



DIVISION OF STATE FIRE MARSHAL

BUREAU OF UNDERGROUND STORAGE TANK REGULATIONS

FACT SHEET

www.com.state.oh.us

Ted Strickland
Governor

Kimberly A. Zurz
Director

Michael P. Bell
State Fire Marshal

Peter A. Chace
Bureau Chief

RELEASE DETECTION

Ohio Administrative Code (OAC) rule 1301:7-9-07 defines the requirements for the performance of release detection on underground storage tanks (USTs) that are regulated by the Bureau of Underground Storage Tank Regulations (BUSTR). Release detection is the process of determining whether a release of a regulated substance has occurred from a UST system into the environment or into the space between the tank system and the secondary barrier surrounding it. This fact sheet explains what choices are available when selecting release detection methods.

UNDERGROUND STORAGE TANKS (USTs)

For most UST systems, two types of release detection must be used to monitor each UST: Daily inventory control and monthly monitoring. Some UST owners mistakenly believe that their monthly method also fulfills the daily requirement. This is only true when the monthly method has been specially modified to perform both functions. Otherwise, owners must employ methods that clearly show that both the daily and monthly requirements are being met.

UST Daily Inventory Control

For UST systems containing motor or aviation petroleum fuels, inventory must be taken on a daily basis and reconciled at the end of the month. Each day, the UST owner should take readings of the physical inventory in the UST system as well as readings of the sales and deliveries for that day. At the end of the day, the inventory should be reconciled to determine daily overage and/or shortage for the UST system. On a separate form, the owner should log the overage and/or shortage for the UST for each day of the month. At the end of the month, the daily overage and shortage readings for the UST should be summed together to determine a cumulative total. This total represents the monthly overage and/or shortage for the UST system. The owner should compare this total to see if it exceeds the calculated leak limit for the UST system. (The calculated leak limit is a number that the owners derives from a separate flow-through equation).

If the monthly overage and/or shortage exceeds the calculated leak limit for two consecutive months for the UST system, then the owner must perform a tightness test of the UST system and report a suspected release to BUSTR if the UST fails the tightness test.

For an in-depth description of daily inventory procedures, please refer to American Petroleum Institute (API) Standard 1621-2001 "Recommended Practice for Bulk Liquid Stock Control of Retail Outlets". BUSTR also provides a guidance titled "Daily Inventory Procedures" that will take an owner through each step of the daily inventory process. This guidance can be obtained by contacting BUSTR at (614) 752-7938 or visiting the BUSTR web site at www.com.state.oh.us/sfm/bust.

As an alternative, BUSTR regulations allow UST owners to forgo daily inventory procedures if the entire UST system (i.e., UST, piping and containments) is monitored by an acceptable method of release detection that operates continuously or produces a conclusive test result at least once a week.

Bureau of Underground Storage Tank Regulations

8895 E. Main St., P.O. Box 687, Reynoldsburg, Ohio 43068 (614) 752-7938
(02/07)

UST Monthly Monitoring

USTs shall be monitored at least every 30 days for releases by the owner or operator using one of the methods listed in paragraphs (D)(2) to (D)(4)(b) of rule 1301:7-9-07 of the OAC. These methods include:

- Automatic Tank Gauging: A product level monitoring device must be able to detect a two-tenth of a gallon per hour leak rate from any portion of the UST.
- Interstitial Monitoring: For USTs with a secondary barrier in or around the UST, the interstitial space between the UST and the barrier must be monitored for the presence of a release.
- Alternative Methods: Any other method that can be demonstrated to be as effected as the currently approved methods or the method can detect a two-tenth of a gallon per hour leak rate or a release of one hundred and fifty gallons within thirty days with a probability of detection of 0.95 and a probability of falsely indicating a release of 0.05. BUSTR must approve in writing each alternative method for each site where it is used. Statistical Inventory Reconciliation (SIR) is the most commonly requested alternative method. Additional information on release detection methods may be found at the National Work Group on Leak Detection Evaluations at the following web site: <http://www.nwglde.org/>.

Please note, after December 31, 2005, soil gas monitoring (vapor monitoring) and groundwater monitoring can no longer be used as methods of monthly monitoring unless the owner receives written approval to use these methods as alternative methods.

PIPING AND CONTAINMENTS

The release detection requirements for piping and containments are dependent upon several factors. For USTs installed prior to March 1, 2005, the following requirements apply to piping and containments:

- Automatic line leak detectors (ALLDs) are required on all piping that routinely contains regulated substances under pressure. Interstitial monitoring is not allowed in lieu of ALLDs unless written approval is given by BUSTR.
- Containments are not required at the USTs and below dispensers.
- Sensors are not required in containments.
- Piping, containments and related equipment used on UST systems installed prior to March 1, 2005, should be maintained in accordance with Rule 1301:7-9-08 of the OAC. In cases where components are not specifically required by rule, the maintenance requirements are minimal.

For USTs installed on or after March 1, 2005, the following requirements apply to piping and containments:

- Automatic line leak detectors (ALLDs) are required on all piping that routinely contains regulated substances under pressure. Interstitial monitoring is not allowed in lieu of ALLDs unless written approval is given by BUSTR.
- Containments are required at the USTs and below dispensers.
- Sensors are required in containments.
- Piping, containments and related equipment used on UST systems installed on or after March 1, 2005, should be maintained in accordance with Rule 1301:7-9-08 of the OAC. In most cases, in-depth maintenance requirements apply to these components.

HAZARDOUS SUBSTANCE AND SENSITIVE AREA UST SYSTEMS

In addition to all of the requirements previously mentioned above, the following requirements also apply to UST systems containing hazardous substances and UST systems installed in sensitive areas:

- UST systems containing hazardous substances must have secondary containment (e.g., double walled USTs) and interstitial monitoring for the UST and piping.
- UST systems containing hazardous substances must have containments (i.e., sumps) and sensors in the containments.
- UST systems installed in sensitive areas (after September 1, 1992 in most cases) must have secondary containment (e.g., double walled USTs) and interstitial monitoring for the UST and piping.
- UST systems installed in sensitive areas (after September 1, 1992 in most cases) must have containments (i.e., sumps) and sensors in the containments.

- UST systems installed in sensitive areas prior to September 1, 1992 may use release detection methods previously mentioned above, though special types of ALLDs are required.

Given the range of requirements that apply to hazardous substance and sensitive areas UST systems, it is recommended that owner review the applicable paragraphs of Rules 6, 7 & 8 of Chapter 1301:7-9 of the OAC. Copies of these rules are posted on the BUSTR web site or may be obtained by contacting BUSTR at the phone number listed on this fact sheet. Please review the fact sheet titled "Sensitive Areas" for further information on how to determine if your UST system is located in a sensitive area.

EXEMPTIONS AND OTHER OPTIONS

Rule 1301:7-9-07 of the OAC exempts some USTs or allows for other options for the following UST systems:

- UST systems that store fuel solely for emergency power generators are exempt from Rule 1301:7-9-07 of the OAC are not required to perform release detection.
- UST systems that store fuel for emergency power generators that also serve as a back-up to fire pump systems or heating systems may need to perform release detection. UST owners should contact BUSTR for further clarification.
- Tanks with a capacity of 550 gallons or less may use manual tank gauging in compliance with paragraphs (D)(1) to (D)(1)(6) of rule 1301:7-9-07 of the OAC for the sole method of leak detection.
- Tanks with a capacity of 551 to 2000 that contain new or used oil may use manual tank gauging in compliance with paragraphs (D)(1) to (D)(1)(b) of rule 1301:7-9-07 of the OAC as a method of release detection provided that a tank tightness test is performed in accordance with paragraph (F) of this rule once every 5 years.

OPERATION AND MAINTENANCE OF RELEASE DETECTION EQUIPMENT

Release detection equipments should be maintained in accordance with the procedures defined in Rule 1301:7-9-08 of the OAC. In some cases, owners should hire a contractor or consult with the manufacturer of the release detection product to ensure that it is operating properly and that it has been maintained in accordance with the manufacturer's specifications. While it is impractical to list all of the operational and maintenance requirements in this fact sheet, some of the more common requirements include:

- ALLDs shall be tested annually in a manner that introduces a simulated leak in order to demonstrate that the ALLDs can detect a leak of three gallons per hour at ten pounds per square inch line pressure within one hour.
- Piping under pressure shall be tightness tested annually or tested monthly by the on-site electronic line testing unit at a .2 gph leak rate.
- No later than December 31, 2005, and every three years thereafter, owners shall tightness test all containments installed on new UST systems (after March 1, 2005), containments associated with UST systems installed in sensitive areas (after September 1, 1992), and all containments associated with hazardous substance UST systems.
- All piping containing hazardous substances and piping located in sensitive areas shall be tightness test annually.
- All daily and monthly release detection systems shall be evaluated annually by a qualified person to ensure that each system is properly calibrated and is in working order.

REPORTING SUSPECTED RELEASES

If any release detection system associated with any UST, piping or containment component indicates that a release may have occurred, owners must report the suspected release to BUSTR within twenty four hours of discovery. BUSTR regulations allow owners to investigate and disprove suspected releases if extenuating circumstances exist. Failure to report a suspected release, even if it is disproved at a later date, may lead to a citation and fine. In addition, failure to report a suspected release may jeopardize an owner's ability to seek reimbursement through the Petroleum Underground Storage Tank Release Compensation Board (PUSTRCB).

This fact sheet is one of a series on Ohio's underground storage tank program. Please copy as needed.

RECYCLABLE

The Department of Commerce is an Equal Opportunity Employer and Service Provider.