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Leak Detection Technologies, LLC

MDleak Enhanced Leak Detection Method

NON-VOLUMETRIC TANK TIGHTNESS TEST METHOD (TRACER)

Certification	Leak rate of 0.005 gph with PD = 97.6% and PFA = 0%
Leak Threshold	A tank system should not be declared tight when chemical marker is detected outside of the tank system.
Applicability	Gasoline, diesel, aviation fuel, fuel oil #4, fuel oil #6, solvents, waste oil, liquefied petroleum gas, natural gas. Other fluids may be tested after completion of a compatibility evaluation by the manufacturer.
Tank Capacity	Not limited by capacity.
Waiting Time	Ranges from 5 to 31 days after chemical marker is added to the tank, when "Controlled Leak Points" are not used. The waiting period may be adjusted below this range when supported by "Controlled Leak Points" as described below.
Controlled Leak Points	A "Controlled Leak Point" is a port where chemical marker is injected directly into the soil surrounding the UST to determine the rate at which chemical marker moves. It can be used to demonstrate that the chemical marker will migrate through the soil to a detection point in a documented amount of time, as described in manufacturer's procedures.
Chemical Marker Dosage	Dosage of chemical marker is based on factors including tank size, tank volume, frequency and volume of tank refills, and is determined according to manufacturer's procedures.
Soil Permeability	Soil present during the evaluation was sandy in texture, with water table 200 feet below the surface. Type of soil may have an impact on the migration of vapors. Whenever the chemical marker is used outside of the parameters of the evaluation, such as in frozen soil or tanks buried in clay where the clay could plug holes in the tank, "Controlled Leak Point(s)" must be used.
Sampling	When sampling in backfill, radius of influence of each sampling port is a maximum 16 feet. All tank surfaces must be within the zone of influence of a sampling port. Sampling can be taken within a vertical or horizontal sampling port. Sampling port installation and sample collection are conducted per EPA soil gas sampling guidance document SOP#2042.
Sample Analysis	Two detectors were used during the evaluation: a helium detector with minimum detection level of 2 ppm He, and a gas chromatograph with minimum detection level of 1-10 picograms. Other analytical equipment with equivalent performance capabilities may also be used.
Groundwater	The method was not evaluated with groundwater above the bottom of the tank.

Depth to groundwater in tank excavation backfill must be determined.

When the interior hydrostatic pressure of the component* being tested is less than the exterior hydrostatic pressure, the use of other test method(s) such as water ingress measurements must be incorporated.

At the discretion of the regulatory agency, water ingress measuring devices may be used to supplement test method in high groundwater conditions.**

When the regulatory agency allows testing to be performed with groundwater above the bottom of tanks containing water based or water soluble products, the product must be removed from the tank prior to testing.

Comments

*This method can be used to test single-walled components by sampling in backfill or to test the primary containment inside of secondary containment by sampling in the interstitial space.

Samples are either analyzed on-site with a mobile laboratory or collected on-site and transported to the MDLeak laboratory for analysis.

Evaluator indicates that the detectable leak rate can be adjusted by controlling test variables such as chemical marker concentration and test duration.***

Calibration of analytical instrumentation is verified daily per EPA published document SW-846, as referenced in the laboratory guidance document.

****Manufacturer's water ingress measurement methods have not been evaluated and therefore cannot be used in California. If the hydrostatic pressure of the component being tested is less than the exterior hydrostatic pressure, the tank must be pressurized to a level above the exterior hydrostatic pressure.**

*****This method cannot be used in California for leak rates other than 0.005 gph because the third-party evaluation included only 0.005 gph leaks.**

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Appearance on this list is not to be construed as an endorsement by any regulatory agency nor is it any guarantee of the performance of the method or equipment.

Equipment should be installed and operated in accordance with all applicable laws and regulations.
For full details, please refer to our expanded "[DISCLAIMER](#)" page.