Implementing the Beneficial Use Statute
Industry Training

Department of Environmental Quality

Office of Waste Management and Radiological Protection

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Solid Waste Regulation

- Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended
- Michigan's Solid Waste Management Act Administrative Rules
- Subtitle D of the federal Resource Conservation and Recovery Act of 1976, as amended

Michigan Solid Waste Policy

- Views waste as a resource
- Challenges decision making based on the three principles of sustainability: economic vitality, ecological integrity, and improved quality of life.
- Stakeholder driven development process. Released in May 2007.
- Next Steps: Governor's Recycling Council convened to guide implementation of Solid Waste Policy.

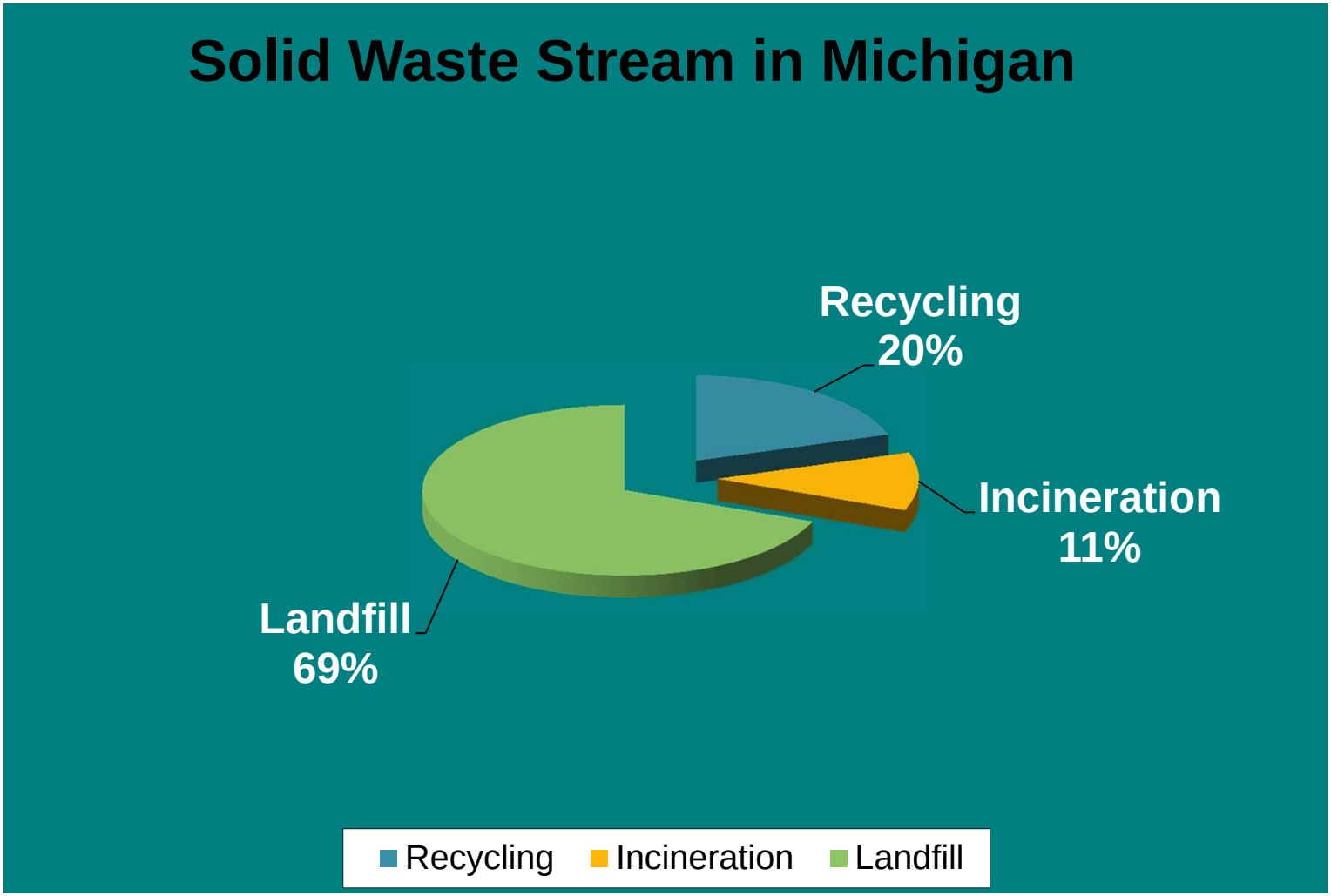
Waste Utilization

- Using waste, site or source separated materials, or other approved material for beneficial purposes
  - reuse
  - recycling
  - composting
  - energy recovery
  - gasification
  - anaerobic digestion
  - etc.

Municipal Solid Waste

Where We Are Today

1999 Data Collection by Michigan Recycling Coalition



Recycling rate Includes yard clippings, and about a 95% recovery rate for beverage containers covered by the bottle deposit law.

2013 Industrial By-Product Reuse

Material	Recycled	Disposed	Percent Recycled	Percent Volume Change from 2012	2009 Volumes	Percent Volume Change from 2009
Pulp/paper/wood sludge	121,672	143,312	46%	+27%	39,889	+205%
Shingles	31,580	?	?	+33%	19,650	+61%
Scrap Wood[4]	69,020	?	?	-27%	26,432	+161%
CKD	43,114	239,657	15%	-22%	29,081	+48%
Foundry Sand	102,156	242,520	30%	+14%	66,870	+53%
Food Processing[3]	35,121	?	?	-22%	16,073	+118%
Coal Ash[2]	395,047	1,205,242	25%	+2%	174,900	+126%
Drywall	3,296	?	?	+3%	1,048	+208%
FGD	32,575	?	?	-6%	32,328	+1%
Wood Ash[1]	6,983	120,905	5%	+113%	5,592`	+10%
Totals[3]	847,722	?	?	+1%	411,863	+106%

Why Recycle?

- ✓ Good For Economy
- ✓ Creates Jobs
- ✓ Reduces Waste
- ✓ Good for Environment
- ✓ Saves Energy
- ✓ Preserves Landfill Space
- ✓ Prevents Global Warming
- ✓ Reduces Water Pollution
- ✓ Protects Wildlife
- ✓ Creates New Demand

Annual Benefits of Using Coal Combustion Products:

Fly ash in concrete = 15.0 million tons used in 2005
FGD Gypsum in wallboard = 8.2 millions tons used in 2005

Saved 158 trillion BTUs of energy ….enough to provide electricity to over 4 million homes for a year.

It also saved 11.2 million tons of CO_2 and 10,500 tons of methane (greenhouse gases) from being emitted into our atmosphere year…..similar to taking 1.9 million cars off the road for a year.

Annual benefits of using foundry sand:

Application	Amount used annually
Road base	144,288 tons
Construction fill	1,140,914 tons
Asphalt pavement	494,390 tons
Concrete pavement	303,531 tons
Manufactured soils	220,949 tons

- 212 billion BTUs of energy saved per year
  - Enough to provide electricity to over 5,500 houses for a year.
- Over 20,000 tons of CO2 emissions prevented
  - Equivalent to taking 3,382 cars off the road for a year.

Beneficial Use Regulations

- PA 178 of 2014 – amends parts 31, 85, 115, and 201
- PA 179 of 2014 – amends Part 201
- PA 180 of 2014 – amends PA 162 of 1955

Ways Materials are Exempted from Solid Waste Regulation

- Prior authorizations
  - Generic site/source separated
  - Site specific site/source separated
  - Inert (for general reuse or site specific reuse)
  - Agricultural use approvals
  - Self-declared

- Beneficial use statute
  - Beneficial use by-products
  - Listed as not a waste (Section 11506)
  - Listed as inert
  - Listed as site/source separated

Prior Authorizations

- Self-declared
  - Verso Paper
  - GM
  - Grand Haven BLP
  - USG
- Generic
  - water softening limes
  - fish waste
  - ethanol syrup
- Site specific
  - Cadillac Castings
  - Bentek
  - AUA's

Materials defined as Beneficial Use By-Products

- Cement Kiln Dust/Lime Kiln Dust: Particulate matter collected in air emission control devices serving Portland cement kilns and lime kilns.
- Coal Bottom or Wood Ash: Ash particles from combustion of coal or any type of ash or slag resulting from wood burning.
- Coal or Wood Ash: Material recovered from an air pollution control system or non-combusted residue from combustion of coal, wood, or both (although only cementitious ash is suitable for use as fill).
- Dewatered Grinding Sludge: from public transportation agency road projects.
- Flue Gas Desulfurization Material: Material recovered from air pollution control systems that capture sulfur dioxide during wood, coal, or fossil fuel combustion including synthetic gypsum.

Materials defined as Beneficial By-products (continued)

- Foundry Sand: Silica sand used in metal casting process from ferrous or nonferrous foundries.
- Lime Softening Residuals: from treatment and conditioning of water for domestic use or community water supply.
- Mixed Wood Ash: Material recovered from air pollution control systems or non-combusted residue from combustion of wood, scrap wood, railroad ties, and tires.
- Pulp and Paper Mill Ash: Non-combusted residue remaining after combustion of coal, wood, pulp and paper mill material, wood or biomass pellets, rail road ties, tires, and scrap wood.

Materials defined as Beneficial By-products (continued)

- Pulp and Paper Mill Material: Materials generated at pulp and paper mills including wastewater treatment sludge; rejects from screens, cleaners, and mills; bark, wood fiber, and chips; scrap paper and causticizing residues.
- Soils Washed or Removed from Sugar Beets.
- Spent Media from sandblasting: with uncontaminated soil, newly manufactured, and unpainted steel.
- Stamp Sands: Sand remaining after stamping and processing copper bearing ores.

Specific Beneficial Uses for By-Products

- **Beneficial Use 1** means use as aggregate, road material, or building material if it will be bonded or encapsulated by cement, limes, or asphalt.
- **Beneficial Use 2** means use as construction fill, road base, soil stabilizer, or road shoulder material.
- **Beneficial Use 3** means application of material as a fertilizer, a soil conditioner under Part 85, or a liming material under 1955 PA 162.
- **Beneficial Use 4** means use to stabilize, neutralize solid, or treat waste; to treat wastewater or sludge; to stabilize hazardous substances; or to serve as landfill construction material.
- **Beneficial Use 5** means soil mixtures using foundry sand and organic material to manufacture soil.

USE/MATERIAL	Bonded by lime, cement, or asphalt Beneficial Use 1	Construction fill under impervious surface/Road shoulder Beneficial Use 2	Land Applied Beneficial Use 3	Remediate/ treat waste or used as fill at landfills Beneficial Use 4	Soil blending Beneficial Use 5	Flue gas scrubbing reagent
Wood ash/coal bottom ash			X			
Wood ash/coal ash	X	X		X		
Pulp/paper mill ash	X	X	X	X		
Mixed wood ash	X	X	X	X		
Cement kiln dust/Lime kiln dust	X	X	X	X		X
Foundry sands (ferrous/aluminum)	X	X	X	X	X	
Stamp sands	X	X				
Pulp/paper mill material			X			
Sand blasting media from new products	X	X				
Dewatered concrete grinding slurry	X	X	X	X		
Lime Softening residuals			X	X		
Sugar beet soils			X			
Flue gas desulfurization sludge	X		X			

Analytical Requirements

- Beneficial Use 1 – no specific testing required. Material can't be a regulated hazardous waste.
- Beneficial Use 2 – must perform leaching tests on 11 metals. Limit = 20 times the Part 201 generic health based drinking water criteria.
- Beneficial Use 3 – MDARD dictates testing protocol. Cumulative pollutant loading rates are set for 8 metals.
- Beneficial Use 4 - no specific testing required. Material can't be a regulated hazardous waste.
- Beneficial Use 5 – limits set for total and leachable levels of 10 metals, benzene, formaldehyde, phenol, and trichloroethylene.

Beneficial Use 2

USES

- Construction fill on non-residential property
  - Placed at least 4 feet above seasonal high groundwater table.
  - Must not come into contact with surface water.
  - Is covered with concrete, asphalt , or other material approved by the DEQ.
  - Less than 4 feet thick unless under a building where there is no limit .
- Road base or soil stabilizer less than 4 feet thick.
- Road shoulder material less than 4 feet thick covered with concrete, asphalt, or gravel.

Conditions on Use

- Stored at the site of generation or use for less than 3 years.
- Stored in a manner that maintains usefulness, controls wind dispersal, and prevents loss beyond storage area.
- Storage does not impact groundwater or surface water.
- Must be legitimate use by being used according to generally accepted engineering, industrial, or commercial standards.

Conditions on Use (continued)

- Generator or broker must notify DEQ of any site that will exceed 5,000 cubic yards of material prior to placement.
- Generator or broker of over 1,000 cubic must report yearly reuse volumes to DEQ.
- A contractor, consultant, or agent of the owner must tell the owner that beneficial use by-products have beneficial use for Beneficial Use 2 on the property.
- The owner of a property must tell the future owner that beneficial use by-products have beneficial use for Beneficial Use 2 on the property.

Land Application

Land Application

- The land application of the following materials as a fertilizer, soil conditioner, or liming material is regulated by the Michigan Department of Agriculture and Rural Development:
  - Wood ash
  - Coal bottom ash
  - Pulp and paper mill ash
  - Cement kiln dust
  - Lime kiln dust
  - Foundry sands
  - Pulp and paper mill material
  - Dewatered concrete grinding slurry
  - Lime softening residuals
  - Sugar beet soils
  - Flue gas desulfurization sludge

Notifications/Reporting

- Beneficial Use 1 – generator/broker of over 1,000 cubic yards send yearly report to DEQ.
- Beneficial Use 2
  - Generator/broker of over 1,000 cubic yards send yearly report to DEQ;
  - Generator/broker notifies DEQ of any site receiving over 5,000 cubic yards;
  - A contractor, consultant, or agent of the owner must tell the owner that beneficial use by-products have ben use for Beneficial Use 2 on the property;
  - The owner of a property must tell the future owner that beneficial use by-products have ben use for Beneficial Use 2 on the property;
- Beneficial Use 3 – Generator/broker registers/licenses with MDARD.
- Beneficial Use 4 – Generator/broker of over 1,000 cubic yards send yearly report to DEQ.
- Beneficial Use 5 – Generator/broker of over 1,000 cubic yards send yearly report to DEQ.

Conditions on Use (Ben Uses 1,2, 4, and 5)

- Not a regulated hazardous waste.
- Allows for storage at site of generation or reuse for 2 years before 75% needs to be reused in the third year.
- Must be stored in a manner that maintains usefulness, controls blowing, and prevent loss of the material beyond storage area.
- Stored in a manner that protects groundwater and surface water;
- The use is a legitimate use.
- Use is consistent with generally accepted engineering, industrial, or commercial standards.
- Storage and use must comply with NREPA.
- No open dumping allowed.

Petitioning the DEQ

The recent changes allow the DEQ to approve:

- Materials other than asphalt, concrete, or gravel to cover Beneficial Use 2 projects.
- Beneficial Use 4 materials for construction at licensed landfills.
- Additional materials as beneficial use by-products, inert material, source separated materials, or low-hazard industrial waste.
- Additional waste to the list of pulp and paper mill material.
- Approve the use of beneficial use by-products for Beneficial Use 2 at residential properties.
- Materials as a beneficial use by-product that do not meet the listed contaminant limits based on specific site conditions.

Petitioning Process

- The proposed rule changes add back in a rule similar to old Rule 118.
- Until such time as the new rules are passed all petitions will be judged on a case by case basis but if the applicant follows old Rule 118 they will considered to be in compliance with Part 115

Other Exemptions Contained in the Beneficial Use Statute

Statutory Exemptions

- Ferrous or non-ferrous scrap.
- Foundry or steel mill slag.
- Garbage that is composted or land applied.*
- Coal bottom ash used as cold weather road abrasive.*
- Stamp sands used as cold weather road abrasive.*
- Non-hazardous secondary material approved for combustion under 40 CFR Part 241.*

Inert Materials

- Rocks
- Trees, stumps, and similar land clearing debris.
- Uncontaminated excavated soil or dredge material.
- Construction brick, masonry, pavement, or broken concrete.
- Asphalt pavement or concrete pavement.

Inert Criteria

- Old Criteria – Act 307 Type B criteria based on a 1 in a million risk.
- New Criteria – Part 201 generic residential criteria based on 1 in 100,000 risk.
- Background as defined by Part 201.

Source Separated Materials

- Glass, metal, wood, paper, plastic, etc.
- Scrap wood, rail road ties, tires, or paint solids used as fuel.*
- Drywall or FGD used to produce drywall.*
- Shingles used for fuel or to produce hot mix asphalt.*
- MSW incinerator ash used for ADC.*
- Utility poles used for poles or posts.
- Rail road ties used for landscaping.
- Recovered paint solids used as fuel*
- Rail road ties used in landscaping

Low Hazard Industrial Waste

- Coal ash or wood ash
- Cement kiln dust
- Pulp and paper mill material
- Scrap wood
- Water treatment sludges
- Foundry sand
- Mixed wood ash
- Street cleanings
- Asphalt shingles
- New construction drywall
- Chipped or shredded tires
- Copper slag and stamp sands

Storage Requirements

- Beneficial use by-products – requires no permit or license. The use or storage can't violate a groundwater or surface water criteria.
- Source separated materials – none listed.
- Inert material – none listed.
- Low-hazard industrial waste – owners/operators of a unit must ensure no violation of Part 31 and that no contamination has resulted after closure of the storage unit.
- Other wastes – must be stored in a Rule 130 contained waste pile.

Speculative Accumulation

- Beneficial use by-products – 3 years at the site of generation or use.
- Source separated material – 1 year.
- Low-hazard industrial waste – 3 years at the site of generation and 1 year at site of use
- Inert material – no limit.
- Yard clippings – 3 years.

Relationship of Beneficial Use Statute to Other Environmental Protection Statutes

- **Part 31** – Water Resources Protection
- **Part 201** – Environmental Remediation
- **Part 301** – Inland Lakes and Streams
- **Part 325** – Great Lakes Submerged lands

Part 31

- The storage or use of beneficial use by-products can not violate either groundwater or surface water protection criteria.
- A person does not need a Part 31 permit for the storage, placement, or use of beneficial use by-products done in compliance with Part 115.

Part 31 Water Quality Standards

- Standards are the most restrictive of any of the following:
  - The health based residential criteria.
  - The aesthetic criteria.
  - The groundwater/surface water criteria (default GSI criteria have been developed depending on where a material will be used.)

Part 201

- A person may use background as defined in Part 201 to compare excavated soils or dredge material to determine if the material is contaminated.
- Contamination caused by the storage, placement, or use of beneficial use by-products or inert material would not create a "facility" if used in compliance with Part 115.
- The placement, storage, or use of beneficial use by-products in compliance with Part 115 is not a "release."

Parts 301 and 325

- Recent statutory changes allows an applicant of a dredge permit the ability to use their knowledge to determine if their dredge spoils have the potential to be contaminated.
- Any project in a known or suspected location that could contain contaminated spoils will need to test in accordance with the dredge procedure unless the material is going to a licensed landfill, a Corps of Engineers confined disposal facility, or is being left upland, on-site, with clean cover and a deed restriction
- The DEQ is in the process of amending the dredge procedure to comply with the recent changes.

Conforming Rules

- Rescinded Rules
  - 113 (coal ash used to reclaim land)
  - 114 (listed inert materials)
  - 115 (inert criteria)
  - 116 (site specific inert)
  - 118 (petition to classify waste)
  - 119 (site/source separated materials)
  - 122 to 127 (low-hazard industrial waste criteria)

Conforming Rules (continued)

- Proposed changes
  - Numerous definitions added to the statute are removed from the rules.
  - Wrong references due to recent statutory changes listed in the rules are fixed.
  - Wrong references due to past statutory/rule changes are fixed.
  - Incorrect scientific notations are fixed.
  - Petitioning rule is added back in.

Conforming Rules (continued)

- Timing
  - October 10, 2014 – Request for Rule (RFR) Making submitted to the Office of Regulatory Reinvention (ORR).
  - October 20, 2014 - RFR is approved.
  - October 23, 2014 - draft rule is approved by ORR.
  - November 25, 2014 – Legislative Service Bureau changes are made.
  - December 10, 2014 – DEQ Director signs Certificate of Adoption

Protecting Your Liability

- If you believe that there is any chance for there to be variability in the process that generated your beneficial use by-product you may want test more than just one sample.
- Since the storage and use of your beneficial use by-product can not violate any water quality standards and they can be stored for up to 3 years you may want to undertake some "due diligence" and inspect any site a broker or end-user may place your material
- You should decide if you want your material placed/used at many sites or if you prefer to use larger volumes at fewer locations

Questions

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