid waste.

Some specific examples of regional activities in this area are described in the following sections. In summary, all of the states proposed significant portions of the Model Mercury Education and Reduction Legislation this year, and several were successful in getting legislation enacted. Partnerships between state and provincial environmental agencies and their respective dental and medical associations have been formed and these enabled the states to work closely with these sectors to collect a large amount of excess mercury and to implement mercury collection and elimination programs. Some of these programs are discussed in more detail in the Dental Sector update that follows. Finally, over 100 kindergarden-through-grade 12 schools in the region have had comprehensive mercury clean-outs with hundreds of pounds of mercury from across the region collected.

Examples of Mercury Collection and Elimination Programs

As noted at last year NEG-ECP meeting substantial amounts of mercury are often present in schools, presenting a serious risk of environmental release and unnecessary exposures to children attributable to inevitable spills and breakage. Spills can also result in expensive cleanups and in school closings. Because of this, the region has undertaken a number of programs to educate school personnel about mercury and to remove mercury from schools. Towards these ends, legislation adopted in New Hampshire, Rhode Island and Maine now bans the use of mercury in schools. Massachusetts' environmental agencies are working

with their state's Department of Education to do the same. Vermont's School Science Lab and Mercury Clean-Out Project has been a major success, with over 625 pounds of mercury collected from 83 participating schools. Massachusetts cleaned out at least 30 high schools and vocational schools in the state this year by working with local government agencies, regional interstate associations, and the operators of the state's municipal solid waste incinerators and anticipates addressing an additional 50 schools in the coming year. These clean-outs have removed hundreds of pounds of mercury from the schools. Connecticut has performed school clean-outs at twenty schools, New Brunswick and Nova Scotia have removed mercury from all of their schools and revised curriculums accordingly, and Prince Edward Island has developed a Mercury Management Plan for Schools.

Connecticut is now well on its way to reaching a goal set by Commissioner Arthur J. Rocque, Jr., of the CT DEP, to collect 2001 pounds of mercury by the end of 2001. A collection of dental mercury held in partnership with the CT State Dental Association in June brought in 412 pounds of mercury. Dentists brought their unused bulk mercury to collection sites in seven cities around the state. When combined with household hazardous waste collections and mercury thermometer exchange events, the total amount of mercury collected by July was 1,837 pounds. Over 50,000 digital thermometers have been distributed and the exchanges will continue through the fall.

Massachusetts has collected over 1,600 pounds of unused bulk elemental mercury from dental offices around the state as part of the first collection effort for this sector, as well as several hundred pounds of additional mercury from thermometer exchanges and municipal collection programs. These programs have been funded through municipal grant programs and through source separation plans being implemented by the state's municipal waste combustors, as required by state regulation. These facilities are investing over one million dollars per year on mercury efforts. Massachusetts has also assisted its municipalities with bulb recycling programs through its municipal grant program and a lower cost state contract for mercury recycling.

Vermont has completed a statewide mercury fever thermometer exchange conducted through its pharmacies. The event was highly successful with about 15 percent of households participating, 33,000 digital thermometers distributed, 45,000 mercury thermometers collected, and 95 pounds of total mercury collected. A total of 111 pharmacies out of 119 in the state participated in the exchange. All of these pharmacies voluntarily pledged to discontinue the sale of mercury fever thermometers. The Maine Departments of Environmental Protection and Agriculture and the State Planning Office have embarked on a program to replace mercury manometers in Maine's dairy industry.

Some examples of mercury elimination efforts in other sectors include a partnership between the Maine Department of Environmental Protection and key health care organizations in the state to promote statewide mercury elimination from Maine's hospitals. As of mid-July, 36 of 38 members of the Maine Hospital Association have signed voluntary agreements to virtually eliminate mercury-containing wastes by 2005. The state has been working with the health care organizations providing educational information and assistance to implement the goals of the partnership program.

Similar efforts are underway in most other states and provinces. For example, Quebec has conducted a survey in hospitals and health-care facilities concerning the use of mercury-containing thermometers and the feasibility of alternative technologies. An action plan is proposed recommending the prohibition of mercury fever thermometers in hospitals and health-care facilities and the safe elimination or disposal of the existing stock. Some establishments have already, on a voluntary basis, eliminated the use of

mercury-containing thermometers. The CT DEP is working in cooperation with the CT Auto Recyclers Association on a voluntary program where auto recyclers will remove and recycle used mercury switches from automobiles. This would prevent mercury from being released when cars with these switches are crushed and shredded, or if the switches corrode with age. A similar project is in progress in Quebec. Stakeholder groups addressing mercury components in automobiles are also meeting in Vermont and Maine. Additionally, many states and provinces have also expanded investments in infrastructure and capacity building projects to improve municipalities ability to implement mercury collection and source reduction programs. For example, Massachusetts and New Hampshire are now providing municipal grants and assistance for mercury product storage sheds and mercury collection programs.

Other Initiatives

Environment Canada and Provinces

The Atlantic Provinces have been actively participating in the Canada-Wide Standard (CWS) process. The Canada-Wide standard process is an initiative being carried out under the auspices of the Canadian Council of Ministers of the Environment (CCME). The approach being undertaken is consistent with the CCME Policy for the Management of Toxic Substances which states that mercury shall be managed through its life-cycle to minimize releases. The national standards developed under the CWS process are endorsed by CCME and implemented by all Canadian jurisdictions. The implementation is achieved through various means, including the use of existing legislation by stipulating the standards in the approvals to operate for specific facilities.

Because mercury derived from automobiles is a significant source of potential release when scrap vehicles are recycled, Environment Canada in conjunction with the Ontario Automotive Recyclers Association, Pollution Probe and other partners, has initiated a pilot project for the removal of mercury containing switches in automobiles prior to their recycling. Eleven auto dismantlers will participate in a pilot project to remove and recycle mercury switches between June and October 2001. The results of this project will be used to evaluate the feasibility of expanding the program.

Environment Canada is also implementing a pilot "Take Back" Program for Mercury Fever Thermometers to encourage the public to exchange their mercury thermometers for digital thermometers. This pilot project is scheduled to begin fall 2001.

New Brunswick has introduced a policy for the acquisition of low-mercury and energy efficient fluorescent lamps in government buildings. New Brunswick has also supported the replacement of mercury manometers with mercury-free alternatives in one of its regional hospitals.

Federal Facilities Project

NEWMOA, EPA and the MA DEP developed and implemented the first mercury reduction program in the United States addressing mercury use and management of federal facilities within the region. Participating facilities were audited, alternative products and revised management protocols were recommended and adopted, two mercury workshops were held, many mercury products were recycled, and the final report of the project was produced. A copy of this report is available from NEWMOA.