

# **ANAEROBIC DIGESTION:**

## **Solid Waste Regulations**

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**The 2013 Forum on Anaerobic Digester Production of Energy:  
New Opportunities for projects in Michigan**

# 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: Solid Waste Advisory Committee 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 (i.e. anaerobic digestion, gasification, pyrolysis, incineration, etc.)

# Materials Exempt From Regulation as a Solid Waste Going to ADs

- Statutory Exemptions
  - Organic waste generated in the production of livestock and poultry
  - Liquid waste
  - Site/Source separated materials (i.e. garbage and other materials approved by the department)

# Materials Exempt From Regulation as a Liquid Industrial Waste Going to ADs

- Food processing residuals
- Site separated materials
- Source separated materials

# On Farm Anaerobic Digestion Inputs

- On-farm generated manures
- Ethanol syrup
- Fish wastes
- Food processing residuals
- Fats, oil, and grease
- Garbage (i.e. rejected food wastes)

# On Farm Anaerobic Digestion Conditions

- Less than 20% by volume
- No speculative accumulation
- Storage requirements
- No nuisance conditions from processing, storage, or use
- Yearly report to DEQ
- Use does not create facility
- Digestate management
  - Landfilled
  - WWTP
  - Land applied according to GAAMPS
  - Solids used as animal bedding
  - Other uses approved by DEQ



# Commercial Anaerobic Digesters

- Fremont Community Digester - Operating
- Swedish Bio Gas - Operating
- MSU Commercial AD – Operating
- Spart (Lowell) – Planning Stage

# Fremont Community Digester Approved Feedstocks

- Manures
- Food processing wastes
- FOG
- Ethanol Syrup
- Glycerin
- Brine from cherry processing
- Blood from poultry processing

# Digestate Management

- The liquids/solids (digestate) that result from the anaerobic digestion are regulated solid waste
- Contaminants found in the digestate
  - Metals, Chlorides, VOCs
- The digestate can be land applied under:
  - A site/source separated exemption
  - An Agricultural Use Approval

# Air Permit Requirements



## Environmental Regulations Affecting Anaerobic Digesters

Michigan Department of Environmental Quality • (800) 662-9279 • www.michigan.gov/deq

The Michigan Department of Environmental Quality (MDEQ) regulates activities that impact the state's air, water, and land resources. This document discusses the environmental regulations that may apply to the installation and operation of an anaerobic digester (AD) in Michigan. It is important that you understand what regulations apply before construction begins because a permit or authorization may be required. The regulatory audit below can be used to quickly determine what regulations might apply to your AD project. Additional information about ADs can be found at [AD website]. MDEQ contact information can be found on page 6.



### REGULATORY AUDIT FOR ANAEROBIC DIGESTERS

The following ten questions will help you identify the environmental requirements that may apply when installing or operating an AD. Detailed information on these requirements can be found on the pages following the audit.

1. Is the biogas generated by the AD going to a generator? (See page 2)	<input type="checkbox"/> Yes - Continue	<input type="checkbox"/> No - Go to question 4
2. Is the heat input capacity of the generator greater than 10,000,000 Btu/hr? (See page 2)	<input type="checkbox"/> Yes - An air permit is required for the generator. Go to question 4.	<input type="checkbox"/> No - Continue
3. Are more than two generators going to be installed? (See page 2)	<input type="checkbox"/> Yes - An air permit may be required. Contact MDEQ district office. Continue.	<input type="checkbox"/> No - Continue
4. Is the biogas generated by the AD going to a boiler or flare? (See page 2)	<input type="checkbox"/> Yes - Continue	<input type="checkbox"/> No - An air permit may be required. Contact MDEQ district office. Go to question 6.
5. Is the SO <sub>2</sub> emission rate from the boiler or flare greater than 1 pound per hour? (See page 2)	<input type="checkbox"/> Yes - An air permit is required. Continue.	<input type="checkbox"/> No - Continue
6. Will material other than manure be added to the digester? (e.g. food processing wastes)? (See page 3)	<input type="checkbox"/> Yes - Contact MDEQ district multi-media coordinator to determine requirements prior to land applying or composting effluent. Continue.	<input type="checkbox"/> No - Continue
7. Is this a community AD (an AD that accepts wastes from multiple sources)? (See page 3)	<input type="checkbox"/> Yes - Contact MDEQ district multi-media coordinator to determine requirements prior to land applying effluent. Continue.	<input type="checkbox"/> No - Continue
8. Will construction of the AD impact a wetland area? (See page 3)	<input type="checkbox"/> Yes - Part 303 permit required prior to any construction. Contact MDEQ, Land and Water Management Division. Continue.	<input type="checkbox"/> No - Continue
9. During AD construction, will one or more acres of earth be disturbed, or will earth be disturbed within 500 ft of a lake or stream. (See page 4)	<input type="checkbox"/> Yes - Soil erosion and sedimentation control permit required prior to any construction. Contact county. Continue.	<input type="checkbox"/> No - Continue
10. Will any additional chemicals be used for the AD? (see page 4)	<input type="checkbox"/> Yes - SARA Title III reporting requirements and Emergency Planning requirements may apply.	<input type="checkbox"/> No

# Air Regulations

- If the gas from the AD will be piped off-site, there are no air emissions so an air permit is not required for this activity.
- If the gas from the AD is going to a flare or boiler, a permit will not be required if the actual emission rate of sulfur dioxide (SO<sup>2</sup>) will not exceed 1 pound per hour
- If the gas will be used to power a generator, you will not need to obtain an air permit if the generator has a maximum heat input capacity of less than 10,000,000 Btu/hr

# Liquid Industrial Waste Regulations

- The following materials do not need to be hauled by a licensed LIW hauler if they are going to an anaerobic digester:
  - Food Processing Residuals
  - Site/Source Separated Material
    - Garbage (food waste)
    - Ethanol Syrup

# Legislative Fixes/Part 115 Exemptions

- Materials Appropriate for Anaerobic Digestion?
  - Fish Waste
  - FOG
  - Non-Livestock Manures
  - Other





# Contact Information

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