



EGLE Classroom EnviroSchool Webinar Series

December 6, 2022: Talking Trash at Home and School

For further resources on materials management and recycling in Michigan, check out these links shared by our presenters and check out EGLE's Solid Waste and Recycling pages below.



[EGLE Classroom](#) Environmental Education Resources:

- EGLE [Lending Station](#)
 - Waste Management EnviroScape Model (includes recycling activity pictured)
- [MEECS](#)
 - Land Use Unit
 - [Brownfields & Greenfields Extension](#)
- EGLE [Career Series](#)

[Michigan.gov/SolidWaste](#)

- How Landfills Work Educational Toolkit
- Sustainable Materials Management Hierarchy
- Information on Deconstruction
- Other waste management programs including hazardous and medical waste, e-waste, scrap tires, and composting

[Michigan.gov/EGLERecycling](#)

- Recycling Raccoons
- Recycling Minute, Sustainability Shorts



Sustainability Shorts

- [Electronics](#)
- [Wrapping Paper](#)
- [Glass Straws](#)

Other Resources from Q&A and Chat

- [America Recycles Day](#) – November 15
- Waste Management educational resources: <https://www.wm.com/us/en/inside-wm/social-impact/education-resources>
- Great Lakes Literacy education exploration (GLLee) Marine Debris by Michigan SeaGrant: www.cgll.org
- Great Lakes Great Responsibility – Challenge to pick up 1 million pieces of trash in the Great Lakes Basin – www.greatlakeslove.org
- Greenpeace Story of a Spoon: www.greenpeace.org/international/story/7361/the-story-of-a-spoon
- Detroit Dirt - Composting Program: [MISSION — Detroit Dirt](#)
- EGLE's Food Waste and Recovery Page: <https://www.michigan.gov/egle/about/organization/materials-management/composting/food-waste>
 - The April EnviroSchool session will focus on food waste recovery and composting as key components of Michigan's climate plan – registration will open soon for this event!

What actually causes the smell at landfills?

Tim Unseld EGLE's Landfill Gas Specialist explains:

- **Landfill gas** from the bacterial breakdown of waste consists of **methane**, a colorless, odorless gas produced by methanogenic bacteria and other trace gasses including **hydrogen sulfide** and other **mercaptans** from sulfur reducing bacteria.
- Hydrogen sulfide and other mercaptans have very low odor thresholds (in the low ppb range) and cause the odor present in landfill gas, landfill gas condensate and leachate.



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- Methane is odorless, and an odorant is added to it for safety reasons, but landfill gas has an odor due to mercaptans.
- We manage landfill gas both because of its explosive and flammable properties from methane and its odor potential due to mercaptans.

More landfill gas questions? Feel free to contact Tim Unseld: UnseldT@michigan.gov

What are some examples of non-recoverable waste?

In general, "nonrecoverable" refers to contaminated materials where there is no technology to separate the contaminant from the commodity. It also means a material where there is no known end market. A specific example might be PFAS contaminated sludge. It could also include contaminated recyclables where the contaminants cannot be removed. Other examples include:

- adhesive tubes (like panel adhesive, floor adhesive, etc.) where the adhesive contaminates all the cardboard and metal tube packaging for that product.
- small granular material that is mixture of all sorts of small, fractionated materials of all kinds (When we do waste sorts/waste characterizations we call them 'fines')
- many construction materials end up as waste given that they are multi-material, have laminated layers, are impregnated with glues and chemicals, etc.

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