

Questions And Answers About EPA's Standard Test Procedures For Evaluating Release Detection Methods May 2019

This document provides information about EPA's standard test procedures for evaluating release detection methods. It covers these topics:

Topic	Page
Why EPA Revised The Standard Text Procedures And EPA's Warning About Storing Ethanol Fuel Blends In Certain Legacy Equipment	1
Recommendations To UST System Owners And Operators Regarding Release Detection Equipment And Water	3

Why EPA Revised The Standard Test Procedures And EPA's Warning About Storing Ethanol Fuel Blends In Certain Legacy Equipment

Question: Why did EPA revise the release detection standard test procedures?

Answer: EPA originally developed release detection standard test procedures, commonly referred to as protocols, in 1990. EPA updated the protocols to address new information and technology; incorporate regulatory requirements of the 2015 federal UST regulation; and address release detection equipment performance when used with increased levels of ethanol in fuel blends.

Question: Vendors evaluated various release detection equipment using EPA's 1990 protocols. Many of this release detection equipment is listed by the National Work Group on Leak Detection Evaluations' (NWGLDE) website. Does EPA require these vendors to re-evaluate their equipment with the 2019 protocols and relist with NWGLDE?

Answer: No. EPA does not require currently listed release detection equipment to be re-evaluated using the 2019 protocols. However, many vendors periodically modify their equipment and release detection methods to achieve improvements. Equipment evaluators may use the 2019 test protocols to demonstrate that new and improved release detection equipment meets the federal release detection requirements. The 1990 protocols are no longer useful to verify that release detection methods meet federal requirements.

Question: The level of ethanol added to fuel blends has increased in past years. Does EPA have concerns with using legacy release detection equipment with ethanol fuel blends?

Answer: Yes. The 1990 protocols focused on the performance of release detection equipment used with non-alcohol blended gasoline and diesel fuel products, the prevalent fuels at that time. One reason EPA revised the protocols was to address release detection equipment performance when used with high ethanol fuel blends.

Based on research conducted on chemical and physical properties of fuels that could affect release detection equipment functionality when used with ethanol fuel blends, EPA is generally not concerned with equipment performance in UST systems storing ethanol blended fuels that have no water or ethanol fuel blends up to E15. EPA's main concern is with excessively high water levels in UST systems that store higher ethanol fuel blends such as E85. High water levels in USTs can affect certain operating principles used by certain legacy release detection equipment, making legacy release detection methods less reliable.

Question: What are EPA's concerns with using some legacy release detection equipment where there are high levels of water in UST systems that store high ethanol fuel blends?

Answer: EPA is concerned specifically with water sensing components associated with automatic tank gauging systems (ATGSs) and detection technologies relying on capacitance, conductivity, and fuel sensitive polymers as an operating principle. Water affects the ability of release detection equipment using these operating principles to detect a leak. EPA is concerned that high levels of water in UST systems could render water sensing equipment inoperable, potentially allowing a release to go undetected for more than 30 days. We want to make UST system owners and operators aware of the potential problems associated with water and UST systems.

Recommendations To UST System Owners And Operators Regarding Release Detection Equipment And Water

Question: What should UST system owners and operators storing high ethanol fuel blends, such as E85, do if they have legacy release detection equipment?

Answer: The 2015 revised federal UST regulation at 40 CFR 280.32 requires UST system owners and operators demonstrate compatibility of release detection equipment and other components of the UST system to store a regulated substance containing greater than 10 percent ethanol. In addition to this demonstration of compatibility, for those UST systems storing E85 or greater ethanol content, EPA recommends owners and operators take actions listed below. These actions will help ensure compliance with performance standards of release detection equipment using water sensing equipment associated with ATGSs or methods that use capacitance, conductivity, or fuel sensitive polymer technologies.

- Conduct several tests of the tank with the ATGS each month to identify potential water ingress that could indicate a breached tank. The ATGS test includes checking for water, which should be done more frequently than the required once every 30 days. Do not rely on a single static ATGS test to prove compliance.
- Frequently assess your UST system for potential water intrusion, especially following heavy rain. This can be done, for example, by manually sticking your tank using water finding pastes specifically designed to work with ethanol blends.
- Discuss with your service provider whether the water sensing function of your ATGS probe is appropriate for use with the ethanol fuel blend you are storing. Determine whether your UST system is using capacitance, conductivity, or fuel sensitive polymer technologies. If so, you may need to use a different form of release detection if water keeps entering your UST system.
- If you are using tank tightness testing to meet part of release detection requirements, discuss with your service provider the tank tightness testing (TTT) procedures used. Determine if TTT should be augmented to ensure you do not miss entrained water or potential water ingress.

Follow storage tank best management practices developed by industry, as applicable to your UST system. Although the industry documents below are not specific to release detection equipment or storing ethanol fuel blends, they contain good water management and other practices, technologies, or treatments to minimize the risk of fuel releases from underground tanks. When following the links below, you will exit EPA's website.

- Steel Tank Institute – [*Recommended Practice for Storage Tank Maintenance R111 Revision*](#)
- ASTM D6469 – [*Standard Guide for Microbial contamination in Fuels and Fuel Systems*](#) (available for purchase)
- Coordinating Research Council
 - [*Report 672 – Preventive Maintenance Guide for Diesel Storage and Dispensing Systems*](#)
 - [*Report 667 – Diesel Fuel Storage and Handling Guide*](#)
- Clean Diesel Fuel Alliance – [*Guidance For Underground Storage Tank Management at ULSD Dispensing Facilities*](#)