



Septage Regulations

- State Rules
 - Follow Fed Regs
 - NONE, may change in future
- State Guidelines
 - 2001, add detail to 503 requirements
- 503 Regulations
 - Federal Law
 - EPA enforced
 - Highlights that LAND Application is OK
- Local Ordinances (53 of counties have)
 - Pumping
 - Inspection
 - Application Sites

Land Application and 503s

- Defines Septage
- Requires Pathogen Control and Vector Attraction Reduction
- Requires Records to be Kept
- Sets Application Rates



Septage Definitions

- Federal definition
 - ***Septage means either liquid or solid material removed from a septic tank, cesspool, portable toilet, Type III marine sanitation device, or similar treatment works that receives only domestic sewage.***
- State definition, 7080.0020 Subp 31
 - *Septage means solids and liquids removed during periodic maintenance of an ISTS or that is removed from toilet waste treatment devices (non-flush toilets)*
- Examples
 - Septic tank, holding tank, portable toilet
- Approximately 300,000,000 gallons per year

What do those Definitions Include?

- Domestic waste
 - Single family homes
 - Apartments, cluster systems
 - Restaurants, offices, etc
- Portable Toilets
- Composting Toilets



Restaurant Waste

- Very high in fats, oils and grease
- Very high BOD
- Lower in Nitrogen
- Can cause yield problems because leaves can become coated.
- Waste very odorous
- MN Guidelines
 - Dilution



What is NOT Septage?

- Industrial waste
- Commercial waste
 - Example = slaughtering operation, food processing wastes or flammable traps
 - Regulated under MN Rules Chp 7002 and 7035
 - Contact MPCA district office, testing required and possibly permit
- Hazardous waste
- Class V system waste
 - If Haz. Waste~ Otherwise Holding tank

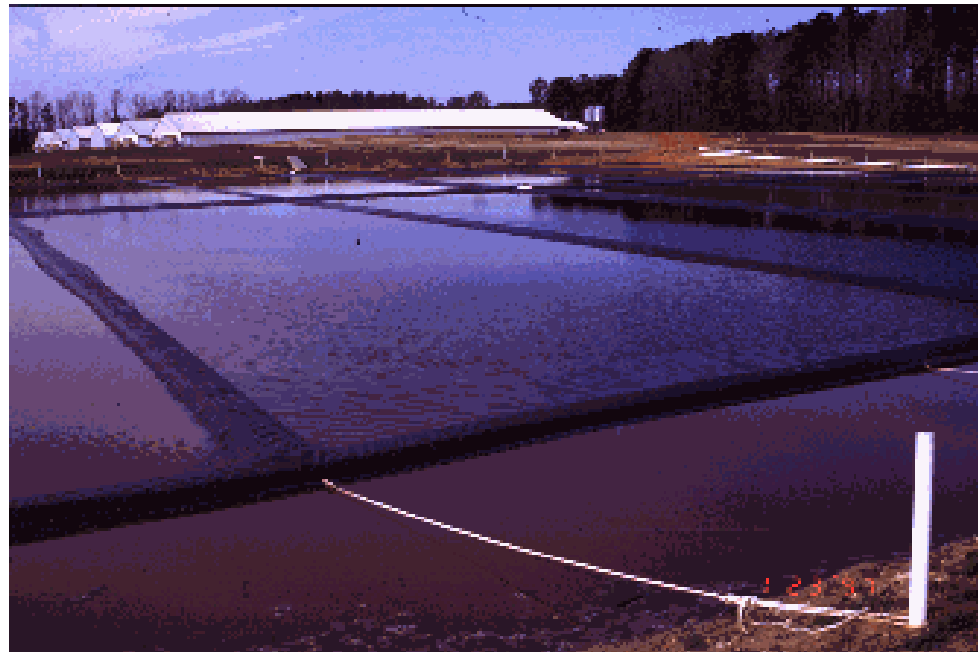
Choices

- Landfill (not encouraged in MN)
- Storage
 - Currently 0 in MN
- Waste Water Treatment Plant
 - 30% (MPCA)
- Land application
 - 70% [MPCA]



Storage

- Requires MPCA permit
- MN Rules Chap 7041
- Does not apply if mobile [Wheels]



Waste Water Treatment Plant

- May or may not accept
- Concern about overloading

○ BOD loading

- Septic tank average = 6,480 mg/l
- Holding tank average = 500 mg/l



Septage Issues

- Feelings
- Nutrients
- Pathogens
- Vectors
- Odors



The solution for Perception

- Professionalism

- Records

- Procedures

- Timing

- Locations

- Education

- You

- Public



Record Keeping For Each Site

- Location of each land application site used and map with areas marked which are useable
- Crops grown on site
- Maximum N application rate in lbs/year
- Running total of gallons of septage
- Description of method of pathogen reduction and vector reduction
- Certified statement

Record Keeping For Each Load

- Date of application of each load
- Total acres covered
- Total gallons applied
- Source of septage, home or facility
 - Property owner name or invoice number
- Type of waste
 - Septage
 - Grease trap, etc

The solution for Nutrients

- Nitrogen
- Phosphorus
- Loading rates
- Site use
 - Setbacks
- Application processes



Application Rates [MN]

- Daily

- 10,000 gal/acre

- Annual

- Crop need, MPCA worksheet to calculate

- The WHOLE Site

- Approximately 5 lbs of N and 2 lbs of phosphorus per 1000 gallons



The Solution for Pathogens

- Lime Stabilization
- Proper timing
- Crop uses
 - Timing



Liming Method

- Pump Tank
- ADD LIME
- Check pH
 - Temperature correction
- Reaction Time
 - 30 minutes after mixing
- Check pH
- Land Apply



Check pH & temperature

pH > 12



How Much Lime?

- 25 # per 1,000 gallons
- Stronger waste more lime



Goals for lime

- Pathogen Control
- Vector Control
- Odor Reduction
- Soil pH correction



Site Suitability {MN}

- No sand at surface
- It needs to soak in
- Depth to bedrock and saturated soils = 3'
(unless highly permeable = 5')
- Tiling depth is same as saturated depth
- Site must not frequently flood
- If slope > 6% must inject or incorporate immediately
- Can't apply > 12%



Site Considerations {MN}

- Setbacks
- Can't have ponded water/septage
- Can't apply from public roads/right of ways
- Area must be clearly identified
- Vehicle moving at all times during application
- Must be uniformly distributed
 - Splash plate or spreader required
 - Application tracking

Restrictions

Crop

1. Food Crops
2. Below surface
3. Feed Crops
4. Turf
5. Grazing
6. Public access
7. () with Liming

Time limit

- 14 months
- 38 months
- 30 days (0)
- 12 months
- 1 month (0)
- 12 months (0)



Public Access

- High
 - Populated areas
 - Turf farms
 - Plant nurseries
- Low
 - Ag land
 - Forests
 - Rural



Vector Attraction Reduction

1. Injection 'within 1 hour'
2. Tillage 'within 6 hours'
3. Lime stabilized





Questions