

Petrol PLAZA

Best practices in tank, line, and leak detector testing in the Turkish UST market



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Underground storage tank systems, classified as a tank and any underground piping connected to the tank with at least 10 percent of its combined volume underground, are widely used around the world. Historically, fuel was stored in bare steel underground tanks with no corrosion protection. The average life expectancy of a tank may be 30 years, but research tells us a true tank life expectancy is closer to 20. A leaking UST system may contaminate groundwater sources, creating health risks, and in some cases leading to dangerous and flammable atmospheres. These risks persist, even as UST testing becomes more commonplace, with a [2003 Sierra Club report](#) noting gasoline related compounds were detected in 10 percent of drinking water sources sampled across the United States.

Often considered as core compliance services, Tank, Line, and Leak Detector testing are vital in reducing the risk of a fuel leak from a UST system.

Prior to the introduction of UST regulations in 1988, 25 percent of UST systems failed in the United States: 5 percent of those failures were attributed to leaking tanks, 10 percent to piping, and 15 percent to tank fittings. The US has developed a mature regulatory system, and closed over 1.9 million substandard tank systems ([as of March 2020](#)). Many countries have developed similar regulations. Private companies --particularly multinational Major Oil Companies with retail locations -- have led the way in the development of best practices and ensuring major leaks are prevented.

[Interpet](#), based in Istanbul, Turkey has been leading the fight to prevent leaking UST systems since 2010 when they introduced [Tanknology](#) services to their domestic market. The Turkish market had,

up to this point, conducted tank tightness testing by pressurizing active USTs with nitrogen. The introduction of nitrogen may pose an environmental risk: any leak point below the fuel level may result fuel being pushed into the soil or groundwater. With a history of best practices and operational excellence, [Interpet introduced the Tanknology's VacuTect® to the market](#). VacuTect is a vacuum-acoustic tank tightness test method, and draws ground water or air into the tank through any possible hole. Interpet's introduction of a safer, alternate test method revolutionized local testing practices, and by 2015 all Major Oil Companies operating in Turkey required a vacuum acoustic test method. Interpet has also introduced Tanknology's line testing and Line Leak Detector testing methods.



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Tank and Line testing offers a snapshot of a system's integrity at that moment in time. VacuTect®, Tanknology's technology for tank testing, is third-party certified with 100 percent probability of leak detection at 0.1 gallons per hour, and is a well-established technology used in more than 20 countries to test than two million tanks. Tanknology's technology for line testing, TLD-1TM, is also third party certified to detect a 0.05 gallon per hour leak for steel, fiberglass, and flexible pressurized piping.

Line Leak Detector testing assures that the line leak detector functions correctly in the event that a line does start to leak - the flow restrictor in the leak detector will slow to 3 gallons per hour. US EPA regulations require an annual equipment test. Tanknology's LDT-5000 TM equipment provides a quantitative test by simulating a 3 gallon per hour leak at 10 psi for mechanical and electronic line leak detectors, and verifying that the Line Leak Detector detects the leak. The LDT-5000 is approved for use by Vaporless Manufacturing, Inc., and is a type of Field Test Apparatus that is acceptable for use by Veeder-Root (Red Jacket) and Franklin Fueling Systems (FE Petro).

A secondary method must also be used, per regulatory requirements, for pressurized piping. This

includes options such as monthly interstitial monitoring, monthly groundwater monitoring, among other methods, but the most commonly paired method is an annual line test at 1.5 times operating pressure, such as a TLD-1 line test.

Interpet has tested thousands of tanks in Turkey since 2010. No false alarms have been recorded to date. Interpet has noted several occasions where testing services have revealed leaks, hidden compartments on older tanks, and malfunctioning products were found.


Beyond tank, line, and leak detector testing, Interpet has introduced additional services, including PetroScope® robotic camera inspections, and spill bucket tightness testing, and plans to once again extend their scope of work with the introduction of vapor recovery testing services. Interpet and Tanknology will continue to provide industry-leading solutions to the Turkish UST industry.


By Tanknology Inc. and INTERPET

Contact information



Tanknology Inc.
11000 N. Mopac Expy, Suite 500
Austin, TX 78759
United States

 +1 512 380 7104

 +1 512 380 7186

 www.tanknology.com