

**MERCURY  
POLLUTION PREVENTION  
IN MICHIGAN**

**MICHIGAN MERCURY  
POLLUTION PREVENTION  
(M2P2) TASK FORCE**

**IMPLEMENTATION STRATEGY**

**PROGRESS  
REPORT**

**SPRING 2000**

# MICHIGAN MERCURY POLLUTION PREVENTION TASK FORCE CONCLUSIONS AND RECOMMENDATIONS

## **KEY:**

- ☑ = Recommendation complete.
- = Partially implemented or currently underway.
- ✦ = Additional resources needed for full implementation.
- ★ = No progress thus far.
- ✘ = Not possible without additional resources.

The ***IMPLEMENTATION STRATEGY PROGRESS REPORT*** expands upon the M2P2 Implementation Strategy much like a chronological diary. Each of the seventy recommendations from the Final Task Force Report are listed individually along with corresponding symbols illustrating the respective stage of progress. The lead entity and potential activities have been excerpted from the Implementation Strategy, as they were initially envisioned. In some instances, these entries have changed, as personnel or resources changed or where new developments prompted different approaches toward achieving the recommendations. The ‘**activities to date**’ listings are of particular significance, as they summarize current progress, events and accomplishments in chronological order. These achievements will be updated until the project is completed.

## **Recommendations**

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### **General Public Subgroup Recommendations:**

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**<1> THE STATE OF MICHIGAN SHOULD UNDERTAKE AN AGGRESSIVE, COMPREHENSIVE STATE-WIDE EDUCATION/AWARENESS CAMPAIGN WITH STRONG SUPPORT FROM THE GOVERNOR TO THE LEAD AGENCY TO ALERT PEOPLE ON WAYS THEY CAN REDUCE MERCURY POLLUTION.**

**status:** → Partially implemented or currently underway.

**lead:** MDEQ, Environmental Education Coordinator

Chairman, M2P2 Task Force  
Plan Implementation Coordinator  
Michigan Department of Education  
Environmental Assistance Division, Pollution Prevention Section

**potential activities:**

*Establish committee initiative to develop an aggressive and comprehensive campaign including such things as:*

- letter(s) from the Governor*
- publication development and distribution mailings*
- educational booths, displays strategy*
- video*
- INTERNET Mercury Web Page*
- Public service announcements; television and radio*

**timeframe:** ongoing

**implementation** : Contractual Assistance is needed to develop, produce and disseminate materials.

**activities to date:**

- 3/1-2, 1996 Michigan Science Teachers Association Annual Conference, Lansing (staff presentations and mercury display)
- 4/96 Approximately, 1,500 copies of the M2P2 Task Force Final Report have been distributed to individuals worldwide. Printing costs were paid for by the University of Michigan and the Detroit Water and Sewage Department.
- 4/15/96 Hospital In-Service Mercury Presentation and display set up in the Cafeteria; St. Johns Hospital, Harrison Township, Macomb County.
- 5/14/96 Mercury P2 Workshop for Lafarge/Systech Corporations - Presentations by AQD and EAD staff
- 5/20/96 Presentation on Mercury P2 to Wayne County's Environmental Committee by AQD Staff

- 5/29/96 Mercury P2 Presentation to Holland, Grand Haven and Wyoming Wastewater Treatment Plant Personnel by AQD Staff
- 6/11/96 Overview of M2P2 Task Force Final Report to the MI Chamber of Commerce Environmental Quality Committee by AQD Staff
- 6/19/96 Presentation on Mercury to the Lake Superior Energy Efficiency Workgroup by AQD Staff
- 6/26/96 Presentation on M2P2 Task Force Final Report to Saginaw Bay P2 Workgroup by AQD Staff
- 8/9/96 Presentation to MDEQ Management on Final M2P2 Task Force Report by AQD Staff
- 8/27/96 P2 Roundtable - Presentation on Mercury P2 by AQD Staff
- 10/4/96 Mercury Pollution Prevention: Healthcare Providers Protecting People and the Great Lakes Conference
- 10/8-9/96 Presentation on M2P2 Task Force Report at MCC Expo by OGL and AQD Staff
- 10/18/96 Presentation on Mercury P2 in Michigan to STAPPA Annual Conference by AQD Staff
- 11/5/96 Presentation to AQD Staff at In-service Training on the Final M2P2 Task Force Report by AQD Staff
- 12/4/96 Presentation on Mercury P2 at the Waste Reduction and Energy Efficiency Workshop by AQD and Minnesota Pollution Control Agency staff
- 1/22-26, 1997 Lansing Homebuilders Show; Lansing Mall (Display)
- 2/21-22, 1997 Michigan Science Teachers Association Annual Conference, Detroit (Display)
- 2/27/97 Presentation on Mercury to the MDEQ's Toxic Steering Group by AQD Staff
- 3/10/97 Presentation on Mercury P2 to Dairy Mercury Manometer Workgroup by AQD Staff

Although additional resources are yet to be received for such a comprehensive effort, much has and is being accomplished to get the educate individuals on the mercury issue. Individual initiatives such as the healthcare, Medical Waste Incinerator and agricultural dairy manometer P2, and ritual use of mercury projects some of which have conducted mass targeted mailings and the mercury P2 Display has been used for educational/outreach purposes numerous times in the past several years, and mercury presentations have been conducted including:

- 5/14/97 Presentation on the Ritual Use of Mercury to the MDCH's Multi-Cultural Task Force by AQD Staff
- 5/21-22, 1997 International Joint Commission (IJC) (Display)
- 7/21/97 Presentation to Minnesota Pollution Control Agency's Mercury Contamination Reduction Initiative Workshop on the M2P2 Task Force Process and Final Report by AQD Staff
- 12/8/97 Ritual Use of Mercury Meeting and Informal Presentation to local stakeholders by AQD, EAD and MDCH Staff
- 10/28/97 Presentation on the Ritual Use of Mercury to Local Leaders by AQD Staff
- 12/13/97 DEQ's Deputy Director; Chad MacIntosh addresses MUCC on State/local government partnerships and resulting accomplishments in mercury pollution prevention.
- 1/12/98 Teleconference on "The Healthcare Industry's Impact on the Environment: Strategies for Global Change" at Butterworth Hospital, Grand Rapids (Display)
- 4/15/98 New EAD district field staff receives training in mercury pollution prevention (P2).
- 5/8/98 Health clinic presentation and facility elimination of mercury sphygmometers. Clinic commits to going mercury-free.

Mercury P2 information was mailed out in 1997 to all municipal waste combustors and medical waste incinerators. This information can facilitate sources meeting the new federal mercury emission standards required under Section 129 of the CAA.

- 6/1/97 EAD staff went on line with a Mercury Pollution Prevention Home Page as a branch of the EAD's Pollution Prevention Section Home Page. As of August 1998 the P2 Home page had received over 2,500 "hits" for information. EAD, AQD, and SWQD just recently began collaboratively working on the development of a 'multi-media' Mercury Home Page.

- 1/98 To date, approximately 16,000 hard copies and 33 electronic copies of the “Merc Concern” have been distributed state-wide. Copies have been distributed to local environmental health departments, RAP Coordinators, environmental advocacy groups, etc. for reprints and local distribution.
- 6/98 The “Merc Concern” brochure was revised, updated and 7,500 additional copies reprinted for distribution.
- 6/98 DEQ’s Environmental Education Coordinator provided Mercury P2 brochures, pamphlets and related presentations for all teachers and others attending Higgins Lake Environmental School, summer 1998.

Since February 1997, AQD has sent out Mercury Pollution Prevention materials to 42 different individuals.

EAD’s Environmental Assistance Center continues to respond to numerous inquiries requesting information about mercury pollution prevention opportunities and initiatives. To date (August 1998), the center has received over 400 requests for mercury P2 related information and assistance.

**The following tools should be developed as part of the state-wide education/awareness campaign:**

**<2> · MDEQ SHOULD DEVELOP A MERCURY MANUAL, INVOLVING ALL STAKEHOLDERS.** Information, including an overview of mercury toxicity, known sources and alternatives, spill clean-up precautions and procedures, household hazardous waste and recycling centers that accept mercury-containing products and pollution prevention alternatives are examples of information that should be included in the manual.

**status:** → Partially implemented or currently underway.

**lead: Plan Implementation Coordinator**

*Assembled with input and review from the following entities:*

Chairman, M2P2 Task Force  
MDEQ Environmental Education Coordinator  
Environmental Assistance Division, Pollution Prevention Section  
Air Quality, Toxics  
Waste Management Division  
Michigan Chemical Council

Michigan Department of Education

**timeframe:** One year

**implementation:** Contractual assistance required.

**activities to date:**

4/1/97 Wisconsin has developed a manual that might be used as a template for such a resource manual here in Michigan. A copy of the Wisconsin Mercury Sourcebook has been delivered to AQD and shared with EAD. MDEQ intends to modify this document where necessary to become Michigan specific by including pertinent State regulations, spill clean-up procedures and lists of collection/consolidation facilities.

10/1/97 MDEQ received an EPA GLNPO Grant to facilitate development of this information. Contact with the appropriate personnel in Wisconsin has been established and efforts are underway to convert this information to an electronic media, which can easily be modified for State specific needs, as well as, placed on the Internet. Michigan intends to work cooperatively with other States and EPA to make this information more accessible.

4/1/98 For a variety of reasons, e.g. WI staff departures, attrition, etc. this task proved much more difficult to administer than previously envisioned. Recently, MDEQ staff were advised of EPA's intent to place this material on the Internet, thus negating the need for the hard copy notebook. Additional materials referenced above have already been developed and made available through EAD's Michigan Mercury Pollution Prevention Home Page, <http://www.deq.state.mi.us/ead/p2sect/mercury>

8/98 EAD is also working on a Mercury Spill Response Fact Sheet slated for publication in Fall 1998 which will provide readers with guidelines and regulations for addressing mercury spills, as well as, list spill clean up contractors and equipment.

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**<3> • MDEQ, INVOLVING ALL STAKEHOLDERS, SHOULD DEVELOP ENERGY CONSERVATION AND ENERGY EFFICIENCY MATERIAL FOR DISTRIBUTION.**

The material should emphasize the link between reduced mercury emissions from reduced burning of fossil fuels from energy conservation and efficiency efforts.

**status:** → = Partially implemented or currently underway.

**lead:** Michigan Department of Consumer and Industry Services, MPSC  
Air Quality Division (review and assistance)  
Environmental Assistance Division, Outreach Branch

**timeframe:** 6 months; possibly less if incorporated into existing publications

**implementation:** Resources are unknown.

**activities to date:**

<4> · MDEQ SHOULD DEVELOP A MERC CONCERN VIDEO.

**status:** → = Partially implemented or currently underway.

(Resources are being sought to implement)

**lead:** Plan Implementation Coordinator

**potential activities:**

*To be developed through contractual assistance or in partnership with donated services from other organizations such as NWF or possibly another entity during administration of the overall education campaign listed under recommendation 1.*

**timeframe:** One year

**implementation:** Contractual Assistance required. Promotional effort also needs a marketing/advertising media strategy.

**activities to date:**

3/97 Preliminary discussions with the National Wildlife Federation suggest that their Washington office may have video production capabilities adequate for producing a video for Michigan. NWF is investigating the possibility of collaborating on such a project. Also, the State of Minnesota has developed a video covering mercury use in hospitals. This video was released in December of 1997 and gives an excellent overview on mercury issues. Copies of this video have been shared with other States in the Great Lakes Region and may be signed out for use, by contacting EAD's Environmental Assistance Center.

9/1/97 Minnesota also sent EAD a copy of the 17 minute mercury video, produced by the Minnesota Office of Environmental Assistance. The title is "Mercury and the Healthcare Professional." This video was also made available to the Michigan Health

and Hospital Association, and may be checked out by hospitals, clinics and other healthcare facilities within Michigan.

Although the video essentially targets the healthcare sector, much of the general information about mercury is pertinent and interesting. Its' contents are similar to the Merc Concern brochure material and general enough to be useful to a broader audience, not just healthcare facilities.

6/3/98 EAD and OGL met to further investigate the possibility of developing a Michigan Merc Concern video, soliciting the assistance of the National Wildlife Federation. Copies of the Minnesota Merc Alert and the "Mercury and the Healthcare Professional" videos were sent to NWF for review and contacts were made with Minnesota staff to obtain permission for possible use of portions of those videos in the Merc Concern video.

<5> · **THE GOVERNOR OF MICHIGAN, THE DIRECTOR OF THE OFFICE OF THE GREAT LAKES, THE DIRECTOR OF MDEQ AND THE DIRECTOR OF MDCH SHOULD CALL UPON RETAILERS TO VOLUNTARILY CEASE DISTRIBUTION OF TOYS, GAMES AND CLOTHING CONTAINING MERCURY.**

**status:**  Recommendation complete.

**lead:** Chairman, M2P2 Task Force

**potential activities:**

*In June of 1996, it was reported that the Michigan Retailers Association is addressing such a request by soliciting cooperation and encouraging support for the M2P2 recommendations in their newsletter mailed to over six thousand members. Cover letter signed by these key officials soliciting involvement by all retailers would be desirable. Such a letter could be sent out in a separate mailing for retailers or the Michigan Retailers Association could be asked to include it in a mailing to their members.*

**timeframe:** 1 month; immediate implementation

**implementation:** Full implementation possible and anticipated, given existing resources.

**activities to date:**

June 1996 Michigan Retailer™, the Michigan Retailers Association's newsletter, June 1996, Vol. 21, No.5, published an article titled: **Stores Can Help State Task Force Cut Mercury Use.** This article highlighted concerns raised by the

mercury task force and called on the retailers to voluntarily cease the sale of mercury containing merchandise.

**<6> · MICHIGAN DEPARTMENT OF EDUCATION SHOULD DEVELOP A MERCURY FACT SHEET AND/OR VIDEO FOR SCIENCE TEACHERS.**

**status:** → ★ Partially implemented or currently underway but additional resources needed for full implementation.

**lead:** Michigan Department of Education

Michigan Chemical Council

**potential activities:**

*(It is my understanding that the Michigan Department of Education has agreed to develop a mercury fact sheet but is hesitant to commit to doing a video, presumably due to funding constraints.)*

**timeframe:** Six Months

**implementation:** Partial Implementation possible, additional assistance would likely be needed to develop the video. Perhaps the video developed for the overall educational campaign can be of some use to this sector.

The original intention was to develop a video of the “density experiment” in science classes to replace the need for science teachers to use and store elemental mercury in the classroom to demonstrate this characteristic.

**activities to date:**

On March 1-2, 1996, representatives of the Genesee County Environmental Health Division and MDEQ-AQD assembled a Mercury P2 Educational booth at the Michigan Science Teachers Association Annual Conference in Lansing. Hundreds of science teachers were provided educational information on Mercury P2 efforts (i.e. Merc Concern Brochures) and were encouraged to share the information with their students. Two collection programs were offered to the public; April and October 1996, by the Genesee County Environmental Health Services Division, which provided three drop-off locations for collection of mercury-containing wastes. At those sites the mercury received proper management and disposal with an estimated 200 pounds being recovered.

In February 1997, Joy Taylor, AQD, Linda Humphrys, OGL, and Steve Kratzer, EAD, devised an outreach strategy to educate science teachers as to the hazards posed by mercury use in the classroom. A brochure was developed for science teachers and disseminated at the February 21-22, 1997 Michigan Science Teachers Association Annual Conference in Detroit. Joy, Linda and Steve all took turns staffing the Mercury P2 Booth and answering questions throughout the two day event. A presentation was also given during the formal program at one of the concurrent sessions highlighting the mercury P2 program. As part of this effort, approval was obtained from three Universities; Michigan State, Northern Michigan, and Wayne State, to act as drop-off depositories for recovered mercury and mercury containing devices from schools. This program continues to accept mercury from schools and labs.

4/10/97            The Michigan Department of Education agreed to cover the costs of    printing additional copies of the brochure and to aid in its distribution.

10/15/97           The DWSD Mercury Minimization for Laboratories Task Force sent Merc Concern brochures and Science Teacher Fact Sheets to all 608 State High Schools, as well as, 98 Michigan Colleges and Universities.

**<7> · MICHIGAN DEPARTMENT OF EDUCATION SHOULD DEVELOP A MERCURY EDUCATION/ AWARENESS COMPONENT FOR SCHOOL CURRICULUM.**

**status:**        →            Partially implemented or currently underway.

**lead:**    Michigan Department of Education

University of Michigan, Pollution Prevention Center  
MDEQ, Environmental Education Coordinator  
Plan Implementation Coordinator

**timeframe:**    One year

**implementation:** input must be sought from the Dept. of Education, resources currently unknown.

- EAD's Program Management Unit staff worked closely with DEQ's Environmental Education Coordinator and AQD staff to develop and conduct a mass mailing of pollution prevention materials to all Michigan Intermediate School Districts. In all, 750 copies of this material was transmitted. The P2 Education Tool Box, featured the Mercury Science Teachers and the Merc Concern Brochures. DEQ Director, Russell Harding and Arthur Ellis, Superintendent of Public Instruction, Department of Education, co-signed the cover (September 16, 1998) letter which stresses the importance of mercury pollution prevention and encourages the use of mercury alternatives.

**<8> . MDCH SHOULD CONTINUE DISTRIBUTION OF EDUCATIONAL MATERIALS FOR WOMEN OF CHILDBEARING AGE WITH REGARD TO EATING MICHIGAN FISH.**

**status:** ✓ Completed but ongoing.

**lead:** Michigan Department of Community Health

**timeframe:** ongoing effort

**implementation:** Additional contractual assistance is desired in the development, printing and distribution of educational materials.

**activities to date:**

4/15/97 MDCH supplied EAD with an electronic version of the Fish Consumption Advisory. This information now appears on EAD's Mercury Pollution Prevention Home Page.

4/20/97 Preliminary discussions with Michigan Department of Community Health have been held to discuss how to determine if certain religious uses of mercury are being carried out in Michigan. Recently, the Chicago Department of Health has discovered that in Chicago the ritual use of mercury is prevalent, finding that certain Hispanic populations use mercury in their homes and on their bodies. This information has resulted in the development of a Multi-Cultural Mercury Task Force which has representation from both MDEQ and the MDCH.

7/20/97 First meeting of the Multi-Cultural Mercury Task Force in Dearborn.

10/28/97 Second meeting of the Multi-Cultural Mercury Task Force. Sonja reported on visiting three botanicas or Mexican "Gift Shops." One of the shops sold her approximately 2-3 ounces of mercury for \$3.

12/08/97 St. Conrad's Church, Melvindale, outreach presentation to and meeting of the Task Force. Several copies of the brochure "What Women of Childbearing age Should Know about Eating Fish" were distributed to the Multi-Cultural Task Force members. Discussion on translating brochures into at least 3 different languages took place and will be pursued.

3/12/98 A new color electronic version of the 1998 Michigan Fish Advisory has been developed and placed on the MDCH Internet web site. It has been directly linked to the Michigan Mercury Pollution Prevention Home Page.

7/1/98 7,500 additional copies of the Merc Concern brochure were reprinted for distribution. The Merc Concern brochure also contains information about mercury in fish. A press release was then issued informing the public about the updated publication and the revised electronic version of the document was placed on the Michigan Mercury Pollution Prevention Internet Home Page.

Thousands of hard copies of the 1998 Fish Advisory have been widely distributed to sporting goods stores, as well as, angler's special interest groups and environmental organizations. MDCH also distributes pamphlets to expectant mothers through their Women Infants and Children (WIC) Program and other programs. MDCH has also developed and are airing radio Public Service Announcements (PSA's) on this subject.

**<9> DECENTRALIZE THE EDUCATION/OUTREACH PROCESS BY WORKING WITH LOCAL COUNTIES AND CITIES ENCOURAGING MERCURY P2 EDUCATION/OUTREACH AT A LOCAL LEVEL** (The City of Detroit's Water and Sewerage Department and the Genesee County education/outreach efforts could serve as models.)

**status:** → Partially implemented or currently underway

**lead:** MDEQ; Environmental Education Coordinator

Plan Implementation Coordinator  
Environmental Assistance Division; Pollution Prevention Section  
Education and Outreach Section  
Michigan Chemical Council

**potential activities:**

*Distribute Merc Concern brochures and disks to all local county health departments. Develop a package of education and promotional materials for townships/cities in such a format that would allow room for inclusion of the sponsoring local entity logo and any related pertinent information.*

**timeframe:** ongoing

**implementation:** Contractual assistance required and associated with recommendation number 1.

**activities to date:**

- 1997            The UP Wastewater Treatment Plant Operators Training Meetings have been held annually since 1955 with attendance of recent years between 80-120. In 1997, Curt Goodman of the Marquette WWTP presented 'Marquette's Community Mercury Reduction Task Force' efforts and Tim Tuominen from the Western Lake Superior Sanitary District (WLSSD) presented their Mercury Minimization activities. Curt also made a mercury pollution prevention presentation to the Joint Task Force of the Binational Forum in Marquette January 1998. The Binational Forum was formed by the International Joint Commission (IJC) to find a way to implement their goal of zero discharge of persistent bioaccumulative toxics to Lake Superior. The Joint Task Force consists of the technical and management level staff from each of the governments surrounding the lake, i.e., state, federal and tribal.
- 1/98            To date, approximately 16,000 hard copies and 33 electronic copies of the "Merc Concern" have been distributed state-wide. Copies have been distributed to local environmental health departments, RAP Coordinators, environmental advocacy groups, etc. for reprints and local distribution. The "Merc Concern" brochure is also now available for downloading on the Mercury P2 Home Page on the Internet.

MDEQ-AQD staff sought and obtained a \$35,000 grant from the Saginaw Bay National Watershed Initiative (MDEQ, Office of the Great Lakes). Funding was awarded to the Genesee County Environmental Health Department-Environmental Health Services Division to conduct an education/outreach and collection program for mercury-containing wastes. Two collection programs were offered to the public in April and October 1996, by the Genesee County Environmental Health Services Division, which provided three drop-off sites for collection of mercury-containing wastes for proper management and disposal with an estimated 200 pounds of mercury being collected.

DWSD's accomplishments in the area of Mercury Minimization have been well publicized and featured in a number of publications and conferences. A March 1998 event examined Detroit's accomplishments through a workshop sponsored by EAD and MML. It took place March 2 & 3, 1998, in Lansing and Gaylord, respectively. This: [Meeting the "New" Water Quality Standards Through Pollution Prevention (GLI) Workshop] showcased Detroit's mercury initiative, in addition to, several other programs that have successfully addressed mercury. Successful tools and the process Detroit followed, may then form a template for other communities implementing aggressive pollution prevention programs and addressing other bio-accumulative chemicals of concern. The process can be used at the local level to educate the general public and to help provide the means for environmentally safe disposal options.

*FORMAL FIELD DEQ AND LOCAL HEALTH DEPARTMENT PARTNERSHIP PROGRAM DEVELOPED INCLUDING WORKPLAN AND MISSION STATEMENT.*

DEQ EAD has also established district field staff positions in Southeast Michigan, Plainwell and Cadillac, with additional staff scheduled to come on line in FY 98/99 for Bay City and Jackson. These positions will work first hand with cities and counties to decentralize the education/outreach process.

*(See also: Recommendation Number 1)*

**<10> COUNTY ENVIRONMENTAL HOUSEHOLD HAZARDOUS WASTE (HHW) COLLECTION PROGRAMS SHOULD REPRINT THE MERC CONCERN BROCHURES, USE THE MERCURY DISPLAYS AND PROVIDE FOR SAFE COLLECTION AND DISPOSAL FOR MERCURY CONTAMINATED HHW.**

**status:** → Partially implemented or currently underway.

**lead:** **Plan Implementation Coordinator**

EAD field staff & Coordinator

(track, monitor progress and provide support, information and assistance if possible.)

**potential activities:**

*Many communities have already proceeded. More involvement is anticipated based on the success of outreach efforts.*

**activities to date:**

1/19/97 MDEQ-AQD required a municipal waste combustor implement a mercury pollution prevention program as part of their permit. The program will include an educational component and the establishment of a permanent facility to accept and properly dispose of mercury-containing wastes in Wayne County.

3/12/97 According to the Grand Traverse County Solid Waste Coordinators Office, their Household Hazardous waste program recently recovered 66 lb. of mercury containing materials. Some of the articles recovered included dental amalgams and bulk elemental mercury, as well as, a variety of medical sources contributing small amounts of mercury. Mercury switches and thermostats were also brought in to their drop off site. This program is typical of numerous other HHW Collection programs functioning throughout Michigan. They are being replicated throughout Michigan in both the residential and agricultural communities.

- 4/1/98 MDEQ reprinted 7,500 copies of the Merc Concern brochure for outreach purposes and educational campaigns. The MDA farm pesticide drop off network has collected mercury from some individuals. The DWSD Laboratory Mercury Minimization group is contemplating a statewide clean sweep collection program for WWTP's, Labs and the general public.
- 7/30/98 The list of Household Hazardous Waste (HHW) collection sites were placed on the Michigan Mercury Pollution Prevention Home Page. This list includes information on the materials collected, site locations and telephone numbers for contacts.

(Also, see number 9)

**<11> LOCAL ENVIRONMENTAL HEALTH DEPARTMENTS SHOULD COLLABORATE WITH LOCAL GOVERNMENTS, PUBLIC AND PRIVATE ORGANIZATIONS, AND GRASSROOTS ORGANIZATIONS TO RAISE MERCURY AWARENESS IN THEIR COMMUNITY.**

**status:** → Partially implemented or currently underway.

**lead:** MDEQ; Environmental Education Coordinator

Plan Implementation Coordinator

(monitor progress and provide support and information if possible)

*see also recommendation number 9.*

MDEQ and the local health and environmental departments are working in a partnership to develop a mission statement, objectives and a work plan to increase the practice of pollution prevention in Michigan. The Partnership has established five major objectives to maximize the impact of state and local agencies' services in promoting pollution prevention within the regulated community and to the general public. A final work plan will be completed by March 1998. To implement the work plan and provide increased environmental assistance at the local level, the Environmental Assistance Division will be hiring three field staff by March 1998. The field staff will be located in the Detroit, Cadillac, and Plainwell District Offices.

**activities to date:**

- 4 & 10/96 Saginaw Bay Area Mercury Clean Sweep
- 3/12/97 Grand Traverse County Solid Waste Department household hazardous waste collections and community presentations.
- 08/97 Cultural Uses

Necessary downloadable tools were made available to those wishing to implement this alternative on EAD's Mercury Pollution Prevention Home Page. Efforts are also underway to translate the Merc Concern and health risk information into Spanish, Arabic and several other languages.

5/2/98 EAD Field staff was brought on board as well as a field staff supervisor. These personnel have been trained in mercury P2 and are conducting outreach and coordination activities through their respective districts.



### **Health Care Subgroup Recommendations:**

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**<12> MDEQ WORKING IN COOPERATION WITH THE MICHIGAN HEALTH AND HOSPITAL ASSOCIATION (MHHA) SHOULD SEND LETTERS TO ALL MICHIGAN HEALTH CARE FACILITIES ENCOURAGING THE PHASE OUT OF MERCURY-CONTAINING PRODUCTS/DEVICES BY CONTINUING MERCURY P2 EFFORTS WHILE ALLOWING FOR THE EXERCISE OF JUDGMENT BY HEALTH CARE PROFESSIONALS.**

**status:**  Recommendation complete

**lead:** Michigan Health and Hospital Association (MHHA)

Environmental Assistance Division, Pollution Prevention Section

**potential activities:**

*Send letter requesting voluntary compliance. Letter should be jointly signed by the M2P2 Task Force Chair and an official of the MHHA.*

**timeframe:** 1 month (immediate implementation)

**implementation:** May be accomplished utilizing existing resources.

**activities to date:**

- 3/10/97 EAD prepared a draft letter for joint signature of G. Tracy Mehan, M2P2 Task Force Chair and the President of the MHHA.
- 4/9/97 EAD met with MHHA representatives to discuss implementing the recommendations of the Healthcare portion of the M2P2 Task Force Report.
- 08/97 Above Letter was transmitted to all Michigan hospitals in an informational kit distributed by the National Wildlife Federation. NWF received an EPA grant to provide on-site technical assistance for implementing mercury P2 in healthcare facilities.
- 12/97 EPA introduces the virtual hospital on the Internet and a step by step interactive software package for mercury P2 in healthcare facilities.

**<13> MDEQ AND THE MICHIGAN HEALTH AND HOSPITAL ASSOCIATION SHOULD CONTINUE THE EDUCATION OUTREACH PROCESS WITH THE HEALTH CARE INDUSTRY.** Hospitals, nursing homes and medical office buildings should be included in this target group.

**status:**  Recommendation complete

**lead: Environmental Assistance Division, Pollution Prevention Section**

Education and Outreach Section  
 Michigan Health and Hospital Association (MHHA)  
 National Wildlife Federation

**timeframe:** 12-18 months

**implementation:** Much has already been done to access the health care sector although more targeted outreach needs to occur for nursing homes, medical office buildings, Health Maintenance Organizations (HMO's), and insurance companies, etc. Additional assistance is necessary to specifically reach these additional sectors.

**activities to date:**

- 10/4/96 MDEQ's, EAD participated in the planning and development of a conference called: Mercury Pollution Prevention: Healthcare Providers Protecting People and the Great Lakes. This conference was attended by 97 participants, representing 35 hospitals and 7 Publicly Owned Treatment Works (POTW)'s. Several case studies were developed as was a step by step Manual on How to

Become a Mercury Free Facility. This information is now also available for downloading off the Internet at DEQ's - Hg P2 and the NWF sites.

3/1/97 MDEQ's, EAD, P2 Section administered a Michigan Medical Mercury/Incinerator P2 Outreach Program. As part of the program, a survey was conducted to determine licensed operating facilities. All hospitals received a minimum of two informational mailings.

All permitted MWI's received additional detailed information about mercury pollution prevention and staff visited those operating facilities in Southeast Michigan to disseminate quantities of detailed information and to discuss P2 initiatives. Additional on-site technical assistance was also made available.

10/1/97 NWF is now also beginning to provide on-site technical assistance for facilities desiring to implement mercury P2 in healthcare. DEQ's -EAD has agreed to market those services through agency contacts and referrals. EAD will continue to be involved in these initiatives as need warrants and as resources allow.

10/10/97 AQD staff organized a Workshop for all health care facilities that operate a medical waste incinerator. Information was presented by EPA and AQD staff on the 8/15/97 promulgated federal regulations for medical waste incinerators. A presentation on mercury P2 in hospitals was presented by AQD staff and a presentation was also given by the M2P2 Task Force Healthcare Subgroup Chair.

12/20/97 EAD added nine case studies to the Internet P2 linkage featuring hospitals and laboratories that have converted to 'mercury free.' EAD's Mercury P2 Home Page is also linked to the EPA's Virtual Hospital and other mercury P2 information sources in the Region. It is felt that adequate resources exist for outreach, information and technical assistance for healthcare facilities both from internal and external sources.

7/14/98 EAD joined Southeast Michigan group initiative with the focus of providing mercury P2 assistance to the 35 hospitals in the DWSD and Wayne County service areas. Partners in this project are; DWSD, Wayne County DPW, Ann Arbor's Ecology Center, MHHA, NWF, DEQ-EAD, and Detroit's for Environmental Justice.

**<14> HOSPITALS SHOULD DISCONTINUE THE PRACTICE OF SENDING MERCURY THERMOMETERS HOME WITH NEWBORNS.**

status:  Recommendation complete

**lead: Michigan Health and Hospital Association**

Chair, M2P2 Task Force  
MDEQ Environmental Assistance Division  
National Wildlife Federation

**potential activities:**

*This could also be combined with outreach efforts under recommendation number 12 above calling for immediate implementation. Co-authored letter from Chairman M2P2 Task Force and MHHA official or the Environmental Assistance Division Chief.*

**timeframe:** 1 month

**implementation:** Possible with existing resources.

**See: RECOMMENDATION #12 ABOVE .....**

**<15> MDEQ SHOULD EVALUATE VETERINARY CLINIC USES OF MERCURY AND ENCOURAGE SIMILAR MERCURY P2 ACTIVITIES AS IN THE HUMAN HEALTH CARE INDUSTRY.**

**status:** → Partially implemented or currently underway.

**lead: Environmental Assistance Division, Pollution Prevention Section;**

**potential activities:**

*Develop materials and administer educational and outreach campaign to this user group.*

**timeframe:** 18 months

**implementation:** Contractual assistance required for researching and developing new materials for Veterinarians as well as displays, presentations and teaching materials targeting MSU's School of Veterinary Medicine.

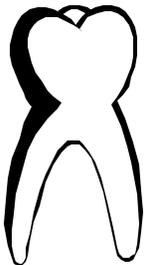
**activities to date:**

4/1/97 A preliminary survey was conducted with the Dean of the Michigan State University School of Veterinary Medicine (Appendix \_\_). This survey identified

uses and applications similar to those found in medical clinics and hospitals. Thus far, additional resources are being sought to access this user group. The GLNPO Mercury Proposal developed in January and awarded October of 1997, attempts to secure partial funding to begin to address this issue. As useful information becomes available it will be placed on the P2 home page.

6/12/97

The DWSD has formed a Laboratory Mercury Minimization Task Force with representation from EAD. To date they have administered a statewide survey of labs including analytical, medical, environmental, as well as, high school and university labs to disclose uses of mercury and mercury bearing compounds. Results indicate that most labs are completely in the dark, about what compounds contain mercury, while some have at least a minimal handle on the situation. Since MSDS Sheets aren't required to disclose ingredients at less than 1 ppm, sources of mercury in lab wastewater are often unknown. In addition, some proprietary concerns on the part of the manufacturer may attempt to cloak the exact composition of some compounds, requiring the need for specific testing. Some hospitals and labs have established 'mercury free' policies which require vendors to provide signed affidavits stating that their products are mercury-free. As more information becomes available it will be shared with the entire laboratory community including vet clinics.



**One of the most significant achievements of the Dental Subgroup, was the successful recovery of 1350 lbs. of raw elemental mercury from a six month statewide, Dental Bulk Mercury 'Clean Sweep' Collection Program. This project was conducted under the direction of the Detroit Water and Sewerage Department (DWSD), in conjunction with the Michigan Dental Association, National Wildlife Federation, and the Department of Environmental Quality. Regulated medical waste haulers; BFI, Star Industries, Medihaul, City Medical, Northern A-1 Sanitation and several county health departments were also involved.**

**For further information or to obtain a detailed report on the project, contact: Joan Hughes, DWSD, Office of Program Management, 313/965-9770.**

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**Dental Subgroup Recommendations:**

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<16> ENCOURAGE THE NATIONAL INSTITUTE OF DENTAL RESEARCH AND THE AMERICAN ASSOCIATION OF DENTAL SCHOOLS TO EMPHASIZE THE USE OF DENTAL AMALGAM ALTERNATIVES, WHICH COULD EVENTUALLY REPLACE THE USE OF MERCURY IN DENTAL RESTORATIONS AND OBLIATE THE NEED FOR SOPHISTICATED AND EXPENSIVE FILTRATION SYSTEMS AND PROPER HANDLING PROCEDURES.

**status:** → Partially implemented and currently underway.

**lead:** Michigan Dental Association

University of Michigan Dental School  
Plan Implementation Coordinator

**potential activities:**

*Transmit letters co-authored by chair of the M2P2 Task Force and the Michigan Dental Association Representative.*

**timeframe:** Two months

**implementation:** Possible with existing resources.

**activities to date:**

3/12/97 Written summary of progress received from the Michigan Dental Association. Response indicates that “the selection of amalgam as a restorative material is decreasing over time because of the advances in the properties of other materials”. Also the MDA response references the fact that mercury use by the dental profession is decreasing each year, due to the continual emphasis on prevention of tooth decay, the “ultimate P2 approach” since less decay results in less mercury amalgams being utilized.

1/28/98 MDA submits updated progress summary indicates a growing industry shift toward non-amalgam restorations. Gallium, a non-mercury alloy, is currently available on the market. Studies indicate it is similar to mercury amalgam in properties such as tensile strength, creep, hardness, comprehensive strength, but exhibits significantly more tarnish and corrosion. The ADA’s Paffenbarger Research Center is currently working on a pure silver filling material that cold

welds as it is condensed. This promising new mercury-free material should be ready for the market by the end of 1998.

**<17> THE M2P2 TASK FORCE CALLS UPON ALL MICHIGAN DENTAL OFFICES TO ELIMINATE THE USE OF BULK MERCURY.**

This recommendation has been implemented through the Detroit Water and Sewerage Department & Michigan Dental Association Dental Task Force efforts and the MWI/ Bulk Mercury Clean Sweep Project.

**status:**  Recommendation complete.

*Task considered complete with ongoing collections now offered by the Michigan Dental Association and the Counties of Ingham and Oakland. Final report is available by contacting EAD's, P2 Section.*

**timeframe:** Immediate/completed

3/12/97 At the 1995 MDA House of Delegates a resolution was passed recommending that dentists discontinue the use of bulk mercury and bulk amalgam alloy and use pre-capsulated amalgam instead. Pre-capsulated Amalgam uses individually measured prescribed doses in proportion to the specific restoration. This practice results in less spillage, less fumes and less excess material left over afterwards thereby reducing waste and mercury exposure to dental personnel.

**<18> THE AMERICAN DENTAL ASSOCIATION, THE MICHIGAN DENTAL ASSOCIATION AND MICHIGAN SCHOOLS OF DENTISTRY SHOULD INCREASE EDUCATION AMONG DENTAL PERSONNEL ABOUT PROPER DENTAL AMALGAM WASTE COLLECTION AND DISPOSITION.**

**status:**  Recommendation complete.

**lead: Michigan Dental Association**

Waste Management Division  
EAD, Pollution Prevention Section  
University of Michigan

**potential activities:**

*Ensure wide exposure to educational brochures and booklets developed to educate dentists and staff on how to properly manage amalgam wastes. This process may also involve meetings with key individuals in schools that teach dental hygienists. DEQ staff may be asked to provide input into this process and to review or comment on materials as deemed necessary. Education materials may need to be revised to be kept consistent with the proposed amalgam waste tracking system proposed under recommendation 21.*

**timeframe:** 6 months

**implementation:** Reproduction and distribution assistance may be required for full implementation. At least some effort is possible however, with existing resources.

**activities to date:**

- 5/20/96 A Dental Pollution Prevention Conference was held at Cobo Hall's; Cobo Conference and Exhibition Center.
- 8/27/96 EAD's Pollution Prevention (P2) Round Table featured achievements of the Dental Task Force.
- 3/12/97 MDA is continuing to implement this recommendation. The publication "Waste Management and Recycling for the Michigan Dental Office" was reprinted and distributed in the February 1997 Journal of the Michigan Dental Association. The MDA also published the "Amalgam Waste Reduction and Recycling" pamphlet. The Health and Hazard Regulation Committee (HHR) received funding and developed a slide lecture program on amalgam use, waste and recycling procedures. To date at least 15 programs have been presented to the dental community throughout Michigan. On a national level, the American Dental Association has followed Michigan's lead and is in the process of developing national waste management guidelines.
- 4/29/97 At the last formal meeting of the DWSD Mercury Minimization Task Force the education/outreach committee reported that the Merc Concern brochure, and the other amalgam management and recycling pamphlets had been distributed to all Michigan Dental Schools and Hygienist Programs statewide, as well as, Delta Dental, Michigan Dental Plan and Michigan Blue Cross Blue Shield.

**<19> MDEQ AND THE MICHIGAN DENTAL ASSOCIATION SHOULD USE THE CITY OF DETROIT'S EFFORT TO REDUCE DISCHARGE OF MERCURY WASTE FROM DENTAL FACILITIES AS A PILOT FOR THE REST OF THE STATE TO FOLLOW.**

**status:**  Recommendation complete and ongoing.

**lead:** Michigan Dental Association

MDEQ Surface Water Quality Division; Industrial Pre-Treatment Program  
Environmental Assistance Division, Pollution Prevention Section  
Detroit Water and Sewerage Department

**potential activities:**

*Share success and make educational tools and materials developed under this project available to others in the Dental community. Publicize achievements and deliver presentations as to accomplishments. Formulate similar working committees of affected dentists in other areas or regions where mercury discharge limits are exceeded.*

**activities to date:**

- 3/97 Two national publications; Dentistry Today and Dental Products Report have run feature articles highlighting the accomplishments of the DWSD Mercury Minimization Task Force.
- 4/97 GLI conference planning committee will highlight the achievements and use this program for a regional model for success at the May 21, 1997 conference to be held in Chicago. Another Michigan GLI conference "Meeting the New Water Quality Standards through Pollution Prevention" will be conducted March 2 & 3, 1998. This program will also showcase Detroit's accomplishments.
- 4/23/97 EAD, P2 Section receives special recognition award for its assistance during the bulk mercury clean sweep project.
- 4/29/97 The Detroit Water and Sewerage Department held its final meeting on the Mercury Minimization and Pollution Prevention Work Group. As of April, 1997, Bob Babcock, of DEQ's Surface Water Quality Division will be joining the HHR Committee as a consultant. To date, half of Michigan's sewered population is served by DWSD. This wastewater treatment plant experiences peak flows of 1.7 Billion Gallons per Day (BGD) or 700 MGD on the average making their facility the largest in the United States.

**timeframe:** ongoing, as needed

**implementation:** Some involvement is possible with existing resources. The extent and number of forming new collaborative partnerships depend primarily upon evolving needs specified in problem areas.

**<20> MDEQ AND THE MICHIGAN DENTAL ASSOCIATION SHOULD ENCOURAGE INSURANCE COMPANIES TO DEVELOP PAYMENT PLANS WHICH INCLUDE COMPETITIVE COVERAGE FOR ALTERNATIVES TO DENTAL AMALGAMS.**

**status:** ★ No progress thus far.

**lead:** Michigan Dental Association

MDEQ Environmental Assistance Division, Pollution Prevention Section

**potential activities:**

*Co-signed letter from Chairman M2P2 Task Force and appropriate MDA officials to major dental insurance carriers.*

**timeframe:** 2 months

**implementation:** Possible with existing resources.

**activities to date:**

4/29/97 EAD and MDA officials met to discuss development of such a letter. Apparently, alternatives to mercury amalgam, may at times, be a viable option, however often not covered by the dental insurance carriers if the procedure should happen to be more costly than conventional alternatives. Dentists can choose to use alternative filling materials rather than amalgam for restorations but the insurance company will only pay for the amalgam as the baseline of coverage for load bearing teeth.

**<21> MDEQ AND THE MICHIGAN DENTAL ASSOCIATION SHOULD DEVELOP AND IMPLEMENT AN AMALGAM WASTE TRACKING SYSTEM.**

**status:** ★ = No progress thus far.

**lead:** MDEQ Waste Management Division

MDEQ Drinking Water and Radiological Protection Division  
Plan Implementation Coordinator

**potential activities:**

*All stakeholders should meet with the DEQ to establish an amalgam waste tracking program using manifests or similar paper documentation process in order to track amalgam wastes from dental offices. The major impetus for this effort is to minimize mercury amalgam discharges occurring to wastewater or in general refuse that may be destined for incineration. Another question would be to consider whether or not waste amalgam might be regarded as a 'regulated medical waste' material since it may include blood, saliva and human tissues. If so, then this material may require some special handling/processing procedures prior to recycling.*

**timeframe:** 18 months

**implementation:** Contractual assistance likely required if DEQ is to administer such a program.

**activities to date:**

4/29/97 EAD and MDA officials met to discuss possible implementation of this recommendation. MDA prefers a voluntary, self regulated, informal approach, to this process.

1/28/98 MDA reports that through some amalgam recyclers, a few dentists have adopted such a system. When dental offices dispose of their scrap or waste amalgam, the recycling company sends the office a manifest that verifies that the amalgam was properly received and recycled. At this time, the Michigan Dental Association prefers to encourage voluntary compliance with established MDA procedures. Later, they may evaluate program effectiveness and if necessary recommend mandatory measures.

It is envisioned that to administer an amalgam waste tracking program, it would require the support of the MDA, DEQ, and the Michigan legislature. Enabling legislation and/or administrative rules would need to be developed and implemented. It is not universally understood that a major new regulatory program is necessary at this time.

**<22> THE MICHIGAN DENTAL ASSOCIATION SHOULD ENCOURAGE THE AMERICAN DENTAL ASSOCIATION OR THE INTERNATIONAL STANDARDS ORGANIZATION AND THE NATIONAL SANITATION FOUNDATION TO CONDUCT EFFICIENCY TESTING ON THE SYSTEMS MARKETED FOR THE CAPTURE OF WASTE AMALGAM.**

**status:** → Partially implemented or currently underway.

**lead: Michigan Dental Association**

Plan Implementation Coordinator  
(Monitor process and encourage completion)

**potential activities:**

*Letter transmitted to these organizations signed by Michigan Dental Association Officials.*

**activities to date:**

3/12/97 MDA's Connie Verhagen was elected to serve on the American Dental Association (ADA) Council on Scientific Affairs. This Council has been designated to take the lead on Amalgam waste issues for the national Association. ADA officials are also represented on the International Standards Organization. For the last couple of years the ISO has been working on standards for testing amalgam capture units. The current ADA's Research Agenda also includes efficacy testing of amalgam capture systems.

9/97 At the September 1997 ISO Meeting in Bangkok, the standard for amalgam separators was approved. the U.S. abstained from the vote due to some reservations about the standard. The U.S. feels amalgam separators that meet ISO standard may not adequately fulfill local and federal regulatory requirements in the U.S. The ADA is also conducting research on amalgam separators which includes using the ISO standard test method to conduct laboratory evaluation on the effectiveness of these amalgam separators. In addition, the research also involves characterizing the particles that are not retained by the amalgam separators.

**timeframe:** Six months

**implementation:** *Possible with existing resources*

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**<23> THE NATIONAL INSTITUTE OF DENTAL RESEARCH (NIDR) , THE AMERICAN DENTAL ASSOCIATION (ADA) AND DENTAL MANUFACTURERS SHOULD CONDUCT ADDITIONAL RESEARCH ON RESTORATIVE MATERIAL ALTERNATIVES AND ALSO CAPTURE TECHNOLOGY FOR DENTAL AMALGAM WASTE.**

**status:** → Partially implemented or currently underway.

**lead:** Michigan Dental Association

Environmental Assistance Division, Pollution Prevention Section

**potential activities:**

*Co-authored letter should be transmitted to these organizations signed by M2P2 Task Force Chair and Michigan Dental Association Officials explaining the need for such research asking that they sponsor or at least promote it. This message may combined with other letters from recommendations in the Dental section if deemed appropriate.*

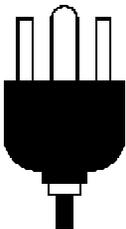
**timeframe:** Two Months

**implementation:** Possible with existing resources.

**activities to date:**

3/12/97 According to the response received from the Michigan Dental Association, considerable research is now taking place on alternative restorative materials such as a gallium alloy composites and a hand consolidated silver alloy. The silver alloy cold welds when condensed into tooth preparations and results look promising. This material should be ready for clinical trials by the end of 1997.

1/28/98 A number of research agencies are conducting research on amalgam capture units. Others are conducting research on pre-treatment technologies such as micro-membrane filtration, and mesoporous materials that will attach to heavy metals to remove them.



**Electrical Manufacturers/Users Subgroup Recommendations:**

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**<24> MDEQ SHOULD CONTINUE MERCURY P2 EDUCATION AND OUTREACH EFFORTS BY INFORMING USERS OF THE VARIOUS TYPES OF BATTERIES THAT CONTAIN MERCURY AND PROVIDE INFORMATION ON ALTERNATIVES AND AVAILABLE RECYCLING CENTERS.**

**status:**  Recommendation complete and ongoing.

**lead:** Environmental Assistance Division, Pollution Prevention Section  
Environmental Assistance Center  
Information and Assistance Section

**potential activities:**

*Since 1992, mercury in batteries manufactured and sold in the United States has been reduced to all but trace or background levels for what mercury may exist in other compounds. Current legislation should ensure that mercury in batteries will continue to decline. The Michigan Recycled Material Market Directories published annually, by the MDEQ Environmental Assistance Division currently lists available recycling centers, collection programs and companies that accept batteries for recycling. It is recommended that the practice of making this type of information readily accessible continue.*

**timeframe:** Immediate/Ongoing

**implementation:** Possible with existing resources.

**activities to date:**

Summer 1997 EAD went on line with a Recycling Home Page that contains the Recycled Material Market Directories (RMMD's). This information may now be searched and downloaded electronically as well as, available in hard copy from EAD's Environmental Assistance Center. Soon this information will be linked with the Mercury Pollution Prevention Home page for easy access.

**<25> MDEQ SHOULD ENSURE THAT MERCURY BATTERY MANUFACTURERS COMPLY WITH MICHIGAN'S NEW BATTERY LAW.**

**status:**  Recommendation complete.

**lead:** MDEQ, Waste Management Division

**timeframe:** Immediate/Ongoing

**implementation:** A national law has hence taken effect and consequently this recommendation is considered complete.

**<26> MDEQ SHOULD WORK WITH LAMP MANUFACTURERS AND ENCOURAGE THEIR CONTINUED EFFORT TO REDUCE THE QUANTITY OF MERCURY REQUIRED FOR OPERATION AND ENCOURAGE DEVELOPMENT OF ECONOMICALLY FEASIBLE ALTERNATIVES WITH COMPARABLE ENERGY EFFICIENCY RATINGS.**

**status:** → Partially implemented or currently underway.

**lead:** MDEQ, Environmental Assistance Division, Pollution Prevention Section

**potential activities:**

*Transmit letter to major manufacturers possibly signed by the M2P2 Chair and continue to work with manufacturers encouraging reduced levels of mercury while the Green Lights Program is being implemented in State Facilities.*

**timeframe:** Three months

**implementation:** Possible with existing resources.

**<27> MDEQ SHOULD CONTINUE TO WORK WITH US EPA TO ENCOURAGE FACILITIES TO PARTICIPATE IN US EPA'S GREEN LIGHTS PROGRAM.**

**status:** → Partially implemented or currently underway.

**lead:** Environmental Assistance Division, Pollution Prevention Section

Michigan Department of Consumer and Industry Services, MPSC  
Michigan Department of Management and Budget

**potential activities:**

*MDEQ Director has taken the lead in overseeing Green Lights Program implementation for State Government facilities. The Environmental Assistance Division, Pollution Prevention Section will provide the staff support for this project, as well as, information and assistance for other entities pursuing Green Lights Program participation and involvement in related projects.*

**timeframe:** Underway/Ongoing

**implementation:** Possible given existing resources

**activities to date:**

- 4/21/97 DEQ Director Russell Harding sent a letter to DMB Director Mark Murray reporting on the progress of expanding the number of facilities for which lighting surveys have been conducted. Efforts are currently concentrated towards completing surveys in State owned Mid-Michigan facilities.
- 9/97 EAD's Pollution Prevention Section begins offering on site technical lighting survey assistance to companies interested in updating their fluorescents. In addition, the Retired Engineers Technical Assistance Program (RETAP) regularly provides on-site waste reduction assistance to small businesses and institutions. The RETAP group performs assessments at individual facilities and recommend waste reduction and energy efficiency improvements. Since the program began in 1994, RETAP professionals have completed 110 assessments. This past fiscal year 27 assessments were completed. In May 1997, House Bill 4849 was introduced to establish RETAP as a permanent program in the DEQ. This bill was reported out of the House Committee on Conservation, Environment, and Recreation in October 1997.
- 12/31/97 EPA developed a one year anniversary progress report for Michigan State Government summarizing our accomplishments. As of this date, 45 percent of State floor space has been surveyed and 12 percent upgraded. Michigan State Government has reduced annual electricity consumption by 3,818,009 kilowatt-hours and are saving \$238,124 annually from our lighting upgrades.
- 3/18/98 In addition to their other services, the retired engineer Technical Assistance Program (RETAP), under the direction of the EAD and the Waste Reduction and Technology Transfer Foundation (WRATT), now provide mercury (P2) outreach and internal mercury audit assistance as part of their waste reduction assessments for companies. They also conduct energy audits and promote participation in the Green Lights Program by handing out brochures and related information.
- 7/20/98 All RETAP personnel also received Green Lights Program and mercury P2 training at their Lansing retreat held at the Holiday Inn, South.

In addition to the items mentioned above, EAD has also:

1. Written informative articles marketing the Green Lights program in Consumer and Industry Services (CIS) and Office of the Great Lakes newsletters and publications.
2. Published several articles in the monthly EAD Bulletin
3. Made Green Light information available on EAD's P2 Website and established direct linkage to EPA's Green Lights Home Page.
4. Issued a major press release through the Governor's Office.

5. Distributed numerous brochures and Green Lights publications through conferences, workshops and events.
6. Featured Green Lights and Energy Efficiency presentations at the annual southeast Michigan Waste Reduction and Energy Efficiency Workshop.

**<28> MDEQ SHOULD CONTINUE ITS EFFORT ON INCORPORATING THE UNIVERSAL WASTE RULE (UWR) INTO MICHIGAN REGULATIONS TO INCLUDE SUCH MERCURY-CONTAINING WASTES AS THERMOSTATS, BATTERIES, BANNED PESTICIDES AND MERCURY-CONTAINING LAMPS AS UNIVERSAL WASTES.** (The final UWR was published FR vol. 60, No. 91, May 11, 1995. This final UWR rule streamlines the hazardous waste management regulations governing the collection and management of batteries, pesticides and thermostats.)

**status:**  Recommendation complete.

**Further, MDEQ SHOULD SEEK EXPANSION OF THE RULE TO INCLUDE MERCURY-CONTAINING SWITCHES, THERMOMETERS AND MERCURY-CONTAINING MEDICAL DEVICES TO SIMPLIFY THE COLLECTION AND RECYCLING OF THESE WASTES.** [In October 1995 MDEQ-Waste Management Division proposed revisions to update its hazardous waste rules and adopt the UWR (Administrative rules to Part 111 of NREPA, 1997 PA 751, as amended. MDEQ-WMD has proposed the Inclusion of thermostats, batteries, banned pesticides and mercury-containing lamps as universal wastes.)].

The Michigan hazardous waste administrative rules under Part 111 of Act 451, as amended, have been revised to incorporate some State initiated changes, to update statutory references, and to remain consistent with federal regulations and allow Michigan to maintain authorization to administer the State's hazardous waste management program. These revised rules became effective September 22, 1998. Universal waste management standards have been clarified for mercury switches, mercury thermometers, and waste devices containing only elemental mercury.

**status:**  Recommendation complete.

**lead: MDEQ Waste Management Division**

**timeframe:** The proposed changes were finalized fall 1996, rules revision became effective September 22, 1998.

**implementation:** Complete

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**<29> MDEQ SHOULD DETERMINE IF FLUORESCENT LIGHT BARREL CRUSHERS ARE A SIGNIFICANT SOURCE OF FUGITIVE MERCURY EMISSIONS TO THE ATMOSPHERE AND DEVELOP A POLICY/RECOMMENDATION ON THIS PROCESS.**

**status:** → Partially implemented or currently underway.

**lead:** MDEQ, Air Quality Division

The crushing of fluorescent lights has been shown to be a source of mercury that often exceeds the OSHA mercury limit. AQD made policy decision to review these types of mercury sources as well as any other source on a case-by-case basis and withdrew its previous toxic air contaminant screening level for mercury due to the highly bio-accumulative nature of mercury and due to exposure to this pollutant by other routes. These types of mercury sources do not qualify for exemption from a permit to install under the AQD Rules 279 or 290 (see attached information).

**timeframe:** Six months

**implementation:** Possible given existing resources.

**<30> MDEQ SHOULD ENCOURAGE MICHIGAN FACILITIES TO PARTICIPATE IN THE HONEYWELL CORPORATION'S REVERSE DISTRIBUTION RECYCLING PROGRAM FOR MERCURY-CONTAINING THERMOSTATS.**

**status:** → Partially implemented or currently underway.

**lead:** MDEQ, Office of the Great Lakes (OGL)

**potential activities:**

*Information about this program should be published in the Recycled Materials Market Directories and promoted through EAD newsletters, outreach publications, conferences and co-authored press releases where applicable.*

**timeframe:** 3 months

**implementation:** May be accomplished through existing resources

12/20/97 A new initiative is just getting underway by the Thermostat Recycling Corporation in conjunction with Honeywell.

6/98 OGL assumes responsibility to act as the lead to work with Honeywell and Thermostat Recycling Corporation to increase awareness about this newly emerging program.

MDEQ plans to do a press release informing Michigan's residents of the program available to recycle their thermostats. Collecting and storing thermostats should not be a problem in Michigan according to Jim Sygo, Chief of Waste Management Division, " We placed thermostats in our last part 111 rulemaking which treats thermostats as Universal Waste. This allows Honeywell service centers to collect thermostats without becoming a licensed facility. We were going to allow them to do that (anyway) if materials were taken off site within 90 days. This project should not be a problem to implement in Michigan with our Universal Waste Rule." he said.

**<31> MDEQ SHOULD EXTEND THE EDUCATIONAL/OUTREACH CAMPAIGN AND COLLECTION PROGRAM FOR PRODUCTS CONTAINING MERCURY IN THE LAKE SUPERIOR BASIN TO MICHIGAN'S LOWER PENINSULA.**

**status:** → Partially implemented or currently underway.

**lead: Plan Implementation Coordinator**

MDEQ Environmental Assistance Division, Pollution Prevention Section  
Michigan Department of Agriculture  
MSU; Cooperative Extension Service

**potential activities:**

*Use mercury brochures and other educational materials developed for education campaign and secure funding to conduct Statewide clean sweep of mercury products. Also provide these services targeting schools, electrical contractors, dairy farms and households.*

**timeframe:** 18 months

**activities to date:**

Fall 1996 MDEQ-AQD staff sought and obtained a \$35,000 grant from the Saginaw Bay National Watershed Initiative (MDEQ, Office of the Great Lakes). Funding was awarded to the Genesee County Environmental Health Department-Environmental Health Services Division to conduct an education/outreach and

collection program for mercury-containing wastes. Two collection programs were offered to the public in April and October 1996, by the Genesee County Environmental Health Services Division, which provided three drop-off sites for collection of mercury-containing wastes for proper management and disposal with an estimated 200 pounds of mercury being collected. Genesee County Environmental Health Services also sent copies of these mercury educational brochures that were sent out in the Upper Peninsula to all of the electrical contractors located within the Saginaw Bay Watershed.

10/1/97 A GLNPO grant was received by EAD to aid in implementing many of the recommendations contained herein (over the next two fiscal years). A mercury clean sweep program for recovering mercury from schools and laboratories may be one possible outcome if collaborative partnerships with existing work groups can be established.

1/06/98 Additional clean sweep programs and farms are also under consideration. EAD has prepared an FY 98/99 GLNPO pre-proposal for additional funding and has submitted it to EPA for consideration.

recommendation 0.4.4 found on pp. 40. ....

**<32> MDEQ SHOULD CONTACT SWITCH MANUFACTURERS AND USERS OF SWITCHES INCLUDING CONTRACTORS AND TRADE ASSOCIATIONS TO IMPROVE THE ESTIMATE FOR MERCURY SWITCHES USE AND DISPOSAL (I.E., IN APPLIANCES SUCH AS FURNACES AND SUMP PUMPS) AND EXPLORE OPPORTUNITIES FOR MERCURY FREE ALTERNATIVES.**

**status:** → Partially implemented or currently underway

**lead:** MDEQ, Air Quality Division, Toxics Unit

Plan Implementation Coordinator

**potential activities:**

*Work with Michigan based switch manufacturer(s) to promote the use of less toxic alternatives or encourage programs that recover and responsibly manage discards and residuals. Explain the Honeywell program and see if they would endorse and support such a concept. Interact with Minnesota officials to track their progress and successes to support similar efforts here.*

**timeframe:** 9 months

**implementation:** Possible by utilizing existing resources.

To date, one mercury switch manufacturer has been identified as being located within Michigan.

7/14/98 EAD, AQD and WMD staff visited and met with officials of Mercury Displacement Industries (MDI), Edwardsburg, Michigan. MDI agreed to provide DEQ with a list of Michigan distributors and major customers so that DEQ could transmit educational/outreach P2 materials such as the Merc Concern and Mercury Spill Cleanup Guidelines. DEQ will also support their take back program for mercury switches, relays and contactors. DEQ will also comment on internal Mercury Clean-up Instructions (PS-179) and provide comments and suggestions.



### **Chemical Manufactures/Users Subgroup Recommendations:**

**<33> THE M2P2 TASK FORCE RECOMMENDS THE MICHIGAN CHEMICAL COUNCIL UNDERTAKE AN ASSESSMENT OF THE QUANTITIES AND TYPES OF MERCURY USED BY THE MICHIGAN CHEMICAL INDUSTRY AND THE VOLUNTARY POLLUTION PREVENTION METHODS BEING USED TO PREVENT RELEASES TO THE ENVIRONMENT AND SHARE WITH MDEQ FOR PUBLIC DISSEMINATION.**

**status:** ★ ★ Additional resources needed to complete.

**lead:** Michigan Chemical Council

Environmental Assistance Division, Information and Assistance Section  
Plan Implementation Coordinator

#### **potential activities:**

*MCC should conduct an inventory to determine mercury usage by the Michigan Chemical Industry. This information should then be used by the MCC to develop pertinent pollution prevention case studies, fact sheets or other relevant information. This material may then also be incorporated into the public educational program as deemed appropriate.*

**timeframe:** One year

**implementation:** Partial completion likely, however additional resources may be required for printing and distribution.

3/98 Michigan Chemical Council distributed a survey and accompanying Merc Concern brochures to over nine hundred chemical users, suppliers and manufactures.

**<34> ALL STAKEHOLDERS SHOULD BE INVOLVED IN THE DEVELOPMENT OF A NATIONAL LABELING REQUIREMENT FOR PRODUCTS OR COMPONENTS WHICH CONTAIN A SIGNIFICANT PERCENTAGE OF MERCURY FOR ITS FUNCTION OR AS AN ADDED INGREDIENT. THIS WOULD ALLOW CONSUMERS AND BUSINESSES TO MAKE INFORMED CHOICES IN EFFORTS TO SUPPORT POLLUTION PREVENTION PROGRESS.**

**status:** → Partially implemented or currently underway.

**lead:** Plan Implementation Coordinator

**potential activities:**

*The M2P2 Task Force letter of earlier Recommendations to the National Mercury Task Force addressed this issue. Additional letters of support could sent to appropriate Washington groups and individuals such as the Consumer Products Safety Commission from Chairman, M2P2 Task Force. Also, further opportunities may arise as plan implementation unfolds.*

**timeframe:** Ongoing monitoring for additional opportunities.

**implementation:** Possible with existing resources.

7/98 EAD and AQD staff continue to participate in monthly conference calls with the Region V states and the mercury workgroup in Minnesota. AQD and OGL staff also participate on the Bi-national Toxics Strategy Workgroup and continue to support advances and seek out opportunities for such coordination on a national scale.

**<35> MICHIGAN SHOULD PROVIDE INCENTIVES TO PROMOTE VOLUNTARY POLLUTION PREVENTION EFFORTS. MANY OF THESE EFFORTS HAVE ALREADY BEEN EXTREMELY SUCCESSFUL. INCENTIVES COULD INCLUDE TAX CREDITS OR GRANTS THAT COULD BE GIVEN TO COMPANIES FOR POLLUTION PREVENTION TRAINING AND EDUCATION.**

**status:** ★ ★ No progress, thus far. Additional resources needed for full implementation.

**lead: Environmental Assistance Division**

**potential activities:**

*The Environmental Assistance Division should continue to evaluate and provide additional incentives such as grants and tax credits for new or expanded P2 program efforts in accord with the Statewide Pollution Prevention Strategy. Other incentives such as the Clean Corporate Citizen Program and the Michigan Business Pollution Prevention Partnership should be enhanced or expanded to reward mercury minimization and pollution prevention efforts. (See Also Recommendation #59)*

**timeframe:** 18 months/ongoing

**implementation:** Depending upon the level of commitment, additional resources may be required in order to implement.

**activities to date:**

FY/1997 Information was gathered on other state's who have implemented or are considering pollution prevention tax or grant incentives. Very few states explicitly provide tax incentives. While more states provide loans and grants, it appears that there has not been strong demand for these from businesses. In general, MDEQ has relied more on public recognition programs such as the Michigan Business Pollution Prevention Partnership rather than monetary programs. There is a new incentive program, Clean Corporate Citizen (C3), which provides air related regulatory benefits to facilities that meet three criteria, one of which is having a pollution prevention program. The benefits provided by the C3 Program will be broadened this year to include water and waste regulatory benefits.

FY/1998 The EAD will continue to gather information. Staff will develop recommendations by June 1998. The EAD will continue to market the voluntary P2 programs and the C3 Program as an ongoing activity. The Technical Assistance Section (TAS) has the lead for the C0 Program.

7/98 Additional resources loom just over the horizon, with the house and senate approval of the Michigan Environmental Bond Program. If this proposal, which needs to be ratified by Michigan voters, in the fall of 1998, five million dollars is slated for low interest loan for pollution prevention activities. EAD has been asked to take the lead on this portion of the proposal and develop proposals, rules, and related infrastructure to carry out this assignment.

**<36> INCREASE THE DIALOGUE WITH INDUSTRY TOWARD FURTHER VOLUNTARY POLLUTION PREVENTION INITIATIVES. AT THE NATIONAL**

**LEVEL THE CHEMICAL MANUFACTURER'S ASSOCIATION RESPONSIBLE CARE® PROGRAM MAY BE THE APPROPRIATE AVENUE TO BRING MORE FOCUS ON MERCURY POLLUTION PREVENTION OPPORTUNITIES IN THE CHEMICAL INDUSTRY. ONGOING INVOLVEMENT OF THE MICHIGAN CHEMICAL COUNCIL IS ENCOURAGED AT THE STATE LEVEL.**

**status:** → Partially implemented or currently underway.

**lead:** Michigan Chemical Council

MDEQ Environmental Assistance Division, Pollution Prevention Section

**potential activities:**

*Enhance partnership and encourage continued involvement with the Chemical Industry for further progress toward pollution prevention initiatives both at the State and national level.*

**timeframe:** Ongoing

**implementation:** Possible with existing resources.

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**<37> THE M2P2 TASK FORCE URGES THE CONTINUED EFFORT BY THE MDEQ INDUSTRIAL PRETREATMENT PROGRAM STAFF TO DISSEMINATE INFORMATION TO LOCAL PRETREATMENT AUTHORITIES AND OTHERS ON MERCURY-CONTAINING PRODUCTS AND PROCESSES AND OPPORTUNITIES FOR P2.**

**status:**  Recommendation complete.

**lead:** MDEQ Surface Water Quality Division, Industrial Pre-treatment Program

Educational materials have been sent to all WWTP's. Mercury presentations and displays continue to be featured at annual conferences and periodic meetings.

**timeframe:** Ongoing

**activities to date:**

03/2&3/98 MDEQ's EAD and MML co-sponsored a workshop titled: Meeting the New Water Quality Standards through Pollution Prevention. This Lansing workshop, was also repeated the next day in Gaylord, and highlighted

Mercury P2 accomplishments as a template for addressing other bio-accumulative chemicals of concern (BCC's) . The targeted audience was WWTP personnel, municipal officials and other key decision makers.

06/98 Regional chapter meetings of groups like the MWEA, continue to focus on mercury Pollution Prevention as an important topic featuring speakers that share their mercury P2 success.

**<38> THE THRESHOLDS FOR MERCURY EMISSIONS UNDER THE TOXIC CHEMICAL RELEASE INVENTORY (TRI) MAY NEED TO BE EVALUATED. THIS REPORTING THRESHOLD MAY BE OF QUESTIONABLE UTILITY GIVEN THAT THE PRESENT REPORTING THRESHOLD FOR MERCURY IS 10,000 POUNDS/YEAR AND THE MICHIGAN ANTHROPOGENIC ATMOSPHERIC EMISSIONS ARE ESTIMATED TO BE BETWEEN 8,000-10,000 POUNDS/YEAR.** TRI reporting is required by Section 313 of Title III of the 1986 Superfund Amendments and Reauthorization Act (SARA 313).

**status:**  Recommendation complete.

**lead:** MDEQ Environmental Assistance Division, Pollution Prevention Section,

**potential activities:**

*Work at the federal and state level to investigate the best methods to collect and utilize this data. Research the process for modifying this reporting threshold for Michigan companies. Develop and implement a strategy to make appropriate adjustments and thereby obtain this important data.*

**timeframe:** 6-9 months

**activities to date:**

In 1997, the categories of industrial facilities required to report for TRI were expanded to cover, electric utilities, among others. However, few utilities need to report on mercury releases because reporting thresholds are above what most utilities emit. In order to ensure that reporting on mercury to TRI will effectively provide citizens meaningful information on mercury releases from utilities and other sources, EPA is preparing a proposal to lower the reporting threshold for mercury.

**<39> THE MICHIGAN CHEMICAL COUNCIL AND MDEQ SHOULD WORK COOPERATIVELY AT IMPROVING THE INVENTORY OF MERCURY**

**RELEASED INTO MICHIGAN'S ENVIRONMENT FROM THE MICHIGAN CHEMICAL INDUSTRY TO IMPROVE THE SCIENTIFIC BASE OF KNOWLEDGE IN MICHIGAN.**

**status:** . → Partially implemented or currently underway.

**lead:** Air Quality Division, Toxics Unit

MDEQ Environmental Assistance Division, Pollution Prevention Section,  
Grants and Information Unit

**potential activities:**

*Air Quality Division is continuing their efforts to refine a comprehensive air toxic Regional Air Pollutant Inventory Development System (RAPIDS) for all sources including point area and mobile sources. Input is needed from the Chemical Industry sector to verify mercury emissions.*

**timeframe:** Task considered ongoing . Will require ongoing maintenance and updates.

**<40> WITH THE ASSISTANCE OF THE MANUFACTURING AND CHEMICAL SECTORS THE MDEQ SHOULD UNDERTAKE MORE EDUCATIONAL EFFORTS ON P2 EFFORTS REGARDING MERCURY. THE INFORMATIONAL FLYER ON AQUEOUS CLEANERS IS A GOOD EXAMPLE OF WHAT MIGHT BE DONE (APPENDIX I).**

**status:** ★ No progress thus far.

**lead:** Michigan Chemical Council Coordinator

MDEQ Environmental Assistance Division, Pollution Prevention Section  
Information and Assistance Section  
MDEQ; Environmental Education Coordinator

**potential activities:**

*The Michigan Chemical Council should develop appropriate mercury pollution prevention fact sheets and educational materials. They may also desire to become involved with the Michigan Department of Education and the Department of Environmental Quality in the development of appropriate materials encouraging mercury pollution prevention. EAD's P2 Section should assist by making printed materials available to the public and featuring MCC speakers at appropriate conferences.*

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timeframe: Ongoing



As of March 10, 1998, Ford personnel reported reductions of 1.4 million switches in their use of mercury switches from 1996-1997. This equates to a 55% reduction in switches used by Ford in vehicles from 1996 to 1997. Chrysler has phased out the use of mercury switches, with the exception of the Grand Cherokee which still uses three mercury switches in the ABS braking system. The mercury free ABS braking system will be introduced across all sport utility vehicles, when all systems meet safety and performance requirements. General Motors continues to make substantial progress toward its respective commitment to phase out mercury switches "where feasible". Collectively the 'Big Three' automobile manufacturers have eliminated the use of several thousand pounds of mercury annually.

In addition, the recent annual conference of the Society of Automotive Engineers had a paper published with updated the list of materials that engineers are instructed to avoid. This paper now includes mercury in addition to a number of other substances. The paper is entitled "The List Game - Materials that Engineers are Instructed to Avoid", by Doris Hill and Wendy Troemel (SAE 980478). A copy may be obtained by calling (412) 776-4841.

### **Automobile Subgroup Recommendations**

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**<41> THE AMERICAN AUTOMOBILE MANUFACTURERS ASSOCIATION SHOULD DEVELOP A MERCURY-CONTAINING SWITCH REMOVAL PROCEDURE FOR CURRENT VEHICLES BY DISMANTLERS TO FOSTER SAFE HANDLING AND DISPOSAL.**

status:  Recommendation complete

lead: American Automobile Manufacturers Association (AAMA)

MDEQ, Waste Management Division

**timeframe:** 6 Months

**implementation:** Possible with existing resources

**activities to date:**

9/10/96 AAMA has developed a draft mercury switch removal procedure. In order to have it sanctioned as a guideline or standard it has been forwarded to the Society of Automotive Engineers.

9/24/96 Comments from DEQ staff were transmitted to AAMA on the draft switch removal procedures.

10/17/97 DEQ AQD staff, AAMA staff and its' member companies and other SAE stakeholders, are participating on the SAE Switch Removal Task Force.

1/21/97 Meeting of the SAE Switch Removal Task Force.

2/18/98 Meeting of the SAE Switch Removal Task Force.

3/18/98 Switch Removal Task Force meets to finalize the procedure. SAE also plans to take an active role in disseminating the procedure to dismantlers/recyclers. This might be distributed through the Environmental Council of States (ECOS).

As switch removal procedures are finalized, SAE will need to disseminate the final switch removal procedure to AIAM.

5/5/98 Final pre-publication protocol for mercury switch removal J2456 forwarded to the Society of Automotive Engineers, Inc. for publication.

**<42> MDEQ SHOULD FOLLOW UP ON THE LETTER FROM THE ASSOCIATION OF INTERNATIONAL AUTOMOBILE MANUFACTURERS (AIAM) REQUESTING ASSISTANCE IN ADDRESSING DISPOSAL/RECYCLING NEEDS REGARDING MERCURY SWITCHES IN THE CURRENT FLEET OF THEIR MEMBER COMPANY VEHICLES.**

**status:**  Recommendation complete.

**lead:** American Automobile Manufacturers Association (AAMA)

MDEQ Waste Management Division

**potential activities:**

*International manufacturers have phased out the use of mercury in switches due to recommendations previously put forth in Sweden.*

**timeframe:** 2 months

**implementation:** Recommendation considered complete.

**<43> THE AMERICAN AUTOMOBILE MANUFACTURERS ASSOCIATION OR MDEQ SHOULD PROVIDE THE SWITCH REMOVAL PROCEDURE TO AIAM FOR A DETERMINATION OF APPLICABILITY TO THE VEHICLES NOTED IN RECOMMENDATION 42 ABOVE.**

**status:** → Partially implemented or currently underway.

**lead:** American Automobile Manufacturers Association (AAMA)

MDEQ Waste Management Division

**timeframe:** Three to six months

**implementation:**

The AIAM will receive the procedure as soon as AAMA publishes it. As of August 1998, the procedure had not yet been published. DEQ, AQD will set up a meeting with SAE and AAMA to work on the distribution effort in Michigan to the auto recyclers/dismantlers....etc.

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**<44> MDEQ SHOULD PROVIDE ADEQUATE RESOURCES FOR QUALITY ASSURANCE CHECKS ON THE MICHIGAN CRITICAL MATERIALS REPORT AND COMPUTER PROCESSING IF THE REPORT IS TO PROVIDE A RELIABLE BASIS FOR MONITORING USE AND POTENTIAL RELEASES OF MERCURY IN THE FUTURE.**

**status:** → Partially implemented or currently underway.

**lead:** MDEQ, Surface Water Quality Division

**potential activities:**

*Investigations by the M2P2 Task Force discovered that some of the data was questionable as to its accuracy. In order to be meaningful, quality assurance measures should be put into place.*

**timeframe:** 12-18 months

**implementation:** Undergoing review and modifications.

Possible update on CMR from SWQD personnel.

7/98 EAD's Grants and Information (SARA Title III) Unit, has been given the lead and asked to take over the CMR.



### **Utility Sector Recommendations:**

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**<45> THE M2P2 TASK FORCE, MDEQ AND THE MICHIGAN PUBLIC SERVICE COMMISSION SHOULD ENCOURAGE USEPA TO FINALIZE THE MERCURY AND UTILITY STUDIES AND ENSURE THAT SIGNIFICANT RESOURCES ARE ALLOCATED TO DETERMINE THE SCIENTIFIC BASIS TO PROMULGATE NATIONAL STANDARDS FOR MERCURY EMISSIONS FROM ELECTRIC UTILITY BOILERS.**

**status:**  Recommendation complete.

**lead:** MDEQ, Air Quality Division

Michigan Department of Consumer and Industrial Services, MPSC

### **potential activities:**

*On November 29, 1995; MDEQ-AQD submitted a letter to US EPA generally concurring with the December 1995 final draft Mercury Study report. MDEQ-AQD staff also continue to track the progress on the EPA Utility Study, as required by the 1990 amended CAA 112(n)(1)(A). MDEQ submitted comments through State and Territorial Air Pollution Program Administrators (STAPPA) and the Association of Local Air Pollution Control Officials (ALAPCO) on the draft utility study and participated in numerous conference calls to discuss report progress. This study is delayed, however an*

*interim final copy was released October 4, 1996 and a final report is expected at the end of 1996, pending negotiations with the Sierra Club.*

**timeframe:** 2 months

**implementation:** Possible given existing resources

**EPA finalized the mercury study December 1997.**

**The Utility Study was and released on February 24, 1998, however, EPA's regulatory decision was deferred until a "later date".**

**<46> THE MPSC AND THE MDEQ, WORKING IN COOPERATION WITH MICHIGAN UTILITIES, SHOULD SUPPORT ADDITIONAL RESEARCH EFFORTS TO EVALUATE THE FULL ENVIRONMENTAL COSTS AND IMPACTS OF MERCURY EMISSIONS AND SUBSEQUENT DEPOSITION FROM ELECTRIC POWER GENERATION.**

**status:** **x** Not possible without additional resources.

**implementation:** More resources are needed.

**lead:** **Chairman, M2P2 Task Force**

Department of Consumer and Industrial Services, MPSC  
Plan implementation Coordinator  
MDEQ Air Quality Division  
Electric Power Generation Utility Companies  
Michigan Department of Community Health

**potential activities:**

*Dialog should be established with groups such as 'Resources for the Future' to encourage someone conduct this additional research.*

**timeframe:** Ongoing

**activities to date:**

Fall 1997 The Office of the Great Lakes solicited a proposal from Resources for the Future, a leading environmental think tank in Washington, DC submitted to the Great Lakes Protection Fund during its 1997 grant cycle. It was entitled "Environmental Costs and Impacts in the Great Lakes of Mercury Emissions and Deposition from Electric Power Generation: Phase I -Scoping Study" seeking \$90,100 in funding. The

Technical Advisory Board (TAB) of the MGLPF declined to fund this proposal. The general feeling was that Michigan could not really rival the extensive work of the U.S. EPA under Section 112 of the Clean Air Act Amendments of 1990 (“Great Waters”).

**<47> MICHIGAN UTILITIES SHOULD CONTINUE TO SUPPORT PROJECTS ON EVALUATING RENEWABLE ENERGY SOURCES, INCLUDING WIND AND SOLAR ENERGY. THE RESULTS OF ALL APPLICABLE STUDIES SHOULD BE SHARED WITH THE MPSC AND MDEQ AND IF DETERMINED TO BE ECONOMICALLY AND TECHNICALLY FEASIBLE, ADDITIONAL RELIANCE ON RENEWABLES SHOULD BE IMPLEMENTED.**

**status:** ★ = No progress thus far.

**lead:** Department of Consumer and Industrial Services, MPSC

Electric Power Generation Utility Companies  
Plan Implementation Coordinator

**timeframe:** Ongoing

**<48> THE M2P2 TASK FORCE CALLS UPON ELECTRIC UTILITIES TO FACTOR IN THE COSTS AND BENEFITS OF MERCURY EMISSIONS CONTROL INTO ALL ENVIRONMENTAL IMPACT STATEMENTS (EIS) REQUIRED UNDER FEDERAL AND STATE LAW.**

**status:** ★ No progress thus far.

**lead:** Michigan Department of Consumer and Industrial Services, MPSC

Utilities

**potential activities:**

*MPSC should track progress and confirm that this recommendation is being implemented.*

**timeframe:** One month and ongoing thereafter as needed while an EIS is prepared.

**activities to date:**

1/28/98 At the January meeting of the M2P2 Task Force, Detroit Edison reported, that from the time of report issuance to present, no EIS's have been prepared, therefore rendering this recommendation non-applicable thus far.

**<49> THE M2P2 TASK FORCE CALLS UPON MICHIGAN UTILITIES TO DEVELOP A PLAN WITH TIMETABLES AND GOALS THAT ARE MEASURABLE, IN QUANTITATIVE OR OTHER TERMS, AS WELL AS MEANS TO ACHIEVE THE GOALS, TO FURTHER REDUCE MERCURY USAGE OR EMISSIONS FROM THE GENERATION OF ELECTRICITY AND/OR OTHER SOURCES. THIS PLAN SHOULD BE SUBMITTED TO MDEQ AND MPSC AND PROGRESS IN ACHIEVING MERCURY REDUCTIONS SHOULD BE REPORTED ON AN ANNUAL BASIS. (See Section 4.4 for the list of various types of activities that could be implemented to reduce mercury usage or emissions from Michigan utilities.)**

**status:** → Partially implemented or currently underway.

**lead:** Utilities

Michigan Department of Consumer and Industrial Services, MPSC  
MDEQ Air Quality Division, Toxics Unit

**potential activities:**

*Work with Jan Patrick and Greg White from PSC to develop a joint letter for the M2P2 Task Force Chair and John Strand to sign. We may also possibly want to tie this to the mercury Cap and Trade concepts being put forth in Minnesota.*

**timeframe:** 18 months

**implementation:** Can be accomplished utilizing existing resources.

**activities to date:**

3/7/97 Consumers Power, CMS Energy, submitted a Mercury Pollution Prevention Plan Report of Mercury Reduction Progress.

3/12/97 EAD develops comments on the report. In essence EAD expressed disappointment that their focus was on “continued assessment and strengthened management through practicable mercury usage and emission options”; rather than mercury pollution prevention options.

3/24/97 Detroit Edison submits their 1997 Mercury Pollution Prevention Report. Copies of both reports have been sent to PSC for review and are under review in MDEQ's Air Quality, Toxics Unit.



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**State Government Recommendations:**

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**<50> MICHIGAN SHOULD:  
ALLOCATE THE NECESSARY RESOURCES TO IMPLEMENT  
THE MERCURY P2 RECOMMENDATIONS WITHIN THIS  
REPORT.**

**status:** → Partially implemented or currently underway.

**lead:** MDEQ, Director & Deputies

Air, Environmental Assistance, Waste Management & Surface Water Quality; Division Chiefs and Programs (impacted by M2P2 report recommendations)

**timeframe:** Begin immediate implementation of those recommendations for which resources are available. Additional resources needed are being identified, sought after and secured.

**activities to date:**

1/97 In an attempt to secure additional resources, EAD staff prepared and submitted a \$171,770 grant proposal to the Great Lakes National Program Office (GLNPO) to aid in plan implementation. These funds would be used for a substantial education/outreach efforts, including; PSA's, fact sheets, development of a mercury resource manual, and other educational materials.

7/97 EAD invited to prepare and submit a full proposal to GLNPO but to par down the amount and remove the public outreach components (PSA's etc), and focus rather on industrial and user groups.

- 10/97 A revised “full” proposal was developed and approved by EPA for funding commencing October 1, 1997.
- 1/98 Compliance with mercury related limitations (Target 6) and pollution prevention (Target 4) have been made top priorities of the DEQ Targets, Means and Measures Program. By receiving such prominent distinction it should assure that mercury P2 receives adequate Department resources, focus and attention.

**<51> MDEQ SHOULD TAKE THE LEAD IN CONTINUING TO FACILITATE THE IMPLEMENTATION OF THE NUMEROUS RECOMMENDATIONS IN THIS REPORT. THESE RECOMMENDATIONS ENCOMPASS COMMUNICATION, COORDINATION, EDUCATION, TRAINING AND DECENTRALIZATION OF MERCURY P2 EFFORTS TO THE LOCAL LEVEL. THE FOLLOWING ARE MORE SPECIFIC RECOMMENDATIONS TO THE MDEQ, BUT SHOULD INVOLVE ALL STAKEHOLDERS:**

**status:** → Partially implemented or currently underway.

**lead:** Plan Implementation Coordinator

DEQ, Director  
DEQ Divisions; AQD, SWQD, EAD, WMD, OGL  
and affected Departments; DMB, DCH, CIS  
& other Stakeholders

- 6/3/98 Press Release issued by DEQ introducing electronic version of the Interim M2P2 Progress Report. (see attachment) and calling attention to the Michigan Mercury Pollution Prevention Home Page.
- 7/17/98 EAD, OGL and AQD met to discuss status of various recommendations and additional strategies and resources needed for plan implementation.

**<52> • FACILITATE P2 BY OTHER STATE DEPARTMENTS REGARDING MERCURY.**

(see: recommendation #51 above)

**status:** → Partially implemented or currently underway.

<53> • **DEFINE SUCCESS. I.E. HOW DO WE MEASURE SUCCESS OF MERCURY reduction efforts?**

**status:** → Partially implemented or currently underway.

*Possible suggestions include amount of mercury collected, # of brochures sent out, attendance at related events, etc.*

(see: recommendation #51 above)

EAD uses program measurements to gauge success in the mercury reduction efforts. A mercury strategy was developed to identify specific activities and those who would be responsible for taking the lead on implementation. A reporting mechanism was put into place by Steve Kratzer using graphs, bar charts, and memos were sent to Department staff with a role in the strategy, asking for progress reports on FY 97 and Work Plans for FY 98. EAD continues to develop and submit quarterly means and measures reports that track Mercury P2.

**Cumulative progress on the 70 recommendations contained herein will define success. Should the votes adopt the provisions of the Clean Michigan Initiative, a major mercury monitoring and environmental baseline effort may be enhanced.**

<54> · **CONTINUE COMMUNICATION WITH MANUFACTURERS AND END USERS OF MERCURY-CONTAINING PRODUCTS/DEVICES AND IDENTIFY POTENTIAL MERCURY POLLUTION PREVENTION POSSIBILITIES AND ENCOURAGE IMPLEMENTATION.**

**status:** → Partially implemented or currently underway

**lead: Environmental Assistance Division, Pollution Prevention Section**

**potential activities:**

*Continue to form partnerships and promote the introduction of environmentally acceptable substitutes for mercury in applications such as schools and the dairy farming community.*

**timeframe:** Ongoing.

**implementation:** Additional resources necessary for implementation of special projects such as clean sweep collection programs.

**activities to date:**

3/20/97 Staff from the AQD, EAD, Department of Agriculture, MSU Cooperative Extension Service, the Farm Bureau, and the Michigan Milk Producers Association are currently working on an effort to implement a pilot collection and replacement of mercury-free dairy manometers in two counties in Michigan.

Thus far, a brochure has been developed for dairy farmers to bring this issue to their attention. Subsequent efforts addressed distribution channels, storage, transportation requirements, etc.

6/23/98 The pilot mercury dairy manometer trade in program was successfully concluded and a final report and press release prepared by the Michigan Department of Agriculture. MDEQ and MDA are currently developing proposals to solicit funds for a statewide expansion of this successful program.

EAD also continues to work with the health/dental community, and wastewater treatment plant operators and municipal officials.

**<55> · DEVELOP A “MERCURY MANUAL” FOR THE MDEQ-EAC; ENVIRONMENTAL ASSISTANCE CENTER, INVOLVING ALL STAKEHOLDERS AND SHARE WITH MDEQ DISTRICT OFFICES.**

**status:** → Effort currently underway.

**lead:** Plan Implementation Coordinator

MDEQ Environmental Education Coordinator  
MDEQ Environmental Assistance Division; Information and Assistance Section  
MDEQ Waste Management Division  
Other DEQ Divisions as necessary

**timeframe:** One Year (contractual assistance)

**implementation:** Manual would be developed by consultant under direction and input of the Divisions listed above. Additional resources must be secured in order to implement. Document might be made available to District staff over the INTERNET. (See Also Recommendation #2.)

**See also response to recommendation number 2.**

- \* By using the 'Wisconsin Mercury Sourcebook', it should no longer be necessary to contract out for services in the development of this document. EPA Region V staff is in the process of uploading this information on the Internet for easy access. This negates the need for further involvement from Michigan sources so our efforts have been redirected toward the development of a multi-media mercury home page.

**<56> · COORDINATE THE DEVELOPMENT OF ADDITIONAL EDUCATION/OUTREACH MATERIALS.**

**status:** → Partially implemented or currently underway.

**lead:** DEQ, Environmental Education Coordinator

Chairman, M2P2 Task Force  
Michigan Department of Education  
Environmental Assistance Division, Pollution Prevention Section  
Plan Implementation Coordinator  
Michigan Chemical Council  
Other contributing stakeholders

7/98 One such publication is a Mercury Spill Response Guidelines brochure that is under development in EAD. A draft is being developed while final publication is slated for Fall 1998. Additional publications such as case studies may be developed as resources become available. Significant accomplishments will continue to be featured on the Mercury Pollution Prevention Home Page and in the P2 Review, published by EAD.

(See Also Recommendation #1.)

**<57> · WORK WITH THE VARIOUS DIVISIONS IN MDEQ (AIR, WATER AND WASTE) TO COORDINATE PERMITTING AND COMPLIANCE ISSUES RELATED TO MERCURY.**

**status:** → Partially implemented or currently underway.

**lead:** MDEQ Environmental Assistance Division, Permits Coordinator

MDEQ Air Quality Division; Toxics

**potential activities:**

*A multi-media (informal) discussion group has been formed in AQD to consider development of a process to coordinate multi-media issues related to bio-accumulative*

*chemicals of concern, which includes mercury. This effort could be formalized and expanded to include input from other Divisions.*

**timeframe:** Ongoing

**implementation:** Feasible given existing resources

**target #6**

**<58> · INCLUDE MERCURY P2 INFORMATION IN MDEQ STAFF TRAINING.**

**status:** → . Partially implemented or currently underway.

**lead:** MDEQ Environmental Assistance Division, Pollution Prevention Section

MDEQ, Environmental Education Coordinator

**potential activities:**

*The mercury manual and relevant case studies could be used for training purposes through development of the notebook as well as Internet postings. Mercury information could also be provided through Pollution Prevention Integration training materials and the associated newsletter.*

**timeframe:** Ongoing

**implementation:** development, printing and distribution of materials.

**activities to date:**

July 1997 The Environmental Assistance Division (EAD) sponsored Pollution Prevention Integration training for DEQ all regulatory staff . The training was developed and delivered by contractors hired by the Environmental Protection Agency's National Enforcement Training Institute. The training entitled, "Pollution Prevention for Compliance and Enforcement Staff," was given to approximately 90 DEQ staff. Although mercury issues were not a part of the training presentations, information and brochures on mercury were distributed at the sessions. This was the only training held in fiscal year 1997 that was sponsored by EAD.

Recently, EAD staff began preliminary discussions on offering waste assessment training for DEQ regulatory staff. A contractor will be solicited via RFP in fiscal year 1998; but the classes will probably not be held until early in fiscal year 1999. Only a few of these sessions can be offered, so attendance will be limited and field inspectors will likely be given preference. The

training would be intensive, possibly up to 3 days in length, and would give participants an opportunity to learn in-depth technical information on how an industry can reduce waste. An attempt will be made to include a brief agenda topic on the importance of mercury. In addition, written materials such as posters, brochures and factsheets on mercury, will be distributed to training participants.

4/15/98            New EAD engineers and district field staff received training in mercury P2. Environmental and health perspectives were discussed as were mercury containing devices and product substitutions.

7/20/98            RETAP staff and program coordinators also received training on how to conduct a mercury waste audit: [See: Recommendation # 27.]

**<59> . DEVELOP A MECHANISM TO RECOGNIZE MERCURY-FREE COMPANIES/INSTITUTIONS OR COMPANIES/INSTITUTIONS THAT HAVE MADE A SIGNIFICANT MERCURY REDUCTION EFFORT.**

**status:** → Partially implemented and currently underway.

**lead:** MDEQ, Environmental Assistance Division, Program Management Unit

Chairman, M2P2 Task Force

**potential activities:**

*This may involve rewarding companies that have found and promoted suitable substitutes for compounds/devices that contain mercury or a facility such as a hospital committing to eliminate all but 'essential' uses within its' facility. The "Reward(s)" could provide recognition under an existing program such as the MBPO Program or in the CO program or may require development of an entirely new program.*

**timeframe:** 6-9 months

**implementation:** Implementation is deemed possible if incorporated into an existing Department Program. If a New Program is required, resources should be allocated to establish and implement.

FY 97            No efforts were undertaken in this area.

FY 98            EAD will consider developing a mercury awards program, examining the feasibility of a separate program or the possibility of providing special

recognition within the context of the existing voluntary programs. Special recognition could be given in the context of Pollution Prevention Week. A decision on these will be made after the Michigan Business Pollution Prevention Partnership staff person is hired.

In the Michigan Business Pollution Prevention Partnership (MBP3), there are five companies that specifically make at least one commitment to reduce mercury:

- Pharmacia and Upjohn
- Detroit Edison
- Consumers energy Parnall Rd. Office Complex
- Baker Furniture
- Wacker Silicones Corp.

Two other companies make commitments to recycle mercury light bulbs or light switches:

- BASF Corp., Wyandotte
- Parke-Davis

Four companies specifically refer to energy efficiency:

- Detroit Edison
- MWP Pleuco
- The Traverse Group
- Irwin Seating

7/28/98      EAD is still considering the suggestion, that special acknowledgment be provided for mercury free companies. This suggestion will be brought before the steering committee of the MBP3 program as other revisions are being examined.

**<60> · MDEQ SHOULD CONSIDER A PERIODIC MERCURY MEETING WITH KEY STAKEHOLDERS TO MAINTAIN FOCUS ON VOLUNTARY MERCURY P2 EFFORTS AND ACCOMPLISHMENTS.**

**status:**     Partially implemented and currently underway.

**lead:**    MDEQ, Environmental Assistance Division, Education & Outreach Section

Plan Implementation Coordinator

**potential activities:**

*After the first 12 months of implementation, either build a significant mercury component into the Waste Reduction and Energy Efficiency Workshop or conduct a separate mercury conference. Feature accomplishments thus far to date and solicit additional support to carry out remaining recommendations.*

**implementation** : From recent experiences and feedback concerning mercury presentations, a separate mercury conference is preferred, however such an effort will require additional financial support to accomplish. EPA's GLNPO grant received in October of 1997 will help fund the GLI Workshop listed below and possibly other mercury event(s) in FY 98/99.

**activities to date:**

1/28/98 Special meeting of the Michigan Mercury Pollution Prevention Task Force to discuss progress and accomplishments to date in meeting the Final Report recommendations. News and emerging mercury issues were also discussed, as well as, possible future courses of action.

3/2&3/98 EAD and the Michigan Municipal League are co-sponsored "Meeting the New Water Quality Standards; Through Pollution Prevention" Workshop featuring mercury Pollution Prevention successes for use as a template while addressing other bio-accumulative chemicals of concern.

Mercury pollution prevention successes and accomplishments will continued to be featured in DEQ publications such as the P2 Review and on the Mercury Pollution Prevention Home Page. Chairman of the M2P2 Task Force, G. Tracy Mehan, continues to send out periodic mailings and updates to Task Force members. Conferences such as the Pollution Prevention Roundtable will feature Mercury P2 projects as will other EAD events such as the Waste Reduction and Energy Efficiency (WREE) Workshop. Additional M2P2 Task Force meetings will be scheduled on an as needed basis, approximately annually.



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**The State of Michigan should first set a positive example by implementing mercury P2 activities:**

**<61> THE STATE OF MICHIGAN SHOULD BECOME A U.S. EPA GREEN LIGHTS PARTNER.**

**status:**  Recommendation complete.

**lead:** MDEQ Environmental Assistance Division, Pollution Prevention Section

Michigan Department of Management and Budget (DMB)

**timeframe:** Ongoing

On April 20, 1996, the State of Michigan became a Green Lights partner and as of January 1, 1998, has completed upgrades on 3,818,009 square feet of its State Facilities. Surveys have been completed for 14,294,190 additional square feet. EPA estimates 45% of the States facilities have been surveyed and 12% have been upgraded. Dollars saved so far per year on lighting upgrades amount to \$238,124. Upgrades have reduced the lighting load by 1,160 kW with an electricity reduction of 4,549,400 kWh. Annual energy achievements resulting from Michigan's lighting include, pollution prevention of:

Carbon dioxide	8,582,442 pounds
Sulfur dioxide	109,022 pounds
Nitrogen dioxide	36,972 pounds
Heavy metals	10 pounds

Michigan's environmental achievements in Green Lights are equivalent to the removal of 858 cars from U.S. Highways or the planting of 1,176 acres of trees in U.S. forests. Plans for fiscal year 1998 include upgrading the lighting in another 1.5 million sq. ft. of State buildings and surveying an additional 10 million square feet. Additional lighting upgrades will also be explored for State Police and DEQ occupied buildings. A Green Lights survey and implementation report will be submitted to U.S. EPA to document the States progress.

For more information contact: EAD's; Program Management Unit.

**<62> THE STATE OF MICHIGAN DEPARTMENT OF MANAGEMENT AND BUDGET (DMB) SHOULD DEVELOP A STATE PURCHASING POLICY THAT IDENTIFIES MERCURY-CONTAINING PRODUCTS AND PURCHASES MERCURY-FREE ALTERNATIVES, WHEN AVAILABLE.**

**status:** → Partially implemented or currently underway.

**lead: DMB; Purchasing**

Plan Implementation Coordinator (tracking progress)

**timeframe:** six months with ongoing monitoring

**activities to date:**

- 4/21/97 DEQ Director sends letter to DMB Director asking concurrence in moving forward on setting appropriate specifications on mercury free products. In specific it suggests replacing standard T-12 fluorescent lamps with T-8 lamps and electronic ballasts.
- 6/12/97 Response by DMB Director concurred with proposed recommendations and stated that DMB would phase in the use of T-8 lights. He also stated that in accordance with the Green Lights Program, they were working with the Department of Consumer and Industry Services in conducting lighting audits of some of the outstate facilities. Additionally, Property Management was preparing documents for a lamp recycling contract.
- Fall 1997 EAD staff encourages all state facilities to use the low mercury high pressure sodium lamps. Department of Agriculture agreed to replace their lights with the low mercury alternatives.
- Fall 1997 and Jan 1998 AQD and EAD staff met with DMB's new Director of Purchasing and his staff. DMB - Office of Purchasing is pursuing a mercury initiative to encourage the purchasing of mercury-free or reduced mercury products. For 1997, DMB purchased approximately 67,000 low mercury ALTO lights and over 113,000 energy efficient lamps that will not only reduce mercury emissions, but CO2 and SO2 emissions as well (see attachment). DEQ staff will be working in cooperation with DMB staff to help identify mercury-containing products that may have been previously purchased and identify mercury-free alternatives that could be purchased in the future. Staff will also work with agency administrators to help educate staff that process requisitions and develop educational materials in appropriate newsletters and any additional necessary correspondence.

**<63> THE STATE OF MICHIGAN SHOULD RECYCLE MERCURY-CONTAINING PRODUCTS AND WASTES, WHERE FEASIBLE.**

**status:** → Partially implemented or currently underway.

**lead: DMB; Office Services Division**

Plan Implementation Coordinator

**potential activities:**

*Recycle mercury containing products and devices including fluorescent lamps.  
Track progress & provide assistance as necessary.*

**timeframe:** Ongoing

**<64> MDEQ AND THE MICHIGAN DEPARTMENT OF PUBLIC HEALTH (MDPH) SHOULD PROVIDE THE NECESSARY RESOURCES TO IMPROVE MICHIGAN'S MERCURY INVENTORY DATA WITHIN THE STATE AND ESTABLISH DATABASES OF INFORMATION ON MERCURY.**

**status:** → Partially implemented or currently underway.

**lead: MDEQ, Director**

MDCH, Director

MDEQ Air Quality Division

MDEQ Surface Water Quality Division

MDEQ Waste Management Division

MDEQ Environmental Assistance Division

Michigan Department of Community Health, Health Risk Assessment

**potential activities:**

*Necessary resources should be provided to MDCH and the line divisions of MDEQ including Surface Water Quality Division (SWQD), Air Quality Division (AQD), Waste Management Division (WMD) and the Environmental Assistance Division (EAD) to better quantify mercury sources and evaluate trends within the state. Examples of data needed would include sediment, fish and human tissue monitoring data. For example AQD is working on RAPIDS and SWQD is developing a monitoring plan. MDCH is seeking funding to do follow up work on the Michigan Algonac Fisheater study to determine the current mercury exposure status of fisheaters around this known site of mercury exposure. MDCH also continues to try to obtain approval and funding to initiate a systematic human monitoring program which would allow MDCH to follow trends in body burdens of xenobiotic chemicals.*

**timeframe:** Ongoing

**implementation:** Some preliminary efforts have been initiated. Additional resources are being sought for these initiatives through a variety of sources.

The Regional Air Pollutant Inventory Development System “RAPIDS” has become a reality instead of just an idea. through the cooperative efforts of representatives from each of the Great Lakes States, the US EPA, and Environmental Canada the “Air Toxics Emissions Inventory Protocol for the Great Lakes Commission” and the RAPIDS software which automates the project have reached the point of being able to provide an inventory of Toxic Air Pollutants for the Great Lakes Region. Most of the States and Ontario, Canada have completed a pilot inventory for the calendar year 1990. Each of the individual efforts are to be combined into the first ever Great Lakes Region Toxics Inventory. The project has progressed to the point that the individual inventories have been prepared and are now going through a regional quality assurance check to insure that all of the results have been determined and are reported in a consistent manner. When completed the data will be available electronically; to modelers, the academia, governmental agencies, and other interested parties; from the Great Lakes National Program Office “GLNPO”. The next toxics inventory being planned will be for the year 1996. This will become the base year for the Regional Inventory which is anticipated to be updated annually from that point forward.



### **Suggested Mercury Legislation**

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**The following Mercury legislation should be considered to facilitate mercury P2 efforts.**

**<65> . THE STATE OF MICHIGAN SHOULD CREATE, BY STATUTE, A MICHIGAN ENERGY BANK WITH THE AUTHORITY TO FINANCE ENERGY AUDITS AND ENERGY-RELATED CAPITAL IMPROVEMENTS FOR PUBLIC BUILDINGS, INCLUDING THOSE OCCUPIED BY STATE AGENCIES AND LOCAL SCHOOL DISTRICTS.** Energy efficiency projects can reduce the demand for electricity supplied by coal-fired power plants, which may reduce the consumption of coal by these power plants. Reducing the consumption of coal, reduces the release of mercury to the atmosphere by coal-fired power plants.

**status:** → Partially implemented or currently underway.

**lead: EAD, Environmental Services Branch**  
MDEQ Legislative Liaison

**potential activities:**

*DEQ's Director sent a letter to the Director of Department of Consumer and Industry Services offering to assist them in developing such a program.*

**timeframe:** Six months

**activities to date:**

1/27/98 DEQ is currently investigating the feasibility of establishing an energy bank program. To date, similar efforts in other states have been researched. Staff from DEQ, CIS and DMB are working jointly on the funding and administrative requirements.

(pp. x)

<66> · THE STATE OF MICHIGAN SHOULD ENACT LEGISLATION OR REVISE RULES THAT BRINGS THE STATE'S HAZARDOUS WASTE REGULATIONS INTO CONFORMANCE WITH THE UNIVERSAL WASTE RULE AS IT PERTAINS TO MERCURY THERMOSTATS, BATTERIES AND BANNED PESTICIDES FURTHER, MICHIGAN SHOULD SEEK EXPANSION OF THE RULE TO INCLUDE MERCURY-CONTAINING LAMPS AND SWITCHES, THERMOMETERS AND MERCURY-CONTAINING MEDICAL DEVICES TO SIMPLIFY THE COLLECTION AND RECYCLING OF THESE WASTES.

**status:**  Recommendation complete.

**lead: MDEQ, Waste Management Division**

Plan Implementation Coordinator (tracking)

**timeframe:** Immediate

<67> · THE STATE OF MICHIGAN SHOULD ENACT LEGISLATION THAT EDUCATES THE PUBLIC ON THE RESPONSIBILITY OF INDIVIDUALS TO DIVERT MERCURY-BEARING MATERIALS FROM THE MUNICIPAL WASTE STREAM. SIMILAR TO LEGISLATION ENACTED IN MINNESOTA, THE LEGISLATION SHOULD PROHIBIT THE KNOWING DISPOSAL BY ANY PERSON OF MERCURY-BEARING THERMOMETERS, TOYS, GAMES,

**BATTERIES, FLUORESCENT LIGHTS AND THERMOSTATS IN A WASTE STREAM DIRECTED TO AN INCINERATOR. BECAUSE THE LEGISLATION IS DESIGNED TO EDUCATE INDIVIDUALS AND BUSINESSES, IT SHOULD SPECIFICALLY EXEMPT INCINERATOR OPERATORS FROM ENFORCEMENT FOR VIOLATIONS COMMITTED IN THE NORMAL COURSE OF INCINERATOR OPERATION.** (This recommendation should be evaluated following implementation of the CAA, Section 129 standards that requires mercury controls for all municipal waste combustors.)

**status:** ★ No progress thus far.

**Section 129 standards have yet to be implemented.**

**lead:** MDEQ Air Quality Division, Toxics

MDEQ, Legislative Liaison  
Plan Implementation Coordinator

**timeframe:** To be evaluated following compliance with Section 129, CAA Standards.

**implementation:** Although this effort is not currently underway, legislation is not necessary to educate the public about proper mercury disposal and the need for material substitution.

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[The Healthcare Subgroup, not necessarily the entire M2P2 Task Force, also recognizes that if voluntary P2 efforts are not successful in reducing mercury in health care institutions, then legislation should be considered, including: ]

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<68> · THE STATE OF MICHIGAN SHOULD SUPPORT LEGISLATION THAT REQUIRES HEALTH CARE FACILITIES TO DEMONSTRATE THAT THEY HAVE INSTITUTED A PROCESS TO REDUCE USES AND SEPARATE WASTES KNOWN TO CONTAIN MERCURY FROM THEIR WASTE STREAM BEFORE WASTES ARE SHIPPED FOR INCINERATION OR INCINERATED ON SITE.

**status:** ★ No progress thus far.

**lead:** MDEQ, Legislative Liaison

Plan Implementation Coordinator

**potential activities:** Plan recommends adopting; “WAIT AND SEE” approach.

**timeframe:** For future consideration.....

6/98 The American Hospital Association and the U. S. EPA Region V, jointly signed a Memorandum of Understanding calling for the elimination of mercury containing devices used in hospitals by the year 2005. This program should significantly advance mercury P2 and will may negate the need for any mandatory legislation.



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**The M2P2 Task Force Also Recommends the Following Efforts be Implemented on a National Scale:**

<69> · MICHIGAN SHOULD CHALLENGE ANALYTICAL STANDARDS SETTING AGENCIES INCLUDING EPA AND THE STANDARD METHODS JOINT EDITORIAL BOARD TO ADDRESS MERCURY POLLUTION PREVENTION OPPORTUNITIES THROUGH REVISIONS TO APPROVE ANALYTICAL METHODS AND DIRECTIONS FOR LABORATORY USE, HANDLING AND RECYCLING OR PROPER DISPOSAL OF MERCURY.

status:  Recommendation complete.

lead: M2P2 Task Force Chair

timeframe: Completed in National Recommendations

<70> · MICHIGAN SHOULD PURSUE OTHER SECTOR STANDARD SETTING ORGANIZATIONS ASSOCIATED WITH THE DESIGN PHASE OF PRODUCTS WHICH MAY HAVE A SIGNIFICANT IMPACT ON ELIMINATING/LOWERING MERCURY USE IN FUTURE PRODUCTS. (EFFORTS SIMILAR TO THE SAE P2 WHITE PAPER SHOULD BE PURSUED BY THE STATE AND OTHER KEY STAKEHOLDERS

status: → Partially implemented or currently underway.

(- SEE SECTION 0.6.0. of the M2P2 Task Force Final Report)

**lead:** Office of Great Lakes  
Air Quality Division, Toxics Unit

Affected Stakeholders

**potential activities:**

*Consult standard setting organizations as needed to shift industry toward lessening manufacturers demands for mercury usage. Identify new opportunities as they arise.*

**timeframe:** Ongoing

**implementation:** Both AQD and OGL representatives are active in the Bi-National Toxics Strategy Workgroup . Since this recommendation has national, as well as, international ramifications, DEQ will work through the Bi-national Workgroup for implementation.

## **ATTACHMENTS**

**-ONE**



(pp. xi)

### **Recommendations for a National Effort**

**The M2P2 Task Force recommended that :**

**· USEPA SHOULD PURSUE A VOLUNTARY P2 INITIATIVE FOR MERCURY WITH THE CHLOR-ALKALI INDUSTRY. EMPHASIS SHOULD BE PLACED ON CONVERSION FROM THE MERCURY CELL PROCESS TO EITHER THE MEMBRANE CELL OR DIAPHRAGM CELL PROCESS. ALTHOUGH NO FACILITIES ARE LOCATED IN MICHIGAN, OUR STATE CAN BE IMPACTED BY ATMOSPHERIC TRANSPORT AND DEPOSITION FROM OUT-OF-STATE FACILITIES.**

**-Chlor-alkali plants in closest proximity to Michigan, are located in Wisconsin, Ohio and West Virginia. Recently, through a Memorandum of Understanding, the Chlor-alkali industry committed to a 50% reduction in mercury releases.**

***In addition: The Michigan Mercury Pollution Prevention Task Force made***

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**the following recommendations to the National Mercury Task Force:**

**1) ESTABLISH A NATIONAL PUBLIC EDUCATION/AWARENESS AND OUTREACH PROGRAM TO EDUCATE CONSUMERS AND END-USERS OF MERCURY-CONTAINING PRODUCTS ON POLLUTION PREVENTION OPPORTUNITIES AND AVAILABLE ALTERNATIVES TO THESE PRODUCTS AS WELL AS ENERGY CONSERVATION OPPORTUNITIES. THE EDUCATIONAL INFORMATION SHOULD EXPLAIN THE LINK TO FISH CONSUMPTION ADVISORIES WITH FOCUS ON SUBSISTENCE FISH EATING POPULATIONS. THE INFORMATION SHOULD RAISE THE AWARENESS OF THE PUBLIC ABOUT MERCURY CYCLING IN THE ENVIRONMENT, AND ITS TOXICITY POTENTIAL AND PERSISTENCE.**

**2) EMPHASIZE MERCURY P2 EFFORTS THROUGH EXISTING EPA INITIATIVES SUCH AS PROJECT XL, 33/50, THE COMMON SENSE INITIATIVE OR MODEL AN EFFORT THAT FOLLOWS THE NATIONAL LEAD EDUCATION AND ABATEMENT PROGRAM.**

**3) INCREASE DIALOGUE WITH INDUSTRY AND MANUFACTURERS ON WAYS TO DECREASE AND/OR ELIMINATE MERCURY FROM PRODUCTS AND PROCESSES. THESE DISCUSSIONS SHOULD ALSO INCLUDE CONSIDERATION OF THE EFFECTS OF IMPORTED MERCURY-CONTAINING PRODUCTS AND MERCURY STOCK AVAILABILITY (DOMESTIC AND IMPORTED) ON EMISSIONS AND P2 EFFORTS. ORGANIZATIONS APPROACHED SHOULD INCLUDE TRADE ASSOCIATIONS, BROAD BASED ORGANIZATIONS AND VOLUNTARY STANDARDS ORGANIZATIONS SUCH AS THE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) AND THE AMERICAN SOCIETY OF TESTING AND MATERIALS (ASTM). FOR EXAMPLE, DISCUSSIONS SHOULD CONSIDER THE USE OF ENVIRONMENTAL MANAGEMENT SYSTEMS AND LIFE CYCLE ANALYSIS IN THE DEVELOPMENT OF PRODUCT RELATED STANDARDS TO HELP RAISE THE AWARENESS OF DESIGN ENGINEERS ABOUT TOXIC SUBSTANCES, INCLUDING MERCURY, AT THE FRONT END OF PRODUCT DEVELOPMENT.**

**4) ENCOURAGE VOLUNTARY PHASE OUT OF NONESSENTIAL USES OF MERCURY AND REPLACEMENT WITH ENVIRONMENTALLY SAFE**

**ALTERNATIVES. MANY STATES ARE RELUCTANT TO ACT IN THE ABSENCE OF A CONSISTENT, NATIONAL POLICY WHICH LEVELS THE PLAYING FIELD. EPA COULD SHOW LEADERSHIP BY CREATING A NATIONAL FORUM WITH THE STATES AND OTHER KEY STAKEHOLDERS IN REGARDS TO MERCURY EMISSIONS AND REDUCTION GUIDELINES.**

**(pp. xii)**

**5) EXPAND THE UNIVERSAL WASTE RULE FOR MERCURY-CONTAINING PRODUCTS, SUCH AS FLUORESCENT LAMPS, SWITCHES, HIGH-INTENSITY DISCHARGE LAMPS, THERMOMETERS AND MERCURY-CONTAINING MEDICAL EQUIPMENT.**

**6) FOSTER VOLUNTARY NATIONAL RECYCLING AND/OR BUY BACK PROGRAMS FOR MERCURY-CONTAINING WASTES INCLUDING FLUORESCENT LIGHTS. THE RECYCLING EFFORT FOR FLUORESCENT LIGHTS COULD POSSIBLY BE IN CONJUNCTION WITH THE EPA GREEN LIGHTS PROGRAM.**

**7) CONTINUE EPA'S EFFORT TO ENCOURAGE NATIONAL ENERGY CONSERVATION, INCLUDING COMMUNICATIONS ON THE BENEFITS OF REDUCED EMISSIONS OF POLLUTANTS FROM FOSSIL FUEL BURNING. EPA SHOULD BROADEN ITS EFFORT BY WORKING IN COOPERATION WITH THE DEPARTMENT OF ENERGY.**

**8) DEVELOP A NATIONAL LABELING REQUIREMENT FOR PRODUCTS OR COMPONENTS WHICH CONTAIN A SIGNIFICANT PERCENTAGE OF MERCURY FOR ITS FUNCTION OR AS AN ADDED INGREDIENT. THIS WOULD ALLOW CONSUMERS AND BUSINESSES TO MAKE INFORMED CHOICES IN EFFORTS TO SUPPORT POLLUTION PREVENTION PROGRESS.**

**9) CONTINUE EPA'S EFFORT TO FIND AN ALTERNATIVE TO THE INCINERATION OF ORGAN-MERCURIC WASTES. PURSUANT TO RCRA, AN ALLOWED TREATMENT OF ORGANIC WASTES CONTAINING MERCURY IS INCINERATION. THIS PRACTICE HAS CONTRIBUTED TO THE ANTHROPOGENIC MERCURY LOADINGS INTO THE ENVIRONMENT IN MICHIGAN AND MAY UNDERMINE MANY OF THE CURRENT P2 EFFORTS UNDERWAY.**



**Additionally, the following research and data needs were recommended to the National Mercury Task Force:**

(Recommendations number 1-6 were adopted from the Michigan Environmental Science Board's report, "Mercury in Michigan's Environment: Environmental and Human Health Concerns (A Science Report to Governor John Engler)" April 1990.

**1) Pregnant Women In The Nation Should Be Periodically Monitored To Determine The Current Level Of Exposure To Mercury And Whether The Exposure Is Changing.** Hair and/or blood should be sampled at intervals not exceeding 5 years.

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**2) Ambient air monitoring should be conducted in and around urban areas to determine the sources and the geographic extent of high mercury concentrations.** Elevated levels of ambient mercury have been found in Detroit and Chicago.

**3) Undertake a national-scale investigation to obtain speciated mercury measurements in the plumes of all major mercury emission source types.** This information is needed to determine which sources should be controlled and the impact any control measure will have on observed mercury concentrations. Plume measurements are much more useful than stack measurements because some gaseous mercury-two in the stack is likely to condense out to particulate mercury-two after exiting the stack. Concurrent stack and plume measurements will help determine the rate of this transformation.

**4) Conduct a national study on mercury mass balance in clouds to provide insight on the importance of nucleation scavenging versus in-cloud oxidation.** Cloud chambers could be utilized to test the importance of in-cloud elemental mercury oxidation, gaseous mercury-two washout and particulate mercury-two nucleation scavenging. This needs to be done in order to determine which form of mercury should be controlled.

**5) Make a determination as to whether or not soils are a net source or sink for mercury by applying state-of-the-art dry deposition measurement techniques.** Vertical profiling as a function of time of day and season are needed to characterize this source/sink. This information is needed in order to quantify the impact of reducing anthropogenic mercury emission sources.

**6) EPA should establish a central repository to collect and maintain information resulting from various states, federal, regional and international research investigations and information on various state, federal and international legislative initiatives. The collected information should be developed into a comprehensive and up-to-date database on mercury.** Currently, there is no single agency that tracks all the various mercury research issues.

(pp. xiv)

**7) EPA should use multi-route exposure assessment modeling before establishing national emission limits for sources known to emit mercury.** (Municipal waste incinerator standards and other incinerator standards must consider the bio-accumulative impacts of mercury in establishing adequate control levels. These standards should also include requirements for source reduction and pollution prevention of mercury-containing materials.)

**8) Provide additional resources for the development of continuous emission monitoring (CEM) of mercury from such sources as incinerators and utilities.**

**9) In efforts to improve the scientific base of knowledge, the reporting thresholds for mercury emissions under the Toxic Chemical Release Inventory (TRI) may need to be evaluated.** TRI reporting is required by Section 313 of Title III of the 1986 Superfund Amendments and Reauthorization Act (SARA 313).

**10) EPA's Science Advisory Board, perhaps through the Clean Air Science Advisory Committee (CASAC), should review and scientifically evaluate the accumulated mercury information and provide recommendations to the Administrator based on new data and/or advancements in the understanding of mercury in the environment.** As new research information becomes available, there will be a need for EPA to scientifically evaluate the material in terms of its impact on ongoing and/or proposed programs.