

Subsurface Sewage Treatment Systems

Disposal of non-sewage wastes from single-family dwellings served by subsurface sewage treatment systems

Introduction

Most of the liquid waste generated by rural households is considered to be sewage. Sewage, as described in the Subsurface Sewage Treatment Systems (SSTS) rules (Minn. R. ch. 7080), is defined as follows:

Sewage is a waste generated by toilets, bathing, laundry, or culinary operations or the floor drains associated with these sources, and includes household cleaners, medications, and other constituents restricted to amounts normally used for domestic purposes.

In accordance with state rules, all sewage generated by households must be discharged into the subsurface sewage treatment system (also known as a septic system) when a municipal sewer is not available.

However, in addition to sewage, there are other liquid wastes which are not classified as sewage by M.R. Chapter 7080 that need to be disposed. This factsheet describes the options for disposal of non-sewage liquid wastes for **single-family dwellings** which are served by SSTS. In the document, we will identify wastes that may not need to be discharged into a SSTS.

This factsheet does **not** apply to the disposal of non-sewage wastes:

- From multi-family dwellings, dwellings which also serve as a home business, or dwellings connected to municipal sewer. For those situations, please contact the Minnesota Pollution Control Agency's (MPCA) SSTS program (800-657-3864) for assistance.
- From either commercial or industrial establishments. For these situations, please contact the MPCA's Industrial Permits Section (800-657-3864) for assistance.

The proper disposal of non-sewage wastes from single-family dwellings served by SSTS is described below. Please contact the MPCA for assistance on any waste not listed in this factsheet. Furthermore, please check with appropriate local authorities to determine if more restrictive standards apply.

Chemical wastes

- Possible constituents of concern – *Hazardous chemicals, hazardous waste, solvents, pesticides, flammables, photo finishing chemicals, paint, dry-cleaning chemicals, unused products or substances, and unused medicines*
- Can the waste be discharged to a SSTS? *No*
- Is waste detrimental to SSTS? *Yes*
- Can waste be discharged into separate trench? *No*
- Can wastes be discharged to the ground surface? *No*
- Disposal Options – See MPCA website at: <http://www.pca.state.mn.us/>.

Footing and roof drainage

- Possible constituents of concern – *None*
- Can the waste be discharged to a SSTS? *No*
- Is waste detrimental to SSTS? *Yes, volume of water*
- Can waste be discharged into separate trench? *Yes*
- Can wastes be discharged to the ground surface? *Yes*

Floor drains from single-family garages

- Possible constituents of concern – *Oil, antifreeze and stored materials in garage (spills)*
- Can the waste be discharged to a SSTS? *No*
- Is waste detrimental to SSTS? *Yes*
- Can waste be discharged into separate trench? *No*
- Can wastes be discharged to the ground surface? *Yes. Daylight pipe must be visible to the owner, the discharge must stay on the property, the discharge must not enter surface water or conveyance to surface water, the discharge point must meet the water supply well setback. See MPCA factsheet regarding floor drains from garages at:*
<http://www.pca.state.mn.us/publications/wq-wwists4-05.pdf>.

Water conditioner waste – ion exchange units (water softener units)

- Possible constituents of concern – *Hardness, iron, arsenic, radium, chlorides*
- Can the waste be discharged to a SSTS? *Yes*
- Is waste detrimental to SSTS? *Unknown. Limited research on the affects to SSTS range from mildly beneficial to adverse. Limited anecdotal observations indicate scum production may be impacted. Backwash from newer salt efficient units will likely cause less adverse impacts on septic tank performance. Older inefficient softeners may be a problem with both volume and salt concentrations of the backwash. Performance of older units may improve if the operational settings are correct and the system is properly functioning.*
Some manufacturers of advanced treatment devices prohibit water softener backwash from being discharge to the treatment device. Some designers and installers prefer not to discharge the backwash into the SSTS. Chlorides are not treated in the soil.
- Can waste be discharged into separate trench? *Yes. Trench bottom must be above the periodically saturated soil or bedrock and the trench must meet water supply well setbacks.*
- Can wastes be discharged to the ground surface? *Yes. But the waste cannot be directly discharged to a surface water, wetland or intermittent stream (dry run). Waste must soak into the ground where it has been discharged. Discharge must stay on the property and not cause erosion or nuisance conditions.*
- Do plumbing requirements apply? *Yes. The discharge must be through a code complying plumbing receptor and building sewer in accordance with the MN Plumbing Code.*

Water conditioner waste – precipitate forming units (example – iron filters)

- Possible constituents of concern – *Iron*
- Can the waste be discharged to a SSTS? *Yes*
- Is waste detrimental to SSTS? *Yes. Discharge to a SSTS is not recommended due to the nature of the solids.*
- Can waste be discharged into separate trench? *Yes. The trench bottom must be above the periodically saturated soil or bedrock and trench must meet water supply well setbacks. Trench should be preceded by a septic tank.*
- Can wastes be discharged to the ground surface? *Yes. The waste cannot be directly discharged to a surface water, wetland or intermittent stream (dry run). Waste must soak into the ground where it has been discharged. Discharge must stay on the property and not cause erosion or nuisance conditions.*
- Do plumbing requirements apply? *Yes. The discharge must be through a code complying plumbing receptor and building sewer in accordance with the MN Plumbing Code.*

Membrane treatment units (example – reverse osmosis)

- Possible constituents of concern – *Hardness, iron, other cations, anions (nitrate), and pathogens. The degree of removal is dependent on membrane type.*
- Can the waste be discharged to a SSTS? *Yes*
- Is waste detrimental to SSTS? *Single fixture membrane units should pose little problems. Whole house membrane units can greatly increase the volume of discharge from the dwelling. If whole house unit is discharged to SSTS, the SSTS must be adequately sized and flow equalization is recommended.*
- Can waste be discharged into separate trench? *Yes. The trench bottom must be above the periodically saturated soil and bedrock and trench must meet water supply well setbacks.*
- Can wastes be discharged to the ground surface? *Yes. The waste cannot be directly discharged to a surface water, wetland or intermittent stream (dry run). Waste must soak into the ground where it has been discharged. Discharge must stay on the property and not cause erosion or nuisance conditions.*
- Do plumbing requirements apply? *Yes. The discharge must be through a code complying plumbing receptor and building sewer in accordance with the MN Plumbing Code.*

Furnace condensate drainage

- Possible constituents of concern – *Low pH*
- Can the waste be discharged to a SSTS? *Yes*
- Is waste detrimental to SSTS? *Unknown. The slow release and low volumes of liquid may freeze in the building sewer.*
- Can waste be discharged into a separate trench? *Yes. The trench bottom must be above the periodically saturated soil and bedrock and the trench must meet water supply well setbacks.*
- Can wastes be discharged to the ground surface? *Yes. The waste cannot be directly discharged to a surface water, wetland or intermittent stream (dry run). Waste must soak into the ground where it has been discharged. Discharge must stay on the property and not cause erosion or nuisance conditions.*
- Do plumbing requirements apply? *Yes. The discharge must be through a code complying plumbing receptor and building sewer in accordance with the MN Plumbing Code.*

Pool water, treated hot tub water and pool filter backwash

- Possible constituents of concern – *Chlorine*
- Can the waste be discharged to a SSTS? *No*
- Is waste detrimental to SSTS? *Yes*
- Can waste be discharged into separate trench? *No*
- Can wastes be discharged to the ground surface? *See the factsheet 'Swimming Pool and Hot Tub Water Discharges Best Management Practices' at: <http://www.pca.state.mn.us/publications/wq-wwprm2-03.pdf>.*

Sauna floor drain (a free standing structure with no plumbing)

- Possible constituents of concern – *Perspiration, condensation, and cleaning agents*
- Can the waste be discharged to a SSTS? *Not applicable*
- Is waste detrimental to SSTS? *Not applicable*
- Can waste be discharged into separate trench? *The drain can be deadheaded into the soil.*
- Can wastes be discharged to the ground surface? *Yes. However, the waste cannot be directly discharged to a surface water, wetland or intermittent stream (dry run). Waste must soak into the ground where it has been discharged. Discharge must stay on the property and not cause erosion or nuisance conditions.*

Open-loop geothermal discharge

- Possible constituents of concern – *None*
- Can the waste be discharged to a SSTS? *No*
- Is waste detrimental to SSTS? *Yes, volume of water*
- Can waste be discharged into separate trench? *Yes. The trench bottom must be above the periodically saturated soil and bedrock and trench must meet water supply well setbacks.*
- Can wastes be discharged to the ground surface? *Yes. The waste cannot be directly discharged to a surface water, wetland or intermittent stream (dry run). Waste must soak into the ground where it has been discharged. Discharge must stay on the property and not cause erosion or nuisance conditions. Please see the Minnesota Department of Health's website at: <https://www.health.state.mn.us/>*