

Mercury Products Advisory Committee 2003 Report to the Legislature

1.0 Introduction and Background

In the spring of 2000, the 119th Legislature passed "An Act to Reduce the Release of Mercury into the Environment from Consumer Products", (P.L.1999, c.779). The law defines mercury-added products to include thermostats, thermometers, electrical switches, relays or other electrical devices, scientific and medical devices, and lamps if mercury is added during manufacture of the product.

The law established a Mercury Products Advisory Committee (Committee) to advise the Department of Environmental Protection (DEP), the State Planning Office (SPO) and the Legislature on actions needed to prevent and reduce the environmental releases of mercury from consumer products. It required the Committee, starting in 2002, to report annually to the joint standing committee of the Legislature having jurisdiction over natural resources. (See Appendix A for a list of Committee members.)

The law contains several key provisions intended to increase the amount of mercury-added products collected for recycling. These provisions include:

- As of July 15th, 2002, businesses and public entities may not knowingly place a mercury-added product in the solid waste stream sent for disposal. (Since most of these wastes are either universal wastes or hazardous waste, it has been illegal for businesses or public entities to place them in the solid waste stream destined for disposal since 2001.)
- As of January 1, 2005 this disposal ban is extended to all Maine residents.
- The development and implementation of an aggressive education and outreach campaign by DEP to inform Maine citizens and businesses about the disposal bans and proper waste management techniques.
- State assistance to municipalities and regional associations to develop collection programs.
- A commitment by the State, within available resources, to develop and implement a capital investment grant program for public infrastructure development and improvements to enable municipalities to collect and recycle mercury-added products and universal wastes.

Since the passage of P.L. 1999, c. 779, the Legislature has passed additional mercury legislation, including the following:

• "An Act to Further Reduce Mercury Emissions from Consumer Products", P.L. 2001, c 373. This bans the sale of mercury fever thermometers and dairy manometers; requires manufacturers to provide written notice to the Department before offering a mercuryadded product for sale in Maine; prohibits the purchase of mercury or mercury compounds for use in schools; and requires manufacturers who sell products to hospitals to provide a certificate of mercury content upon hospital request.

 "An Act To Address The Health Effects of Mercury Fillings" was enacted as P.L. 2001, c. 385. It requires the state Department of Human Services, Bureau of Health to prepare a brochure and a poster on alternative dental restorative materials and procedures and their health and environmental impacts, and for dentists who use mercury to display the poster and provide patients with the brochure.

In the second regular session of the 120th Maine Legislature (adjourning April 17, 2002), two more mercury product bills were passed:

- "An Act to Prevent Mercury Emissions when Recycling and Disposing of Motor Vehicle" was enacted as PL 2001, c. 656. It prohibits the sale of mercury switches in automobiles as of January 1, 2003 and establishes a statewide system to collect, consolidate and recycle the switches. A bounty of \$1 is provided to people who remove switches and return them for recycling, with the money to be provided by the auto manufacturers.
- "An Act to Phase Out the Availability of Mercury-added Products" was enacted as PL 2001, c. 620. It prohibits the sale of most mercury thermostats used in non-manufacturer applications (effective January 1, 2006), and requests DEP to submit a comprehensive strategy to further reduce the mercury content of products by January 2003.

This report delineates the State's progress to date in fulfilling the mandates of P.L. 1999, c. 779 and P.L. 2001, c 373, including the development of: public and private infrastructure, product specific collection systems, Maine's Clean State Initiative, information on mercury-added product recycling, and data collection. It also contains information on future actions planned by the DEP and SPO, and other recommendations to help achieve the legislative goals.

2.0 Infrastructure Development

Public Infrastructure Development: An important directive within P.L. 1999, c. 779 requires DEP and SPO to help municipalities develop the infrastructure needed to collect mercury-added products for recycling. The DEP's legislative implementation plan included the development of the UW rules to facilitate the handling of mercury, lead, and PCB containing products, and a multifaceted education and outreach program. The UW rules, adopted by the Board of Environmental Protection in January 2001 and amended in 2002, require that all generators of universal wastes send these wastes to appropriate recycling

facilities, and include provisions that allow licensed solid waste facilities and recycling centers to collect UW. With the 2002 amendments, all mercury-added products as defined in P.L. 1999, c. 779 can be handled as universal wastes.

SPO's role was to develop a grant program to rapidly put into place a voluntary management and collection infrastructure within the existing municipal and regional solid waste and recycling framework.

<u>Grant Program for Publicly Funded Infrastructure Development:</u> In 2000, the Legislature allocated \$438,000 from surplus revenues in the Solid Waste Management Fund to jump start the activities mandated by the legislation. Of these monies, approximately \$300,000 has been dedicated to public infrastructure development. In March 2001 the SPO, in partnership with the DEP, offered a new municipal grant program to enable municipalities to collect and recycle mercury-added products and universal wastes. The program provided funds to construct storage sheds or modify existing structures, thereby providing new permanent collection and storage capacity. Limited funds were also available to support one-time collection events that included UW and other mercury-added products.

To help determine infrastructure development costs, SPO contracted with the University of Maine at Orono (UMO), Department of Resource Economics and Policy to collect data and build a spreadsheet model. The study was submitted to the committee having jurisdiction over natural resources in January 2002. It looked at five collection strategies for household hazardous wastes, including mercury-added products, and the potential operating costs of each strategy. It concluded that no one development scenario is a clear 'winner' from a cost-effectiveness standpoint and that a mix of options would probably be best in the State.

Originally seventy-four municipal or regional grant applications were received and most were funded. To date, thirty-two towns and regional associations have set up 8' x 10'storage sheds for the collection and recycling of mercury products, twelve have built or modified larger storage areas, and seven have held one time regional collection events. Twelve other municipalities received infrastructure grants but have not completed construction and have asked for extensions until June 2003. Most have cited monetary constraints to cover operational costs as the reason for the extension requests.

The storage facilities funded thus far will service approximately 200 communities with a collective population of forty percent (40%) of the State's population. Maine has 493 municipalities, so clearly there are many towns without access to mercury collection and storage facilities at this time. Since participation in the separate collection of mercury-added products from households is voluntary until the residential disposal ban goes into effect on January 1, 2005, some towns have been waiting and anticipating that more grant money would become

available. This past November, Maine voters approved an environmental bond request, of which \$900,000 is slated to fund completion of the shed deployment statewide and the infrastructure/collection needs identified by the UMO study. The bond issue also includes \$600,000 for enhancement of municipal infrastructure to recycle solid wastes. With the bond's passage, the SPO will reissue the universal waste storage capacity grant program in March 2003.

None of the bond funds are targeted for ongoing municipal operational costs. The Legislature passed a Resolve during the second session of the 120th, to study various funding options for State cost share of municipal HHW operational costs. The funding proposal and draft legislation will be provided to the committee with jurisdiction over natural resources in January 2003.

<u>Service Contract</u>: SPO issued two Requests for Proposals (RFP) to collect and recycle mercury and UW collected by municipalities. The State has successfully executed two contracts, one for electronics and another for the mercury-added products and PCB lighting ballasts. The contracts provide a statewide price per waste stream for pickup of mercury-added products and UW, regardless of location. Any municipality may participate in the contracts, which will be put out to bid or renewed on an annual basis. Because these contracts can achieve some economies of scale, they offer competitive prices.

Private Infrastructure Development

The number of private sector consolidators and recyclers is rapidly growing to meet the increasing recycling demand. There are approximately 58,000 potential generators in Maine, as most businesses generate mercury-added wastes such as fluorescent lamps. At present there are fifteen companies (consolidators) listed on the DEP web page that will transport UW and mercury-added products to the recycling companies. This is an increase of three companies during 2002. Nine are based in southern and central Maine, although they have a statewide reach. There are also fourteen recyclers listed on the DEP web page; all are out-of-state companies. This is an increase of four new companies over the previous year. As the demand for recycling grows, it is anticipated that the number of consolidators and recyclers will continue to increase. The DEP is presently helping several companies in Maine to become licensed to consolidate or recycle mercury-added products and universal wastes.

3.0 Product Specific Collection Systems and Recycling Data

<u>Mercury thermostats</u>: The Thermostat Recycling Corporation (TRC), founded by a consortium of thermostat manufacturers (Honeywell, White-Rodgers and General Electric), utilizes the existing Heating, Ventilation and Air Conditioning (HVAC) wholesaler network to collect unwanted mercury thermostats for recycling. TRC provides a collection container to participating locations in which contractors (and, depending on location, homeowners) may deposit out-of-

service mercury thermostats. The containers, when full or within a year, are shipped to TRC for recycling, free-of charge. Any name-brand mercury switch thermostat is accepted.

Presently there are approximately 38 HVAC locations in Maine, six of which participated in the program in 2001 and eleven in 2002. This has left the majority of plumbing and heating contractors in the State without easy access to the TRC program. In addition, the program has not been well advertised by TRC. Maine also has a significant number of 'do-it-yourselfers' who do not utilize HVAC wholesalers and therefore would not participate in the program. During 2001 the TRC program collected and recycled 233 thermostats with 1.5 pounds of mercury. (The 2002 Committee report listed the amount recovered during the first nine months of 2001.) During 2002, the amount of mercury recycled through the program was approximately 1.8 pounds. The number of thermostats recovered in both 2001 and 2002 represents less than 1% of the estimated Maine thermostats that are removed in any given year. Because the TRC program is not widely available or well known, contractors are paying to recycle thermostats through the hazardous waste system instead. (See Table 1.)

<u>Mercury thermometers:</u> With the heightened awareness about mercury, several communities have organized mercury thermometer exchange events. Among the communities statewide almost 4000 fever thermometers have been collected. For some of the collections, grant money awarded by SPO has covered the cost of publicity and disposal for the thermometers collected. DEP has provided technical assistance.

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Two large collection events took place in 2002; one sponsored by 37 Maine hospitals in the Maine Hospital Association (MHA) for their employees, and the second by the State of Maine for state employees. The MHA and Maine DEP worked together to coordinate the collection events, which were held during Earth Week in April 2002. The State collected approximately 18 pounds of mercury, which is equivalent to about 10,000 fever thermometers. MHA collected over 4000 fever thermometers from their 37 participating hospitals and gave out replacement digital thermometers.

<u>Dairy manometers:</u> The Maine Department of Agriculture (DOA), the DEP, and SPO have located 26 mercury manometers from both operating and former dairy farms. Manometers were located as DOA inspectors conducted their routine inspections of active dairy farms or through a notice sent to farms statewide. Each manometer has approximately one pound of mercury. The State of Maine, through this voluntary program, will pay for the removal and replacement, if necessary, of the manometers. The project should be finished by early 2003.

<u>Lamps</u>: There has been a steady upward trend in lamp recycling since the Universal Waste Rules were adopted. The National Electronic Manufacturers Association (NEMA) estimates that 2.5 million lamps are sold in Maine each

year. Using this as a baseline, the DEP estimates 15 % of lamps were recycled in 2002. (See Table 2.) While this percentage warrants significant improvement, about 180,000 more lamps were recycled in calendar year 2002 verses 2001. This increase can be attributed to the education and outreach program discussed below, and the early development of municipal universal waste collection events.

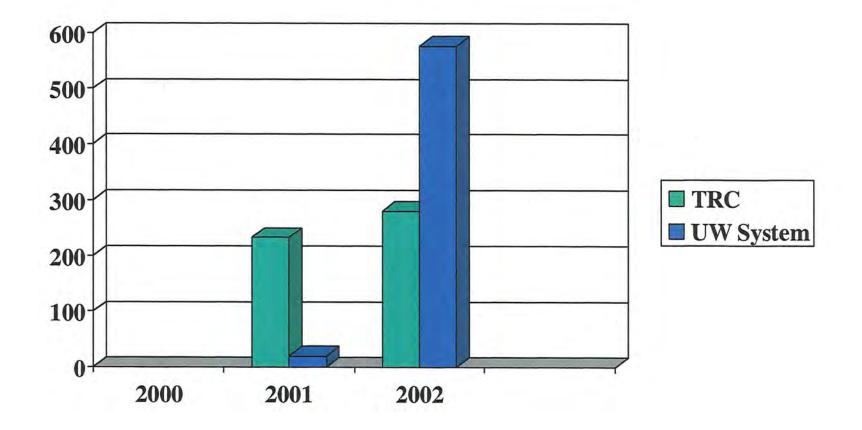
Lamps, like most mercury-added products, have traditionally been co-mingled in the solid or hazardous waste streams. It is assumed that there has been minimal recycling due to a lack of infrastructure and legal or regulatory requirements. The Universal Waste rules adopted in January 2001 required recycling of mercury-added lamps exhibiting the hazardous waste toxicity characteristic generated by businesses. Starting in July 2002 all mercury-containing lamps were subject to the universal waste provisions, not just those exhibiting hazardous waste toxicity characteristics. In other words, lamps containing mercury but passing the Toxicity Characteristic Leaching Procedure [TCLP] test could be legally disposed of until July 15, 2002; as of this date, all mercury-containing lamps must be recycled, regardless of TCLP test results. It is anticipated that lamp recycling will continue to grow as more businesses, schools and government offices become aware of the universal waste requirements. The State has set a target goal of 70% lamp recycling.

4.0 Education and Outreach

The DEP initiated an aggressive education and outreach (E&O) program to aid the development of public infrastructure and inform the general public about new collection and recycling options for UW. The E&O program includes educational training for municipal personnel, and the development and distribution of educational materials for both the general public and municipal officials.

- Educational training: To educate municipal officials in how to best manage mercury-added products and UW, the DEP conducted 20 half-day training sessions for municipal solid waste personnel and municipal officials during 2002. One hundred and eighty-two people attended the training, many of whom represent municipalities that are receiving an infrastructure development grant from SPO. DEP staff continues to offer these training sessions upon request.
- School Program: The DEP successfully initiated a school education and outreach program focusing on mercury and hazardous waste issues. Schools were invited to attend a day-long training on chemical management and sign up to have the mercury cleaned out of their schools. Eighty-four school personnel attended and twenty-four schools and school districts signed up for the mercury/chemical clean-out project. The clean-out was completed in September 2002. A total of 297 pounds of mercury were collected, for an average of twelve pounds per school. At the same time 1629 pounds of

Thermostats Recycled in Maine



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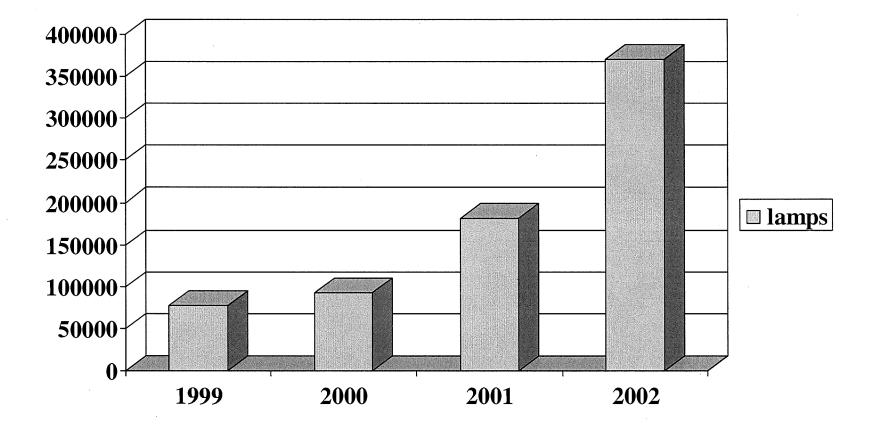
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Number of Lamps Sent for Recycling*



*pounds converted to number of items

hazardous wastes were also removed from school science labs. This represents an average of 68 pounds of hazardous waste per school. The DEP is planning on continuing this program in 2003.

Department web site: The Department established a web site for mercury and UW, which includes general information and reports on mercury in the environment, links to the Bureau of Health fish consumption advisories, and the following DEP information:

- Universal Waste and Mercury Management and Recycling Companies. This list includes contact names, addresses, phone numbers, web site address, wastes handled and types of services provided;
- Mercury-added lamp information including a notice to lighting vendors and contractors and a mercury containing lamp fact sheet;
- Mercury Management in the Health Care Environment Fact Sheet including alternatives to mercury products;
- Maine's Voluntary Mercury Manometer Replacement Program;
- Mercury Thermostat Recycling Program including a list of participating wholesalers in Maine;
- Rechargeable Battery Recycling Program, including a list of participating drop off locations;
- Computer Recycling in Maine fact sheet;
- A copy of the Universal Waste rules; and
- An electronic submittal form to receive various educational materials and to be placed on the mailing list for Universal Waste training seminars.

Mercury videos: The Department participated in the development of two mercury videos during 2002; Get the Mercury out of Maine and Mercury Pollution - We Are the Solution. The first video describes how to remove mercury switches and sensors from junked cars and trucks and is an educational tool for vehicle dismantlers. The second video is aimed at sport fisheries enthusiasts as well as the general public. It describes the environmental issues surrounding mercury pollution in Maine, where mercury is found in common consumer products, and what we can all do to minimize or eliminate mercury from our lives. This video was a joint DEP project with the Natural Resources Council of Maine and funded in part by a Maine Outdoor Heritage Grant. It will be aired several times throughout the State on various TV shows hosted by Harry Vanderweiden.

DEP also conducted substantial E&O activities for the business community. In 2002 DEP completed the following to help the private sector with infrastructure development:

Placed new generator information on the DEP mercury web page and Northeast Waste Management Officials Association (NEWMOA) web page.

- Updated the Universal Waste Handbook and developed a summary of the Small Universal Waste Generator requirements.
- Conducted 27 training sessions on managing mercury-added products and UW, which were attended by over 800 people.
- Conducted 4 training sessions on mercury auto switch removal for those engaged in auto repair, dismantling and salvage. The trainings were attended by 196 people.

<u>Future Education and Outreach</u>: The DEP will be initiating additional education and outreach activities in 2003. For the general public and schools some of the activities are:

- Develop a handout on mercury-added products and UW management for municipalities to give to the public. This will stress the importance of recycling rather than disposal.
- Expand the DEP mercury web site.
- Continue a school program to clean out mercury wastes and help them to manage mercury-added products properly.
- Support other mercury collections and thermometer exchange programs through funding and education and outreach activities, within available resources.
- Conduct additional training sessions for schools and municipalities.

The DEP will also continue to help generators, consolidators and recyclers in 2003 through the following activities:

- Provide additional universal waste training upon request.
- Target specific sectors for universal waste training. For example, the DEP will develop and implement a plan for training contractors and service repairmen on how to remove and handle mercury switches from appliances.

5.0 Clean Government Initiative

The Clean Government Initiative statute was enacted to ensure Maine State Government's compliance with existing state and federal environmental laws and to introduce environmental sustainability into the functions of Maine State government. The Initiative has a number of elements, but most applicable to this report are those elements regarding procurement and disposal of mercury-added products. Former Governor King signed an Executive Order on the procurement of mercury free products. (See Appendix B.)

The statute which created the Initiative expressly states that continuous improvement in environmental compliance and performance be sought through, in part, procurement of commodities assessed on a life cycle basis, including

technically comparable, cost effective, and reasonably available alternatives to products which may release mercury to the environment. The Department Environmental Protection and the Department of Administrative and Financial Services are working jointly to develop procurement and disposal policies to implement the statutory requirement and the Executive Order.

6.0 Advisory Committee Findings

Infrastructure:

- Public Infrastructure Development: The first step in the development of public infrastructure to recycle mercury-added products has been a success. The response to the grant program was very positive. Unfortunately there was not enough grant money in calendar year 2002 to fund all requests and there are no State funds available to help municipalities with ongoing operational costs for the proper management of mercury-added products. For these reasons and others there are some areas of the State that have not yet participated in the grant program. This leaves approximately sixty percent of the population without access to public services. However, the November 2002 bond money should be sufficient to complete UW infrastructure development statewide. Moreover, at the request of the Legislature, DEP submitted draft legislation that proposes to fund approximately 50% of the operational costs associated with the management of household hazardous waste and mercury-added products. This state financial assistance would further encourage statewide participation in the program.
- Private Infrastructure Development: The private sector is responding appropriately to the new demand for services and the developing markets for materials. The DEP has taken effective steps to work with the private sector through rulemaking activities, licensing activities and education and outreach. The Committee recommends that DEP continue to work in a targeted manner with the private sector, with special focus on continued education and outreach.
- Schools: Children are most at risk when it comes to mercury exposure. Although Maine schools can no longer purchase elemental mercury or mercury compounds, they still may have significant quantities on hand as well as mercury-containing scientific devices. DEP should continue work with schools to facilitate the removal of existing mercury stockpiles.

Effectiveness of Established Programs

 Mercury Thermostats: The TRC program has been in operation in Maine for over two years. The collection rate at this time is quite low, less than 1%. TRC has taken a few steps to promote the program but they do not appear to have been particularly effective.

- Mercury Thermometers: Most Maine citizens should be able to recycle their mercury thermometers at the local transfer station in the near future, assuming the November 2002 bond money substantially expands UW shed deployment. It is anticipated that the availability of recycling opportunities, in conjunction with the sales ban without a prescription, will significantly reduce the overall stock of mercury fever thermometers in the State.
- Dairy Manometers: This program is voluntary and is generally thought to have identified the majority of manometers existing on Maine dairy farms or former dairy farms. Replacement of remaining mercury manometers will be completed early in 2003. No further action is needed.
- Lamps: The infrastructure is in place for businesses to recycle lamps, but there is a continuing need to educate the business community about their responsibilities. Awareness of the need to recycle lamps is expected to increase as more education and outreach is conducted by both the DEP and the local waste facilities. More education and outreach is needed with the business community, the haulers, and the waste facilities in order to reach the State lamp recycling goals of 70%.
- Motor Vehicle Switches: This program is just getting underway. In anticipation of program initiation, DEP conducted extensive education and outreach activities during the summer and fall of 2002. Automakers have selected the consolidation facilities to receive the auto switches from end-oflife vehicle handlers; thus the infrastructure necessary for this program is in place. The Alliance of Automobile Manufacturers has sued the State to enjoin enforcement of those parts of the auto switch law that require automakers to consolidate and recycle the switches, and pay ELV handlers \$1 per switch to offset their removal costs. The program remains in effect pending the outcome of the litigation.

Appendix A

The Mercury Products Advisory Committee

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Mercury Products Advisory Committee

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Appendix B

Executive Order Procurement of Mercury

Executive Order

OFFICE OF THE GOVERNOR NO. <u>03 FY 02/03</u> DATE <u>December 17, 2002</u>

PROCUREMENT OF MERCURY FREE PRODUCTS

WHEREAS, the Governor, as the state's Chief Executive, has oversight responsibility for agency actions; and

WHEREAS, Maine lakes and rivers have fish consumption advisories due to the presence of unhealthy amounts of mercury; and

WHEREAS, use and disposal of mercury-added products contributes to the presence of unhealthy mercury levels in fish; and

WHEREAS, the Governor has joined with governors in other New England states and Eastern Canadian premiers in calling for the virtual elimination of mercury-added products and other anthropogenic sources of mercury; and

WHEREAS, mercury-free or low mercury alternatives exist for many consumer products that currently contain mercury; and

WHEREAS, state agencies can promote the goal of mercury reduction by giving preference to purchase of mercury-free and low mercury products; and

WHEREAS, such action is consistent with the Clean Government Initiative under which Maine state agencies have taken numerous actions to reduce their use of toxic substances and procure alternatives that are environmentally benign;

NOW, THEREFORE, I, Angus King, by the authority vested in me as Governor, do hereby order the agencies of the State of Maine as follows:

1. Agencies shall eliminate the purchase of products to which mercury is added during manufacture or formulation if mercury-free alternatives of comparable performance are available at reasonable cost.

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- 2. Where mercury-free alternatives of comparable performance are not available at reasonable cost, agencies shall give preference to the purchase of functional, reasonable cost product makes and models containing the lowest amount of added mercury and bearing a mercury content warning label where required under Maine law.
- 3. The Department of Administration and Financial Services shall ensure these practices are reflected in the administrative purchasing policies and procedures of the state no later than January 1, 2003.
- 4. The Department of Environmental Protection shall assist the Department of Administration and Financial Services in identifying mercury-added products and low and mercury-free alternatives to those products.

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The effective date of this Executive Order is December 17, 2002.

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