

Mercury Devices at Drinking & Wastewater Treatment Facilities

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N E W M O A



Background

The Massachusetts Dept. of Environmental Protection (MassDEP) contracted with NEWMOA to research mercury pollution prevention awareness and practices at drinking water and wastewater treatment plants in Massachusetts.



Background

- Targeted water treatment plants undergoing facility upgrades under ARRA or SRF funding
- Conducted a survey of these facilities
- Completed site visits at six facilities
- Drafted a report of our findings and provided recommendations for MassDEP

Online Survey

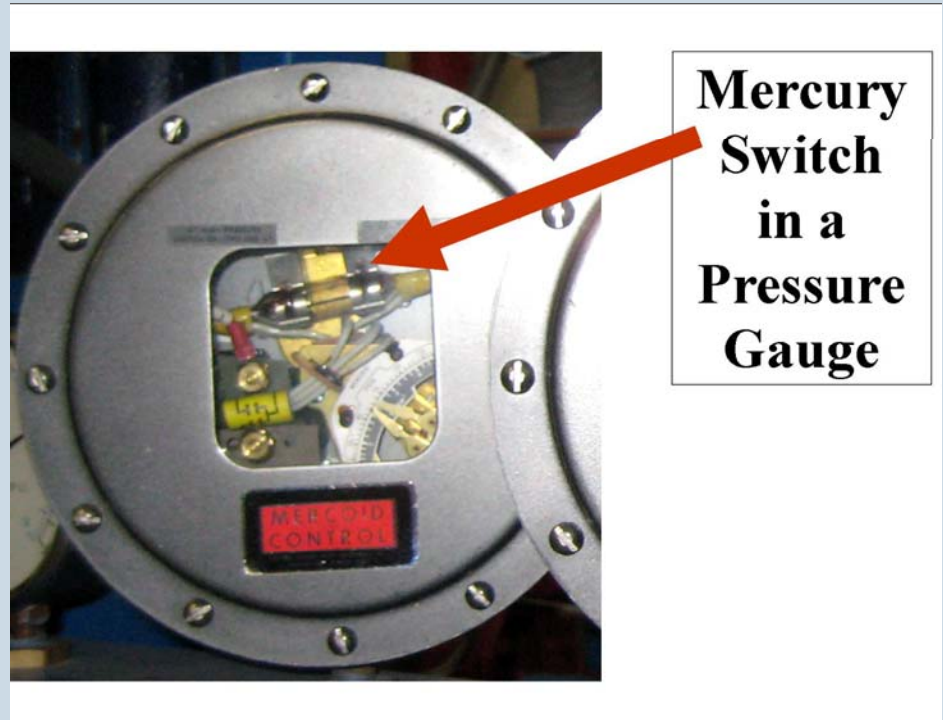
- Inventory of mercury devices at the facility
- Plans for removing or replacing mercury devices during their upgrades
- Handling & disposal procedures for mercury items once they are no longer being used
- History of mercury spills at the facility

Site Visits

- Completed the inventory of mercury devices at the facility
- Made recommendations for storage/labeling of devices still in use
- Discussed disposal and recycling options for mercury devices no longer in use
- Discussed possible non-mercury alternatives

Results - Switches

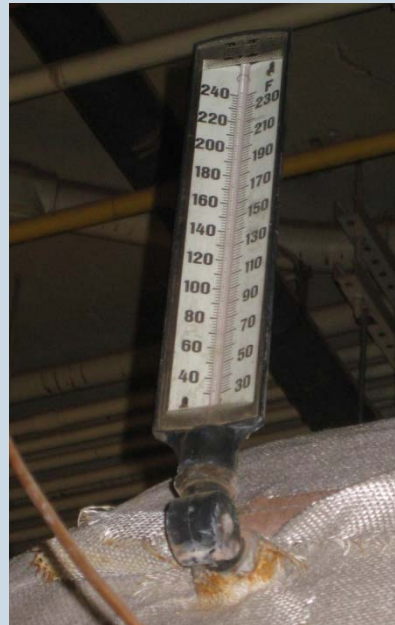
- Float switches
- Pressure switches
- Pressuretrols
- Thermostats



Results - Thermometers



Outdoor Max-Min
Thermometer



Mercury
Thermometer on
Boiler System



Oven
Thermometer

Results - Mercury Lighting

- Fluorescent lamps
- HPS lamps
- Metal halide lamps
- UV lamps



Results - Other

Vacuum gauge
with a mercury
manometer



Legacy Mercury Products

- Old Appliances
 - chest freezers; gas flow regulators; and silent light switches
- DC watt hour meters
- Old Paints & Other Chemicals
 - latex paint; marine paint; and pesticides
- Rectifiers
- Trickling filters

Non-Mercury Alternatives

- Alcohol-based and digital thermometers
- Aneroid barometers
- Aneroid and digital pressure gauges
- Digital thermostats
- LED lighting
- Mechanical float switches and pumps
- Ultrasonic flow meters

Non-Mercury Alternatives

Non-Mercury Pressure Gauges



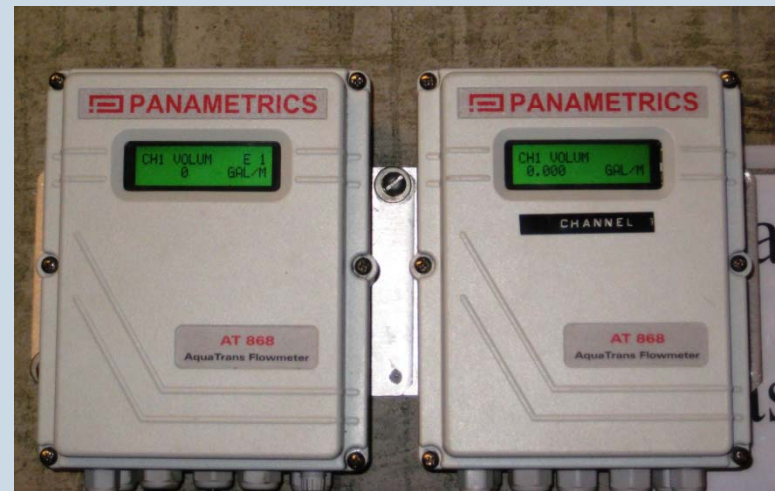
Digital Pressure Gauge



Aneroid Pressure Gauge

Non-Mercury Alternatives

Ultrasonic Flow Meter Technology



Conclusions

- New facility upgrades are not designed with mercury devices
- Construction companies in charge of upgrade implementation dispose of mercury as HW
- Several facilities already use non-mercury devices
- Successful mercury cleanouts are possible

Conclusions

- Identifying mercury-added lighting is a problem for many facilities
- Many facilities lack knowledge on proper handling and disposal of mercury devices
- Increasing operator awareness of mercury devices and non-mercury alternatives is the key to success

Questions

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