Owners and operators of regulated underground storage tanks (USTs) on tribal lands must comply with federal UST regulations.

This compliance assistance brochure highlights best management practices for piping release detection.

Note: This document is a resource to promote compliance and does not replace the federal UST regulations.


EPA developed this brochure to help UST owners and operators in Indian country comply with the federal UST regulations.

This brochure is one in a series of EPA compliance assistance brochures designed to help owners and operators comply with UST regulations.

Other brochures focus on spill buckets, overfill protection, recordkeeping and notification, financial responsibility, insurance, and tank release detection.

www.epa.gov/oust/pubs

EPA

**Office of Underground Storage Tanks**
**www.epa.gov/oust**
**August 2013**
**EPA-510-F-13-004**

# PIPING RELEASE DETECTION

## BEST MANAGEMENT PRACTICES FOR YOUR UNDERGROUND STORAGE TANK

**Effective through October 12, 2018**
**Visit**
https://www.epa.gov/ust/managing-your-usts-indian-country

**Compliance Assistance In Indian Country**

US EPA ARCHIVE DOCUMENT

# RELEASE DETECTION

## What is release detection?

Piping release detection is an electronic or manual method or combination of methods designed to help you quickly detect releases from your underground piping.

## What type of release detection must you use for pressurized piping?

A line leak detector (LLD) must be installed on your pressurized piping and must be tested ***annually*** to make sure that it works properly.

***You also must conduct one of the following:***

- an annual tightness test of the piping, or
- monthly monitoring using:
  - interstitial monitoring;
  - vapor monitoring;
  - groundwater monitoring;
  - statistical inventory reconciliation; or
  - other methods approved by the implementing agency.

## What type of release detection can you use for suction piping?

Release detection **is not** required if the suction piping:

- operates at below atmospheric pressure;
- is sloped so its contents drain back into the tank; and
- there is only one check valve directly below the dispenser pump.

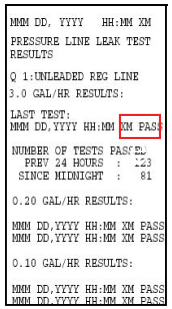
Suction piping system

If your facility's suction piping does not exactly match the characteristics above, then you must use either one of the monthly methods used for pressurized piping, or conduct a tightness test at least every 3 years.

**Your release detection must be installed, calibrated, operated, and maintained according to manufacturer's instructions.**

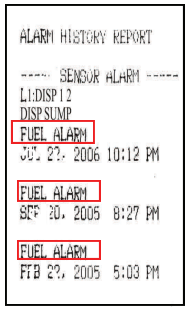
## What should you do to ensure your release detection device is working properly?

- **Check your alarm control panel printout (if installed).**
  - Does the printout show problems like alarms occurring, the console is not programmed properly, sensors not working properly, or liquid in the sump?



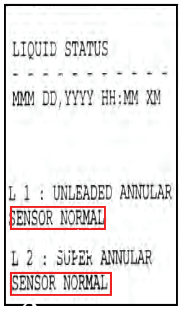
```
MMM DD, YYYY   HH:MM XM
PRESSURE LINE LEAK TEST
RESULTS

Q 1:UNLEADED REG LINE
3.0 GAL/HR RESULTS:

LAST TEST:
MMM DD,YYYY HH:MM XM PASS

NUMBER OF TESTS PASSED:
  PREV 24 HOURS  :  123
  SINCE MIDNIGHT :   81

0.20 GAL/HR RESULTS:

MMM DD,YYYY HH:MM XM PASS
MMM DD,YYYY HH:MM XM PASS

0.10 GAL/HR RESULTS:

MMM DD,YYYY HH:MM XM PASS
MMM DD,YYYY HH:MM XM PASS
```

Piping leak test results



```
ALARM HISTORY REPORT

------ SENSOR ALARM ------
L1:DISP12
DISP SUMP
FUEL ALARM
JUL 22, 2006 10:12 PM

FUEL ALARM
SEP 20, 2005  8:27 PM

FUEL ALARM
FEB 22, 2005  5:03 PM
```

Sump sensor alarm history



```
LIQUID STATUS
- - - - - - - - - - -
MMM DD,YYYY HH:MM XM


L 1 : UNLEADED ANNULAR
SENSOR NORMAL

L 2 : SUPER ANNULAR
SENSOR NORMAL
```

Sump sensor status report

- **Immediately respond to and investigate any control panel alarms or flashing lights.**

**Not all alarms are due to releases. However, releases have gone undetected when alarms are either ignored, or the control panel is turned off to stop flashing lights or beeps.**

Control panel indicator lights

- **Inspect your sumps.**
  - Is a sensor present?
  - Is the sensor positioned correctly?
  - Is there any liquid or product present?
  - Does the lid have a tight seal and is it securely fastened?
  - Is the sump damaged? *A damaged sump would no longer hold product if a release occurs.*

Tank top sump with double-walled piping and liquid sensor

Tank top sump full of liquid

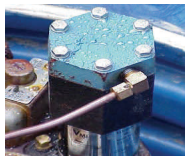
## What are some common piping release detection problems?

### Line leak detectors (LLD)

- Not installed or functions incorrectly.
- Not tested yearly or in accordance with manufacturer's requirements.
- Not programmed or properly connected.

Submersible turbine pump without a LLD installed

Electronic LLD



Mechanical LLD

### Sensors

- Not present or not functioning.
- Installed too high or placed improperly.

Tank top sump sensor installed too high

Sensor has been moved and cannot detect liquid

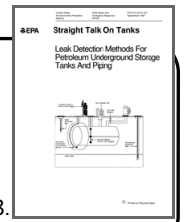
### Tightness Testing

- Not testing every three years. *This applies to suction systems that do not meet the requirements for exemption from leak detection.*
- An annual line test not being conducted for pressurized piping.

### Recordkeeping

- No records of an annual tightness test.
- No release detection performance claims or repair and maintenance records.
- No annual LLD test results.

For more information on piping release detection, see EPA's ***Straight Talk On Tanks: Leak Detection Methods For Petroleum Underground Storage Tanks And Piping*** at www.epa.gov/oust/pubs/straight.htm or order free copies by calling (800) 490-9198.



EPA Straight Talk On Tanks

Leak Detection Methods For Petroleum Underground Storage Tanks And Piping