Safely Handling MRW

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Based on Washington regulations for design and operation

60 MRW facilities statewide (53 public)

Common themes from 2010 Ecology statewide site visits
Four typical issues we encounter:

1. Proper sorting and segregation
2. Secondary containment
3. Bulking safety
4. Operations plan
Sorting and Segregation

Never stack boxes/containers of HHW on top of one another
Sorting and Segregation

Stacking again and no segregation by hazard class

Container labeled “Household Hazardous Waste”

Inside…
Sorting and Segregation

Basic neglect
Sorting and Segregation
Sorting and Segregation

Unlabeled drums
Sorting and Segregation

Clearly identify what goes in each storage area
Sorting and Segregation

Within a main hazard class, further segregate when needed
Sorting and Segregation

Perfection?
Sorting and Segregation

Provide clear drop off areas, and move into long-term storage quickly
Sorting and Segregation
Secondary Containment

► 10% of total volume of liquid or volume of largest container, whichever is greater

► Segregated into 3 main hazard classes, or further segregate as appropriate.

► Must actually hold materials (no cracks or gaps, be impermeable)

► Provide additional capacity for 25 year storm if uncovered, and 20 minutes of flow from automatic fire suppression.
Secondary Containment

Use containment pallets - inexpensive
Secondary Containment
Engineered and sealed containment, but is it effective?
Secondary Containment

For lab/loose pack, the drum is the secondary containment
Secondary Containment

Or lack thereof...
Secondary Containment
Secondary Containment
Some good, some bad
Secondary Containment
Secondary Containment
Secondary Containment
Secondary Containment

Floor as containment, must have good seal
Secondary containment
Secondary Containment
Bulking Safety

► Mechanical ventilation

► Flammable/Explosive gas monitoring

► Grounding and bonding

► Container integrity

Perhaps most important for your *personal* health and safety – don’t blow up or breathe harmful vapors!
Bulking Safety

Ventilation – height, exhaust location
Bulking Safety

Ventilation – low to ground, close to source (good!)
Bulking Safety

Ventilation in locker where no bulking occurs
Bulking Safety
Ventilation for identifying unknowns
Bulking Safety

Moveable ventilation
Bulking Safety

Ventilation – What’s most important?
Bulking Safety

Monitoring
Bulking Safety Monitoring
Bulking Safety

Monitoring

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Bulking Safety

Monitoring
Bulking Safety
Monitoring – What’s most important?

DOES IT WORK?
Bulking Safety
Grounding and bonding

From OSHA Office of Training and Education
Bulking Safety

Grounding and bonding

NOTE:
GROUND CONDUCTIVITY OF ALL PIPING, EQUIPMENT, DEVICES, CABLES AND CONNECTIONS MUST BE CHECKED FOR ELECTRICAL CONTINUITY AT THE TIME OF INSTALLATION AND PERIODICALLY THEREAFTER.

TYPICAL GROUNDING SYSTEM FOR SMALL VOLUME SOLVENT HANDLING
Bulking Safety

Grounding and bonding
Bulking Safety

Container integrity
Bulking Safety
Container integrity
Bulking Safety
Worker exposure
Operations Plan

Know what you are supposed to do
Keep it simple.
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