Underground Storage Tank (UST) Piping Release Detection

Releases from UST systems can be very costly and impact drinking water sources. Since 1984, there have been over 568,981 releases from UST systems across the nation. The majority of UST system releases occur from the underground piping. Detecting a release from piping as soon as possible can minimize loss of inventory, the cost of clean-up and the impact to the environment.

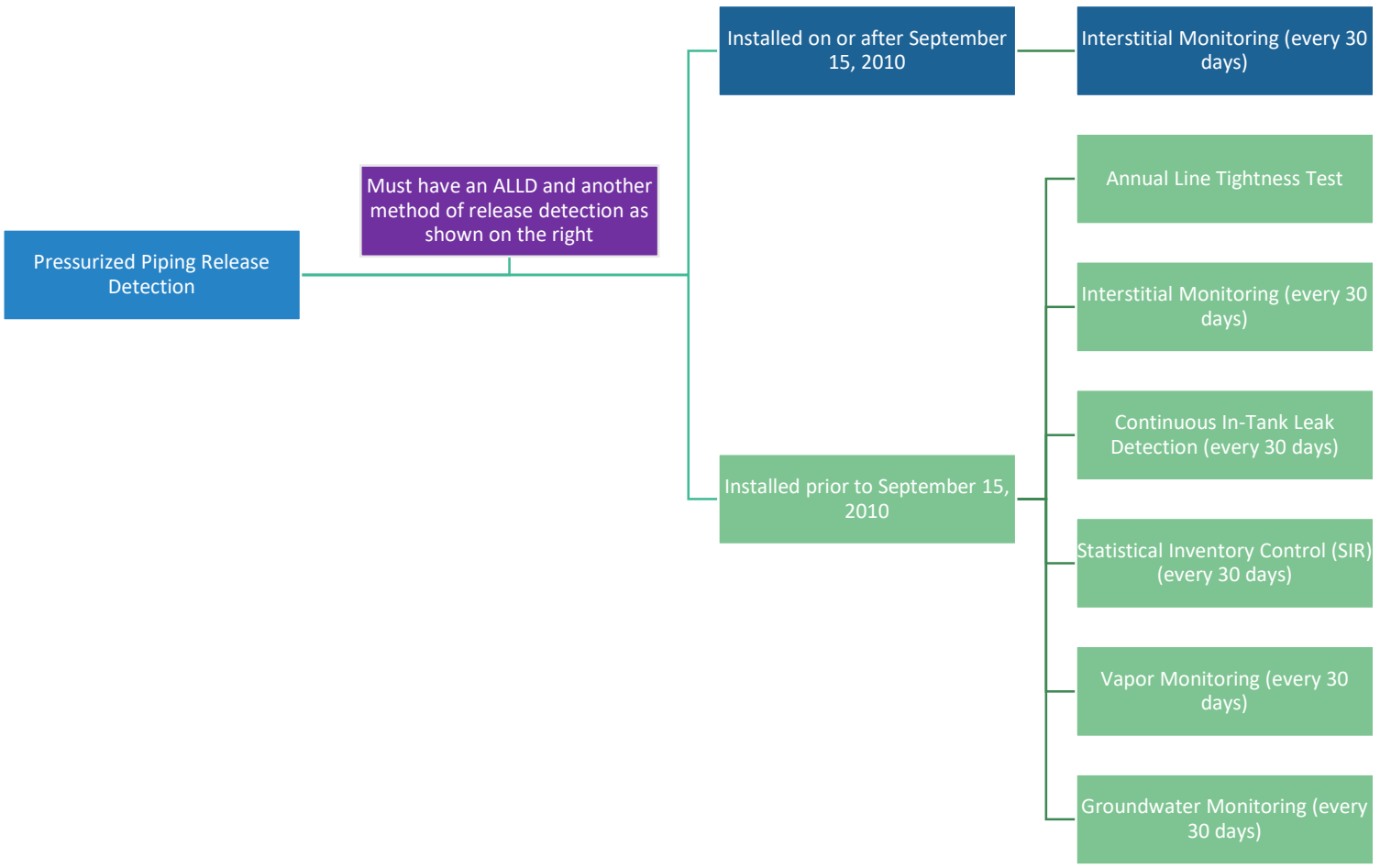
Do I need to perform release detection on my UST piping?

The first step in determining whether release detection is required on your UST piping is to identify what type of piping is installed. If you are unsure of your piping type, please contact a contractor to identify the piping type.

Piping Type	Release Detection Required	Release Detection Type
Pressurized	Yes	Automatic Line Leak Detector plus one other method
Safe Suction (no check valve at tank)	No	
Unsafe Suction (check valve at the tank)	Yes	Tightness test every 3 years or monthly method

What is required for pressurized piping release detection?

Pressurized piping requires an automatic line leak detector (ALLD) and one other method of release detection. The automatic line leak detector must be tested annually by simulating a leak. In addition to an automatic line leak detector, pressurized piping must also have one other method of release detection as described below.



What are the pressurized piping release detection options?

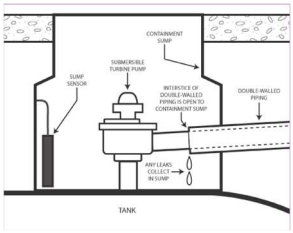
Automatic Line Leak Detector (ALLD)

- ✓ **Required for all pressurized piping**
- ✓ May be mechanical or electronic
- ✓ Identifies catastrophic leaks (greater than a 3gph)
- ✓ The ALLD will restrict flow of product into the piping if a catastrophic leak is detected
- ✓ Not designed to catch small leaks
- ✓ Must be tested annually by simulating a leak

Automatic Tank Gauging (ATG) with an Electronic ALLD

- ✓ An electronic line leak detector can be tied into an ATG to monitor the pressure in the piping at a 0.2gph leak rate
- ✓ ATGs can conduct periodic or continuous monitoring
- ✓ Performs monthly 0.2 gph piping leak tests

Interstitial Monitoring (IM)



- ✓ **Required for all pressurized or unsafe suction piping that was installed or replaced[1] on or after September 15, 2010**
- ✓ Piping must be double-walled
- ✓ Interstitial monitoring is usually conducted in a containment sump where any leaked product from the inner piping wall will accumulate for detection

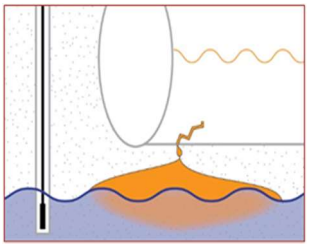
Statistical Inventory Control (SIR)

- ✓ SIR is an inventory method of tank and piping release detection
- ✓ The tank owner collects the data and submits it to a 3rd Party for analysis
- ✓ SIR usually does not work for piping associated with emergency generator tanks because the product use cannot be metered

Line Tightness Testing

- ✓ Line tightness testing requires a contractor with certified equipment
- ✓ The contractor applies slight pressure to the piping to determine if the pipe is leaking
- ✓ Line tightness testing must be conducted annually for pressurized piping and every 3 years for unsafe suction piping installed before September 15, 2010.

Groundwater or Vapor Monitoring



- ✓ Groundwater and vapor monitoring require monitoring soil vapors or groundwater for the presence of product.
- ✓ A site assessment must be conducted prior to use to determine if the site is suitable

What release detection options are available for unsafe suction piping?

Release Detection Requirements for Unsafe Suction Piping (choose 1)	
Method	Frequency
Line tightness test	Test every 3 years
SIR	Every 30 days
Interstitial Monitoring (required if piping installed or replaced[1] after 9/15/10)	At least every 30 days
Groundwater Monitoring	At least every 30 days
Vapor Monitoring	At least every 30 days

What records must be kept for piping release detection?

- ✓ Results of monthly monitoring must be kept for at least 12 months.
- ✓ Line tightness testing records must be kept until the next test is conducted.
- ✓ Records of annual equipment testing must be kept for 3 years.

For more information:

Contact the Office of Spill Response & Remediation at (804) 774-8338 or tank@deq.virginia.gov, or contact your regional DEQ Office: https://www.deq.virginia.gov/get-involved/about-us/contact-us

[1] Replaced means, for piping, to remove 50 percent or more of piping and install other piping, excluding connectors, connected to a single tank. For tanks with multiple piping runs, this definition applies independently to each piping run.