Material Separation Plan
For the Diversion of Mercury
(MSP3, January 1 - December 31, 2006)

Annual Report

Wheelabrator Millbury Inc.

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Wheelabrator Millbury Inc.
Materials Separation Plan
Annual Report on the Results of the Mercury Recovery Program

Introduction

This report presents annual results of Materials Separation Plan (MSP3). It includes activities for the period covering January 1, 2006 to December 31, 2006. The report describes the activities involved in the design, implementation and operation of the Mercury Recovery Program (MRP) in each community. Each MRP is community focused, locally based and operated. Wheelabrator provides all of the technical, logistical and financial support for each program. The corner stone of the MRP Program are the community collection sites. Each community has at least one, often two and in some cases three centrally located and easily accessible locations in the city or town where residents can safely dispose of products that contain mercury.

MRP for 2006 consisted of the following elements:

- Regional Outreach
- Local Outreach / Education
- Mercury Separation and Recycling
- Thermometer Exchange
- Thermostat Recovery
- Thermostat Reimbursement Program
- School Clean Sweeps
- Button-Cell Battery Collection
- Bulk Mercury Collection
- Fluorescent Lamp Reimbursement
- Purchase of Sheds for Community Program

Wheelabrator has continued to develop, expand and improve the MRP in each community participating in the program.

- The Regional Outreach placed informative educational advertisements in an expanded number of radio stations.

- The Local Outreach placed six advertisements in the local newspapers in each community, promoting the local Mercury Recovery Program, informing residents where they could safely dispose of mercury products in their community. These advertisements are an important aspect of the overall educational and outreach effort.

- The Mercury Separation and Recycling, Local Community Collection Program was continued in each of the participating communities. Each community's collection site(s) is monitored on a regular basis. When the

collection pails are full they are serviced promptly by the service provider. The program collects elemental mercury and a wide variety of mercury containing devices including: fever thermometers, lab thermometers, thermostats, mercury switches, sphygmomanometers, button-cell batteries, barometers and an assortment of miscellaneous mercury containing items.

- Training and education is conducted with personnel at each site on an ongoing and as needed basis.

- A special program for the collection of thermostats continues to develop in participating communities. Local Boards of Health are encouraged to pass a regulation banning the improper disposal of thermostats.

- A new program providing a financial reimbursement for used thermostats was offered to plumbing supply businesses within the service area.

- School Clean Sweeps collection program continues to be offered to local school systems on an as needed basis.

- Button-cell batteries continued to be collected utilizing small collection boxes. A new reimbursement program for button-cell batteries was offered to each community.

- The Fluorescent Lamp Reimbursement offered financial reimbursement for costs related to the disposal of mercury containing lamps such as fluorescent and HID bulbs.

- A new program providing storage sheds for Universal Waste is being offered to participating communities.

The Mercury Recovery Program has been successful in removing thousands of mercury containing products from the municipal solid waste stream. The Program through its regional and local educational outreach efforts, has contributed to a greater awareness on the part of residents regarding the potential impacts of mercury on human health and the environment. Residents are increasingly aware of where in their community they can safely dispose of mercury and products containing mercury.

1. Regional Outreach

The Integrated Waste Services Association coordinated the regional education / outreach program for five Massachusetts' waste-to-energy facilities including facilities located in Saugus, North Andover, Millbury, Haverhill, and SEMASS.

Integrated Waste Services Association's activities in support of Massachusetts' Waste-to-Energy Facilities' Materials Separation Plan (MSP3) for 2006 are a continuation of the IWSA's 2005 Regional Education Program with a few modifications. This following report, prepared by IWSA, describes the activities involved in the design, implementation and operation of IWSA's Program in support of the five waste-to-energy plants operating in Massachusetts and their Mercury Recovery Programs (MRP). Each facilities' MRP is community focused, locally based and operated; and the IWSA activities are designed to support in a coordinated fashion the MSPs on a regional basis.

IWSA's Annual Report on the Results of the Mercury Recovery Program

- **Introduction**

The Integrated Waste Services Association's activities in support of Massachusetts' Waste-to-Energy Facilities' Materials Separation Plan for 2006 continues the direction set in prior years. This report describes the activities involved in the design, implementation and operation of IWSA's Program in support of the five waste-to-energy plants operating in Massachusetts and their Mercury Recovery Programs (MRP). Each facilities' MRP is community focused, locally based and operated; and the IWSA activities are designed to support in a coordinated fashion the MSPs on a regional basis.

IWSA Regional Program activities for 2006 consisted of the following elements:

- Radio Advertising for "Keep Mercury From Rising"
- Evaluation & Analysis of the "Keep Mercury From Rising" campaign
- Revision & Update of Website www.keepmercuryfromrising.org
- Availability of print and video materials to facilities, the public and media

- **Regional Education Program "Keep Mercury From Rising"**

The Integrated Waste Services Association coordinated the regional education / outreach program for five Massachusetts' waste-to-energy facilities including facilities located in Saugus, North Andover, Millbury, Haverhill, and SEMASS.

a) Objectives

In 2006, the Regional Outreach Plan supported individual facility programs by the continued promotion of the media campaign, "Keep Mercury from Rising". This campaign included two waves of radio advertisements to designed to reach the broadest possible audience. The campaign used targeted advertising educating the listeners about the concerns related to mercury. The advertisements also encouraged residents to contact their local health departments to receive more information about mercury and

find out where in their communities they could dispose of mercury containing devices.

The objectives for 2006 were met and included the following:

- The Regional Outreach Program continued to raise awareness about mercury-containing products in the home and the proper handling and disposal of these products;

- The Program provided information and promote local recycling events;

- The Program continued to build an integrated communications program that leveraged opportunities for incremental, free media, and worked synergistically with the efforts of individual waste-to-energy facilities.

b) Tactics

A public survey was completed in mid-2006 measuring the effectiveness of the educational campaign "Keep Mercury From Rising." Findings from this survey guide the development of the Regional Program. The website, www.keepmercuryfromrising.org, continues to be more user-friendly, and includes more contact information and contractor material, as well as continuing to provide information and assistance with recycling of mercury-containing products to the general public. IWSA produced five videos in 2003 for each waste-to-energy plant, and these videos are available on the website. The videos show the unique and effective programs now in place to keep mercury containing products out of the waste stream.

i) Survey

The effectiveness of the regional education campaign is in large part measured by an annual research survey. The polling is designed to measure positive changes in public attitudes and behaviors, as well as the receptiveness of the message. The survey questionnaire was in the field during June 2006, and consisted of 400 completes, providing a 95% confidence level. IWSA polling has measured some marked improvements in mercury awareness, responsibility, and actions – the likes of which we have not seen since 2001. For example, fish advisory mercury awareness (87%) scored its highest total in six years. Recycling participation (86%), also a six-year high, topped its 2004 high of 83 percent. Owners of thermometers were deemed most responsible for the safe disposal of a mercury thermometer – another six year high – when compared to manufacturers, waste companies, and

the government. A growing number of people (41% today vs. 16% in 2001) would drive to a mercury collection center to properly dispose of a mercury product. Glass thermometer awareness reached a three-year high at 91%.

Circular wall thermostats made the most significant year-over-year jump (65% today vs. 58% in 2005) which may be due in part to the proactive initiatives of IWSA members who have spearheaded the awareness campaigns at the grassroots level. Fluorescent light bulbs also scored significantly higher mercury awareness than the 2001 levels (46% today vs. 29% in 2001). Fifty-six percent of respondents would pay $33-$45 to replace a $30 circular wall thermostat with a non-mercury replacement; an additional 23% - another six year high - would pay at least double ($60 or more) for the non-mercury replacement. In addition, doctors were the most trusted source for health and environmental information.

ii) Advertising

Analyzing past results, it was determined that the radio ads reached a greater target audience than the print advertisements in newspapers. Rather than purchasing one wave of radio advertisements, IWSA purchased two separate three-week radio buys in 2006 and advertised on radio stations that broadened our geographic outreach. Radio is a targeted medium that provides cost-efficient mass communication and built frequency of message delivery.

The first three-week radio buy was implemented May 22 through June 18, 2006. Markets targeted by the radio buy were Boston, Worcester, New Bedford, and Cape Cod. In order to maximize the dissemination of the message, IWSA purchased another three-week radio buy that aired September 11 through October 1, 2006. Based on the results of the survey conducted after the radio ad, we believe the plan was successful in increasing public awareness. By transferring the budget for print advertising to a second radio wave almost five months later, we have broadened the opportunities for a successful campaign.

iii) Web-based Tool

The website, www.keepmercuryfromrising.org, is user-friendly and provides additional information:

> The site provides navigation under the masthead and incorporates information in the following categories:

Home – includes background on Keep Mercury From Rising and information on calling 1-866-9MERCURY for more information about safe disposal options.

Drop-off sites – provides information on where to drop-off mercury containing items.

Spills – provides a variety of information on actions one should take in the event of a mercury spill.

FAQs –provides answers to five common questions.

Video/Audio – provides the five videos developed by the facilities as well as an audio file of the advertisement that aired for six weeks in 2005.

Links – links were proactively sought and added to this page and efforts were made to increase the number of other website that link to http://www.keepmercuryfromrising.org.

Contractors - contains useful information and links for sources of mercury related information.

iv) Print Materials

IWSA continued to make available education brochures and print information developed in 2003. The basic "Keep Mercury From Rising" message is consistent with media formats.

v) Video

The five-minute "Keep Mercury from Rising" educational video was completed for each facility in 2003. The video explains the need to recycle mercury-containing products and the efforts undertaken by the state of Massachusetts and waste-to energy facilities to reduce the amount of mercury entering the environment.

The video now is being used at the five waste-to-energy facilities for educational purposes during tours and other meetings. Copies of the video have been made available to local cable access television stations and a "B-roll" of visuals and sound is available for media covering MSP events. Copies of the video also have been given to local public officials to be shown at meetings, schools, senior citizen centers, and other

organizations that would benefit from viewing the video. As noted above, the video also may be viewed at the website.

c) 2006 Expenditures

Activity	Actual Expenditure
Survey	***$18,000***
Media Buys	***$146,241***
Website	**$132**
Print	**$0**
Video	**$0**

2. Local Outreach / Education

The local outreach / education effort consisted of several activities with a goal of increasing community awareness concerning mercury. The outreach / educational effort focused on three principles of proper management of mercury and products containing mercury. It identified the environmental and health impacts of mercury, identified products containing mercury and provided instructions on how residents can properly manage and dispose of mercury in their community. These activities consisted of newspaper advertisements, educational flyer mailings and distribution, local display of the educational board.

a) Newspaper Advertisements

The Mercury Recovery Program continued to be advertised in local newspapers. This local outreach activity has proven to be an effective method of educating residents about mercury and the need to properly dispose of products that contain mercury. The local program coordinators consistently report that there is always an immediate increase in activity after an ad runs in their local newspaper.

The newspaper ads were specific to each community's program. They informed residents of the potential harmful effects of mercury to human health and the environment and instructed residents where they could safely dispose of mercury containing products in their community.

A total of one hundred and seventy ads were placed in local newspapers promoting the program. Most of the ads were 5" x 5" ads. This year we combined some community ads that were being run in the same newspapers into larger ads listing all the communities in a single ad **(Attachment #1).** A total of six ads were planned for each community.

The ads were placed in each community's local newspaper for the months of: March, April, May, September, October, and November. The ads normally appear during the second week of the month. The vast majority of the newspapers are weekly publications usually published on Wednesday or Thursday of the week.

Four of the six ads were generic to the program, listing a variety of common products that contain mercury. All of these products could be properly disposed of at the local collection site (s). The ads also informed residents of the on-going thermometer exchange program and encouraged them to exchange their mercury fever thermometer for a new digital thermometer. The remaining two ads were specific to thermostats, encouraging contractors and residents to properly dispose of these products at the local collection site.

b) "Keep Mercury from Rising" Video

In 2004 local cable access television stations in each community received a copy of the "Keep Mercury from Rising" video. In addition, the Director of Health in each community received a copy of the film for distribution to local groups or schools etc.

Many local cable access channels utilize the film as a community service announcement. The film also continues to be made available to local groups, organizations and schools through the Board of Health offices in each community. The film is regularly used by the program coordinator in community and school presentations. Wheelabrator Millbury continues to show the film for educational purposes during tours, trainings and other meetings

c) Educational Display Board

The educational display boards that were distributed to each community in 2002 are still being effectively utilized in the local community outreach campaign. Several of the boards are permanently displayed at the city or town hall. In many communities the boards are periodically displayed and rotated among the local libraries, senior citizen centers, health fairs and town meetings. These boards compliment the other local outreach efforts reinforcing the importance of properly disposing of mercury containing devices.

3. Mercury Separation and Recycling, Local Community Collection Programs

The community based collection sites continue to be the cornerstone of the overall Mercury Recovery Program. Each community has at least one; some

have two centrally located, easily accessible collection site(s). These sites are typically located at the Board of Health office, Department of Public Works and or the Transfer Station.

There is a minimum of two five-gallon pails for the collection of mercury containing items at each of these sites. The second pail is the backup and is to be used only after the first pail becomes full. The individual(s) at each site responsible for the daily management of the program have been trained in the proper handling and management of mercury containing products. They have also been trained in the proper clean-up procedures in the case of a spill. Each location has a mercury spill kit and a box of zip-lock plastic bags. Written instructions are on the spill kit itself as well as on each five-gallon pail. Due to the fact that there are frequent changes in personnel, training is reviewed with the staff on an as-needed basis during visits to the collection sites. In most cases some form of training and education takes place on each visit.

Enviro-Safe is the service provider for the MRP. Attached to each five-gallon pail are two stickers. One sticker contains the program instructions with information about what to do in case of a mercury spill. The other larger sticker identifies the program, lists a few of the representative mercury containing products and gives instructions about what to do when the pail is full. The local program coordinators are instructed to secure the lid and call the 800 telephone number for a pickup. Contractually Enviro-Safe will pick up the pail within two to four weeks of being notified. In actual practice the pickup takes place within one or two weeks from the time they receive the pickup request.

In the event that a large quantity of elemental mercury is found in a residents home, special arrangements can be made for a pick up to occur at that location, see # 9, Bulk Mercury Collection.

4. Thermometer Exchange

The permanent Thermometer Exchange Program continues to be a very popular component of the overall MRP. All of the participating collection locations appreciate the ongoing exchange program and consider the program as an important outreach component for the overall mercury recovery program. Although the number of thermometers collected has dropped off from the earlier years of the program there continues to be a steady flow of residents coming into the collection sites to exchange their mercury fever thermometer for a new digital thermometer. Each community has an ample supply of digital thermometers for distribution. Many of the local program coordinators utilize the residents visit to their office as an opportunity to further educate them about mercury and other aspects of the program.

The Thermometer Exchange collected 2,430 4-inch fever thermometers and lab thermometers in 2005. This is approximately 300 less than were collected in

2005. It is anticipated that the total number of fever thermometers will continue to decrease slightly over the next few years.

5. Thermostat Recovery

The Thermostat Recovery Program continues to expand. In 2006 the Board of Health in the town of Rutland passed a policy banning the improper disposal of thermostats. Of the thirty-six communities serviced by the Wheelabrator Millbury facility a total of twenty-four have passed a version of the regulation banning the improper disposal of thermostats in the waste stream.

The regulations banning the improper disposal of thermostats are very clear. They state the purpose of the regulation, definitions, penalties and effective date. The penalties associated with the regulations range from $50.00 per incident (per thermostat) up to a $300.00 fine per incident. The purpose of encouraging local Boards of Health to pass a regulation banning the disposal of thermostats is to encourage contractors to properly dispose of these devices. The penalty associated with the regulation is an essential component. Without the threat of a potential financial penalty, contractors are less inclined to properly dispose of the thermostats. In conjunction with other educational activities such as posters, direct mailings, flyers and local newspaper advertisements contractors and residents are increasingly properly disposing of these devices.

In 2006 one direct mailing was sent to plumbers, electricians, boiler technicians and building contractors in the communities that have passed a regulation **(Attachment #2)**. Each mailing contained a notice signed by the city or town's Building and Health Directors. It also contained an informational flyer with an educational piece developed by MADEP, "Mercury and Health" and "Mercury and the Environment". In addition, two advertisements specific to thermostats were placed in the local newspapers. One ad ran in April and the other in October.

In 2006, 1,800 thermostats, 638 small switches and 54 large switches were collected by the program. This represents and increase of 601 thermostats and switches collected over the number collected in 2005. We continue to see an increase in the number of these devices being collected and removed from the municipal waste stream.

6. Thermostat Reimbursement Program

A new pilot program to encourage plumbing supply businesses to collect thermostats from their customers (plumbers and contractors) was initiated in 2006. The Thermostat Reimbursement Program is designed to provide plumbers and contractors a financial incentive to properly dispose of thermostats at Plumbing Supply businesses. These businesses are where the majority of thermostats are purchased (points of purchase) and are logical locations for plumbers and contractors to properly dispose of these used devices. A total

rebate of $5.00 per whole thermostat was offered to the plumbing supply businesses. A $3.00 rebate to be paid to plumbers and contractors who brought in thermostats and $2.00 for to the plumbing supply business for each whole thermostat recovered.

A flyer was developed for each participating business to distribute to their customers (Plumbers and contractors) **(Attachment #3).** Once the program was started a supply of flyers were delivered to the business to be mailed to each of their customers with a small number left for walk-in customers.

Two plumbing supply business's signed up for the Thermostat Reimbursement Program. Both locations established their program in September. Pinto Plumbing Supply is located in Milford and is a small business. They did not have a pickup by the end of the year. B & D Supply in the City of Worcester is a large Plumbing Supply business that specializes in controls and they had two large pickups by the end of the year. These two pickups totaled 510 thermostats and 317 switches. These numbers are reflected in the total number of thermostats collected in 2006. The first pickup of 357 thermostats included a large number of thermostats the company had been collecting and had stored in their basement. Regardless, this total number of thermostats from one business reflects the potential future success of this program.

A number of plumbing supply businesses that have indicated their interest in participating in the program. This new reimbursement program has a tremendous potential to increase the number of thermostat recovered and will be further developed in 2007

7. School Clean Sweeps

The School Clean Sweeps Program in 2005 continued to be offered to school systems for elemental mercury and products containing mercury. The program provides a free service to school systems to inspect chemical storage areas and science laboratories and for the safe removal of elemental mercury and products or devices containing mercury. In addition to the removal service the program also provides replacement products for certain items targeted for removal. The replacement products consist of lab thermometers, digital barometers and portable and wall mounted sphygmomanometers.

There were no school programs conducted in 2006 in the communities serviced by Wheelabrator Millbury.

8. Button Cell Battery Collection

The Button Cell Battery Collection is an on-going effort in each community. Each community has received a supply of small collection boxes for button-cell batteries. They are encouraged to distribute the boxes to targeted businesses

and certain community locations for the collection of button-cell batteries. Key locations in any community consist of points of purchase such as drug stores, jewelry stores, hearing aide stores and camera stores. Also community locations such senior citizen centers, health offices and libraries are fairly good locations for the collection of button-cell batteries. With limited resources it is difficult for many communities to distribute and collect the collection boxes. Very often the only collection point is the Board of Health office.

Approximately 19,609 button cell batteries were collected in 2006. Several communities collect button-cell batteries actively which accounts for most of the recovered button-cell batteries. These particular communities either have a recycling committee or other volunteer group that regularly collects the button-cell batteries from designated collection points in the community.

In 2006 a pilot Button-cell Battery Reimbursement Program for the collection of button-cell batteries was offered to the communities. If a local organization within the community could be identified that would be willing to place the collection boxes in specific collection locations and service the boxes on a monthly basis that organization would receive a reimbursement for the button-cell batteries collected. The organization would be paid $100.00 per pound up to a maximum for any calendar year of $500.00.

New flyers were developed for the program. These flyers are to be used in conjunction with the collection site to be placed in store windows, bulletin boards and store counters **(Attachment #4)**.

Four communities had local organizations sign up for the program. Four organizations from the City of Newton and the towns of Grafton, Westborough and Shrewsbury started the program. Each of these communities recovered in excess of five pounds of button-cell batteries, so each of these organizations received the maximum reimbursement of $500.00. This is a very good start to the program and provides excellent examples for other communities thinking of participating. We anticipate a significant increase in the number of communities participating in this program in 2007.

9. Bulk Mercury Collection

Each community has been informed that a special collection program is available for elemental mercury. If a large quantity of elemental mercury or devices containing a quantity of mercury is identified in the community, a special pickup of the mercury (or devices) is available. All of the program coordinators have been notified of this special collection service in the event of such a discovery.

There was one special bulk mercury collection in the Wheelabrator Millbury communities in 2006. A resident in the town of Natick had twenty-five pounds of

elemental mercury. The mercury was in the resident's garage and had been left there by a previous owner.

10. Fluorescent Lamp Reimbursement

The Fluorescent Lamp Reimbursement activity completed its third full year of implementation. A total of twenty-nine out of thirty-six communities have a fluorescent lamp recycling program. The following towns started fluorescent lamp collection programs in 2006: Weston, Spencer, Paxton, Northborough, Millbury, Grafton, Dover.

A total of twelve communities had pickups in 2006 and submitted invoices for reimbursement. A number of the nineteen communities started their programs in the fall and had not accumulated enough lamps for a pickup. There are several communities interested in starting a program in 2007.

A few communities continue to find it difficult initiating a fluorescent lamp recycling program because of problems coordinating the different municipal departments necessary to implement a successful program. Some of these communities are small towns that do not have municipal services available similar to larger communities.

In 2006 a total of 121,322 linear feet of fluorescent lamps were collected. An additional 2,080 single bulbs such as circular, compacts, u-tubes and HID were also collected. This is essentially a similar amount of lamps collected as in 2005. With several new communities collecting fluorescent lamps in 2006 it is anticipated that there will be an increase in the number of lamps collected in future years.

11. Purchase of sheds for the storage of Universal Waste

A new program for the purchase sheds for the storage of Universal Waste was offered to the communities. This was initiated through a modification to MSP3. It was recognized that several communities could not start a fluorescent lamp collection and recycling program because they did not have an adequate location for the storage of the lamps. Other communities could not consider expanding their programs because of the same reason. A limited number of communities received sheds in 2006. Each community will have the opportunity to receive a shed for the storage of fluorescent lamps and other universal waste over the next two years. Communities were prioritized based on need, first to help start a program and secondly to expand or improve their program.

Eight communities received sheds; Dover, Holden, Millbury, Needham, Newton, Northborough, Spencer and Westborough **(Attachment #5)**. The towns of Dover, Holden, Millbury and Spencer were able to start fluorescent lamp collection and recycling programs as a direct result on receiving a shed. The towns of

Northborough and Westborough both had fledging programs that needed a shed for the storage of lamps. The city of Newton and town of Needham had extremely overcrowded collection areas for fluorescent lamps. Having a shed tremendously improved their storage situation and will improve the efficiency of their programs.

Program Results

All thirty-six Wheelabrator Millbury communities participated in the Mercury Recovery Program in 2006. The total net amount of mercury collected through the Mercury Recovery Program for 2006 weighed 206.06 pounds. This total includes a bulk collection in the Town of Natick of 25 pounds.

The combined educational / outreach effort including regional radio ads, “Keep Mercury from Rising” video, mailings, flyer distribution, local promotions have all helped raise awareness of the health and environmental concern associated with the improper disposal of mercury and products that contain mercury.

New programs offering a reimbursement for the collection of button-cell batteries and thermostats have had very promising results and will be expanded upon in 2007.

As expected, the number of fever thermometers and lab thermometers collected decreased slightly in 2006. A total of 2,274 fever thermometers and 156 lab thermometers were collected. The overall recovery of thermometers has leveled off resulting in a fairly constant participation in the exchange program.

A total of 2,492 thermostats and switches were collected in 2006. This is an increase of 500 devices over the total number collected in 2005. The new reimbursement program offered to plumbing supply businesses had a significant impact on the total number of thermostats collected in 2006. The community collection program working in unison with the reimbursement program for plumbers and contractors should recover an increased number of thermostats in the coming years.

Seven new communities started fluorescent lamp recycling programs in 2006. The collection of fluorescent bulbs remained relatively constant in 2006 with 121,322 linear feet of fluorescent lamps and 2,080 additional mercury containing lamps being collected. It is anticipated that the total amount of fluorescent lamps collected will continue to increase in future years.

In conclusion, the Mercury Recovery Program was very successful in 2006 and has shown an increase in the collection of thermostats and fluorescent lamps. The program is operating very successfully in all thirty-six communities. The regional and local outreach efforts continue to be very effective in educating residents about mercury and its potential harm to human health and the environment.