

DIVISION OF UNDERGROUND STORAGE TANKS

CLASS A/B OPERATOR RETRAINING REQUIREMENT

ATG RELEASE DETECTION METHOD



ATG

AUTOMATIC TANK GAUGING

An ATG system consists of a permanently installed probe inside your tank that collects information such as product level and temperature, and a console inside the facility which calculates changes in product volume that can indicate a leak. The console should signal an alarm when there is a suspected problem. An ATG must be able to detect at least a 0.2 gallon per hour (gph) leak.

- **STATIC TESTING**

- Some ATGs can be programmed to automatically conduct a static leak test at least every 30 days. If your ATG does not test automatically, you must manually conduct a static leak test.
- Static testing requires downtime and should not be performed during deliveries or dispensing fuel.
- Static testing cannot be used for manifolded tank UST systems.

- **CONTINUOUS TESTING**

- Some ATGs have internal computer software that allows tanks to remain active while leak testing is performed. Common industry terms include CSLD, SCALD, and CITLDS.
- If a continuous leak test result is not available by the end of 30 days, a static leak test must be conducted.

- All ATGs require a minimum amount of product in the tank to conduct a valid test.
- It is not recommended to rely on the ATG computer software memory to store leak detection records because a power surge or lightning strike may cause a loss of electronic records.
- Pay attention to all alarms and respond appropriately.
- Keep your ATG user manual handy for reference and troubleshooting.

RECORDKEEPING AND REQUIREMENTS

- Print, review and keep at least 1 passing monthly leak test result for each tank compartment from the ATG.
- Keep the last 12 consecutive months of leak detection results and make available for inspection.
- Conduct annual ATG operability test and maintain the last 3 years of test results.
- The monthly release detection results must be recorded on the Division's Monthly/Annual Facility Walkthrough Inspection Form (CN-2544).
- Perform routine maintenance required by the ATG manufacturer.
- If any of the following conditions are observed, then the Division should be contacted to report a suspected or confirmed release with 72 hours:
 - Results of any failed 0.2 gph leak tests from the ATG
 - Any in-tank alarm from the ATG which indicates a sudden or unexplained loss of product or the presence of water
 - Any released petroleum product at the UST site or in the surrounding area

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CORROSION PROTECTION REQUIREMENTS



CORROSION PROTECTION

Steel tanks and piping that are in contact with the ground and/or water must be protected from corrosion or “rust”. Metal components or fittings (for example, flex connectors, riser pipes, valves, elbows, and unions under the dispensers or at the top of the tank) that are in contact with the soil or water also require corrosion protection.

- **GALVANIC**

- These cathodic protection systems use buried sacrificial anodes that are attached to underground tanks, piping or metal components to protect these items from rusting. Galvanic systems typically cannot be seen since the anodes are typically underground and there is no rectifier.

- **IMPRESSED CURRENT**

- These cathodic protection systems use a rectifier and buried wires connected to underground tanks, piping or metal components to protect these items from rusting. The rectifier may be located inside or outside of the facility. Electric power to the rectifier must be on continuously.
- All corrosion protection systems must be tested at least once every 3 years or following repairs (see below).

REPAIR AND REPLACEMENT

- Test the cathodic protection system within 6 months of installation or repair, and every 3 years thereafter.
- Some system repairs also require:
 - A follow-up tightness test within 3 to 6 months of repairs; or
 - The signature of a corrosion expert.
- Visually inspect all anode wiring and make repairs if necessary.

RECORDKEEPING AND REQUIREMENTS

- Conduct a cathodic protection test at least every 3 years and maintain the results of the last 2 tests.
- Maintain the results of any tightness test performed following the addition or replacement of anodes.
- If the site has an impressed current cathodic protection system:
 - Record the rectifier’s amperage and/or voltage of the 60-day rectifier inspection on the Monthly/Annual Facility Walkthrough Inspection Form (CN-2544).
 - Maintain the results of the last 3 rectifier inspections.
 - If the rectifier output (amperage or voltage) has changed by more than 20% since the “as left” readings on the last corrosion test, you should contact a cathodic protection tester.
- Cathodic protection systems must be operated continuously and maintained in accordance with a corrosion expert’s design.
- Metal tanks and/or piping (excluding flex connectors) that do not have corrosion protection must be permanently closed.
- If an impressed current cathodic protection system has been turned off or inoperable for more than 12 months, Division approval is required prior to placing the UST system back into service.

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IM RELEASE DETECTION METHOD



IM

INTERSTITIAL MONITORING

IM is a leak detection method that detects releases in the interstice, which is the space between a double walled tank or double walled piping. The interstitial space or interstice must be monitored continuously. For tanks, a sensor is installed between tank walls to check for the presence of a liquid or the loss/gain of liquid as is the case for hydrostatic methods. For piping, a sensor is placed in a location where liquid from a leak would most likely be detected. Typically, this location is inside a sump at the top of the tank, inside piping transition sumps, and in a sump under the dispenser. The pipe interstice must be open to allow product to flow from the pipe interstice to the liquid sensors in all sumps.

OPERATING IM EQUIPMENT

- Interstitial sensors trigger an alarm:
 - When liquid is detected in a dry tank interstice.
 - When a loss or gain is detected in a liquid tank interstice.
 - When liquid is detected in containment sumps.
- Disabling or tampering with a sensor is a criminal offense.
- Moving a sensor out of position so that it will not be able to easily detect liquid is a violation.
- Sensors must be tested annually to ensure proper function.
- Containment sumps must be liquid tight and integrity tested every 3 years.

RECORDKEEPING AND REQUIREMENTS

- Print, review, and maintain the sensor status and alarm history reports and document responses to alarms every 30 days.
- Maintain the last 12 consecutive months of release detection records.
- The monthly release detection results must be recorded on the Division's Monthly/Annual Facility Walkthrough Inspection Form (CN-2544).
- Maintain the most recent 3 year sump integrity test.
- Any containment sump repair or replacement must be tested within 30 days.
- Maintain the last 3 years of annual:
 - Automatic Tank Gauge (ATG) operability tests
 - Sensor function tests
 - Line leak detector tests (for pressurized piping)
- If any of the following conditions are observed, then the Division should be contacted to report a suspected or confirmed release with 72 hours.
 - If a sensor detects water or petroleum between the walls of a double wall tank.
 - If a sensor detects liquid and fuel is present in sump.

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PIPING RELEASE DETECTION METHODS



PRESSURIZED PIPING

CATASTROPHIC

Catastrophic line leak detection is required for all pressurized piping to detect large sudden releases, such as a piping failure. Catastrophic line leak detection is conducted by automatic line leak detectors installed in the piping system. The line leak detector may be mechanical or electronic. Mechanical and electronic line leak detectors must be tested annually.

PERIODIC

Periodic line leak detection is required for pressurized piping to detect smaller, less noticeable releases. Periodic line leak detection must be performed either monthly or annually. One of the following methods must be implemented:

- Monthly Monitoring
 - Interstitial Monitoring (IM) - required for piping installed or replaced on or after July 24, 2007.
 - Statistical Inventory Reconciliation (SIR).
- Annual Line Tightness Testing.
- Electronic Line Leak Detectors (ELLD) - conducting 0.2 gph monthly or 0.1 gph annual testing.

SUCTION PIPING

Leak detection is not required for suction piping that meets both of the following conditions of safe suction:

- The piping is sloped so product will drain back to the tank if suction is lost.
- There is only one check valve located near the suction pump beneath the dispenser.

Leak detection is required for suction piping that has not been verified as "safe suction". This piping must conduct one of the following:

- Line tightness test conducted every 3 years.
- Monthly monitoring (IM or SIR).

RECORDKEEPING AND REQUIREMENTS

- Test mechanical and electronic line leak detectors at least annually and maintain the last 3 annual test results.
- Pressurized piping must have an annual line tightness test, or be monitored monthly with IM, ELLD, or SIR.
- Keep the last 12 consecutive monthly monitoring results (IM, ELLD, or SIR) and/or the annual line tightness test.
- For suction piping that is not considered "safe suction": a line tightness test must be conducted every 3 years or monitored monthly with IM or SIR.
- For Interstitial Monitoring (IM) requirements on pressurized piping, please refer to the IM Release Detection Method Flyer.
- The monthly release detection results must be recorded on the Division's Monthly/Annual Facility Walkthrough Inspection Form (CN-2544).
- Piping repair requests must be submitted in writing to the Division for approval.
- Report all suspected releases within 72 hours, and investigate and determine the cause for all alarms or failures.

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SIR & MTG MONTHLY RELEASE DETECTION METHODS



SIR

STATISTICAL INVENTORY RECONCILIATION

SIR is a monthly monitoring release detection method for tanks and piping. SIR uses a computer software program to perform a statistical analysis of UST system inventory, delivery, and dispensing (sales) data every 30 days.

RECORDKEEPING AND REQUIREMENTS

Maintain the following SIR records:

- Monthly SIR report/results.
- All inventory data (daily 1/8th of an inch fuel measurements, sales and deliveries).
- All data must be submitted to the SIR vendor every 30 days.
- Monthly water level readings.
- Annual dispenser calibration records for all dispensers
- The last 12 consecutive months of complete monthly SIR results.
- For pressurized piping, maintain annual line leak detector test results for 3 years.
- Report all suspected releases within 72 hours (any fail or any two consecutive inconclusive results).
- If applicable, maintain the last 3 years of ATG annual operability tests.
- The monthly release detection results and annual gauging stick inspection must be recorded on the Division's Monthly/Annual Facility Walkthrough Inspection Form (CN-2544).

**All inventory data must be collected using the correct tank chart or an accurately programmed automatic tank gauge (ATG).*

**The SIR method must be listed as meeting the performance standards by the National Work Group on Leak Detection Evaluations (<https://neiwppc.org/nwglde/>)*

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MTG

MANUAL TANK GAUGING

MTG is a monthly monitoring release detection method used for tanks that meet very specific volume and diameter requirements. The tanks must be placed out of operation weekly for specific time periods to meet the method requirements. For that reason, MTG is not a commonly used method of release detection.

RECORDKEEPING AND REQUIREMENTS

- Keep the last 12 consecutive months of leak detection results and have available for inspection.
- Tank liquid level measurements must not exceed weekly or monthly standards for appropriate tank size.
- MTG may used on tanks 1,000 gallons or below.
- Tanks from 1,001 gallons to 2,000 gallons must use Tank Tightness Testing in addition to MTG. *Tanks over 2,000 gallons may not use MTG.*
- Report all suspected releases within 72 hours.
- The monthly release detection results must be recorded on the Division's Monthly/Annual Facility Walkthrough Inspection Form, Section I (CN-2544).

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DIVISION OF UNDERGROUND STORAGE TANKS

CLASS A/B OPERATOR RETRAINING REQUIREMENT

SPILL PREVENTION AND OVERFILL PREVENTION EQUIPMENT



SPILL

- Single wall spill prevention equipment must be integrity tested at least once every 3 years or use a double-walled spill bucket monitored continuously with an interstitial sensor.
- If a tank compartment has multiple fill ports each fill port must have spill prevention equipment.

OVERFILL

- All overfill prevention equipment must be inspected at least once every 3 years. At a minimum, the inspection must ensure that overfill prevention equipment is set to activate at the correct level and will activate when petroleum reaches that level.
- Tank charts must be used for correct calculations for overfill inspections and testing. Tank charts can be obtained from the tank manufacturer, calculated from inventory records (ATG or SIR), or generated using a manufacturer's website.

REPAIR AND REPLACEMENT

- If the device manufacturer does not have an approved method to repair the damaged or defective spill or overfill prevention device, the equipment must be replaced. Repaired or replaced spill and overfill prevention devices must be integrity tested or tested for functionality within 30 days of the repair or replacement.
- Flow Restriction Overfill Devices (Ball Float Valves) cannot be repaired or replaced if found damaged, defective, or improperly installed. Another method of overfill prevention must be installed within thirty days. (Automatic Shutoff Device or High-Level Alarm). If the ball float device is not removed and an automatic shutoff flapper valve is installed, the flapper valve should be set to the height of the ball float but not above 95%.

RECORDKEEPING AND REQUIREMENTS

- The spill and overfill test results must be maintained for 3 years.
- Records for double-walled spill prevention monitored with an interstitial sensor must be maintained for as long as the equipment is in use. Conduct an integrity test within 30 days of discontinuing the interstitial sensor monitoring.
- Double wall spill buckets not monitored continuously with an IM sensor need to be integrity tested every 3 years.
- All post-repair and replacement testing must be conducted within 30 days and maintained for 3 years.
- All repair documentation must be maintained for the life of the UST system.
- Monthly inspections are required for all spill prevention devices. The results of these inspections must be recorded on the Division's Monthly/Annual Facility Walkthrough Inspection Form, Section I (CN-2544).

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