

# ADVISORY COMMITTEE ON MERCURY POLLUTION



## 2002 ANNUAL REPORT

to the Governor, General Assembly  
and Citizens of the State of Vermont  
January, 2002

### Committee Members:

Chair Richard Phillips  
Michael Bender  
William Bress  
Mary K. Canales  
Ric Erdheim  
Neil Kamman  
Richard McCormack  
Ira M. Pike

Vermont Agency of Natural Resources  
Abenaki Self-Help Association, Inc  
Vermont Department of Health  
School of Nursing, University of Vermont  
National Electrical Manufacturers Association  
Vermont Agency of Natural Resources  
Senate Natural Resources and Energy Committee  
House Natural Resources and Energy Committee

**ADVISORY COMMITTEE ON MERCURY POLLUTION:  
2002 LEGISLATIVE REPORT**

**EXECUTIVE SUMMARY**

This is the fourth annual legislative report of the Advisory Committee on Mercury Pollution, established to report on mercury contamination in the environment, health risks posed, and to review programs and methods to reduce contamination and health risk. The report reviews the 1) the status of mercury product legislation in the region and Vermont's implementation of mercury product labeling; 2) status of mercury education and reduction efforts and initiatives; 3) status of mercury monitoring and monitoring needs in the environment; 4) committee work plan for 2002; and 5) committee recommendations.

**Status of Regional Mercury Product Legislation and Vermont's Product Labeling Law**

Maine, New Hampshire, and Rhode Island have passed some provisions of mercury product legislation. Maine and Rhode Island have passed product labeling provisions. The Advisory Committee has reviewed the provisions of S. 91 which passed the Senate Natural Resources and Energy Committee last year and has included recommendations in regard to this bill. The Vermont Agency of Natural Resources is implementing mercury product labeling with about 170 manufacturers of mercury-added products. The 2<sup>nd</sup> District Court of Appeals vacated the preliminary injunction on the State of Vermont to enforce product and package labeling of fluorescent lamps.

**Mercury Education and Reduction Efforts**

Municipal and statewide programs and initiatives have removed over 1000 pounds of mercury from circulation. These include solid waste district and municipal household hazardous waste programs, school lab clean-outs, statewide fever thermometer exchange, dental office clean-outs, and dairy manometer replacement programs. Mercury switches in automobile convenience lighting, particularly in scrapped vehicles, is another mercury product source being targeted. Efforts to educate the general public and sensitive populations include the highly successful statewide fever thermometer exchange (33,000 digital thermometers distributed and 45,000 mercury thermometers collected), plans to post fish consumption advisories at state fish access locations this year, and distribution of educational brochures to pregnant women. Regional reduction efforts include the plans of the Wheelabrator waste-to-energy plant in Claremont, NH to reduce mercury emissions by nearly 90%.

**Monitoring of Mercury in the Environment**

Several ongoing studies in Vermont and in the northeast region are shedding more light on mercury deposition and fish and wildlife contamination in Vermont. A preliminary mercury emissions inventory shows that Vermont contributes less than 1% of regional mercury emissions. The major emission sources for Vermont include residential and industrial fuel combustion, mercury releases from discarded mercury-added products, and vehicle emissions.

## **Committee Recommendations**

### 1. Legislative Recommendations

Prohibit mercury convenience light switches in vehicles sold after January 1, 2003. Require auto manufacturers to share responsibility for removal and proper disposal of these switches.

Certified labeling plans should be required by statute in S. 91 rather than as an option of rulemaking.

Re-institute funding to study the link between power generation and fish tissue mercury contamination in hydropower reservoirs.

2. State purchasing and procurement policies should be amended to require no or minimal mercury content in purchase of all goods and services.
3. The Committee supports the continued efforts to remove mercury switches from the state vehicle fleet.
4. The Committee supports the continued funding of the Vermont Monitoring Cooperative in Underhill, Vermont (the longest continuous mercury air monitoring station worldwide).
5. The Committee supports the state's participation in the Interstate Mercury Education and Reduction Clearinghouse (IMERC).
6. The Committee recommends that funding be provided to complete dairy manometer replacement project.
7. Establish a program to promote the sale and use of non-mercury-added Energy Star thermostats, and to encourage proper collection and management of these mercury-added thermostats taken out of service.

## **INTRODUCTION**

This is the fourth annual report of the Advisory Committee on Mercury Pollution, which was established by the 1998 Vermont Legislature to address and report on mercury contamination in the environment, health risks posed, and to review programs and methods to reduce contamination and health risk.

This report is divided into the following sections:

- I. Status of Mercury Reduction Efforts and Work of the Committee in 2001
- II. Monitoring of Mercury in the Environment
- III. Committee Work Plan for 2002
- IV. Committee Recommendations

## **I. STATUS OF MERCURY REDUCTION EFFORTS AND WORK OF THE COMMITTEE**

### ***Mercury Product Legislation***

The January 2001 report recommended legislation to reduce the use and release of mercury contained in consumer and commercial products based on model regional legislation developed through the Northeast Waste Management Officials' Association (NEWMOA). The Senate Natural Resources and Energy Committee passed S. 91 by unanimous vote in the last legislative session, incorporating provisions in all areas suggested by the Committee. Advisory Committee members provided testimony. The Advisory Committee has reviewed the provisions of S. 91 and has provided recommendations on modifications to S. 91 for the Legislature's consideration. These appear in the Recommendations section of this report.

The states of Rhode Island, New Hampshire, and Maine have passed some provisions of the NEWMOA model legislation in 2000 and 2001. Rhode Island and Maine have legislation requiring manufacturers of some mercury-added products to provide product and packaging labels informing mercury-added product purchasers of the presence of mercury.

### ***Vermont's Product Labeling Law***

The Agency of Natural Resources continues to review and approve mercury-added product labeling plans from manufacturers. As a result of recent mercury legislation in other New England states, additional manufacturers are complying with Vermont's labeling law. There are almost 170 approved labeling plans. Those manufacturers with two-year "alternative" labeling plan approval (due to product size or other product characteristics that preclude a product or package label) must re-apply for plan approval in 2002.

Fluorescent lamp manufacturers (represented through National Electrical Manufacturers Association or NEMA) have not been subject to label lamps and their packages since a 1999 ruling by the Federal District Court in Vermont enjoined the State from enforcing the labeling law for these lamps. Vermont appealed to the 2<sup>nd</sup> U.S. District Court of Appeals in New York, and in November 2001, the Court ruled in the State's favor and vacated the preliminary injunction, and remanded the case to the lower court. NEMA petitioned for a rehearing in front of the 2<sup>nd</sup> Circuit Court on its decision. The petition for rehearing was denied.

## ***Mercury Education and Reduction Initiatives***

The following is a brief summary of mercury education and reduction initiatives in Vermont that the Committee has reviewed or been involved with:

- *Mercury Fever Thermometer Exchange and Pharmacy Pledge* – In February 2001, the Agency of Natural Resources conducted a statewide mercury fever thermometer exchange at pharmacies across the state. In this highly successful education effort, 112 pharmacies participated (95% participation rate) by pledging not to sell mercury fever thermometers in the future and collecting mercury fever thermometers in exchange for digital thermometers provided by the Agency. Nearly 15% of Vermont households participated, with 45,000 mercury thermometers collected, 33,000 digital thermometers distributed, and nearly 100 pounds of mercury removed through the assistance of the Chittenden Solid Waste District.
- *School Science Lab Chemical and Mercury Clean-Out Project* – The Agency of Natural Resources, in conjunction with the Chittenden Solid Waste District and Association of Vermont Recyclers, completed its two-year project with middle schools and high schools with the following results: 156 pounds of elemental mercury and over 17,000 pounds of hazardous chemicals were removed from 83 participating schools. All schools developed lab chemical management plans and received training on lab chemical management. Most of these schools are now mercury-free in their science laboratories.
- *Outreach to sensitive populations* - The Vermont Department of Health has continued to distribute its mercury brochure for pregnant women regarding fish consumption advisories. During the last year, the Department's district offices distributed 800 brochures. These brochures were also added to the Provider's Toolkit, a health information kit that nearly every Vermont physician receives from the Department of Health.

The U.S. Food and Drug Administration has revised its Consumer Advisory on fish consumption for women of child bearing age who may become pregnant and for children. The FDA now advises that these at-risk populations avoid marine fishes that include shark, swordfish, king mackerel, and tilefish. They also recommend that no more than 12 ounces of fish per week (of any kind) on average be consumed by these populations.

- *Municipal Collections of Mercury* – Municipalities throughout the state collected approximately 559 pounds of mercury in household hazardous waste and small business collection programs (1999-2001). Wastes typically collected included thermometers, thermostats, elemental mercury, and mercury-containing switches.
- *Mercury Dairy Manometer Replacement Project* – The dairy manometer exchange program in the Lake Champlain Basin, coordinated by the Northwest Solid Waste Management District and the Dept. of Agriculture, Food, and Markets has been completed. Through this project, 84 mercury manometers were replaced on working farms through funding received from the Lake Champlain Basin Program. Additional mercury dairy manometers exist in the state, particularly outside of the Lake Champlain Basin and on non-working farms. See Recommendations section of report.

- *Mercury Switches in Autos and Appliances* – The Agency of Natural Resources developed a manual on how to remove mercury switches from appliances such as gas ranges and heaters, chest freezers and washing machines. Three hands-on training sessions were held in the fall and attended by solid waste district staff, salvage yard operators, and gas company technicians. The Agency also piloted an auto switch removal program with four volunteer salvage yards. These yards were trained in removing mercury trunk and hood light switches from vehicles in the yard and agreed to collect switches from vehicles received in the future. Over 200 switches were collected in the pilot, representing about ½ pound of mercury. The Agency of Natural Resources has initiated a program to replace mercury switches in its vehicle fleet with non-mercury switches, and is developing a program to remove all mercury switches from state vehicles at end of life or prior to auction.
- *Thermostat Collection Program* – Vermont Department of Environmental Conservation (DEC) has purchased and distributed thirty collection containers throughout the state to plumbing, heating and electrical wholesalers for collection of discarded mercury thermostats from contractors. The Thermostat Recycling Corporation (TRC) provides free disposal for participating wholesalers. DEC supplied promotional materials to the wholesalers including program posters, flyers and bill inserts. As of October 402 thermostats have been collected through this program.
- *Mercury in Dental Offices* – To date, more than 100 pounds of liquid mercury has been removed from dental offices through the joint efforts of the Vermont State Dental Society and the Chittenden Solid Waste District. The Advisory Committee has encouraged the Vermont State Dental Society (VSDS) to continue to monitor mercury management in dental offices. The VSDS is working cooperatively with the Agency of Natural Resources to develop a regulatory scheme (through an Agency Procedure) that would require the implementation of certain best management practices for the management of dental amalgam. The Committee is following a technical study to evaluate the effectiveness and cost of dental amalgam separator technologies, used to capture and further reduce fine dental amalgam particles in wastewater discharges. After this study is completed through the Strategic Envirotechnology Partnership (a state sponsored organization in Massachusetts assisting in environmental technology development), it is the intent of the Agency to require dental offices to install such separators.
- *Posting of Fish Consumption Advisories at State Access Areas* - During 2001, the Committee obtained agreement from the Commissioners of the Department of Environmental Conservation (DEC) and the Department of Fish and Wildlife to post the text of the current fish consumption advisory, as well as additional materials, at State-owned accesses throughout Vermont. Department of Health has provided the printed materials for this purpose. The Committee further worked with DEC and Dept. of Fish and Wildlife to review currently available educational materials related to mercury in fish tissue for posting at the access areas.
- *Public Presentation on Mercury Contamination in Aquatic Environments* - Neil Kamman, of the DEC Water Quality Division (also a member of the Advisory Committee) presented findings of a large study, which is being conducted by Vermont DEC and others, to the Committee and other interested parties. Some of the findings discussed during the presentation included the overall level of mercury contamination in waters, sediments, and fish, as well as declines in the amount of mercury falling to the sediments of lakes in recent years. (These findings are discussed in Section II of this year's report and last year's report.)

- *Review of Ongoing Mercury Collection Programs* - The Advisory Committee on Mercury Pollution (ACMP) formed a sub-committee (Collection Program Review Committee) comprised of Solid Waste District and Agency of Natural Resources representatives to review and evaluate current mercury collection systems within the state. The sub-committee reviewed the effectiveness of current collection programs and made recommendations to the ACMP for any improvements or changes in these systems to better serve the needs of Vermont citizens for mercury disposal/recycling. (See Committee Recommendations section of this report.)
- *Mercury Reduction at Wheelabrator Technologies' Claremont Waste-to-Energy Plant* - Wheelabrator Technologies' announced that its solid waste to energy plant in Claremont New Hampshire will upgrade its air pollution control equipment that will collectively remove 85-90% of mercury emissions from its stack emissions. Under current state and federal emission guidelines, the upgrade would not have been required until the end of 2005. This facility serves 29 Vermont and New Hampshire communities. It is estimated that this facility upgrade will reduce total mercury emissions in New Hampshire by 10 percent.
- *Estimated Cumulative Mercury Reductions to Date* – The Advisory Committee has recommended that the Agency of Natural Resources maintain a cumulative inventory of mercury that has been collected and removed from circulation as a result of all statewide mercury reduction efforts. The Agency is beginning this running inventory with this report.

<b>SOURCE</b>	<b>AMOUNT</b>
<b>Municipal Collection Programs -1999-2001</b>	<b>559 lbs.</b>
<b>School Science Lab Clean-Out Project</b>	<b>156 lbs.</b>
<b>State-wide Fever Thermometer Exchange</b>	<b>98 lbs.</b>
<b>Dental Offices</b>	<b>194 lbs.</b>
<b>Thermostat Recycling Corporation (TRC)</b>	<b>3 lbs.</b>
<b>Dairy Manometer</b>	<b>41 lbs.</b>
<b>Auto Switches</b>	<b>1 lbs.</b>
<b>CUMULATIVE TOTALS</b>	<b>1052 lbs.</b>

### ***Regional Mercury Reduction Efforts***

The Agency of Natural Resources regularly updates the Advisory Committee on regional mercury reduction efforts through its involvement with NEWMOA and the New England Governors' Conference and Eastern Canadian Premiers' Mercury Task Force. The following are significant results of regional efforts in 2002.

- The states of Rhode Island, Maine and New Hampshire enacted various provisions of the NEWMOA model mercury product legislation in 2000 and 2001. Currently, Rhode Island has adopted most provisions of the model legislation including phase-out of certain mercury-added products based on the mercury content. Maine adopted laws addressing the Interstate Clearinghouse; Notification; Labeling; Restrictions on the sale of mercury containing fever thermometers, manometers, and mercury in schools, Disposal Ban; Disclosure by manufacturers for mercury-containing products used in hospitals; and, Restrictions on sale and use of elemental mercury. New Hampshire has provisions for the Interstate Clearinghouse;

Notification; Restrictions on the sale of mercury-containing novelties, thermometers, and mercury in schools; and, Limitations on the use of elemental mercury.

- NEWMOA and its member states have initiated the interstate clearinghouse to assist states in coordinating on various aspects of the mercury product legislation. The Clearinghouse is known as the Interstate Mercury Education and Reduction Clearinghouse (IMERC). IMERC has developed a uniform notification process for manufacturers of mercury-added products and formulated products that can make notification to IMERC instead of separate states. IMERC is also initiating a process to coordinate state implementation of mercury product labeling requirements. NEWMOA also facilitates state communications on mercury education and reductions efforts and legislative issues through its Mercury Work Group and web site.
- NEWMOA reviewed participation by regional wholesalers in the Thermostat Recycling Corporation's program to collect spent mercury-added thermostats. The overall finding of the report was that thermostat collection rates could and should be significantly improved.
- The Conference of New England Governors and Eastern Canadian Premiers (NEG/ECP) established a Mercury Task Force and Mercury Action Plan in 1998 to promote regional coordination on actions to virtually eliminate anthropogenic sources of mercury release to the environment. An interim goal of 50 % reduction in regional mercury emissions by 2003 was originally set. It now appears likely that a 50 % or greater reduction in emissions will occur, primarily due to reductions in mercury emissions from municipal waste combusters, medical waste incineration, and the closing of the chloralkali plant in Maine.

NEG/ECP passed a resolution in 2001 establishing a new goal of 75 % reduction in anthropogenic mercury emissions by 2010. The resolution also calls for an updated mercury emissions inventory for the region in 2002 to get a more accurate picture of current emissions from the previous inventory in 1998 and a review of the adequacy of the current mercury deposition monitoring network in the region.

- NEG/ECP, NEWMOA, EPA and other groups are committed to addressing management of surplus mercury in the coming year. As mercury use is being reduced in manufacturing and as mercury waste is being collected and recycled, there is a growing supply of mercury that exceeds current demand for use by industry. If this excess mercury is allowed to remain in commerce, it will drive mercury prices downward and possibly encourage greater mercury use, particularly in some foreign countries, thus risking greater environmental release, and defeating the purpose of mercury removal and reduction efforts to date. These groups are planning to convene a conference in 2002 to open the dialogue on removing this mercury from commerce and establishing safe storage.

## **II. MONITORING OF MERCURY IN THE ENVIRONMENT**

### *New Findings and New Research Initiatives*

- Mercury continues to deposit to Vermont's landscape at a rate similar to that of years past, even though independent data from lake sediment cores show a decline in mercury deposition in recent years.

- Research indicates that there exists a geographic influence on fish tissue mercury contamination. Areas where fish tissue Mercury is elevated in Vermont include lakes in the Northeast kingdom, and lakes in southern Vermont. Overall tissue contamination is greater in New Hampshire lakes than in Vermont. This is due both to geology and to differences in mercury deposition. Our ever-improving understanding of this variation will allow Vermont to improve the precision of fish consumption advisories.
- Vermont and New Hampshire are jointly working to map air mercury deposition across both states. This important analysis will provide insight into areas where tissue contamination may be influenced by point sources of mercury, such as southern New Hampshire, and in the vicinity of Albany, NY.
- USEPA promulgated new maximum permissible limits for tissue contamination in fish, and ASIWPCA (Association of State and Interstate Water Pollution Control Administrators) is presently developing procedures for assessing waters in light of that standard. Vermont's current approach to determining safe consumption limits is more conservative and protective of human health than the new USEPA limits.
- Vermont is now engaged in a collaborative, multi-state and bi-national research effort, to pull together air and water mercury monitoring data in order to better understand the underlying mechanisms which account for mercury contamination in fish and fish eaters such as loons and eagles.
- Vermont is also engaged in a large investigation into the movement and bioaccumulation of mercury in Lake Champlain; a system which is ill studied with respect to mercury.
- Researchers from the US Geological Survey continue to study the mechanisms by which mercury is transported through rivers and streams. The movement of mercury is seasonal, with the largest quantities being transported out of watersheds by spring runoff. It has been shown that the majority of the annual mercury export from a given watershed can be accounted for by one or two storm events.

### ***Monitoring Needs***

- Continue to seek funding to study the link between power generation and fish tissue mercury contamination in hydropower reservoirs. Available literature indicates that fluctuation of reservoirs creates conditions where methylmercury is generated and bioaccumulated. The conceptual design for this study has the support of the Governor, research institutions, and congressional delegations. In 2001, the Legislature appropriated \$75,000 to seed what is likely to be a \$1,000,000 study to be managed by the Department of Environmental Conservation. These funds were subsequently rescinded post-session. See Committee Recommendations section of the report.
- Review literature regarding point source contributions of mercury to Vermont's environment. There is currently very limited information on how much mercury is passed through publicly owned treatment works into surface waters.

- Review literature regarding the contribution of mercury to Vermont's air from landfills. Very new research from other parts of the United States indicates that landfills are a measurable local source of airborne mercury, and even toxic methylmercury. Unlike solid waste incinerators, landfills will continue to emit measurable quantities of airborne mercury for an undetermined period of time.

### ***Vermont Mercury Emissions Inventory***

The Air Pollution Control Division of the Vermont Agency of Natural Resources has developed, as a working document, a mercury emissions inventory and modeling effort with the following findings:

- Relative to other states in the northeast, Vermont emits a small fraction of regional emissions (0.6%).
- In 2000, approximately 193 pounds of mercury was emitted from sources in Vermont. Major emission sources include residential fuel combustion (36%), mercury releases from discarded mercury added products (28%), mobile source or vehicle emissions (15%), industrial fuel combustion (12%), crematoria (4%), dental offices (1%), and landfills (less than 1%).

### **III. COMMITTEE WORK PLAN FOR 2002**

1. Continue to provide testimony and information to legislative committees on proposed mercury legislation.
2. Continue to review environmental monitoring data, studies, and environmental research initiatives (state, regional and national) on all aspects of mercury contamination in air, soils, water, and biota to gain a better understanding of the ecological and human health risks in Vermont.
3. Provide comment and review on revisions and enhancements to Vermont DEC's Mercury Emissions inventory (prepared by the Air Division) and the regional emission inventory to be prepared by the NEG/ECP Task Force.
4. Review, comment and advise on mercury education and reduction efforts of the Departments of Health and Environmental Conservation, Solid Waste Districts and municipalities, and other private and non-profit organizations to reduce mercury release and exposure.
5. Oversee outreach and education efforts by the Department of Health and Agency of Natural Resources on consumption of both recreational and commercial fish that are contaminated with mercury (particularly to sensitive populations and those consuming large quantities of fish). Identify and provide recommendations on ways to strengthen outreach and education.
6. Oversee of efforts by the Agency of Natural Resources, its Departments, and other organizations to post fish consumption advisories at all state-owned access points to waters of the state.

7. Review status of DEC's efforts and those of the Vermont State Dental Society to monitor and reduce mercury use in and release from dental offices through adoption of best management practices and other initiatives. Review status of ongoing dental amalgam separator research for its potential adoption as a wastewater treatment requirement for mercury reduction.
8. Continue to review the status and effectiveness of certain manufacturer-sponsored mercury product collection and take-back programs, (including provisions under H. 283 establishing advanced disposal fees to support municipal collection programs), for products such as thermostats, batteries, and medical products. Evaluate and make recommendations on NEWMOA model legislation section 10 addressing manufacturer-sponsored collection systems for discarded mercury-added products. Also review effectiveness of collection programs sponsored by the state and municipalities for products such as lamps, motor vehicles switches, appliance switches, electronic products and dairy manometers.
9. Working in conjunction with the Dept. of Agriculture, Food and Markets to obtain funding sources for completing replacement and removal of the remaining mercury dairy manometers at working and non-working farms throughout the state.
10. Support residential and business access in small rural municipalities and solid waste districts to permanent regional collection programs. Promote collaboration between the districts and municipalities to provide adequate ongoing disposal/recycling options for mercury-containing wastes and other hazardous wastes. Seek assistance from the Hazardous Waste Network of municipal solid waste districts, alliances and municipalities in evaluating potential opportunities to improve access to collection programs.
11. Evaluate status of mercury reduction efforts at hospitals and health care facilities in Vermont and advise on voluntary and regulatory strategies that can be used to reduce mercury use. Meet with the Vermont Association of Hospitals and Health Care Systems and other health care representatives to identify mercury reduction opportunities.
12. Review H. 283 provisions that would require presorting of mercury-added products in any municipality that sends solid waste to municipal solid waste incinerators. Review existing statutes in 10 V.S.A. Section 6605g on incinerator emissions. Provide information and recommendations to legislative committees.

#### **IV. COMMITTEE RECOMMENDATIONS**

##### **1. Legislative Recommendations**

Prohibit mercury convenience light switches in vehicles sold after January 1, 2003. Require auto manufacturers to share responsibility for removal and proper disposal of these switches.

Certified labeling plans should be required by statute in S. 91 rather than as an option of rulemaking.

Re-institute funding to study the link between power generation and fish tissue mercury contamination in hydropower reservoirs.

2. State purchasing and procurement policies should be amended to require no or minimal mercury content in purchase of all goods and services.
3. The Committee supports the continued efforts to remove mercury switches from the state vehicle fleet.
4. The Committee supports the continued funding of the Vermont Monitoring Cooperative in Underhill, Vermont (the longest continuous mercury air monitoring station worldwide).
5. The Committee supports the state's participation in the Interstate Mercury Education and Reduction Clearinghouse (IMERC).
6. The Committee recommends that funding be provided to complete dairy manometer replacement project.
7. Establish a program to promote the sale and use of non-mercury-added Energy Star thermostats, and to encourage proper collection and management of these mercury-added thermostats taken out of service.

Dissenting Remark  
Prepared by ACMP Member Ric Erdheim, Senior Manager for Government Affairs, National  
Electrical Manufacturers Association  
January 2002

The National Electrical Manufacturers Association, which represents manufacturers of energy efficient lighting, dry cell batteries and other electrical products, as well as manufacturers of products that energy efficient lighting and batteries and users of such products oppose the mandates in the Agency of Natural Resources (ANR) mercury legislation. The Advisory Committee on Mercury Pollution (ACMP) continues to support broad mercury legislation even though it addresses a very small and declining source of mercury. The ANR and ACMP disregard the growing national and statewide data showing that the bill does not address remaining mercury issues in an efficient manner. My earlier concerns about the economic and environmental flaws in the bill are included in my comments in last year's report to the Vermont General Assembly. These remarks focus on recent developments that reinforce my earlier concerns.

Recent developments continue to show the flaws in the legislation, such as:

1. The costliest mandates are aimed at the smallest sources. An analysis of the state's mercury inventory prepared by the Vermont ANR Air Toxics Control Division and presented to the Committee estimates that the four largest sources of in state emissions (most emissions come from out-of-state) are residential fuel oil burning – 36.4% -- automobile switches – 22.2% -- and mobile sources – 15.3% -- and industrial fuel combustion – 11.7%. These sources, which make up 85% of the emissions inventory, are not addressed by the key labeling and phase out provisions of the bill. In fact, only lamp breakage at 3.9% and landfills at 0.1% would even be addressed by the bill. Consequently, the state will get a very low return on the limited dollars it has to invest.
2. The bill relies on old data, thereby failing to reflect the significant reduction of mercury in the solid waste stream. Due to industry innovations to reduce mercury in products, the bill will result in minimal incinerator and landfill emission reductions. A recent report issued by the US EPA shows that mercury use by industry has declined by 90% from the early 1980s. It also shows that municipal waste incinerators, historically one of the larger sources of mercury emissions, now are the source of less than 4% of nationwide manmade emissions. National incinerator emissions have declined from 42 tons in 1990 to 4 tons in 2001. This report can be accessed on the internet at the following link: ([WWW.EPA.GOV/REGION5/AIR/MERCURY/PROGRESS.HTML](http://WWW.EPA.GOV/REGION5/AIR/MERCURY/PROGRESS.HTML))
3. The bill will lead to unintended consequences. It undercuts the nation's global warming efforts by making it more difficult and more costly to market energy efficient lighting. Both fluorescent and HID lamps are typically three to four times more energy efficient than incandescent lamps. This year, the Federal EPA started a campaign, "Change a Light, Change the World." to highlight the importance of the use of energy efficient mercury containing lamps (October 15, 2001).

Moreover, in his 2002 state of the state address, Governor Dean called for the state to develop energy independence. In reaching this goal he identified energy efficiency as one of the key components. Yet this bill would on its face ban some of the very products that the state will need if it is to achieve energy independence.

The proposed measures might also adversely effect the health and welfare of Vermont citizens: They can adversely affect public health by banning button batteries used to power some portable

medical devices and ultraviolet lamps used to treat childhood jaundice and skin diseases and to control bacteria in drinking water and for water pollution control. They can adversely affect public safety by banning efficient outdoor lighting used for nighttime driving and to make crime less likely. They can adversely affect the state's economy by banning the use of photo etching lamps at semiconductor facilities such as IBM at Essex Junction, and lamps used for nighttime highway construction (the same lamps now used for nighttime recovery efforts at the World Trade Center), sports lighting used to illuminate nighttime outdoor sporting events at schools, ski slopes and concerts and airport lighting at freight and passenger loading areas.

In sum, the bill requires labeling, and product and disposal bans for nearly all mercury-containing products without consideration of benefits and costs. By failing to establish priorities and by ignoring the costs and benefits of the proposed programs for different products, the bill will not result in mercury reduction in a cost-effective and efficient manner. In fact, it could confuse and discourage consumers from using energy efficient products. In short, the proposed mandates will frustrate the state's efforts to achieve energy independence by improving energy efficiency.

An effective mercury program is one that focuses on priority mercury issues and addresses them in a manner that considers all relevant costs. The ACMP proposed legislation fails to meet this standard.

Dissenting Remark about Dissenting Remarks  
Prepared by ACMP Chair Richard I. Phillips, Agency of Natural Resources  
January 2002

As Chair of the ACMP, I am opposed to including committee members' separate dissenting opinions about the legislative report as a part of the report. This essentially allows a member to continue the argument even though the other members do not agree and the dissenter has the freedom to say whatever he or she wishes with no particular need to be thorough or accurate. It is easy to use this dissenter process to provide one-sided information and opinion that would not stand up to scrutiny. Essentially, it is lobbying the readers of the report at the expense of the other Committee members' views. It degrades the committee process by making it unnecessary to reach a group decision. This year we have two dissenting members. If we continue allowing dissenting remarks, we will probably have more dissenters. The Committee discussed this matter briefly this year and decided to continue the tradition of allowing dissenting remarks one more year.

I intend to take this matter up again in a future AMCP meeting and recommend that no dissenting remarks be published with the annual report in the future.

## Dissenting Comments

*Prepared by: Michael Bender, Director, Mercury Policy Project, representing the Abenaki Self-Help Association, Inc.*

### **Comments on the 2002 Report:**

The Advisory Committee on Mercury Pollution's *2002 Annual Report* does a good job of describing current education and reduction initiatives for reducing some mercury releases in Vermont. However, with few exceptions, it fails to recommend the aggressive steps necessary to further reduce human exposure to mercury and attain the goal of *virtual elimination of anthropogenic mercury*--agreed to by the Vermont governor and the other New England governors in 1998.

### Specific Comments

The comments below outline areas where this year's *Report*, in particular, fails to adequately address, or is silent, on recommending the steps necessary to protect all Vermonters--and in particular sensitive populations--from exposure risks to mercury. These comments are specific to Vermont Statute (*written below in italics*) that the Committee is charged, each year, with reporting on.

***The extent of any health risk from mercury contamination in Vermont, especially to pregnant women, children, the Abenaki Self-Help Association, Inc. and other communities that use fish as a major source of food.***

While the *2001 Report* made a specific recommendation to assess human exposure to mercury in Vermont, this has not occurred over the past year. Unfortunately, the *2002 Report's* silence on this issue apparently reflects the lack of priority given to: "...***minimizing...increased health risk***" from mercury to Vermonters. However, concerns about reducing human exposure to mercury have prominently and consistently been addressed by federal agencies and others at the national level, including the following:

- A July 2000 U.S. National Academy of Sciences (NAS) report upheld the Environmental Protection Agency's (EPA's) reference dose--a recommended standard for warning the public about mercury-contaminated fish. EPA's standard is five times more stringent than the Food and Drug Administration's (FDA's) "action level" of 1 ppm.<sup>i</sup> The NAS report confirmed the findings of an earlier Faroes Island study that even low levels of mercury exposure can cause brain damage and learning disorders in children. Decreased intelligence quotient, learning problems, inability to concentrate, hyperactivity, delayed development in children, and now high blood pressure have all been linked to womb and post-natal exposure.<sup>ii</sup>
- In January 2001, FDA updated its consumer advisory for the first time in six years, warning women of childbearing age and pregnant women not to eat certain commercial marine fish, including swordfish, shark, king mackerel and tilefish, due to high mercury levels.<sup>iii</sup> Also, in January 2001, the EPA warned pregnant women, women of child bearing age and nursing mothers not to eat more than 6 ounces of fish per week. EPA also advised that young children not be allowed to eat more than 2 ounces of fish per week.<sup>iv</sup>
- In March 2001, using blood and hair samples—the first study of its kind in the U.S.—the Center for Disease Control and Prevention estimated that one in ten women of childbearing age is exposed to mercury levels above which harm could occur.<sup>v</sup> This translates into 390,000 children born each year in the U.S. at risk for neurodevelopmental deficits due to exposure in utero.<sup>vi</sup>
- The June 2001 *Consumer Reports* recommends that pregnant women, women of childbearing age and children limit consumption of canned tuna--the most popular seafood consumed in the U.S. and the only seafood many children will eat--based on EPA's guidelines.

According to *Consumers Union*, here's what that means:

"A 132-pound women could consume up to 9 ounces of light tuna or 5 ounces of white tuna a week (assuming no other mercury-bearing fish is eaten). That's about two cans of light tuna or one can of white a week. A 44-pound child could eat only 3 ounces of light tuna or 1.5 ounces of white a week; in other words, one tuna sandwich weekly.<sup>vii</sup>"

***Methods available for minimizing risk of further contamination or increased health risk to the Vermont public.***

Unfortunately, the *Report* fails to adequately and effectively address reducing human exposure risks to mercury in fish, dental fillings and vaccines in Vermont, with the latter two not mentioned in the *Report*. Yet other nearby New England states are addressing dental mercury issues. In 2001, a law was passed requiring dentists to provide patients with information about mercury in dental fillings, modeled after an earlier California law.<sup>viii</sup> In January 2002, a New Hampshire health committee held a public hearing on HB 1251, a legislative proposal consistent with the following Health Canada recommendations:

- "Non-mercury filling materials should be considered for restoring the primary teeth of children;
- Whenever possible, amalgam fillings should not be placed in or removed from the teeth of pregnant women.<sup>ix</sup>"

Although the Vermont Health Department began issuing fish consumption advisories for mercury over five years ago, these notices still do not appear at boat landings where people fish. The *Report* makes reference to an informal agreement by the Commissioners of Fish and Wildlife and Environmental Conservation to post freshwater fish advisories for mercury at state-owned points of access. However, it does not clearly spell out who is responsible for doing so or by when--or present other additional steps needed to raise public awareness of mercury-contaminated fish. Although the *Report* states that the Committee will provide oversight of the Departments' fish postings as well as the Health Department's efforts on warning the public about mercury in freshwater and marine fish, it has no authority to do so--and the *Report* makes no recommendations as to how this should occur. The lack of attention to reducing Vermonter's exposure to mercury in marine fish is particularly disturbing given that, on average, more than three-quarters of the fish consumed in the U.S. is commercially sold, mostly marine fish.<sup>x</sup>

---

<sup>i</sup> *Toxicological effects of Mercury*, National Research Council, July 2000

<sup>ii</sup> Sorenson, N., Murata, K., Budtz-Jorgensen, E., Weihe, P., Grandjean, P. Prenatal methylmercury exposure as a cardiovascular risk factor at seven years of age. *Epidemiol* 1999; 10:370-5

<sup>iii</sup> FDA Consumer Advisory, "An Important Message," Jan. 2001

<sup>iv</sup> EPA Office of Water, Consumption Advisory, Jan. 2001

<sup>v</sup> MMWR Morb Mortal Wkly Rep 2001 Mar 2;50(8):140-3

<sup>vi</sup> The Centers for Disease Control and Prevention concludes that "10% of women have mercury levels within one tenth of potentially hazardous levels (58 ppb) indicating a narrow margin of safety for some women and supporting efforts to reduce methylmercury exposure." The level is the benchmark dose level, derived in the Faroes study. EPA used this level to calculate their reference dose, and the agency applies a 10-fold uncertainty factor (that results in a blood level of  $58/10 = 5.8$  ppb) to derive a RfD from there. EPA says that there may be harm from exposure to mercury above the RfD, and that exposures below the RfD should be safe. In its findings, CDC says nothing about population variability, uncertainties, etc., in the level at which harm can occur. Therefore, if you assume that anyone exposed above EPA's RfD is at risk, then based on the new CDC data, 10% of the women of childbearing age in the U.S. have blood mercury levels that put their newborns at risk. This is because 10% of women have blood mercury levels within a factor of 10 (= the EPA uncertainty factor) of the effects level.

<sup>vii</sup> "Tuna goes upscale/Mercury: Gauging the risks," *Consumer Reports*, June 2001, p.17

<sup>viii</sup> See <http://janus.state.me.us/legis/bills/LD.asp?LD=1409>

<sup>ix</sup> See [http://www.hc-sc.gc.ca/hpb-dgps/therapeut/zfiles/english/publicat/dental\\_position\\_e.html](http://www.hc-sc.gc.ca/hpb-dgps/therapeut/zfiles/english/publicat/dental_position_e.html)

<sup>x</sup> Johnson HM. Annual report on the U.S. seafood industry, 6<sup>th</sup> ed. Bellevue (WA): H.M. Johnson and Associates; 1998

