

ASPHALT SHINGLES RECYCLING: HOW TO WORK WITH REGULATORS

Presented at the 5th Asphalt Shingle Recycling Forum
Dallas, TX

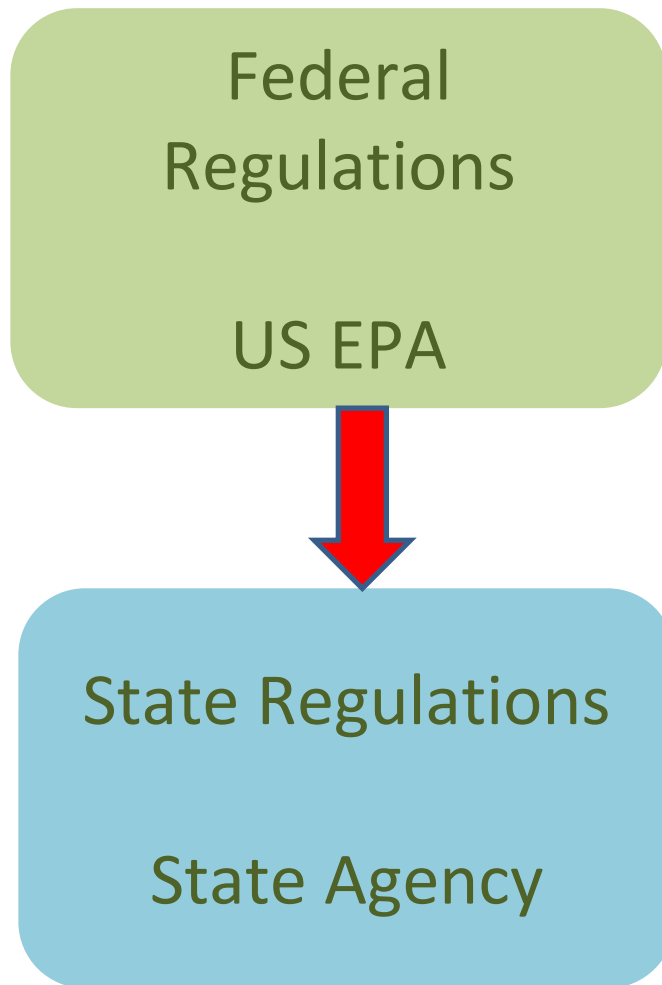
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Comment on Environmental Regulations



- Defines solid waste
- Recycled materials remain solid waste
- Requirements for managing ACM
- No specific rule or requirement on shingle recycling

- Follow federal rules when available
- Possibly develop new rules when rules are not available
- Protect human health and the environment

Shingle recycling is primarily a state issue

Why is Shingle Recycling Even Regulated?

- Discarded shingles meet the definition of solid waste under most regulatory programs.
- Unless otherwise specifically exempted, materials recovered by recycling remain a solid waste during the process of collection, storage, and processing. When is the exit point?
- If done poorly, shingle recycling can have a negative impact on human health and the environment.

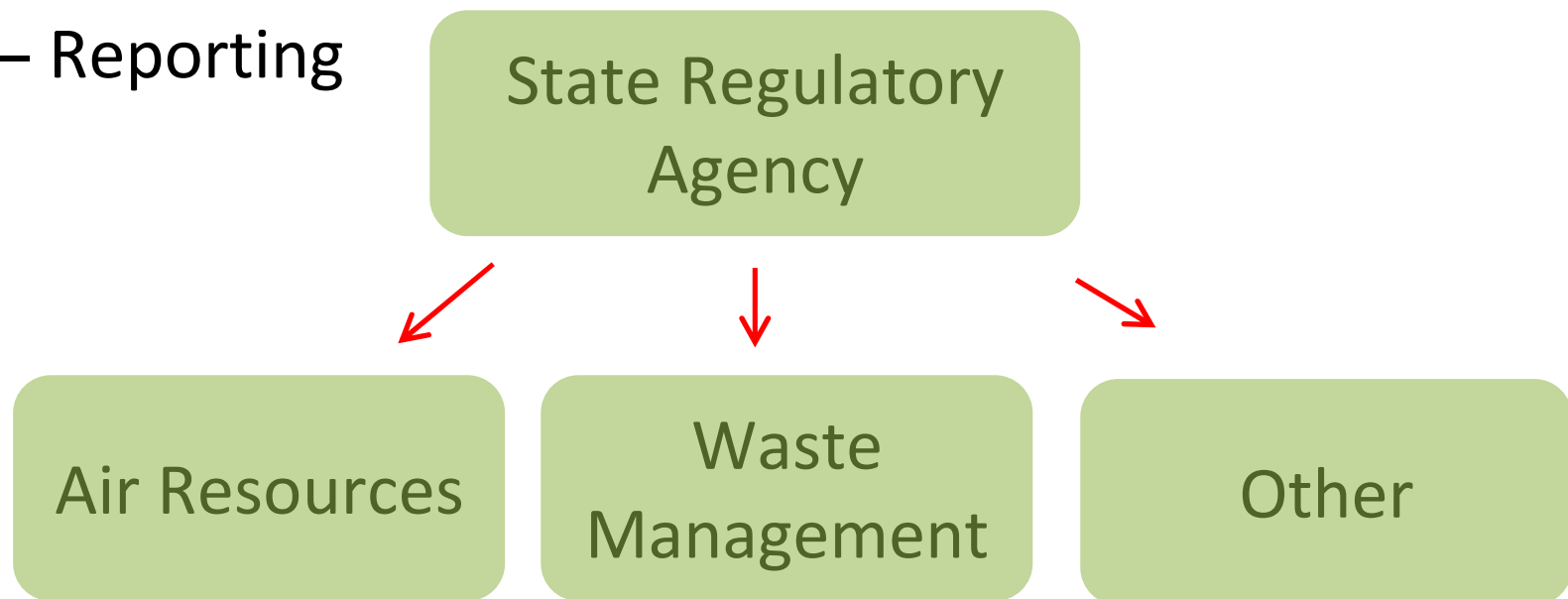
Note on Local Government Requirements

- Though not common, some local governments will have their own environmental regulations and agencies.
- Land use and zoning requirements must be considered.



Implications of Being Regulated

- State specific
- Potential elements
 - Notification or permit application
 - Agreement to comply with rules and permit conditions
 - Reporting



Common Components of Waste Processing Facility Permit

- Site plan and identification of storage and processing areas
- Operations plan
- Restrictions on waste and product storage
- Stormwater control provisions
- Plans for controlling dust, visible emissions, noise, and odor

Common Components of Waste Processing Facility Permit

- Sample testing requirements
- Reporting requirements
- Space to remove and store prohibited materials
- Closure steps
- Financial assurance

Typical Problems

- Failure to notify or to obtain permit
- Too large of a stockpile
- Not properly controlling stormwater
- No evidence of segregation



Definition of Speculative Accumulation from the EPA Hazardous Waste Rules

- A material is “accumulated speculatively” if it is accumulated before being recycled.
- A material is not accumulated speculatively, however, if the person accumulating it can show that the material is potentially recyclable and has a feasible means of being recycled; and ... the amount of material that is recycled, or transferred to a different site for recycling, equals at least 75 percent by weight or volume of the amount of that material accumulated at the beginning of the period.







Chapter 10. Organic Waste Management



Chapter 8.
Municipal Solid Waste Management



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Municipal Solid Waste Management

Why a Concern with Stockpiles?

- Fires
 - Size of pile
 - Insufficient to move fire response equipment around
- Water contamination
- Abandonment

Example Damage Case Related to Asphalt Shingles Recycling

- Speculative stockpiling – several thousand tons. Operator not able to finance project to process and sell ground shingles to end users. Site eventually abandoned, land owner paid for clean-up.



Material Storage Limits - Colorado

- 6 CCR 1007-2, Part 1. 8.3.1(A): “After an initial accumulation period a recycling facility must be able to show that the quantity of recyclable materials that were recycled during each successive calendar year was at least 75% of the quantity of recyclable materials in inventory. The accumulation period is based on a 3-year rolling average of the facility’s stock of the recyclable material at the end of the previous calendar year in order to allow for variations in the market.”

Material Storage Limits - Texas

- Title 30, Part 1, Chapter 328, Subchapter A, Rule §328.4(b):

(b) Recyclable material may be accumulated or stored at a recycling facility only under the following conditions:

(1) the facility accumulating it can show that the material is potentially recyclable and has an economically feasible means of being recycled;

(2) within 270 days after the effective date of this rule, or 270 days from the commencement of a new facility's operations, the amount of material recycled, or transferred to a different site for recycling, equals at least 25% by weight or volume of the material accumulated 90 days from the effective date of this rule or 90 days from the commencement of a new facility's operation; and

(3) during each subsequent six-month period, the amount of material that is recycled, or transferred to a different site for recycling, equals at least 50% by weight or volume of the material accumulated at the beginning of the period.

Material Storage Limits - Florida

- As stated in 62-701.710(2)(e), a Waste Processing Facility Permit Application shall include:
 - “Identification and capacity of any on-site storage areas for recyclable materials, non-processable wastes, unauthorized wastes, and residues.”

Specific Considerations for Asphalt Shingles Recycling

Possible Permitting Needs Specific to Asphalt Shingles



Waste Processing Facility

- Solid waste section permit
- Air section permit
- Possible local permits



HMA Facility

- Air section permit
- Possibly solid waste if material stockpiled or processed on site
- Possible local permits

Asbestos and Asphalt Shingles

- Strong evidence that asphalt shingles will rarely contain asbestos, but attached materials may
- Frequency of “other” materials showing asbestos presence is low



Database collected for the “Environmental Issues” CMRA white paper showed asbestos detection in 1.5% of more than 28,000 samples

Regulatory Needs with Respect to Sampling

- The goal is assess whether target material will exceed a regulatory threshold
 - For some waste materials, the concern is the average content of problematic constituent
 - For other materials, the concern is never allowing material above a certain content to be processed
- Typical steps
 - Baseline sampling
 - Routine sampling

Asbestos Sampling Approach – Bulk, Unprocessed Shingles

- Who conducts?
- How to conduct?
- Sampling frequency?
- Analysis method?
 - PLM
 - TEM?



Examples of Sampling Frequencies for Asbestos in Asphalt Shingles

STATE	SAMPLING FREQUENCY
Colorado	<ul style="list-style-type: none"> • No minimum published¹ • Roof to Roads: 3 for roof <1,000 sq. ft; 5 for roofs 1,000 to 5,000 sq. ft; 7 for roofs >5,000 sq. ft • Other project-specific requirements have included 1 sample per 500 tons
Florida	<ul style="list-style-type: none"> • No minimum published in rules • Pilot project: 1 sample per 25 tons
Georgia	<ul style="list-style-type: none"> • 1 sample for PLM per 1,000 tons¹
Maine	<ul style="list-style-type: none"> • No sampling required for residential² • One composite sample per load required for commercial²

1. Colorado Department of Public Health and Environment
2. Georgia DOT (2001). Section 402 – Recycled Hot Mix Asphaltic Concrete.
3. Shinglerecycling.org.

Summary

- Asphalt shingle meet the normal definition of solid waste, even when recycled, and thus appropriate regulations need to be considered.
- Regulations pertaining to asphalt shingle recycling vary by state.
- It is important to discuss your project with the regulatory community early in the process.

Summary

- Be prepared to discuss successful examples of shingle recycling.
- Propose a facility and operation plan that employs state-of-the-practice techniques and good housekeeping practices. Recognize past concerns with excessive stockpiles of waste and be proactive with your plan.
- Asbestos is likely to remain an issue of concern. Acknowledge this concern but be prepared to educate using the large and growing database available.