

Guidelines for co-mixing domestic sewage with animal manure

Combining sewage and manure, commonly referred to as “co-mixing”, was a common practice in the past. Co-mixing, while still allowed, is not a recommended practice when both animal manure and domestic sewage are produced at one facility. Keeping these materials separate allows each to be treated appropriately without introducing additional requirements to meet federal and state regulations.

What is sewage?

Sewage, and septage, are regulated at both the state and federal level due to the risks that these materials pose to human health and the environment when they are improperly disposed of.

Sewage is defined, in Minn. R. 7080.1100 subp. 73, as “waste produced by toilets, bathing, laundry, or culinary operations or the floor drains associated with these sources, and includes household cleaners, medications, and other constituents in sewage restricted to amounts normally used for domestic purposes.”

Additionally, Minn. R. 7080.1100 subp. 69 states, “Septage” means solids and liquids removed from an SSTS and includes solids and liquids from cesspools, seepage pits, other pits, or similar systems or devices that receive sewage. Septage also includes solids and liquids that are removed from portable, incinerating, composting, holding, or other toilets. Waste from Type III marine sanitation devices, as defined in Code of Federal Regulations, Title 33, Section 159.3, and material that has come into contact with untreated sewage within the past 12 months is also considered septage.”

Sewage disposal

All sewage produced in Minnesota must be disposed of in accordance with Minn. R 7080.2450 subp. 6. This rule requires that “Septage or any waste mixed with septage must be disposed of in accordance with state, federal, and local requirements for septage and other wastes.” As such, anyone wishing to co-mix sewage with animal manure is allowed to do so provided all state, federal, and local regulations are met. Currently, state regulations require adherence with the federal regulations found within 40 C.F.R. § 503 2017. Additionally, local units of government within Minnesota may have supplementary ordinance requirements that must be followed.

All material that comes into contact with sewage must be treated to the same requirements as sewage alone. Furthermore, any other regulations which apply to the material the sewage is mixed with must also be followed.

Federal 503 adherence

Compliance with federal regulations regarding the disposal of septage, and materials mixed with septage, while comprehensive are not overly burdensome. It should be noted however, that federal requirements for disposal of septage are more cost, and time, intensive than Minnesota’s manure management requirements.

Federal requirements currently include:

1. Annual application rates
 - $AAR = (N/0.0026)$
 - AAR = Annual application rate in gallons per acre per 365 day period
 - N = Amount of nitrogen in pounds per acre per 365 day period needed by the crop or vegetation grown on the land

2. Pathogen reduction
 - Site and crop harvesting restrictions
 - pH adjustment to 12
3. Vector reduction
 - Injection
 - Incorporation within 6 hours
 - pH adjustment to 12
4. Recordkeeping requirements
 - Location of disposal
 - Application site acreage
 - Application dates
 - Nitrogen requirements
 - Application rate
 - Certification statement
 - Pathogen control method
 - Vector control method

The above list is meant to highlight some of the requirements from 40 C.F.R. § 503 but is not intended to be used for compliance. 40 C.F.R. § 503 2017 can be found in full at <https://www.govinfo.gov/help/cfr>.

Recommended solution

It is not recommended to co-mix sewage and animal manure. Keeping these materials separate allows each to be treated appropriately without introducing additional requirements to meet federal and state regulations. Small volume sewage generation may be handled by installation of a small septic system [subsurface sewage treatment system (SSTS)], or a holding tank. Larger sewage generation facilities will likely benefit from a traditional septic system, or SSTS. Septic systems, or SSTS, must be permitted by the local unit of government or by the MPCA under a State Disposal System permit. Please contact your local governmental unit for specific requirements.

More information

For more information about co-mixing, contact the MPCA SSTS program at <https://www.pca.state.mn.us/water/ssts-staff-mpca> or 651-296-6300.