

Sanitary Gravity Sewer System “Smoke” Testing

Frequently Asked Questions

What is the purpose of “smoke” testing?

The purpose of “smoke” testing is to find potential points of inflow and infiltration in the public portion of the sanitary gravity sewer system that could lead to high flows during storm events.

“Smoke” testing can help locate the following:

- Buildings that have downspouts, cellar, yard or basement drains, and sump pumps connected to the public sewer system
- Points of groundwater or surface water intrusion into the gravity sewer
- Any cross connection between sanitary and storm drains
- Defective gravity sewer connections that could allow sewer gases into a building



What are the benefits of “smoke” testing?

“Smoke” testing is the most efficient and cost effective way to locate and identify where unauthorized water is entering the public portion of the gravity sewer system. The “smoke” is harmless and will disappear after a few minutes. The testing is a cost-effective way to find areas of the sewer system that need improvement. “Smoke” testing will also help identify plumbing leaks in buildings. Sewer gases can cause health problems for building occupants.

How long will the testing take?

While crews might be in your area for a few hours, each actual “smoke” test setup takes approximately 15 minutes to complete. Most houses will only be within the testing area for one or two tests.

I have a Grinder Pump will this affect me?

Some customers/homeowners are connected to the public sanitary sewer system by utilizing a private grinder pump assembly at the home and/or business and connection to the low pressure sewer system. This type of private grinder pump assembly will **NOT** be affected by any “smoke” testing.

Is the “smoke” harmful?

NO. The “smoke” is not true smoke, but rather a mist containing a large percentage of atmospheric moisture that is highly visible at low concentrations. It will not harm your health or leave a stain and will disappear rapidly without leaving an odor. Since any vapor can be an irritant, direct contact with the “smoke” may cause minor respiratory irritation in some people.

Individuals with respiratory problems such as chronic asthma, emphysema or other respiratory conditions should avoid direct exposure to the “smoke”. Please contact Lincoln County Public Works at 704-736-8495 to discuss your situation in further detail.

If the “smoke” enters your home, it may make you cough, but the “smoke” is

- Non-toxic
- Non-staining and odorless
- Harmless to humans, pets, plants, food and material goods
- Creates no fire hazard

How does “smoke” testing work?

During “smoke” testing, field crews blow air and “smoke” into the sanitary gravity sewer system in the street and easements, and monitor where “smoke” escapes the system. The “smoke” under pressure will fill the main line as well as any connections and then follow the path of any leak to the ground surface, quickly revealing the source of the problem. For instance, if “smoke” permeates up through a yard, it indicates breaks in the gravity sewer line. Only enough force to overcome atmospheric pressure is required, and “smoke” should escape from building roof vents. If you have any doubt as to the source of the “smoke” in your home or yard, phone E-911 immediately.

How will residents or businesses know when the LCPW is “smoke” testing?

Lincoln County Public Works (LCPW) will notify customers prior to “smoke” testing the portion of the sanitary gravity sewer system that is connected to specific homes. Customers will be notified prior to any “smoke” testing by fliers. Fliers will be distributed when LCPW is “smoke” testing a small area. Fliers will be distributed five to seven days prior to the “smoke” testing event. The schedule may also shift if more or fewer defects than expected are located and need to be documented. Caution Type Road Signs will be displayed along roadways in the area that “smoke” testing will be conducted to advise any local traffic. LCPW will notify the local area Fire Department and the Emergency Communications Center (E-911) before and after each “smoke” testing event.

Will “smoke” testing of the sewers allow “smoke” to get into my home?

No, it should not, provided that your plumbing is installed and functioning properly, and provided “traps” are filled with water. Drains that are used frequently should be okay. If you are not sure, simply run water down the drain for a minute to ensure that the trap is not dry. It is important to locate dry traps as they could allow sewer gases to enter the home. Dry traps are most commonly found in basement floor drains that are used only during rare flood events or in unused fixtures. Please thoroughly check your home.

What does it mean if “smoke” enters my house?

If “smoke” enters your home during the test, it may indicate there are deficiencies in the plumbing that may allow potentially dangerous sewer gas to enter.

How may the “smoke” enter my house?

Since plumbing fixtures in your home or business are connected to the sanitary sewer system, there is the potential for the “smoke” to enter if the drains are not connected properly. This happens particularly under the following circumstances:

- The vents connected to your building's sewer pipes are inadequate, defective or improperly installed
- The traps under sinks, tubs, basins, showers and other drains are dry, defective or improperly installed
- The pipes, connections or seals in the wastewater drain system in and/or under your building are damaged, defective, have plugs missing or are improperly installed

What should I do if “smoke” gets into the house?

- Open windows to allow ventilation and note the location of the “smoke” emission; “smoke” will clear within a few minutes
- Exit the building and notify “smoke” testing personnel in the area.

If the “smoke” is not harmful, why do you recommend exiting the building?

We recommend evacuating as a precautionary measure in case the “smoke” is due to a real fire rather than a test, and also since “smoke” in your house from this test indicates other sewer gases may also be entering the building.

What should I do to prepare for “smoke” testing?

When you receive notice that “smoke” testing will take place, you should:

- Check to see that all drain traps under basins, washing facilities and floor drains contain water; simply flush toilets and run or pour water into all drains, including unused fixtures and floor drains.
- If there is an individual in your home or business who has respiratory problems and/or mobility limitations, or if you have any additional questions, contact the Lincoln County Public Works Department at 704-736-8495.

How is a plumbing “trap” supposed to work?

The “gooseneck” or “snake” section of your drain pipe is the “trap.” The trap allows water to fill that section of the pipe completely. Since vapor and gas cannot travel through water unless under pressure, this effectively “traps” the gas in the sewer portion of the pipe. The vent on your system—the portion of pipe protruding from the roof of the building—prevents the gas from becoming pressurized and allows it to escape outside the structure. These two systems function together to keep potentially harmful sewer gases from entering your structure. If there is no water in the trap, the trap is not functioning properly. We recommend dumping water into building drains and fixtures prior to testing.

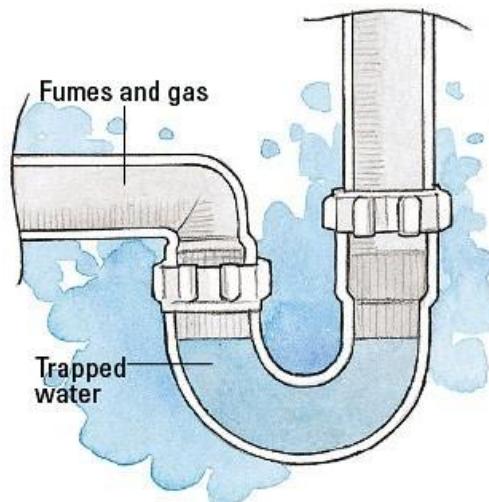


Figure 2: Trap (photo for informational purposes only)

What happens if the LCPW Inspection Crews find a faulty sewer or lack of water “traps” in a home?

If “smoke” is seen within a house or structure, LCPW Inspection Crews will attempt to notify the homeowners of these potential defects. Owners are responsible for repairs to private property plumbing.

Do I have to be home during testing?

No. LCPW Inspection Crews will not need to enter your home. LCPW Inspections Crews are not allowed to assist with identifying potential plumbing problems within a private residence.

How will I know if “smoke” enters my house if I am not home during testing?

The purpose of the “smoke” test is to identify sources of unauthorized water entering the public portion of the sewer system. While it has the additional benefit of detecting deficient plumbing connections on private property, this is not the main intent of the “smoke” test. It is the homeowner’s responsibility to maintain private plumbing connections per the NC Plumbing Code.

Can the “smoke” testing activate the “smoke” alarms?

Yes, “smoke” alarms may be activated during “smoke” testing. If possible, open windows and/or doors for ventilation. If you have any doubts about the origin of the “smoke”, please call E-911.

I am a pet owner and I will not be at home during the testing. Should I be concerned?

The “smoke” is not harmful to pets. If windows are left open, any “smoke” that enters the building will dissipate in a few minutes.

Will rodents be smoked out?

No. However, the “smoke” may have the added benefit of detecting broken building sewer services where there is a potential for possible future rodent access.

Can “smoke” plug the sewer?

There is no way “smoke” can plug the sewer. The “smoke” is made up of a vaporized substance.

Where does the “smoke” appear?

“Smoke” may be seen coming from roof vents, building foundations, manhole covers or yard cleanouts. “Smoke” coming from roof vents on the roof of homes is a normal occurrence and indicates to the crews that “smoke” has filled all sewers.

**If you have any additional questions please call the
Lincoln County Public Works Department at
704-736-8495**