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EnviroTRACE

FlowTRACE Leak Detection Method

NON-VOLUMETRIC TANK TIGHTNESS TEST METHOD (TRACER)

Certification	Leak rate of 0.05 gph with PD = 100% 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.
Tank Capacity	Not limited by capacity.
Waiting Time	Ranges from 24 to 48 hours after chemical marker is added to fully inoculate the tank.
Tracer Dosage	Dosage of chemical marker of either vapor, liquid or both 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 considered to be a loamy soil that has an equal consistency of sand, clay and silt particles. Type of soil may have an impact on the migration of vapors.
Sampling	When sampling in backfill, radius of influence of each sampling port is a maximum 5 feet (24 hour test) or 10 feet (48 hour test). All tank or pipe 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. The manufacturer shall consult with the implementing agency or AHJ to determine if additional sample collection procedures are required.
Sample Analysis	A gas chromatograph with minimum detection level of 1-10 picograms. Other analytical equipment with equivalent performance capabilities may also be used.
Groundwater	Depth to groundwater in 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.
Comments	The tester may determine that pre or post testing is needed to establish the background level of tracer in the soil. The presence of a layer of water saturated soil, that is also frozen, above the location where a leak may exist, may inhibit the effectiveness of the method by impeding the transport of the tracer labeled product into the unsaturated zone. *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.

Higher tracer concentrations increases the speed of the test. Higher ullage level requires a longer time between inoculation and sampling. Distance between tank and sampling ports matters, a further distance will require longer sampling times.

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

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