

Sanitary Sewer System Smoke Testing

WHAT IS THE PURPOSE OF SMOKE TESTING?

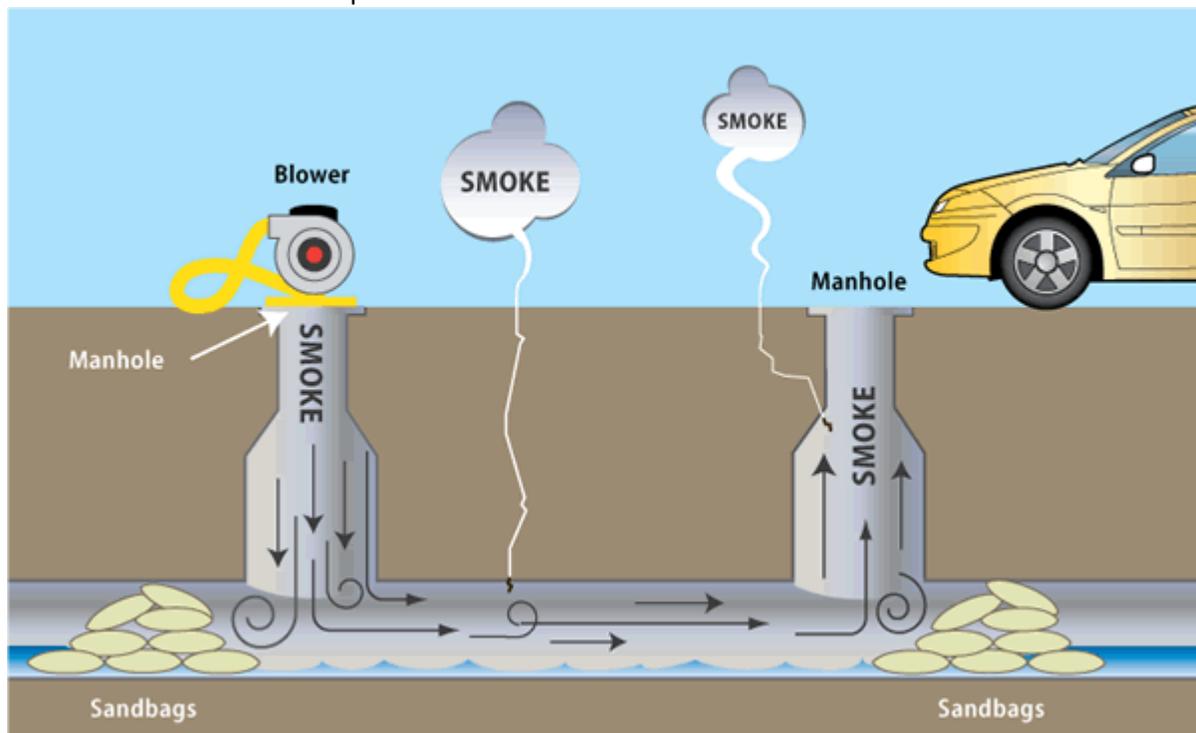
Smoke testing is important preventative maintenance that helps Murphys Sanitary District (MSD) pinpoint the location of sewer defects that may need repairs. Millions of gallons of excess water can infiltrate sanitary sewers each year through these defects. This raises the cost of wastewater treatment for the entire community and increases the risk of sewage overflows during storms.

The Environmental Protection Agency (EPA) endorsed smoke tests as a standard way to find defects in the sewer system. Defects in the sewer system allow rain water to enter the system, increasing flows and treatment costs. If smoke can exit through a defect, rain water can enter through that defect. These tests are economical, convenient, and effective. In the long-run, it may reduce the cost to customers.

Our sanitary sewer system is designed to carry wastewater only. The storm water drainage system is a separate network of pipes that channels rainwater and other runoff into creeks and waterways. If storm water is infiltrating the sewer system, rainstorms can overload the pipes, pumps, and wastewater treatment plant and cause sewage overflows that damage property and the environment.

WHAT HAPPENS DURING A SMOKE TEST?

MSD employees or contractors isolate a small section of the sewer system and then blow smoke through that section from a manhole. If there are defects in either the main sewer pipes or the private sewer laterals that serve individual homes and businesses, or if there are illegal cross-connections between the sewer and storm drain, smoke will rise to the surface and reveal these problems.



Smoke test in sewer main pipeline.

What do I need to do to prepare before the smoke tests?

Water can evaporate from drain traps of unused plumbing fixtures. Therefore, the day prior to any testing, property owners should pour water down all drains of plumbing fixtures that are not regularly used (e.g., guest bathroom, bar sink). This ensures the P-traps are full to prevent smoke from entering the house. It is also a good idea to keep bathroom doors closed during the test period.



P-trap

Will smoke enter my house?

Smoke rarely enters a home or business during the test if the P-traps are full of water, but because a building's plumbing is connected to the sanitary sewer system, smoke could enter through a plumbing defect in the home or business. The most frequent entry point is around a bad wax ring on the toilet. If smoke does enter your home or business, open a window. Visible smoke should last no more than 15-20 minutes.

What should I do if I have emphysema or respiratory problems? Is the smoke harmful? What should I do during a smoke test?

Although the smoke is considered to have no adverse health effects, individuals with respiratory conditions should take special precautions. Smoke rarely enters a home, but it would be best if you sat outside for the duration of the

smoke test, about 15-20 minutes. If you cannot sit outside, open the windows and shut your bathroom doors.

What should I do if smoke comes out of a plumbing fixture in my house?

Open windows and doors. The smoke usually clears in 15-20 minutes. If you are home during the testing, please inform the MSD crew members that smoke has entered your home. You also should call a professional plumber. If smoke has entered, your plumbing may have a defect that is also allowing sewer gases and odors to enter. Sewer gases can be both unpleasant and a health risk. We advise you to determine where the smoke entered and contact a plumber to correct any defects as soon as possible. *Please notify Murphys Sanitary District as well.*

Do I need to be home during smoke testing?

No, but you might want to leave your kitchen or bathroom windows slightly ajar.

I work during the day and have animals inside. What do I do during the smoke test?

Smoke rarely enters a home, but if you have to leave your animals inside, leave windows open slightly for ventilation. On the rare occasion when smoke enters a home, it is usually through a defect in the bathroom, so do not enclose animals in the bathroom. Shut bathroom doors and leave the bathroom window open.

How is the smoke test conducted?

The smoke is pumped into underground sewer pipes through manholes in the streets. Sandbags are placed at the bottom of the manhole and trap the smoke in the pipe located between the two manholes.

How long does the smoke test last?

Approximately 15-20 minutes.

Are the police and fire departments aware of the smoke testing?

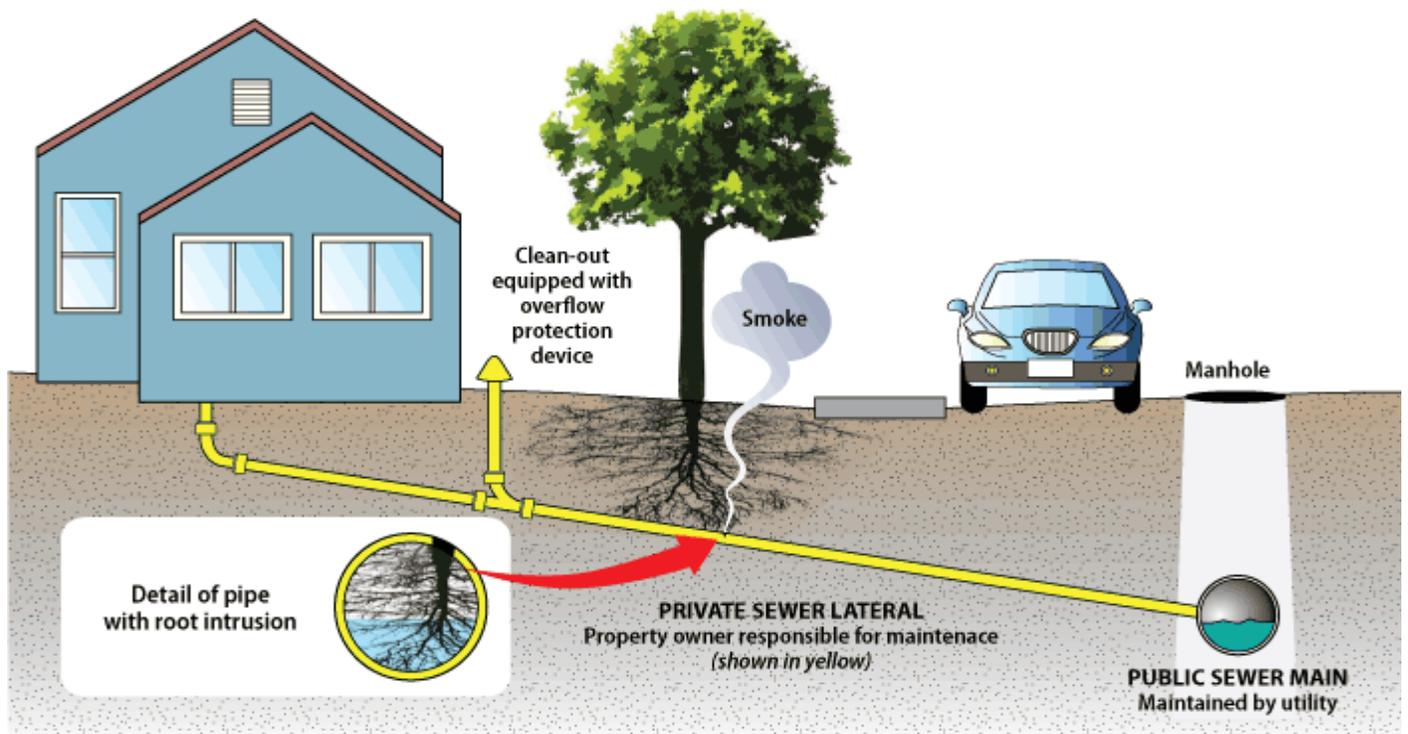
Yes. MSD notifies the local County Sheriff's Office and the Murphys Fire Department.

Can smoke clog the sewer?

No. Smoke cannot stop up a sewer. This clean, efficient smoke is made up of a vaporous substance similar to fog; it is 50 percent atmospheric moisture.

What causes defects in sewer pipes?

Tree roots are the most common cause of defects. If a pipe develops a hairline crack, roots may grow toward this moisture, infiltrate the pipe, and widen the crack. Avoid planting trees and large shrubs near sewer lines.



Roots from trees or large shrubs can cause leaks or clogs in your sewer lateral.

Who is responsible for paying to repair plumbing problems that are discovered through smoke testing? Property owners are responsible for maintaining their inside plumbing, as well as for repairing cracks, breaks, and clogs in their private sewer laterals that connect their home to the District's main sewer pipeline. If you see smoke coming out of your yard this probably indicates that you have cracks in your sewer lateral that need repair. MSD is responsible for maintaining and repairing the public wastewater collection system, the larger pipes that usually run under the street.

Is it OK if I see smoke coming from my overflow protection device?

Yes, if the overflow protection device is working properly, you should see smoke coming out of it.

How do you select a neighborhood for smoke testing?

MSD uses a robotic video camera to examine inside the public sewer pipes. We use these images, along with the age of pipes and the record of any repairs or overflows, to identify the neighborhoods that are a potential concern.

During testing, smoke should escape from the overflow protection device.

