

# Pump the Tank at the End of the Inspection

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**I have to qualify my earlier advice about septic system inspections; a pumpout is necessary, but should be the last item on your to-do list.**

In a recent column I referred to the need to pump septic tanks as a part of a thorough inspection to determine tank structural soundness and watertightness. In my years in the industry this has always been a discussion point with differing opinions about whether the tank must be pumped to give a complete picture of the tank's condition. Further, at least in the comments I received after the column ran, there was some confusion about at what point in the inspection process the tank should be pumped.

Since I opened this "can of worms," it's a good idea to walk through the tank inspection process, including pumping the tank.

After locating the tank, the manhole should be opened so the contents and interior of the tank can be viewed. For most tanks this means opening the manhole and using mirrors or cameras to view inside. For tanks lacking manholes (a topic for another time) the lid will need to be removed.

The lid should be carefully inspected to determine structural soundness and if there is evidence of previous system backups or failure. Scum or toilet paper clinging to the bottom of the lid indicates at some time water level in the tank was above normal operating levels. The way risers are attached to the lid should be evaluated for watertightness so no unwanted surface water or sediment can enter the tank.

Septic tank performance should be evaluated; the tank should be operating at the level of the invert of the outlet. If the level is above the invert, there is some type of backup. This could be due to blockage in the baffle or piping, or indicate the entire system is full.

## **THREE LAYERS**

Evaluate the tank contents. A tank should develop three distinct layers: floating scum on top, clear water in the middle and sludge on the bottom. If these three layers are not present or if there is a lot of floating material such as plastic products or raw food, this indicates a problem that will probably show up in other parts of the system. The cause needs to be determined to provide recommendations to the homeowner. If there is a sump serving a basement bathroom, the three layers may become mixed due to turbulence created in the tank when the pump runs.

The scum layer should not be excessively thick and should always be less than three inches from the bottom of the outlet baffle or to be over the top of the baffle to ensure excessive scum cannot leave the tank. A screen at the outlet helps stop scum from continuing downstream, but excessive scum could block the screen and cause the level in the tank to rise and even backup to the house. Excessive scum may just indicate the tank needs to be cleaned.

Other floating items, such as feminine hygiene or birth control products, should not be in the tank. The homeowner needs to be educated about how these products can cause problems in the system. Undigested food in the scum layer may indicate use of a garbage disposal or one of the occupants has a medical issue. This may require additional tank maintenance for medical reasons or discontinuing use of the garbage disposal.

### **LOOK AT SLUDGE**

Thickness of the sludge layer should be determined. Sludge should not be within 12 inches of the bottom of the outlet baffle. After opening the tank, allow time to be sure the sludge has settled before measuring the depth. Sludge will not settle properly if the water in the tank is turbulent. These conditions can be the result of a pump in the basement adding high volumes of wastewater or the flow from the house is simply too high.

If flow from the house has increased over time due to more occupants or changing ages of the occupants (think teenagers), the tank may simply be not large enough to handle the amount of wastewater being delivered. The homeowner — if made aware of this — may be able to reduce water use.

If there is an excess amount of material in the sludge that does not break down into either the sludge or scum layers, the frequency of tank maintenance can be increased to remove the materials.

The next step is to determine if all components of the system are operating as they should. Different locations have varying requirements or standards for the operation test. It is another area where there is not total agreement about what this test should look like. The bottom line is during this test the inspector wants to make sure water moves between all system components as it should and is not obstructed in any way. In addition, the drainfield portion of the system should accept the water introduced without backups.

It is important to conduct this test according to local standards and those standards are discussed with the homeowner. This will help avoid accusations from the homeowner that the test is causing any problems with the system.

If the permitting authority requires septic tank performance be evaluated by testing the quality of the effluent, samples should be taken to determine BOD, suspended solids and fats, oils and grease.

### **TIME FOR PUMPING**

After all of the activities described above it is now time to pump the tank to finish the evaluation of the septic tank to determine structural soundness and watertightness. It is important to be able to visually inspect all parts of the tank and all connections. This includes the tank lid, side walls, bottom and all tank openings and connections. It should always be pumped unless it is already obvious due to the previous parts of the inspection the tank is unacceptable. How to proceed at this point can be discussed with the homeowner or person ordering the inspection.

Pumping the tank comes at the end of the process, not at the beginning.