Sewer System Standards

General Requirements

The minimum lot size that can have an onsite sewer system (septic tank-drainfield) is **40,000 square feet (about 1 acre).

**No sewage may be discharged onto the surface at any time other than into an approved sewage lagoon.

If the sewer system will be used by 25 or more people on a daily basis or if there are more than 15 service connections on the system, it must be approved by the North Dakota Department of Environmental Quality.

No more than 4 buildings can be tied into any individual sewer system.

For commercial shops with floor drains, the waste lines from the floor drains must pass through an oil interceptor. From there, they should drain into a holding tank. The water can be drained from the oil interceptor into a septic tank/drainfield but the system would then have to be classified and registered as an injection well by the North Dakota Department of Environmental Quality.

The size and capacities of the sewer system are dependent upon the soil conditions and number of people using the system.

Be aware that high water tables can cause sewer systems to fail.

All structures in the sewer system must be at least 10 feet from any property lines.

Trees and shrubs should be located no closer than 10 feet from the septic tank and drainfield.

The septic tank and drainfield should be located no closer than 25 feet from any water lines.

The high water mark of any body of water (river, lakes, stream, etc.) must be located at least 100' away from the sewer system.

The sewer system must be located no closer than 100' from any private water well if the water well is less than 100' in depth.

-if the private water well is greater than 100' in depth, the sewer system must located at least 50' from the water well.

-For all public water wells, there must be at least 100' of separation between the water well and sewer system.

The septic tank and drainfield must be located at least 10' away from any building.

The septic tank must have a minimum **working capacity of 1000 gallons** (There is a difference between the working capacity and the total capacity of a septic tank).

For septic tanks buried less than 4 feet below the surface, it is recommended that the top of the tank be covered with 2" of Styrofoam with a 4 foot overlap on each side.

The drainfield should be located no closer than 10 feet from the septic tank and/or lift pump.

The area over the drainfield should be seeded into grass and not be driven over with any heavy vehicles that might compact the soil and seal the drainfield. Do not use this area as a parking lot or a garden. In order for the system to work, the water in the drainfield should evaporate and absorb into the ground. Grass is a good way to draw water out of a drainfield.

If using a lift pump, use a larger lift chamber so that the pump doesn't have to pump as often which reduces the chance of burning out the lift pump.

Drainfields using gravel and 4" perforated tile

The minimum linear footage of the drainfield is 150 feet. Longer distances may be required in heavier soils.

There should be at least 12-18" of ¾ to 1 1/2"washed rock under the sewer tile. **Scoria cannot be used in place of the washed rock!**

-the sewer tile should be surrounded by the washed rock with an additional 1-2" of rock over the tile.

The washed rock should be covered with a permeable fabric or straw, then backfilled.

The average distance from the top of the sewer tile to the surface should be 30-36 inches. Depth distances can range from 24" to 48". Be aware that shallow drainfields may freeze and deeper drainfields may have a reduced evaporation rate and be affected by a high water table.

Cleanouts are recommended on the drainfield to monitor the sewer system.

All sewer tiles in each drainfield trench should be laid level.

There should be at least 10' of separation between drainfield trenches.

Drainfields using gravel-less chambers

The minimum linear footage for gravel-less systems is 200'. Longer distances may be required in heavier soils.

The average distance from the top of the sewer tile to the surface should be 30-36 inches. Depth distances can range from 24" to 48". Be aware that shallow drainfields may freeze and deeper drainfields may have a reduced evaporation rate and be affected by a high water table.

Cleanouts are recommended on the drainfield to monitor the sewer system and allow the drainfield to be pumped if necessary.

All sewer tiles in each drainfield trench should be laid level.

For systems using 24" wide or less chambers, there must be at least 6 feet of undisturbed earth between each trench. When using chambers that are greater than 24" wide, there must be 9 feet of undisturbed earth between each trench.

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Some counties require pre-approval and installation inspections on all onsite sewer systems. The Southwestern District Health Unit has the necessary forms for the approval plans and can conduct the onsite inspections of the sewer system when it is installed. There is no charge for the plan pre-approvals. **However, we do charge $150.00 to conduct an onsite inspection of a sewer system.**

Holding Tanks- Tanks should be sized to have a capacity equal to 7 days of wastewater generation from the facility. For residential dwellings, the capacity should be 400 gallons times the number of bedrooms with a minimum 1000 gallon capacity.

Lift Chambers- Capacity of the lift chamber should be at least 1/4th the total daily volume of wastewater generation. There should also be a reserve capacity of about 75% of the daily wastewater generation in case of pump failure. Therefore, the total capacity of the chamber should be equal to the daily volume of wastewater generated at the site.