



Manure Composting

MNCC + MnDOT Compost Workshop

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Feedlot Program Overview

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Regulatory universe

15,000 feedlots in MN

- All are subject to state feedlot rules
 - 1,300 have operating permits
 - 1 manure compost site
- 50 counties delegated to oversee “smaller” sites



Large sites



Small sites



Manure storage sites

- You don't need animals to be regulated by the feedlot program/rules
 - Manure storage sites
 - Manure compost sites



Water quality based regulations

- Discharge standards
 - Locational restrictions
 - Technical criteria for manure storage
 - Land application of manure requirements
- Permits for construction
 - Operation of large sites

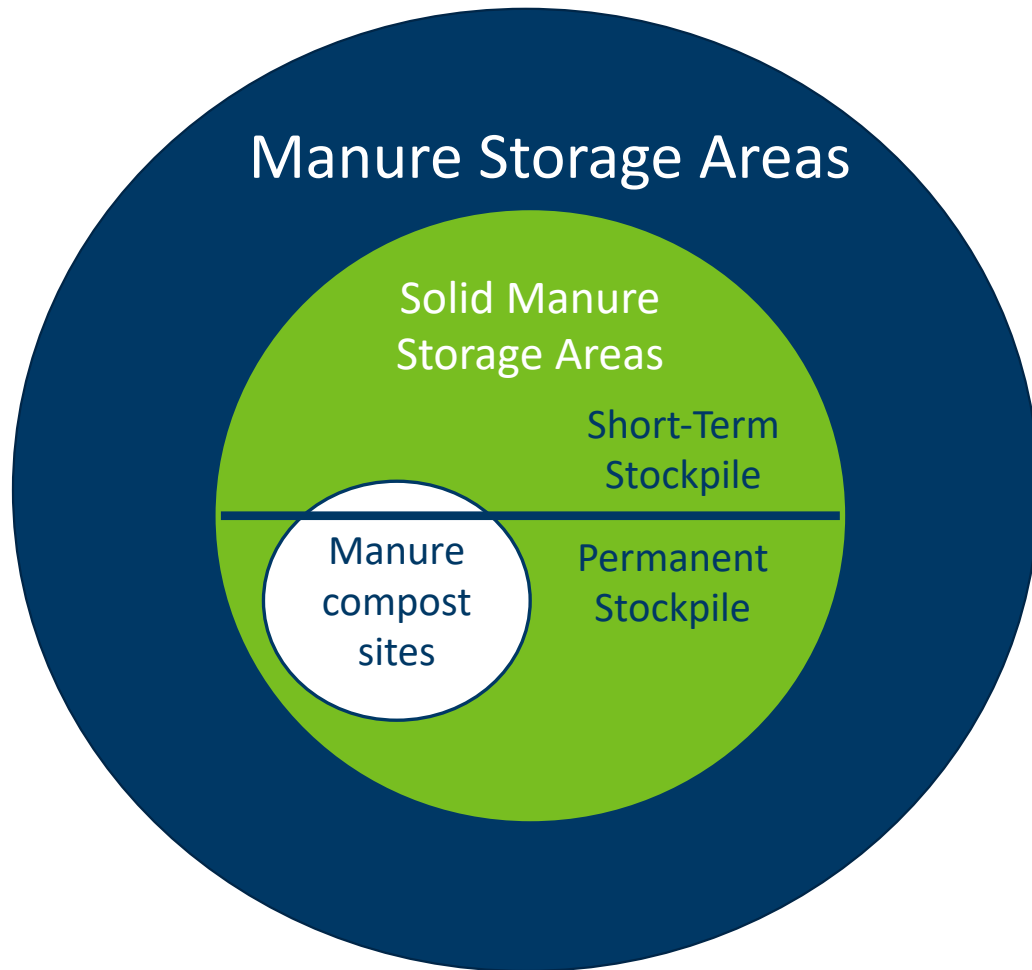




Manure Compost Operations and the Feedlot Rules

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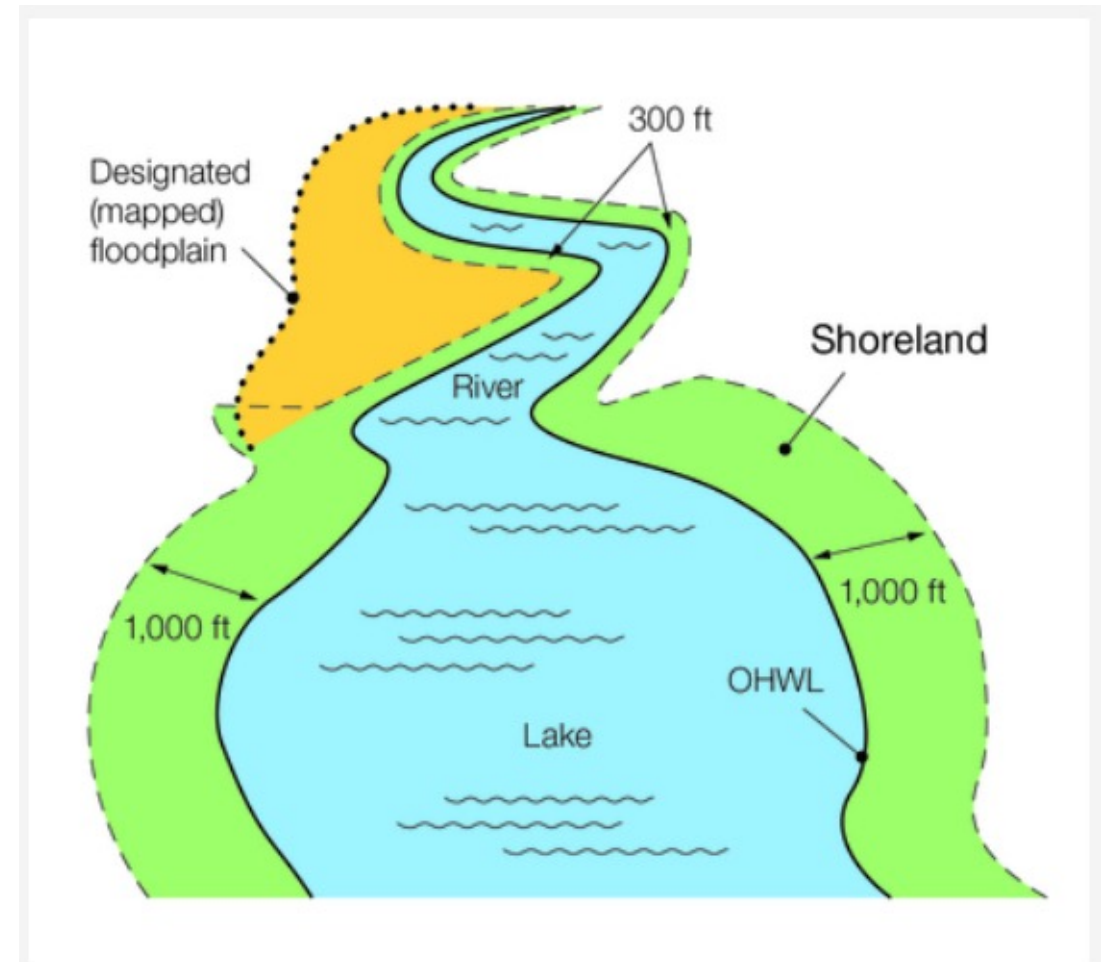
Manure storage areas



- All manure compost sites are considered manure storage areas
 - Stockpile
- Many manure stockpiles but few manure compost sites
 - Same general requirements as any other permanent manure stockpile
 - Location
 - Construction/operation
 - Permitting

Locational restrictions

- New manure storage areas prohibited within
 - Floodplain
 - Shoreland
 - Expansion of existing allowed to a point
 - 300 ft of a sinkhole
 - 100 ft of a well
 - 1,000 ft of a community well
 - 200 ft if not in DWSMA



Technical criteria for solid manure storage

Permanent stockpiles

- Can't use quarries, gravel pits, etc.
- Seepage limiting pad
 - Concrete, asphalt, compacted soil
- Prevent runoff going through the site
- Runoff collection may be needed
 - Site specific factors



Manure to compost



Manure



Soil Amendment

Composting manure requirements

Operational Requirements

- Windrow Method
 - 55°C for 3 weeks
- Static Pile Method
 - 55°C for 7 days
- Enclosed Vessel Method
 - 55°C for 24 hours
 - Stabilization period of 7 days
 - 55°C for 3 days during stabilization

Record Keeping Requirements (Permitted sites only)

- Quantities and sources of manure and bulking agents
- Temp and retention time
- pH
- Moisture content
- Particle size
- NPK ratio
- Soluble salt content



Permits for compost operations

- Permit required for construction in a permanent location
- Permit required for operation if 1,000 or more animal units (AU) of manure is processed
 - How many animals would it take to produce that much manure?
 - Type of manure
 - One year period

Ex. $\approx 1,550$ ton of turkey litter (hens) = 1,000 AU



Composting multiple products

Q: If I compost manure with other products what regulations apply?

A: Case by case determination

- Generally – if mostly manure than it would be regulated by feedlot program
- Some compost facilities already take some manure but are not regulated by the feedlot program



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