

MassDEP Drinking Water Program Mercury Reduction Initiative

Summary of Mercury Questionnaire Results from Public Water Systems

DRAFT

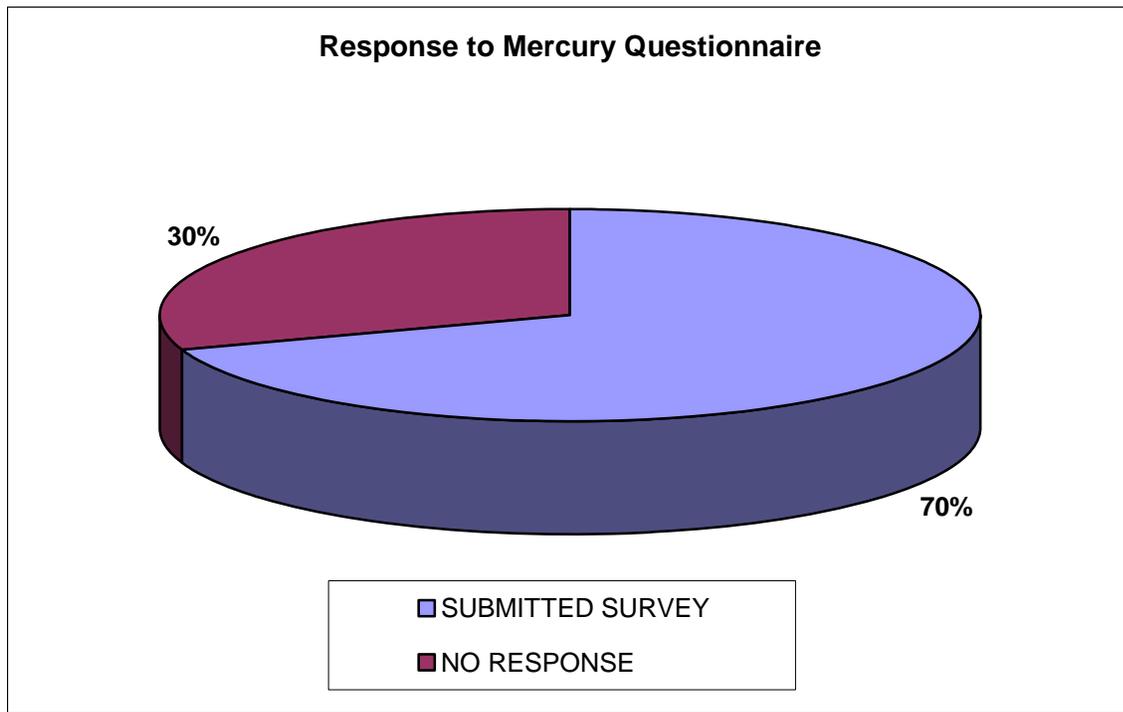
Background: In keeping with the MassDEP’s initiative to reduce mercury in the environment, the Drinking Water Program (DWP) sent out voluntary mercury questionnaires with the 2006 Annual Statistics Reporting (ASR) package. The questionnaire was designed to determine the extent of products containing mercury that are currently being used at public drinking water sources, pumping stations, water treatment and storage facilities, and distribution systems. Products that might contain mercury include submersible pump seals; tilt, float, and relay switches; flow meters; thermometers; and thermostats.

In addition to the questionnaire, the DWP developed a Best Management Practices (BMP) guidance document that provides information regarding the identification and proper removal and disposal of mercury-containing products, mercury-free replacement alternatives, mercury recyclers, how to cleanup mercury spills, and mercury spill kit vendors. The BMP document is available on MassDEP’s web site at

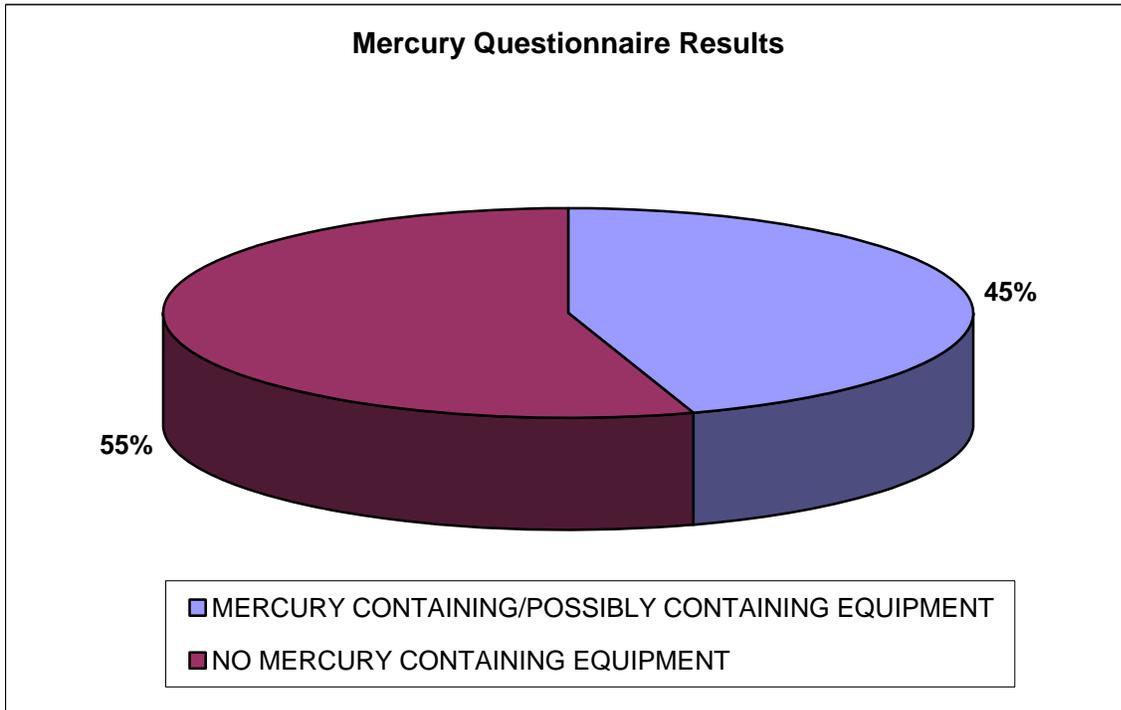
<http://www.mass.gov/dep/water/drinking/leadtothe.htm#mercury>

Results: The completed questionnaires were due on March 30, 2007. The following results are based upon the questionnaires submitted:

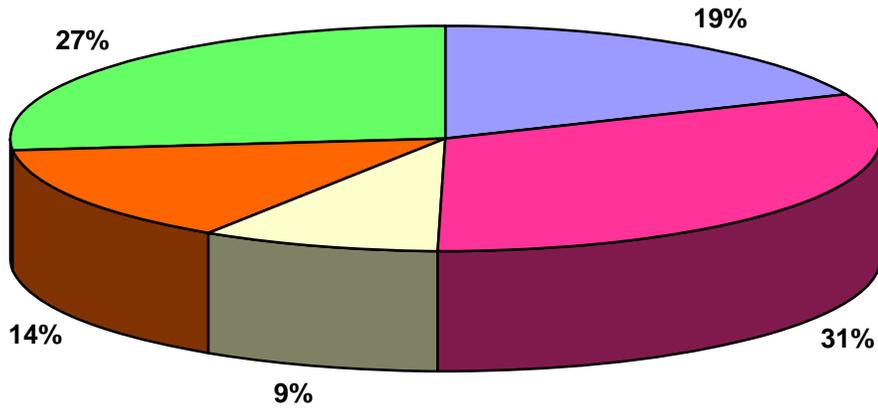
1,209 out of 1,731 active public water systems (PWS) submitted their mercury questionnaires (70% response).



545 out of the 1,209 PWS that responded (45%) indicated the presence of products that are either known to contain mercury or are of unknown mercury content.

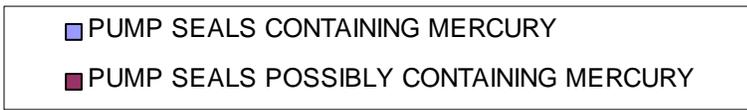
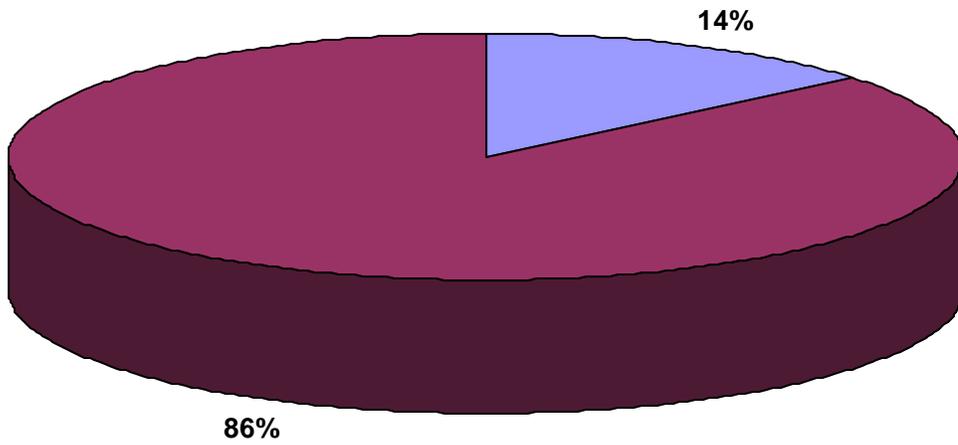


Distribution of Equipment Containing/Possibly Containing Mercury

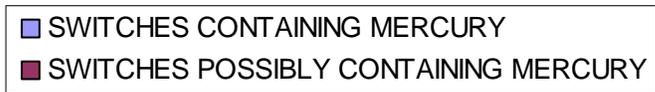
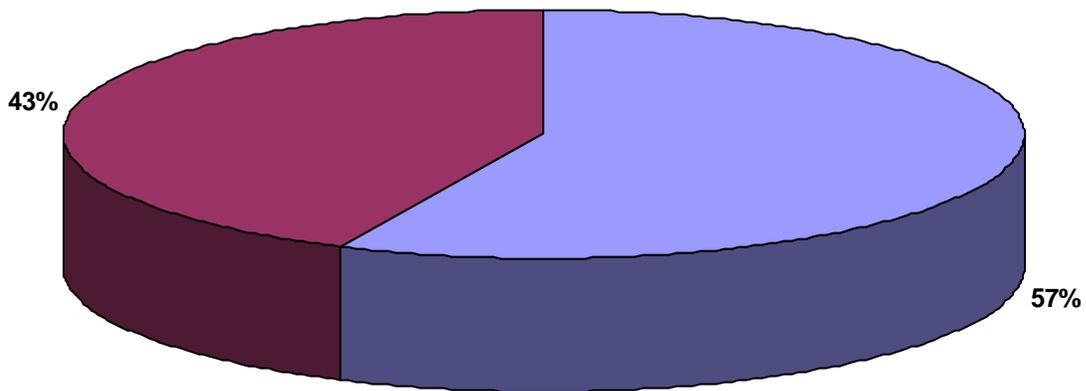


- | | |
|-----------------------------|--------------|
| PUMP SEALS | SWITCHES |
| FLOW METERS/PRESSURE GAUGES | THERMOMETERS |
| THERMOSTATS | |

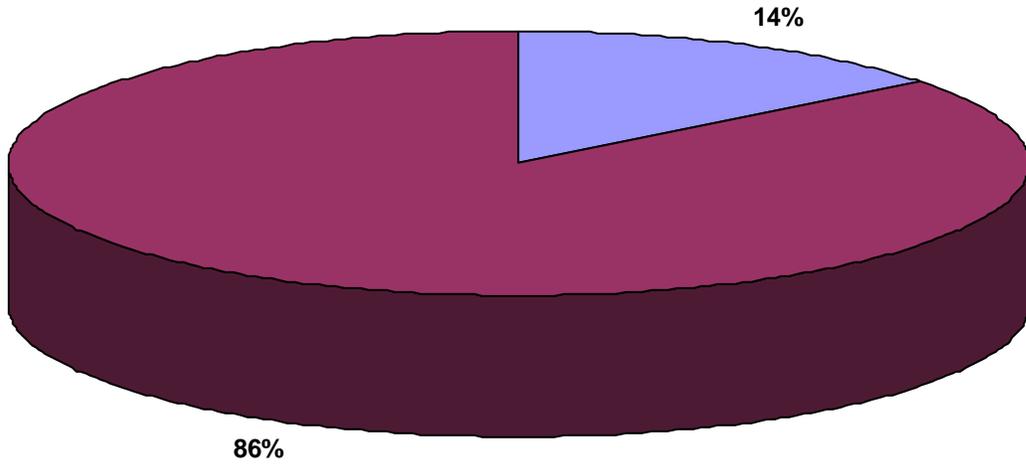
Pump Seals



Switches

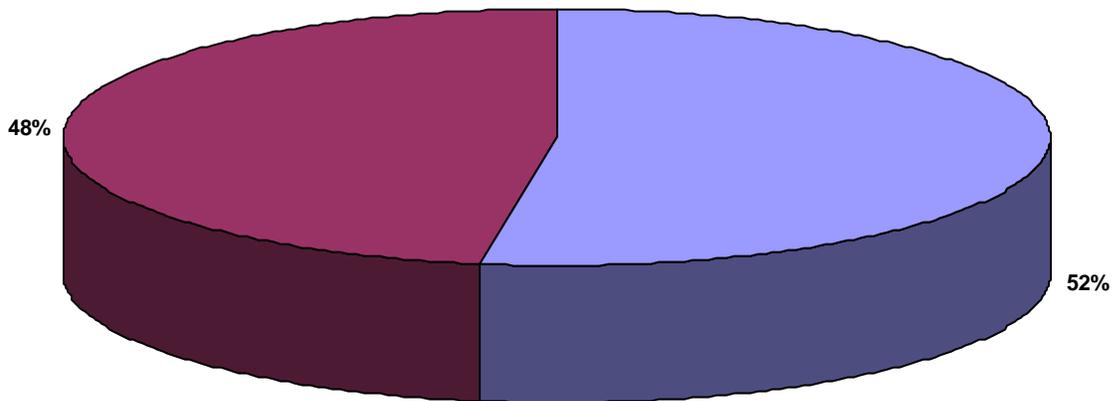


Flow Meters / Pressure Gauges



- FLOW METERS/PRESSURE GAUGES CONTAINING MERCURY
- FLOW METERS/PRESSURE GAUGES POSSIBLY CONTAINING MERCURY

Thermostats



- THERMOSTATS CONTAINING MERCURY
- THERMOSTATS POSSIBLY CONTAINING MERCURY

Issues Identified: After reviewing the results of the survey and conducting additional research, DWP identified the following issues:

- A significant number of PWS are uncertain as to whether the products they are using contain mercury;
- Although some corporations that produced products from 2001 through the present have provided information regarding mercury content to the Interstate Mercury-Added Products Database (IMERC) that is available on the Northeast Waste Management Officials' Association's (NEWMOA) web site, <http://www.newmoa.org/prevention/mercury/imerc.cfm>, DWP could find no clearinghouse for mercury content of products produced prior to 2001. This makes it difficult for PWS or DWP staff to determine whether or not older products contain mercury unless the mercury content is clearly visible or clearly labeled on the product or in product specifications. The task of collecting mercury content information on older products would require DWP staff resources that don't currently exist.
- DWP concerns for mercury-containing products at PWS fall in two general categories, risk of contamination of drinking water and operator work place hazards.
- Risks posed by specific types of mercury containing products need to be prioritized for the efficient allocation of DWP staff time to address the risks associated with these products.

Follow-Up:

- The DWP determined that mercury-containing submersible pump seals are a significant concern due to their proximity to the source of water. Therefore, DWP staff will work with the PWS while conducting sanitary surveys to identify which pumps contain or may contain mercury seals and to try to verify the mercury content when unknown.
 - *Prior to conducting sanitary surveys, MassDEP staff shall obtain information from the mercury database (Y/DWPshare/mercury) as to whether the PWS has submersible pump seals of known or unknown mercury content.*
 - *If the pump seal has known mercury content MassDEP staff shall inquire as to the projected schedule for pump replacement, and require that the ER Plan address potential mercury spills.*
 - *If the pump seal is of unknown content, staff shall request that the PWS attempt to obtain confirmation from installer/manufacture by the next sanitary survey, and require that the ER Plan address potential mercury*

spills unless PWS confirms to MassDEP in writing, that it has determined that the pump seal doesn't contain mercury.

- The DWP determined that other mercury-containing products are of a lesser concern for drinking water contamination. However as resources permit these products should be categorized and evaluated for the relative level of drinking water contamination risk or work place hazard associated with certain types, makes, and/or models of mercury-containing products. As the DWP completes its evaluation of the risk level for other types of products, additional high-risk items may be addressed during sanitary surveys. Best Management Practices (BMP) for mercury-containing products have been posted on our web site and will be handed out to PWS as staff conducts sanitary surveys.
- Maintain and use the DWP mercury database. A mercury equipment database was created to store the PWS survey results. Prior to conducting future sanitary surveys, regional staff will obtain information from the mercury database and use the information to establish priorities for survey selection. While conducting the surveys, staff will evaluate the relative level of contamination risk posed by equipment that has been identified as either containing or potentially containing mercury. This on-site evaluation will be used to make recommendations to the PWS for equipment removal, replacement, containment, or management, as applicable.
- DWP will require PWS with mercury containing equipment that is determined to pose a risk to do the following:
 - Provide a training program for PWS staff on handling and disposing of mercury containing products;
 - Replace and properly dispose of the equipment; and/or,
 - Develop and implement a spills plan and incorporate into Emergency Response Plan
- DWP will include information on mercury reduction at training opportunities during the year and in our annual mailing to the local boards of health.
- The DWP will recommend to NEWWA and AWWA the creation of a database, at least for those products most likely to represent a risk for drinking water contamination or a work place hazard. Creating this type of database should be of interest to the regional and national membership that these associations represent.

For more information on DWP mercury reduction initiative please contact the following:
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