



RCRA 101: Requirements for Management of Universal Waste

NEWMOA WEBINAR

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Universal Waste Rule (UWR)

- ▶ Published by US EPA in 1995
 - ▶ Codified at 40 CFR Part 273
 - ▶ A stand-alone section within the HW regulations
 - ▶ Lamps (1999), MCE (2005), Aerosol Cans (2019)
- ▶ An alternative to compliance with full RCRA for certain lower-risk wastes
- ▶ UWs typically found in homes and businesses
- ▶ UWR is optional and not effective in authorized states until state adopts the rule
- ▶ States may adopt some or all federal UWs
 - ▶ May also petition EPA to add UW



UWR Goals (and successes)

- * Encourage recycling
- * Simplify regulatory requirements
- * Remove barriers to collection programs
 - * Radio Shack - one of the first takebacks (NiCd batteries)
 - * RBRC/Call2Recycle, TRC
 - * Large chains and small hardware stores now take back CFLs
- * Divert toxic materials from solid waste facilities, especially from households
 - * Success story: Lamps, Thermostats and Button Batteries all recycled more now thanks in part to the UWR
 - * Less mercury disposal, more recycling!

Federal Universal Wastes

- ▶ **Batteries**

- ▶ NiCds, Button, Lithium

- ▶ **Pesticides**

- ▶ Recalled pesticides that are:

- ▶ Stocks of a suspended and canceled pesticides that are part of a voluntary or mandatory recall under FIFRA (or voluntary recall by registrant) or
 - ▶ Stocks of other unused pesticide products collected and managed as part of a waste pesticide collection program

- ▶ **Mercury containing equipment**

- ▶ e.g., thermostats, switches and gauges

- ▶ **Fluorescent lamps**

- ▶ **Aerosol cans (NEW)**

UWR Terminology

▶ **Universal Waste Handlers**

▶ Small Quantity Handler

- ▶ accumulates less than 5,000kg UW

▶ Large Quantity Handler

- ▶ accumulates 5,000kg or more UW at any one time

▶ **Universal Waste Transporter**

- ▶ Comply with DOT

- ▶ Transporter becomes a Handler if it holds UW for >10 days

▶ **Destination Facility**

- ▶ TSDF or Permitted (commercial) recycler

Full RCRA



Generator

- EPA ID
- Mgmt Standards
 - Lines, lids and labels
- Manifests
- Reporting
 - Biennial Report (LQGs)

Transporter

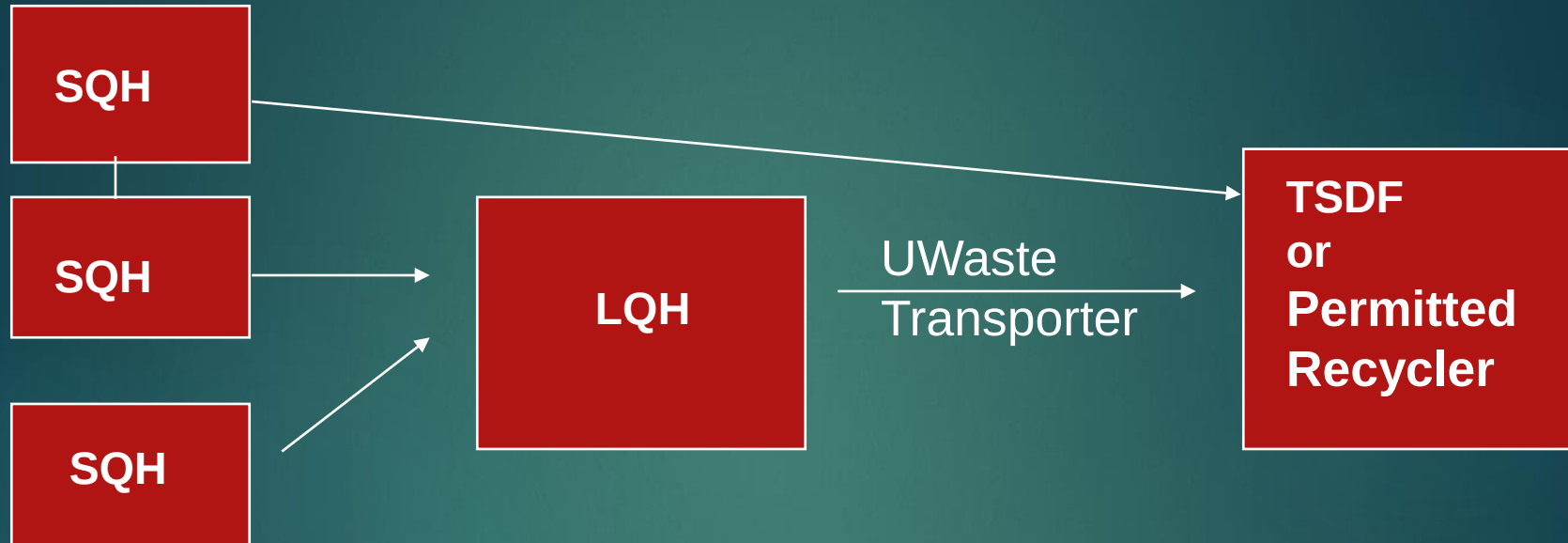
(requirements in MA)

- License
- Reporting
 - EMOR
- Transporter Fee
 - 22.75 cents/gal in MA

TSDF Regs

- Part B permit

Universal Waste Rule



Streamlined Regulations			RCRA Regs
<u>SQH</u>	<u>LQH</u>	<u>Transporter</u>	<u>TSDF</u>
• Accumulation Stds -< 5,000 kg of UW at one time -One Year • Mark & Label • No Manifest • No Reporting	• ≥5,000kg/One Year • Notification/EPA ID • Mark & Label • No Manifest • No Reporting • No Compliance Fee (MA)	• No license • No reporting • Comply with DOT • CDL/HE • No Transporter Fee (MA)	• Part B Permit • Permitted Recycler

General Comparison of Hazardous Waste Transporter Requirements to Universal Waste Transporter Requirements

	Universal Waste Transporters 40 CFR part 273 subpart D	Hazardous Waste Transporters 40 CFR part 263
Compliance with Department of Transportation (DOT)	Yes §273.52(a) cites DOT Requirements 49 CFR parts 171-180	Yes §263.10 DOT Requirements 49 CFR parts 171-179
EPA ID Number (Notification Requirements)	None	Yes §263.11
Allowance to Store up to 10 days at a Transfer Facility	Yes §273.53	Yes §263.12
Manifest Requirements	None	Yes §263.20-22
Response to Releases	Yes §273.54	Yes , with more complex requirements §263.30-31

State and Federal Differences

- ▶ States may
 - ▶ petition EPA to add other UWs in their state
 - ▶ modify federal universal waste rules
 - ▶ provided they're no less stringent
- ▶ Rules for Universal Waste Batteries must be identical
 - ▶ Per the federal Mercury-Containing and Rechargeable Battery Management Act (1996)

Universal Waste Accumulation

- ▶ Label items or containers of items as UW
- ▶ Manage UW in a way that prevents releases of any UW or component of a UW to the environment
- ▶ No satellite accumulation areas under UWR

Handlers Must:

- ▶ Mark/label UW items or container
- ▶ Inform employees of proper waste handling and emergency procedures
- ▶ LQHs Must:
 - ▶ Keep records for each shipment received/sent
 - ▶ Notify EPA of handler activity
 - ▶ LQHs of batteries-only with an EPA ID number need not notify (Battery Act)

Closure for Handlers (in MA)

- ▶ MA SQHs/LQHs must comply with state “closure” standard - 310 CMR 30.689
 - ▶ At closure, remove all HW and HW residue
 - ▶ EPA initially said it couldn’t authorize rule since it conflicted with Battery Act
 - ▶ Later allowed closure noting that closure requirements are not clearly preempted

UW Pesticides

- ▶ MA rarely sees pesticides managed under UWR
- ▶ Part of reason for this is the narrow description of what qualifies under UWR and requirement to develop a program
 - ▶ Recalled pesticides that are stocks of a suspended and canceled pesticides that are part of a voluntary or mandatory recall under FIFRA (or voluntary recall by registrant) or
 - ▶ Stocks of other unused pesticide products collected and managed as part of a waste pesticide collection
- ▶ Easier to manage broader universe of pesticides at Household Hazardous Waste Events/Centers
 - ▶ Small businesses may also be able to bring waste pesticides to these collections

UW Batteries

- ▶ Common UW batteries include nickel cadmium, button, lead acid and lithium-ion
- ▶ Intact, non-leaking **lead acid batteries** don't need to be managed as a HW or UW if recycled through regeneration
 - ▶ EPA: "lead-acid batteries...managed under Part 266, Subpart G, are not subject to the universal waste management standards."
 - ▶ Under UW, generators can drain lead acid batteries
 - ▶ Electrolyte is HW, Battery is a UW
- ▶ Lithium batteries:
 - ▶ While most UWs pose lower risk, lithium batteries can cause fires if not managed properly
 - ▶ Special handling requirements recommended

Lithium-Ion Batteries

- ▶ To prevent fires, tape battery terminals and/or place Li-ion batteries in separate plastic bags
- ▶ Difficult for generators to identify which Li-ion batteries are HW when disposed
 - ▶ If uncertain, EPA recommends that businesses consider managing Li-ion batteries as a UW
- ▶ Li-ion batteries and devices containing these batteries should **NOT** go into household trash or recycling bins
- ▶ In response to increase in fires at recycling and waste facilities, industry groups developed the 'Avoid the Spark. Be Battery Safety Smart.' campaign
 - ▶ Educates consumers about proper management of used Li-ion batteries
 - ▶ More information: [Call2Recycle's website](#)
 - ▶ Also: [DOT's Check the Box campaign](#)

Mercury Containing Equipment?

- ▶ Mercury-containing equipment is a device or part of a device that contains elemental mercury integral to its function
- ▶ Examples of items that meet this definition are mercury thermostats and thermometers, mercury switches and the devices that contain them, mercury barometers and mercury manometers
- ▶ UW handlers may remove Hg containing ampoules
 - ▶ Manage removed ampoules as HW, maintain spill clean-up kit, ensure employees are familiar with mercury handling and emergency procedures and comply with OSHA exposure levels
- ▶ MCE definition does not include batteries or lamps

Fluorescent Lamp Crushing

- ▶ Crushing mercury containing lamps regulated in MA as licensed treatment or permitted recycling
- ▶ Drum-top crushers effectively banned in MA in 2019
 - ▶ VSQGs that purchased DTC prior to 2019 had to get licensed or stop using it by November 2020
- ▶ Class C (or Part B permit) required for crushing
 - ▶ Two permitted mercury recyclers in MA

Low Mercury Lamps

- ▶ **Fluorescent lamps that pass TCLP are not a HW or UW in MA**
 - ▶ However, Massachusetts Mercury Management Act imposes certain prohibitions on handling and disposal of mercury containing products
 - ▶ As of May 1, 2008, mercury-added products cannot be disposed of in trash when they reach the end of their useful life
 - ▶ <https://www.mass.gov/doc/faq-on-mercury-containing-product-disposal-ban/download>

Applicability of LDRs to recycled universal waste glass

- ▶ Lamps consolidated for recycling from different generators
 - ▶ at least some are hazardous waste (D009)
- ▶ Recycling separates lamps into metal end caps, phosphor powder and glass
- ▶ Glass may pass TC for mercury (0.2 mg/L), but exceed LDR standard of 0.025 mg/L
 - ▶ 40 CFR 268.40 - Table: waste code D009 - non-wastewaters - low mercury subcategory
- ▶ EPA Region 1 consulted with EPA HQ and concluded that glass must meet 0.025 mg/L LDR standard prior to disposal

Applicability of LDRs to recycled universal waste glass - continued

- ▶ Region 1: LDR prohibition attached when universal waste lamps were initially generated
- ▶ Even if recycling process resulted in glass no longer being characteristically hazardous, LDR requirements still apply.
 - ▶ 40 C.F.R. 261.3(d)(1)
- ▶ While recycling may separate glass from the other components, glass remains in the same treatability group as the initial universal waste lamps
- ▶ EPA HQ: "LDR prohibitions remain attached to the initial waste as long as the waste remains within the same treatability group...." 64 FR 25411 (May 11, 1999).

Applicability of LDRs to recycled universal waste glass - continued

- ▶ Glass that doesn't meet the LDR 0.025 mg/L level may not be used in a manner constituting disposal
 - ▶ Allowance in 40 CFR 266.20 for certain products to be used in a manner constituting disposal doesn't apply if LDR standard is not met
- ▶ Mixing glass with other materials to get it below 0.025 mg/L prior to being used in a manner constituting disposal is prohibited (40 CFR 268.3)
- ▶ Glass which meets LDR standard may be disposed in a subtitle D landfill
 - ▶ Whether such glass may be used in a manner constituting disposal is a matter for States to decide under its solid waste rules

Aerosol cans

- ▶ Widely used for dispensing a broad range of products
 - ▶ paints, solvents, pesticides, and personal care products
- ▶ Account for nearly 40 percent of retail items managed as HW at large retail facilities
- ▶ With its rule, effective February 7, 2020, EPA added hazardous waste aerosol cans to universal wastes, 40 CFR Part 273

Aerosol cans - continued

- ▶ **Streamlined (UW) regulations expected to:**
 - ▶ Ease regulatory burden on retail stores and others that discard aerosol cans
 - ▶ Promote collection/recycling of aerosol cans
 - ▶ Encourage development of municipal/commercial programs to reduce quantity of these wastes going to landfills and combustors

Management of aerosol cans under EPA's universal waste rule

- ▶ Accumulate in container that
 - ▶ is structurally sound
 - ▶ compatible with contents of cans
 - ▶ lacks evidence of leakage or damage, and
 - ▶ is protected from heat sources
- ▶ Leaking cans must be
 - ▶ packaged in a separate closed container
 - ▶ over-packed with absorbents or
 - ▶ immediately punctured and drained in accordance with UW requirements

Management of aerosol cans under universal waste rule - continued

- ▶ A handler that punctures and drains aerosol cans must recycle cans and:
 - ▶ Use a device and follow procedures designed to safely puncture aerosol cans and contain contents and emissions
 - ▶ Maintain a copy of manufacturer's instruction and ensure employees operating device are properly trained
 - ▶ Immediately transfer contents from can or puncturing device, if applicable, to a container or tank that meets applicable HW requirements
 - ▶ Conduct a HW determination on contents of emptied can and manage accordingly
- ▶ Have a written procedure in place and a spill clean-up kit available for any spill or release

Treatment activities allowed under UWR

- ▶ Batteries: electrolyte removal, disassembling battery packs, etc
- ▶ Mercury Containing Equipment/Thermostats: ampoule removal
- ▶ Fluorescent lamp crushing
- ▶ Aerosol cans – puncturing and draining
- ▶ Question: have states restricted UW treatment options in their regulations, seen problems involving treatment or considered revising regulations to discourage certain forms of treatment?

Looking Back: MassDEP's Experience

- ▶ Early adopter - 1997
- ▶ Added Lamps before EPA
 - ▶ had to do a clean-up reg package for lamps for consistency
- ▶ Aerosol Cans will be first waste added to MA UWR since 1997
- ▶ Hasn't been used for other "state-only" UWs as was envisioned
 - ▶ Resisted adding CRTs
- ▶ Biggest successes related to collection programs that discouraged mercury disposal



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