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Ka-Boom! Can a Septic Tank Spontaneously Combust?

Put out that cigarette before nearing the septic tank or trapped methane gas could blow that lid sky-high, causing serious injury or death **By Jim Anderson, Ph.D.**

A couple of months ago, I read a news story about a septic tank that exploded and started a fire, destroying a home. Could this really happen? The answer is yes, it can happen and it is easier than you might think.

Over the years, I've written a few columns about septic system safety concerns, and one of the concerns has been the buildup of toxic or explosive gases. I have usually addressed the topic when talking about safe confined-space entry of a septic tank for maintenance. Proper ventilation equipment, a harness and other safety gear are necessary when entering a septic tank.

Appropriate lifelines include 3/4-inch manila, 1/2-inch nylon or 1/2-inch polypropylene lines. The free end of the line should be tied to an object that will not fall into the tank.

There should be at least two able people up top who can rescue the technician down below without entering the tank. If a person is not attached to a lifeline and has collapsed, rescue should only be conducted by a person with a self-contained breathing apparatus and lifeline. Way too often you read about a person entering a tank and collapsing. Then his buddy or buddies jump down to help and they are overcome, resulting in two or three fatalities instead of one.

NEED PROPER VENTILATION

Methane gas is a natural byproduct of anaerobic digestion, the process where organic solids are broken down by anaerobic bacteria that exist in a septic tank. That is why manure from large cattle-feeding operations is collected and put in a digester, with the generated gas used to create electricity. The gas burned to generate electricity is methane. Similarly, if you pass a

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capped sanitary landfill, you will see pipes sticking up through the material. This is to vent the gases created as the garbage decomposes. In some areas, you see the gases being burned off.

A septic tank or any sewage tank in an onsite system needs to be properly vented. That is why most sewage codes include a requirement to provide adequate venting from the tank. In a single-compartment tank, there should be a space of an inch or two above the baffles to the bottom of the lid of the tank. In a compartmented tank, there also needs to be venting between the compartments. If not properly vented, the gases can collect because they are heavier than air.

If the gases have collected and the manhole or inspection ports are opened, and there is some type of heat source, an explosion can occur. Heat sources include flames, sparks, electrical tools and cigarettes. In the news account cited earlier, workers were doing some type of maintenance on the plumbing beneath the house that involved a propane torch. This was the heat source. The next thing the workers knew, there was a loud bang and the fire ensued.

I mentioned cigarettes as a source for two reasons. First, a lit cigarette could touch off the explosive gases. One safety concern I talk about frequently is avoiding smoking when servicing a system. If you do smoke, do it well away from the tank or other parts of the system. A second reason not to smoke while servicing a system is that it provides a ready way for pathogens to find their way from the sewage to you.

A FINAL WORD

I have had countless discussions over the years with service providers telling me how Dad or their uncle Joe was working on a system and smoking, and they blew the manhole cover 20 or something feet into the air. The story is usually followed by a large laugh. I am thinking if the cover hit you it may be curtains. So it's really no laughing matter. ■

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