



## Sewer line vent maintenance

Swine barns use large diameter pipes (10" diameter and greater) buried below the in-room pits to drain the manure to a central sump or directly to long-term storage. Similar to a bathtub, when a pit is full, a plug in the pit floor is pulled and the manure rushes into the horizontal sewer drains.

If the lines are not vented or the vents are clogged, this rush of manure can cause a build-up of air pressure. This coupled with the fast flowing manure can pop the plugs in the pits in neighbouring rooms. If a popped plug does not reseal, it will continue to drain. Eventually this leaves the drain hole to the sewer pipe open and unknown, to the operator. This pit can slowly drain leaving behind the solids and the open drain can allow potential fatal sewer gas to be drawn into the room.

To prevent these air pressure build-ups, the sewer lines must be vented to the outside. This is done most commonly with a 6" diameter riser pipe at the end of the various lines beyond the last plug.

These vents may become obstructed for the following reasons:

1. There is a build-up of solids in the sewer line between the last plug and the vent as shown in Figure 1. This length of pipe will fill with manure when the pits are emptied but there is never any subsequent flushing action. As a consequence, the solids settle out and over time the build up blocks the venting.
2. The screened end of the vent pipe can be clogged with dust, crop residues (after the fall harvest) or snow.
3. The vent pipe if it was placed too close to a winter exhaust fan can become clogged with frost.

A check of the sewer line venting should become part of the barn maintenance SOP (standard operating procedure). Inspect the screen twice a year (after the crop harvest and during the winter) to ensure it is clear. Once a year, flush the top end of the lines with water. Ideally, this should be done with something providing a high flow rate such as a truck-mounted water tank rather than a garden hose to ensure a good clean out. Severely clogged lines may need the more aggressive action of a drain auger.

Less common are vents at the lower end of the system. If the end of the drainpipe is submerged, a pressure build up will occur when a pit plug is pulled. A vent installed near the outlet or just up-stream from any 90° elbow can prevent a pressure build-up. Such a vent may be difficult to retrofit.

Newer barns are designed with larger diameter pipes (up to 16"). This has reduced the incidence of plug popping but has not entirely eliminated it. "Y" connectors rather than "T" connectors also help but are more expensive.

It is important for barn operators to be aware of this potential hazard and ensure that neighbouring room plugs are inspected after a manure removal event to ensure all plugs are safely in place.

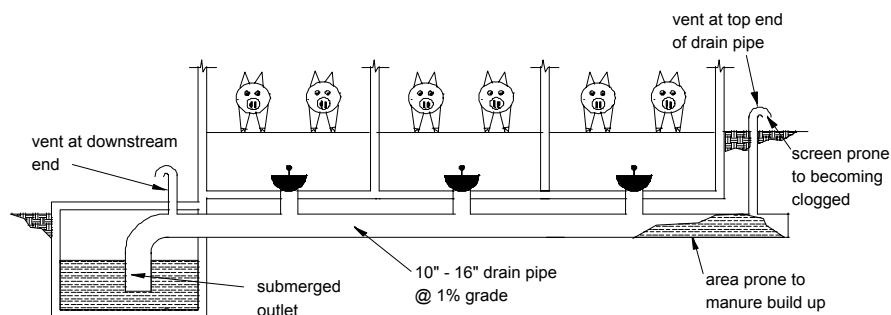


Figure 1: manure pit drain pipe and venting

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