

FAQs from the NWGLDE

... All you ever wanted to know about leak detection, but were afraid to ask.

Evaluating ATGs for a 0.1 gph Leak Rate

In this LUSTLine FAQs from the National Work Group on Leak Detection Evaluations (NWGLDE), we clarify how ATGs are listed after being third-party evaluated for detecting a 0.1 gph leak. Please Note: The views expressed in this column represent those of the work group and not necessarily those of any implementing agency.

Q. If an automatic tank gauge (ATG) is certified to find 0.1 gph leaks, can it be used as a tank tightness test?

A. Automatic Tank Gauges (ATGs) that have been certified to detect leaks of 0.1 gph are evaluated using the EPA Standard Test Procedures for Evaluating Leak Detecting Methods: Volumetric Tank Tightness Testing Methods in addition to the ATG protocol, EPA Standard Test Procedures for Evaluating Leak Detecting Methods: Automatic Tank Gauging Systems. The Volumetric Tank Tightness Testing (VTTT) protocol requires the method to demonstrate that it can detect leaks as small as 0.1 gph with at least a 95 percent probability of detection (Pd) and no more than a 5 percent probability of false alarm (Pfa).

There is an important difference in the third-party evaluations for ATGs and Volumetric Tank Tightness Testing methods. While the ATG protocol *does not* require the determination of groundwater depth during third-party evaluations, VTTT methods *are* required by the protocol to determine the depth to groundwater in the tank excavation backfill. This is done to see if groundwater is at or above the bottom of the tank. This is important because groundwater above the bottom of a tank can result in water intrusion into a hole in a tank due to high hydrostatic pressure. Any tank that can take on water has the potential to release fuel if there are fluctuations in the groundwater level, or if fuel is added to the tank, causing the hydrostatic pressure relationship between fuel inside the tank and water outside the tank to change.

The VTTT protocol also requires these test methods to have a means to account for and compensate for the presence of groundwater if it is detected at or above the bottom of the tank. Methods designed for compensation due to groundwater adjust the product level in the tank to create a positive pressure from the product at the bottom of the tank, thus negating the effects of a high water table.

There is no such requirement for ATGs in the USEPA ATG protocol. ATGs are not required to detect the depth to groundwater in tank excavations and compensate for groundwater if it is at or above the bottom of the tank. In regions where groundwater levels are typically below the bottom of the tank and groundwater is not a factor, the use of an ATG to conduct a tightness test may be acceptable. In other areas

where groundwater is above the tank bottom, slow water ingress might go undetected until it reaches the ATG level where the high-water alarm is activated. Be aware that a static ATG test only evaluates the portion of the tank that is holding fuel when the test is conducted, and most tests are conducted when the tank is less than full. Therefore, a static ATG test result would only be representative of a portion of the tank. Another method, such as an ullage test, would need to be used in conjunction with an ATG test if the objective is to test the entire tank. VTTT underfill tests would also only test the wetted portion of the tank, but typically these tests are supplemented with ullage testing that would test the remaining unwetted portion of the tank.

Since ATG test methods do not account for groundwater levels, they are not listed by NWGLDE as a VTTT method. Whether to accept the use of a 0.1 gph ATG test as equivalent to a VTTT and, if so, under what conditions, is ultimately the decision of each implementing agency. ■

About the NWGLDE

The NWGLDE is an independent work group comprising ten members, including nine state and one USEPA member. This column provides answers to frequently asked questions (FAQs) the NWGLDE receives from regulators and people in the industry on leak detection. If you have questions for the group, please contact them at questions@nwglde.org.

Oops!

In the last FAQs from the National Work Group on Leak Detection Evaluations (LUSTLine #63, "More Questions on Throughput!"), we left out some important words at the very end of the answer to the question: Why do some listings have throughput limits while others do not? So, please accept our humble apology and note the complete text for the end of that question:

"Unfortunately, the current SIR protocol does not include a throughput limit like the CITLDS protocol. Because of this, the NWGLDE has included the throughputs from the data sets used during the third-party evaluation of the SIR methods. **The NWGLDE provides this information for state agencies that may want to consider using this monthly throughput as a throughput limit.**"