July 1, 2005

SEMASS Partnership
141 Cranberry Highway
West Wareham, MA 02576
Phone: 508-291-4400
Fax: 508-291-1522

Nancy L. Seidman
Division Director
Massachusetts Department of Environmental Protection
Bureau of Waste Prevention
Division of Consumer and Transportation Programs
One Winter Street
Boston, MA 02108

Re: SEMASS Resource Recovery Facility (RRF) – Material Separation Plan 3 (MSP3) Program for the Diversion of Mercury: Response to Comments on the 2004 Annual Report

Dear Ms. Seidman:

On behalf of the SEMASS Partnership, here is our response to your letter dated May 26, 2005 regarding comments to the SEMASS Material Separation Plan (MSP) Program 2004 Annual Report.

1) Breakdowns of Mercury Device by MSP3 Program Task & Municipality. Per your request, attached is a table detailing the breakdown of mercury and mercury-containing devices by MSP3 Program Task. For your reference, we have also included the prior table showing the breakdown of mercury and mercury-containing devices by long-term contracted customers/municipalities. These tables are in the format agreed upon by the Department, the Integrated Waste Services Association (IWSA) and the waste-to-energy companies during August 2004. Electronic versions of these tables have also been sent to your attention via e-mail. The breakout of devices by MSP3 Plan task should clarify your concern of what was reclaimed through community support and outreach versus amounts reclaimed by other Plan tasks.

2) Massachusetts Military Reservation (MMR) Clarification. The Department requested clarification regarding mercury amounts reclaimed from Otis Air National Guard Base. The terms "Otis Air National Guard Base" and "Massachusetts Military Reservation (MMR)" are used interchangeably in the Cape Cod area since Otis Air National Guard Base was the former name. Our annual report and MSP3 Plan should have used the correct term "MMR" instead of the now superceded "Otis Air National Guard Base".

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The removal of mercury from MMR falls within the parameters set forth in SEMASS' approved MSP3 Plan. MMR (or alternatively "Otis Air National Guard Base", its former name) is a long-term "community" as listed in SEMASS' MSP3 Plan. SEMASS provides solid waste disposal services for MMR via the Otis Transfer Station and the Town of Bourne. Reimbursement was provided for the direct mercury reclamation costs in a similar manner as any municipal reimbursement or household hazardous waste event support under Task 3.3 of the MSP3 Plan. Identification of this important mercury source was provided by our contractor, Pozitive Environmental Solutions, Inc. (PESI) of Stoughton, MA, who is listed in the MSP3 Plan for purposes of identifying and locating potential sources of mercury within the Plan geographic area.

Some of the Department's confusion in making spot calls to check SEMASS mercury amounts may be related to the various service branches that are domiciled at MMR. These include: Army National Guard (Camp Edwards), U.S. Coast Guard Air Station Cape Cod, Otis Air National Guard, and Cape Cod Air Force Station (Pave Paws radar site). Personnel from one service branch may be unaware of base activities from the other branches.

As detailed in my April 14th e-mail to Lori Segall, the source of mercury at MMR was from two service branches: a large source from the Army National Guard Base (Camp Edwards) plus a smaller source from the U.S. Coast Guard Air Station. The majority of this amount is from a cleanup that occurred on the Mass. Army National Guard Base during 2004. According to our information, the elemental amounts of mercury consisted of four drums containing heavy-duty, mercury electrical switches that had been removed from explosives/ ordinance. At some point in the past, these switches were placed in drums and buried. The cleanup unearthed the drums and disposed of the contents properly. Other mercury materials may also have been present in the drums. Given the nature of the material and the extreme potential hazards, only a total weight of the material was recorded by the reclamation company. Counts of devices were not done. Refer to the discussion under Item 3 for SEMASS' estimate on reclaimed mercury amounts.

The Department questioned how 400+ pounds of elemental mercury could originate from four (4) 55-gallon drums. This could easily be feasible. Our MSP Program mercury handling & awareness training contractor, HAZMATEAM, Inc. of Hudson, NH, noted in a recent municipal training session that a single 5-gallon pail, if filled with liquid mercury, would weigh more than 500 pounds alone. Four (4) drums of mercury and/or mercury-containing devices represents

an extreme quantity of mercury that could potentially, and improperly, enter the solid waste stream, if not handled appropriately.

Elimination of this large source of mercury and/or mercury-containing devices with support from the SEMASS MSP program was extremely beneficial for all parties involved. Reclamation removed a potential hazard that, if unmitigated, may have eventually impacted public health and the environment. The MSP program support served as an incentive for proper disposal/reclamation of these devices and mercury-containing materials. Improper disposal may have resulted in a high probability of these materials ending up in the solid waste stream, and ultimately, the SEMASS Resource Recovery Facility.

3) Estimated Mercury Amounts. We wish to clarify that SEMASS' MSP 2004 Annual report and any mercury amounts provided to the Department in follow-up communications represent estimated, equivalent pounds of elemental mercury (i.e. not pounds of mercury-containing manufactured articles). It was our understanding that the Department wanted reporting in equivalent pounds of elemental mercury to facilitate comparisons between annual reports. We have complied with this request.

Below are large sources of mercury materials in the 2004 Annual Report that were reclaimed prior to the Department's desire and our current approach to "count" everything. Total, gross weights of the amounts were accurately recorded. SEMASS evaluated the various sources and made conservative (i.e. lower) estimates of the equivalent amounts of elemental mercury present in them.

Equivalent amounts of elemental mercury were estimated by a combination of methods. SEMASS discussed each source with PESI and/or the reclamation contractors to determine the nature and type of the materials reclaimed. To supplement this, SEMASS made direct weight measurements of actual mercury-containing devices (i.e. thermometers, blood pressure cuffs, industrial mercury switches, thermostats) to determine a weight percentage of mercury in the gross unit weight of devices. Unit amounts of mercury from the MSP3 Plan were applied to help calculate this (i.e. 4.5 grams Hg per thermostat, 110 grams Hg per blood pressure cuff, etc.). Combined with information from the reclamation contractors, an estimate of materials was made and weight percentages were then applied to calculate elemental mercury amounts.

For example, materials from MMR – Army National Guard were assumed to be either elemental mercury amounts (a minority quantity) or heavy-duty industrial mercury switches (the assumed majority of the total weight). Measured weight

percentages of actual switches were then applied to calculate an equivalent elemental mercury amount.

**Large Sources of Non-Differentiated Mercury Materials and Estimated Equivalent Elemental Mercury Amounts in 2004 Annual Report**

| Hg Source | Gross Weight of Hg Materials [1] (lbs) | Municipal Attribution (Table 1) | Task Attribution (Table 2) | Estimated Equivalent of Elemental Hg [2] (lbs) |
|---|---|---|---|---|
| Cape Cod Health, Hyannis | 77 | Barnstable | 3.1 | 33.9 |
| N/E Specialty Hospital | 55 | Braintree | 3.1 | 55 |
| MMR: Army National Guard (Camp Edwards) | 1,135 | Otis ANGB | 3.3 | 499.4 |
| MMR: U.S. Coast Guard Air Station Cape Cod | 80 | Otis ANGB | 3.3 | 29.3 |
| Weymouth N.A.S. | 75 | Weymouth | 2.2 | 27.5 |
| Mass Electric Co. | 347 | Overall SEMASS Region | 2.2 | 116.1 |

Notes:
( 1 ) Does not include container weight.
( 2 ) Refer to text discussion for estimation basis.

We hope that this clarifies the Department's concerns. Should you have any questions, need further information, or would like to discuss this further, please do not hesitate to call me at (508) 295-2860.

Sincerely,

Daniel P. Peters, P.E.
Sr. Environmental Engineer &
MSP Program Manager

Attachments
Cc: L. Segall – DEP-Boston
J. Qamoos
M. Sears
A. Dell'Anno