

From a Germantown Hills, Illinois webpage at
http://www.germantownhills.com/wola/grinder_pumps.htm

Key points have been highlighted.

"Information about Grinder pumps

For sewage emergencies call the Village Hall 383-2209 day or night.

Sewage flows from your home via gravity to the holding tank located on the homeowner's property. A grinder pump at the bottom of the tank ejects the waste into the village sewage main located in the homeowner's neighborhood. When the fluid level rises, about the bottom third of your tank, a float switch activates and the pump turns on and runs till the tank is mostly empty. The pump has a check valve that keeps the sewage from coming back down the pipe from the neighborhood system. The neighborhood system is under pressure. A second float located above the first float comes on if the fluid level reaches emergency levels. When this higher level is attained a steady red warning light on the control panel activates. Typically at this point the pump has failed and fluid levels in the tank are too high.

Floats may become clogged with grease from your kitchen sink and cause the first float to stick and not activate. Or the pump may fail to activate for some other reason. At this point the homeowner should cease discharging fluids down the drain. However, there is some reserve capacity that will be used up before any intrusion will occur into your home. Older systems have only a visible steady red warning light to alert the homeowner. A 100-db audible high-level alarm is available from the village for a \$150 installation fee. Some of the older systems are wired in such way that if the pump trips the circuit breaker then the alarm will fail too, you will not know you have a problem until sewage is coming into your basement. A floor alarm will let you know there is a problem if you are home to hear it.

If your pump fails you will have some reserve capacity. The homeowner's tank may have 30 to 70 gallons of reserve capacity and a 4-inch sewer pipe will hold two thirds of a gallon per linear foot. On the average... each home may have about 100 gallons of reserve capacity depending on how much fluid is in the tank when it fails and how much sewage pipe the home has underground below their lowest drain. If your pump should fail the homeowner should cease sending additional fluids down the drain and contact the village hall immediately. The village has an automated answering system and after business hours it will page an "on Call waste treatment service technician". The homeowner should make a note of the village hall phone number and keep it readily accessible.

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The pipes and valves in the tank are all made of PVC material and should not corrode. However, they could break, melt or fall apart. These pipes hold back the pressure from the neighborhood's main sewage pipe that runs down your street. The output of the homeowner's grinder pump goes straight up a few feet through a plastic PVC pipe then turns at a 90 degree elbow then passes through an emergency shut off valve which is normally open.

Should the pump, check-valve, shutoff valve, elbow or connecting pipes inside the holding tank lose integrity and fail to hold back the pressure from the neighborhood system then pressurized sewage will invade the tank. In this situation if the lid to the holding tank is unbolted or loosened raw sewage may overflow the top of the tank and spill into your yard. There is no second check-valve at the street connection protecting the homeowner's system from the neighborhood's system pressure. There is a shut-off valve at the street connection to isolate the homeowner's system from the neighborhood

system but this valve is always open.

In the event of a failure of the pressurized part of the homeowner's system raw sewage will invade the holding tank, the reserve capacity could be used up in only a few minutes. After the reserve capacity is full sewage may back up into the homeowners sewage draining pipes. An intrusion of raw sewage and damage to your home may occur. The flow rate and head pressure of the flood may be affected by your elevation and severity of the breakage.

During one such breakage event the flow rate was calculated to be at least 650 gallons per hour. A 1600 square foot basement could be flooded by raw sewage at the rate of almost an inch/hour. In this real situation damage probably began to occur in less than 13 minutes.

The homeowner should take steps to add additional insurance coverage for intrusion of sewage into their home, as most insurance companies will not include this coverage in the standard homeowner's policy. The homeowner should specifically ask their homeowner's insurance agent for a "**sewage backup protection rider**" to their standard homeowner's policy.

The village's responsibility is to maintain the grinder pump, controls and conduct regular inspections to insure proper operation of the homeowner's grinder pump system. The homeowner must provide a 220-volt service to operate the pump. If the pump fails eventually the high level float will activate the alarm system. However, in many of the older systems the alarm system is powered by the same 220-volt service that powers the pump. If the pump has overloaded and tripped the 220-volt circuit breaker the high alarm will not activate either. At this point the homeowner will not know there is a problem until sewage begins to backup into their lowest drains (typically basement floor drains). Homeowners should take precautions to install basement floor drain alarms to alert them of pending backups. If a backup of this type occurs the homeowner should immediately stop sending fluids down the drain to minimize the flood. (Recommendations: Turn off sinks, dishwasher, clothes washer, and water softener etc., DO NOT FLUSH TOILETS).

Typically if sewage backs up into your home the cost of cleanup and repairs will be the homeowner's responsibility! Expect to pay several thousand dollars out of pocket just for a professional cleanup. Insurance for this loss can be purchased for an additional fee, contact your home owner insurance agent.