Underground Storage Tank Compliance Program

2018 Rule Changes and Other Related Guidance Directive

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DEQ is a leader in restoring, maintaining and enhancing the quality of Oregon's air, land and water.

State of Oregon
Department of Environmental Quality

DEQ can provide documents in an alternate format or in a language other than English upon request. Call DEQ at 800-452-4011 or email deqinfo@deq.state.or.us.

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1. Purpose

The purpose of this Directive is to ensure consistent interpretation of OAR Chapter 340, Division 150 (UST Compliance rules) by DEQ staff.

2. Applicability

This Directive is to be used by DEQ staff when providing guidance to owners and permittees of UST facilities and to licensed service providers on implementing the UST Compliance rules. The UST Compliance Rules apply to:

- Tanks storing gasoline, ethanol, diesel, biodiesel and listed hazardous substances;
- Tanks greater than 110 gallons in size (1,100 gallons or more if residential or farm use);
- Tanks in use after 1974; and
- Service providers conducting UST services.

3. Background

The US Environmental Protection Agency revised the federal UST regulations (40 CFR Part 280) in 2015. In June 2018, DEQ amended OAR 340, Division 150 to align the UST compliance rules with the federal regulations.

A portion of the UST Compliance rules are slated to become effective on October 1, 2020, including:

- Sump Testing;
- Spill Prevention Equipment Testing;
- Overfill Equipment Inspections;
- Release Detection Equipment Operability Testing; and
- Walkthrough Inspections.

Section 6 of this Directive provides detailed information on implementing each of those sections of the UST compliance rules.

Section 7 of this Directive provides detailed information on the appropriate configuration of pressurized piping equipped with mechanical line leak detectors. Past installation practices have left some UST systems with mechanical leak detectors installed downstream of the turbine, leaving portions of pipe sections, fittings or couplings without 3 gph leak detection. In the past, DEQ staff have not consistently determined which configurations meet the requirements. Section 7 further explains how DEQ staff will determine compliance for those situations.

Additionally, Appendix A of this Directive contains the complete notes from information sessions with UST service providers, owners and permittees which occurred following the adoption of the UST compliance rules in June 2018.

4. Definitions

Unless noted otherwise, the definition of terms used throughout this Directive are set forth in OAR 340-150-0010.

5. Acronyms Used in This Directive

AHJ – Authority having jurisdiction
ALLD – Automatic line leak detector
ATG – Automatic tank gauge
BMP – Best Management Practice
CFR – Code of Federal Regulations
DEQ – Department of Environmental Quality
ELLD – Electronic line leak detector
EPA – Environmental Protection Agency
ICC – International Code Council
MLLD – Mechanical line leak detector
NWGLDE – National Work Group on Leak Detection Evaluations
OAR – Oregon Administrative Rules
ORS – Oregon Revised Statute
PEI – Petroleum Equipment Institute
RP – Recommended Practices
STS – Sump Test System
TS – (Franklin Fueling Systems) Total Solution
UDC – Under Dispenser Containment Sump
UST – Underground Storage Tank
U1 – UST Installation/Retrofitting
U2 – UST Decommissioning
U3 – UST Underground Tank Tightness Testing
U4 – UST Cathodic Protection

6. 2018 UST Rule Change – Guidance

6.1 Tightness Testing of Sumps Used for Interstitial Monitoring

When a sump is used as secondary containment for piping at UST facilities, it must be tested for tightness every three years. This type of sump can include turbine or tank top sumps, UDC, and transition sumps.

Note: Sumps which are used as spill prevention equipment are covered in **Section 6.2.**

State authority for sump testing OAR 340-150-0310(8) and (10)

Federal authority & requirements 40 CFR 280.35
Facilities requiring sump testing

- UST facility that had 50 percent or more of the connected underground piping installed, replaced, or upgraded after March 1, 2008 must have interstitial monitoring; and
- Any other UST facility that uses interstitial monitoring as their method of release detection for its piping.

Types of sump tests

- Full hydrostatic sump testing methods include PEI-1200 and Franklin Incon TS-STS Sump test System;
- Low level sump testing methods currently include EPA JUN2018 Technical Compendium;
- Other methods approved by DEQ, if they are determined to be protective of human health and the environment, and are list on the NWGLDE website.

Best management practices and quality standards for sump tests

During a compliance inspection, DEQ will request documentation to confirm the permittee completed the following actions:

- Sensors are checked to ensure they activate below the lowest penetration of sump;
- Sumps are "visually" tested. If there are obvious visual ques that the sump will not pass a tightness test, then the test fails, and the sump needs to be repaired or replaced;
- Sumps are cleaned of dirt, grime and other materials prior to testing; and
- Disposal of test water is completed according to regulations.

DEQ accepts documentation through photographic records of the basin and sump conditions, completed test forms, and disposal receipts.

Who can do sump testing?

- A licensed supervisor with "Tank Tightness Testing" (ICC-U3) or "Installation" (ICC-U1) license.
- A facility owner provided they have the appropriate ICC license.

Sump repairs

- If a sump fails a visual test (suspected release condition), a repair must be done prior to tightness testing of the sump.
- Repairs to sumps must be performed to manufacturer's specifications and in accordance with a code of practice developed by a nationally recognized association or an approved testing laboratory.

Verification of proper sump testing

During compliance inspections, DEQ may spot check accuracy of sump test results, including:

- Visual test of sumps;
- Actual depth of penetration(s) matches depth on the test report;
- Check sensors functionality; and
- Actual depth of sump matches the depth on the test report.

Documentation and forms
DEQ accept several forms as documentation of a completed sump test. These forms vary based on the testing methods used. At minimum, all forms must be as descriptive as the PEI RP-1200 or the EPA low-level test forms.

Failed tests
- A failed sump (e.g. Turbine, UDC, or transition) test is a suspected release (OAR 340-150-500(1)(d)). DEQ must receive this notification within 24 hours of failed test. Inspector updates the program's information management system (i.e. UST Database or EDMS).
- If the test has failed DEQ should supply and request the completion of the "Failed Sump Test Suspected Release Investigation Questionnaire and Report" (**Appendix B**). Based on the information submitted, DEQ should determine if further investigation is required.

Sump test water disposal
- Sump test water must be disposed of properly and in accordance with DEQ hazardous waste guidelines and any other federal, state, or local regulations. DEQ will refer to the use of the Hazardous Waste Program Fact Sheet titled, "How to Determine if Your Waste is Hazardous" to decide if the sump test water generated needs to be disposed or handled as a hazardous waste.
- If sump test water is stored on site for re-use, DEQ will require that the UST facility keep the "sump test fluid" in a compatible, sealed, and labelled container in a secure location.

Sump testing – record keeping
Owners and permittees must maintain records for sump tightness testing, including:
- All records of testing or inspection for three years; and
- For sumps not tested every three years, documentation must be maintained for as long as the equipment is monitored. This is required to verify that the sump is double walled and the integrity of both walls is periodically.

An owner and permittee must have the records available for review by DEQ upon request.

6.2 Tightness Testing of Spill Prevention Equipment

Beginning on Oct. 1, 2020, owners and operators must test their spill prevention equipment (e.g. spill buckets) to ensure they are tight and functioning per manufacturer specifications. The proper operation of a spill bucket can be verified through various methods; each referred to as a "tightness test."

State authority for spill prevention equipment testing OAR 340-150 0310 (8);(11);(12)

Federal authority & requirements 40 CFR 280.35

Facilities requiring spill prevention tightness testing
UST facilities that deposit 25 gallons or more of product into a UST tank at one time are required to have spill prevention equipment. Spill prevention equipment tightness testing is required:

- At the time of installation;
- After a repair; and
- At least every three years.

Types of tightness tests for spill prevention equipment -

- Hydrostatic test methods includes PEI RP-1200 and Franklin Incon TS-STS Sump Test System;
- Vacuum test methods includes PEI RP-1200 and manufacturer recommended practice; or
- Continuous/periodic monitoring of both walls at least every 30 days.

Best management practices and quality standards for spill prevention tightness tests

During a compliance inspection, DEQ will request documentation from the permittee that the following actions have been taken:

- Spill prevention equipment must be "visually" tested prior to testing. If there are obvious visual cues that the spill prevention device will not pass a tightness test, then the test fails, and the device needs to be repaired or replaced;
- Spill prevention equipment must be cleaned of dirt, grime and other materials prior to testing; and
- Disposal of test water must be done according to regulations.

Documentation can be provided through photographic records of the spill prevention device, completed test forms, and disposal receipts.

Who can perform spill prevention equipment testing?

- Licensed supervisor with "Tank Tightness Testing" (ICC-U3) or "Installation" (ICC-U1) license.
- A facility owner provided they have the appropriate ICC license.

Verification of proper spill prevention tightness testing

During compliance inspections, DEQ may spot check accuracy of spill prevention tightness test results, including:

- Visual test of the spill prevention device;
- Check sensors functionality; and
- Actual depth of the spill prevention device matches the depth on the test report.

Test water disposal

- Spill prevention test water must be disposed of properly and in accordance with DEQ hazardous waste guidelines and any other federal, state, or local regulations. DEQ will refer to the Hazardous Waste Program Fact Sheet titled, "How to Determine if Your Waste is Hazardous" to decide if the sump test water generated needs to be disposed of or handled as a hazardous waste.
- If spill prevention test water is stored on site for re-use, DEQ requires that the UST facility keep the "spill prevention test fluid" in a compatible, sealed, and labelled container in a secure location.

Spill prevention tightness testing – record keeping
Owners and permittees must maintain records for spill prevention tightness testing, including:

- All records of testing or inspection for three years; and
- For sumps not tested every three years, documentation must be maintained for as long as the equipment is monitored. This is required to verify that the sump is double walled and the integrity of both walls is tested periodically.

An owner and permittee must have the records available for review by DEQ upon request.

Documentation and forms
DEQ accepts several forms as documentation of a completed spill prevention tightness test. These forms vary based on the testing methods used. At minimum, all forms must be as descriptive as the PEI RP-1200 form.

DEQ accepts documentation through photographic records of the spill prevention device, completed test forms, and disposal receipts.

Additional Information / Clarification
DEQ will refer to the EPA publication, "UST Systems: Inspecting and Maintaining Sumps and Spill Buckets" for additional clarification on how to maintain and inspect spill prevention equipment.

6.3 Functionality of Overfill Prevention Equipment Inspection

What is overfill equipment testing?
For overfill equipment to be operated effectively and safely, the equipment must be maintained, inspected, and tested for operation on an ongoing basis.

State authority on overfill equipment testing OAR 340-150 0310 (7);(8);(9)

Federal authority & requirements 40 CFR 280 & 281

Facilities required to do testing
UST facilities that deposit 25 gallons or more of product into a UST tank at one time are required to have overfill prevention equipment. Overfill prevention equipment functionality testing is required:

- At the time of installation;
- After a repair; and
- At least every three years.

Types of Overfill Prevention Equipment

- Ball Floats (cannot be used with coaxial Stage 1 vapor recovery).
- Automatic Shutoff Devices (flappers).
- Overfill Alarm.

Best management practices and quality standards for overfill equipment functionality inspections
During a compliance inspection, DEQ will request documentation from the permittee that verifies overfill equipment inspections were conducted to meet the manufacturer specification requirements or by a code of practice developed by a nationally recognized association.

Who can perform overfill equipment functionality inspections?
- Licensed supervisor with "Tank Tightness Testing" (ICC-U3) or "Installation" (ICC-U1) license.
- A facility owner provided they have the appropriate ICC license.

Verification of overfill equipment functionality testing
During compliance inspections, DEQ may spot check accuracy of overfill equipment functionality by:
- Completing a visual test of the overfill device,
- Checking relay for the overfill alarm.
- Reviewing all documentation including completed inspection forms and photographic records.

Note: If more than one overfill prevention method is present, DEQ will request documentation for all methods. UST systems can have more than one overfill device and not be in violation as long as the one being used it tested and is not interfered with by operation by a secondary overfill equipment.

Overfill equipment functionality inspections forms & documentation
There are several forms that DEQ can accept as documentation of a completed overfill equipment functionality inspection. These forms vary based on the type of overfill equipment being used. At minimum, all forms must be as descriptive as the PEI RP-1200 Appendix C-5 and Appendix C-6.

Overfill Equipment Inspections - Record-Keeping
Owners and permittees must maintain records of testing or inspection for three years and be available for review by DEQ upon request.

6.4 Operability Tests of Release Detection Equipment

What is Operability Tests of Release Detection Equipment?
Owners and operators must test electronic and mechanical components of their release detection equipment for proper operation at least annually.

State authority on operability tests of release detection equipment OAR 340-150-0400

Federal authority& requirements 40 CFR 280:40

Facilities required to do operability testing
All UST facilities are required to have some method of release detection and because of that, they have to do operability testing.

Types of operability testing
Electronic and mechanical release detection components must be tested for proper operation at least annually using one of the following options:

- Equipment manufacturer's instructions/recommendations.
- A code of practice developed by a nationally recognized association or independent testing laboratory.

Best management practices and quality standards for operability tests of release detection equipment
During a compliance inspection, DEQ will request documentation to confirm the permittee completed the following actions:

- Automatic tank gauge and other controllers
    1. Test external audible alarm and ATG console alarm and lights.
    2. Verify the ATG system configuration set-up parameters.
    3. Test the battery backup.
    4. Ensure date setting is correct.

- Probes and sensors
    1. Inspect probe shafts and floats for residual buildup.
    2. Ensure all floats move freely.
    3. Ensure shafts are not damaged.
    4. Ensure the cables are free of kinks and breaks.
    5. Ensure fittings where the probe/sensor cables exit the riser are in good condition.
    6. Test the alarm operability and communication with the controller (ATG).

- Automatic line leak detector
    1. Ensure the device activates (alarms, restricts flow, or shuts off flow) within an hour when simulating a release equivalent to 3 gallons per hour at 10 pounds per square inch.

- Vacuum pumps and pressure gauges
    1. Ensure there is proper communication with sensors and the controller.
    2. Ensure vacuum gauges are functional and reading correctly.

Operability tests of release detection equipment forms and documentation
DEQ can accept various forms as documentation of a completed operability tests of release detection equipment. At minimum, all forms must be as descriptive as the PEI RP-1200 Appendix C-7 or as equipment manufacturer's instructions recommend.

Who can perform operability tests of release detection equipment?

- Licensed supervisor with "Tank Tightness Testing" (ICC-U3) license.
- A facility owner provided they have the appropriate ICC license.

Verification of operability tests of release detection equipment
During compliance inspections, DEQ may spot check accuracy of the operability tests of release detection equipment by:

- Completing a visual test of the release detection equipment;
- Check sensors functionality; and
- Reviewing all documentation including completed test forms and photographic records.

Operability Tests Release Detection Equipment - Record Keeping
An owner and permittee must maintain records demonstrating compliance with this rule and retain the following records for as long as the release detection equipment is in use:

- All written performance claims pertaining to any release detection system used and the third party evaluation and approval;
- The results of any sampling, equipment testing or monitoring; and
- Written documentation of all calibration, maintenance and repair of release detection equipment permanently located on site, including any schedules of required calibration and maintenance provided by the release detection equipment manufacturer.

An owner and permittee must keep release detection records either:

- At the UST facility and immediately available for inspection by DEQ; or
- At a readily available alternative site and provide the records for inspection by DEQ upon request.

6.5 Walkthrough Inspections Guidance

What are walkthrough inspections?
Owners and operators must conduct monthly walkthrough inspections at their UST facility. A monthly walkthrough inspection involves checking spill prevention equipment and release detection equipment. An annual walkthrough includes checking containment sumps and handheld equipment.

State authority for walkthrough inspections OAR 340-150-0315

Federal authority & requirements 40 CFR 280.36

Facilities requiring walkthrough inspections
All UST facilities are required to perform walkthrough inspections and retain records as noted below.

Types of walkthroughs

- Monthly walkthrough for spill prevention equipment and release detection equipment; and
- Annual walkthrough to check sumps and handheld release detection equipment.

Best management practices and quality standards for walkthrough inspections
During a compliance inspection, DEQ will request documentation to confirm the permittee completed the following actions:

- Inspect spill prevention equipment
    1. Check for damage;
    2. Remove any liquid or debris;

3. Check for and remove any obstructions in the fill pipe;
4. Check the fill cap to make sure it is securely on the fill pipe;
5. If the UST system is equipped with double walled spill prevention equipment with interstitial monitoring, check for a leak in the interstitial area.

- Inspect release detection equipment
  1. Ensure it is operating with no alarms or other unusual operating conditions present;
  2. Ensure records of release detection testing are reviewed and current.
- Inspect containment sumps
  1. Check for damage, leaks into the containment area, or releases to the environment;
  2. Remove any liquid or debris;
  3. If the UST system is equipped with double walled containment sumps with interstitial monitoring, check for a leak in the interstitial area.
- Inspect hand held release detection equipment (for example tank gauge sticks or groundwater bailers)
  1. Check for operability and serviceability.

Who can perform a walkthrough inspection?

- PEI RP 900 describes who can complete monthly walkthrough inspection as a Level II Qualified person; DEQ sees an Operator class A or B equivalent to the Level II Qualified person.
- PEI RP 900 describes who can complete an annual walkthrough inspection as a Qualified Technician; DEQ sees an Operator class A or B equivalent to the Qualified Technician.
- Because the rule allows options on how to complete walkthrough inspections, only if a facility completes inspections following PEI RP 900, do they have to have qualified individuals as described above complete the inspections.

Walkthrough inspection forms and documentation

DEQ may accept any form as documentation of a completed walkthrough inspection as long as it at minimum inspects the equipment and factors listed in the PEI RP 9000 walkthrough form.

Verification of walkthrough inspections

During compliance inspections, DEQ may spot check accuracy of the annual and monthly walkthrough inspections by:

- Completing a visual test of equipment;
- Check sensors functionality; and by
- Reviewing all documentation including completed inspection forms and photographic records.

Walkthrough Inspections - Record keeping

- Owners and permittees must maintain records of annual and monthly walkthrough inspections for one year. Records must include a list of each area checked, whether each area checked was acceptable or needed action taken, a description of actions taken to correct an issue, and delivery records for spill prevention equipment checked less frequently than every 30 days.
- Records must be available for review by DEQ upon request.

7. Automatic Line Leak Detection Configuration

*Under OAR 340-150-0400(1)(a), the owner must conduct release detection monitoring on **all** portions of the UST and underground piping which routinely contain a regulated substance. OAR 340-150-0410(2) more specifically requires that underground pressurized piping have a line leak detector installed and annual line tightness testing or interstitial monitoring sensors that monitor all portions of underground piping. In lieu of annual line tightness testing or interstitial monitoring sensors (but not in lieu of a line leak detector), the owner may conduct one of the methods in OAR 340-150-0450 through 340-150-0470 (see OAR 340-150-0410(7)).*

In summary, pressurized piping must have the following: line leak detector which meets the standards in OAR 30-150-0400(2); and annual line tightness testing or another method of release detection that monitors all portions of the underground piping.

What is pressurized piping?

- Regulated substances conveyed from the underground storage tank to the dispenser by use of a submersible turbine pump. The product is essentially "pushed" from the tank under positive pressure;
- Any method that creates a positive pressure to push regulated substance through piping.

State authority for line leak detection OAR 340-150-0400(1) & 0410(1)

Federal authority & requirements 40 CFR 280.44

Types of automatic line leak detection equipment

- Mechanical Line Leak Detector (MLLD)
- Electronic Line Leak Detector (ELLD)

In most cases, an inspector will see the MLLD installed on the turbine head via an appropriate port. (**Figure 1.0**). *In some situations due to the construction of the UST system, a mechanical line leak detector is installed on the piping, rather than on the turbine, resulting in a portion of the underground piping which is not protected by the line leak detector such as when a MLLD is installed immediately adjacent to the turbine with manufacturer approved fittings (**Figure 2.0**) or when a MLLD is installed off the turbine (**Figure 3.0**).*

When a mechanical leak detector is installed "downstream" of a submersible turbine pump some portions of the piping are not being protected by the leak detector. As such, when a mechanical leak detector is installed downstream of the turbine, the UST facility is not meeting the requirements in OAR 340-150-0400 and OAR 340-150-0410. DEQ will require the permittee to correct this violation by:

- Installing an electronic line leak detector that can detect pressure loss upstream of the leak detector (**Figure 4.0**); or
- Installing a turbine that allows MLLD to be installed directly on the turbine; or

- Installing a turbine containment sump and monitor the sump with a sensor (**Figure 3.0** left side) in the following ways:
    1) Tightness test the sump at installation and at least once every three years as per OAR 340-150-0310(8).
    2) Functionally test sensors annually.
    3) Facilities with attendants and/or Class C trained operators on-site during operational hours may utilize alarm only functioning sensors.
    4) Facilities without attendants may utilize positive shutdown sensors that shutdown the turbine when a leak condition is present.
    5) A monthly log record of sensor status must be maintained with sensor alarm records recorded.

Figure 1.0 - Mechanical Line Leak Detector

Setup with an MLLD on turbine head. All portions of pressurized piping protected. **In compliance with the rules.**

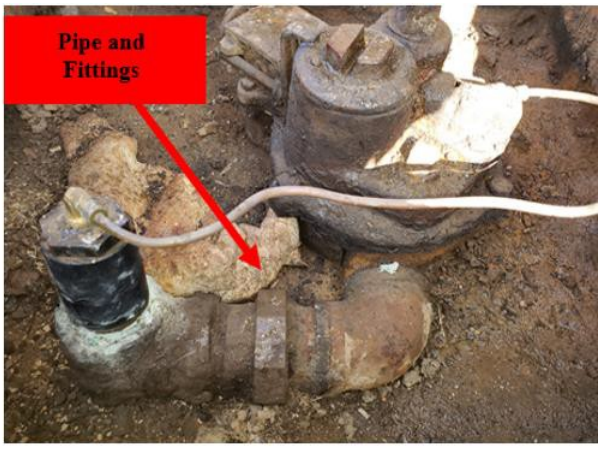
Setup with a high-flow MLLD mounted directly attached to 5-hp turbine. All portions of the pressurized piping is protected. **In compliance with the rules.**

Figure 2.0 - Mechanical Line Leak Detector is installed immediately adjacent to the turbine

In compliance with the rules only if the sump is monitored.

Figure 3.0 - Mechanical Line Leak Detector is installed off the turbine

Setup with piping prior to the leak detector assembly housing in a tight sump containing a sensor. **In compliance with the rules.**



Setup with piping prior to the leak detector assembly housing and no sump. **Not in compliance with the rules**.

Figure 4.0 - Electronic Line Leak Detector installed off of turbine sees pressure in both directions.

In compliance with the rules.

Who Can Perform Leak Detector Installation/Repair?

- A licensed supervisor with an "Installation" (U1) license.
- A licensed supervisor is required to also be / employed by a licensed UST service provider.
- A facility owner provided they have the appropriate ICC license.

Leak detector testing should be conducted after any repair or reconfiguration of a leak detector.

Who Can Perform LLD Testing?

- Licensed supervisor with "Tank Tightness Testing" (International Code Council "U3").

- A facility owner provided they have the appropriate ICC license.
- Refer to OAR 340 Division 160 Registration and Licensing Requirements for Underground Storage Tank Service Providers for additional information.

Sites Requiring LLD Testing

- All regulated facilities employing a pressurized method of product transfer require yearly LLD functionality testing.
- All sump sensors employed to assist with the line leak detection are required to be tested yearly.
- Monitored sumps require tightness testing at installation and every (3) years.

Suspected Release Requirements

- Sensor alarms, failed line testing and failed sump tests must be investigated and reported as per OAR 340-150-0465(7) & 340-150-0500.

Additional Information

- EPA – 40 CFR -280.
- National Work Group on Leak Detection Evaluations – NWGLDE.
- "Pressurized Piping. Standardized Inspection Manual Technical Chapter 3.5" Tennessee Department of Environment & Conservation.
- "Release Detection For Underground Storage Tanks and Piping" Straight Talk On Tanks" EPA 510-k-16-003 May 2016.

Automatic Line Leak Detection - Record Keeping

- Records of tests are to be available to DEQ upon request and during routine compliance inspections.
- The last completed line test, line leak detector test or the most current 12 consecutive months of release detection records for piping must be retained. DEQ recommends keeping release detection records for the last 3 years.
- Monthly sensor status records must be kept as per OAR 340-150-0465(4) & (6).

8. Appendix A

Service Provider Roundtable Meeting Q&As

State of Oregon Department of Environmental Quality

Underground Storage Tank Program

Service Provider Roundtable Meeting Q & As

Sump Testing

1. What are the requirements for double-walled containment sumps and double-walled spill buckets?

Answer: Double-walled containment sumps and spill buckets are excluded from the triannual testing requirement if **both** inner and outer walls of the sump/spill bucket are monitored every 30

days. This means that only liquid- or vacuum-constructed sumps/spill buckets qualify for the triannual testing exemption. Double-walled spill buckets, such as the OPW "Edge" model have open-air interstitial spaces and do not qualify for this testing exemption. See OAR 340-150-0310(8) for specific reference.

2. What test methods are allowable in Oregon for the triannual sump and spill bucket-testing requirement?

   Answer: As described in 340-150-0310(8)(b)(A-C), acceptable test methods include any manufacturer-developed method or a code of practice by a nationally recognized industry association (e.g., PEI RP-1200). As described in the low-level sump testing section, EPA has recently produced guidance on low-level sump testing that is acceptable in Oregon.

3. Is an audible and visual alarm necessary when performing low-level sump testing as part of the interstitial monitoring piping leak detection method?

   Answer: The EPA guidance published in June 2018 includes language in the Required Conditions section that states, "You may only use these instructions if your sensors are programmed to both alarm and shut off when in contact with any liquid." This means that 'stand-alone' sensors (e.g., Franklin DC 400 series sensors) can only be used if they provide some sort of alarm, in addition to the shutdown action. This is true regardless of whether the site is attended or unattended when low-level sump testing occurs. DEQ also recognizes that some sites have previously been told they were in compliance with stand-alone sump sensors. However, those approvals were prior to the federal and state rule revision and the new low-level sump-testing requirement published by the EPA.

4. Can an owner or permittee perform their own spill bucket testing or other types of testing and do they have to have a supervisor's license?

   Answer: An owner or permittee can perform UST services at their own facilities, including testing, installation and modification work, as long as they have completed the appropriate International Code Council (ICC) exam for each type of work performed. A supervisor's license is not required.

5. Does the hydrostatic test on newly installed sump/spill bucket count as the first required tri-annual sump-tightness test?

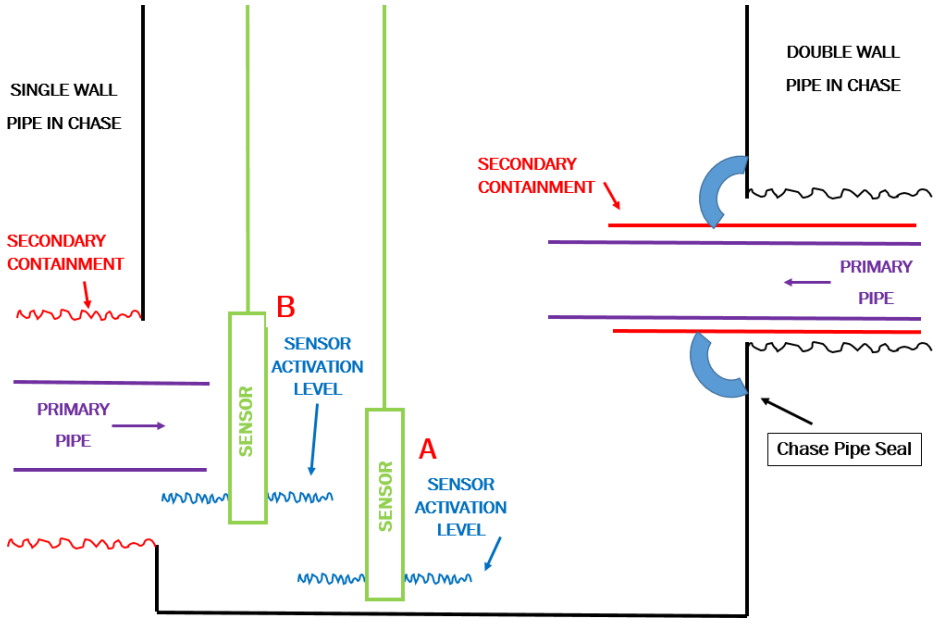
   Answer: Yes, the containment sump and spill bucket will need a tightness test again within three years of the first test at installation.

6. Is the following situation in compliance with interstitial monitoring piping release detection requirements? Annular space openings of piping in a sump are temporarily sealed to complete a hydrostatic test of the sump. The temporary annular space seal is removed and the annular space is, once again, open to allow potential leaks from the primary piping to flow back into the sump. The piping annular space exists below the activation point of the interstitial monitoring sump sensor.

Answer: No, if the sump sensor activation point is above the level of the penetration seal or cover that is removed after the test then the method would not be considered to be in compliance.

Describing specific sump testing circumstances is difficult because of the unique configurations of sumps, piping and penetrations at individual sites. See the diagram below for examples of sump conditions intended to illustrate the answer above. In all cases, the secondary containment (annular space) of the double-wall piping must communicate with the monitored containment sump during operation. On the right-hand side of the diagram, the chase pipe of the double-wall pipe can be sealed off from the sump when tested and during normal operation. On the left-hand side of the diagram, the chase pipe of the single wall pipe functions as the secondary containment, and must remain open during normal operation and must also remain open during testing if the sump is monitored by a sensor at or above the level of the penetration (sensor example B). This means the chase pipe, which is acting as the secondary containment, must be included in the tightness test of the sump. If the sump is monitored by a sensor below the secondary containment penetration (example A), then the penetration cover can be in place during the test and must be removed during operation.

Please note, not all chase pipes have third party approval and compatibility ratings to act as secondary containment. Facility owners should consult the manufacturer of the chase pipe to confirm chase piping is appropriate as secondary containment.



7. Will the UST program require submittal of records of disposal for water used for hydrostatic testing?

Answer: No, even though typical sump and spill bucket test documentation forms (e.g. the PEI test form) do include a place to indicate proper management of test water.

8. If a person keeps hydrostatic sumps and/or spill bucket testing water on-site, do they need to register with DEQ as a hazardous waste generator?

Answer: Typically no. If reusing test water as test water, then it is not a waste and can be stored on-site in a labelled, closed container that is compatible with the test water. If the person intends to dispose of the test water, then it is a solid waste and must be properly characterized,

transported and disposed of. A person intending to dispose of test water should contact DEQ's Hazardous Waste Program at the regional office nearest you.

9. Can spill bucket and sump test water be disposed of in a sewer or oil-water separator?

Answer: Disposing of test water into an oil-water separator that discharges into a storm drain is not allowed under any circumstances. If the separator discharges into a sanitary sewer, you will need to contact the sanitary system operator to gain approval for disposal of the test water. The best method of test water disposal is to contact a company that can transport and dispose of the contaminated water appropriately. Oil-water separators do not remove dissolved contaminants in water, they simply separate floating/non-aqueous material from water. The EPA Technical Compendium provides additional information on test water management and disposal regulations, which can be found doing a web search for "EPA UST Sump Test Water Characterization and Disposal."

10. What are the requirements for conducting low-level sump testing?

Answer: Sump tightness testing is required triennial at any site that uses interstitial monitoring. There are two types of sump testing currently approved: full sump testing (as per PEI) and low-level sump testing. In June 2018, EPA published guidance that specifies the requirements for conducting low-level sump testing, as well as a form that can be used to document that testing. Oregon has adopted EPA guidance which can be found here, "Low Liquid Level UST Containment Sump Testing Procedures."

11. In a low-level sump test, what is the required depth of liquid?

Answer: The EPA guidance referenced in question 10 above states that, "a minimum of 4 inches of liquid must be used above the lowest activation level of the sensor."

12. Is an audible/visual alarm necessary when performing low-level sump testing as part of the interstitial monitoring piping leak detection method?

Answer: The EPA guidance referenced in question 10 above states you may only use these instructions if your sensors are programmed to both alarm and shut off when in contact with any liquid. This means that 'stand-alone' sensors (e.g., Franklin DC 400 series sensors) can only be used if they provide some sort of alarm in addition to the shutdown action. This is true regardless of whether the site is attended or unattended when low-level sump testing is used. DEQ also recognizes that some sites have previously been told they were in compliance with stand-alone sump sensors. However, those approvals were prior to the federal and state rule revision and the new low-level sump-testing requirement published by the EPA.

13. What are the licensing requirements for performing sump or spill bucket testing?

Answer: Post-installation sump or spill bucket testing must be performed by **either** a DEQ-licensed UST Installation Supervisor (ICC - U1) **or** a DEQ-licensed Tank Tightness Test Supervisor (ICC - U3) working under a UST service provider license. Note: Only a DEQ-

licensed UST Installation Supervisor working under a DEQ UST service provider license may perform testing during installation activities.

14. If a facility has sensors in sumps, but is not required to use interstitial monitoring (e.g. piping installed prior to March 10, 2008), are the sumps required to be tightness tested every three years?

    Answer: Tightness testing of sumps is only required if interstitial monitoring is the method of leak detection being used. If interstitial monitoring is not the primary leak detection method used, then sumps are not required to be tightness tested. Additionally, if sump sensors are installed at a UST system and are not part of the UST's primary release detection (interstitial monitoring) then they also do not require testing.

15. If new piping is installed in pre-existing containment sumps then do the existing sumps need to be tightness tested and monitored?

    Answer: Yes, newly installed piping is required to utilize interstitial monitoring as the primary leak detection method, which includes tightness testing and monitoring of all containment sumps.

16. Is the annular space of a double walled fuel line (secondary containment) required to be tested on a triennial basis along with containment sumps?

    Answer: No. Neither federal nor Oregon regulations require testing of the annular space of fuel lines. Containment sumps used for interstitial monitoring are required to be tested at least once every three years (340-150-0310(8).

17. If a tightness test of a sump fails, is it considered a suspected release that requires reporting to DEQ (OAR 340-150-0500 and OAR 340-150-0510)?

    Answer: If the sump is being used in conjunction with interstitial monitoring, then the sump tightness testing is part of a release detection method and a test failure is considered a suspected release under 340-150-0500(1)(d). That said, a test failure does not need to be reported to DEQ if there was no release of fuel from the UST system and a repair of the sump is completed within 24 hours. In all other cases, a failed sump test or other leak detection alarm must be reported to DEQ within 24 hours.

18. If a tightness test of a sump fails, what investigation needs to be done?

    Answer: When a sump (turbine, UDC, transition) being used for interstitial monitoring fails a sump test and cannot be repaired within 24 hours, an investigation needs to be completed within 7 days (or longer as DEQ allows). The investigation should include; A - A line tightness test of all lines associated with the sump that failed, B - Submittal of photographs/diagrams of failed sump, C - Submittal of the *Failed Sump Test Suspected Release Investigation Questionnaire Report* (*Appendix A*). The submittal of A, B, and C will allow DEQ to determine if any further investigation is required.

Spill Prevention Equipment Testing

19. Do spill buckets require tightness testing every three years?

    Answer: Yes, unless both walls are monitored by either liquid or vacuum every 30 days.

20. Are repairs for spill buckets (inserts) allowed and is there a specific fluid volume capacity?

    Answer: Failed or damaged spill buckets can be repaired, as long as the repair method conforms to a nationally recognized standard or manufacturer-recommended practice and utilizes compatible materials. Neither federal nor Oregon rules specify a minimum volume capacity. For more information about spill buckets, suggest reading EPA's brochure, "Spill Buckets: Best Practices for Your Underground Storage Tank" found on the web. (November 2020) DEQ recognizes NLPA/KWA Standard 823 for a standard available for spill bucket repair.

21. For sump and spill bucket repairs and replacements, what is the timeline/deadline of repair which the DEQ will allow?

    Answer: Operating an UST system without properly maintained spill prevention equipment is a violation. DEQ will typically not cite this as a violation if repairs to the spill prevention equipment is completed within 30 days. Replacing the spill prevention equipment would be considered a repair if the equipment is not functioning properly, otherwise the replacement would be a modification under OAR 340-150-0352.

22. Will a visually damaged spill bucket require soil samples to be taken and evaluated?

    Answer: Spill buckets that are visually inspected and found to be damaged must be repaired or replaced. Typically, damage to a spill bucket will not require soil sampling unless there is an indication of a release of fuel such as petroleum stained soil or a sheen on water.

Overfill Equipment Inspections

23. Is an owner or permittee required to remove a ball float vent valve if a drop tube flapper or other overfill device is the primary overfill means?

    Answer: No, unless the ball float valve interferes with the proper operation of any other overfill prevention equipment or is found to be installed such that it will not restrict flow at 95 percent capacity, the ball float valve is not required to be removed. An owner should consult with an UST service provider to ensure ball float vent valves do not interfere with the proper operation of other overfill prevention equipment. Flow restrictors such as ball float vent valves are prohibited at new UST installations and cannot be repaired or replaced (340-150-0310(4)).

24. Is an UST system originally installed with a ball float as an overfill device still able to use the ball float valve as an overfill device if it is tested every three years, according to OAR 340-150-0310(9)?

Answer: Yes, however, DEQ recommends removal of ball float vent valves. If the ball float valve fails to function properly (stops flow at 95%), it must be removed and another overfill prevention device installed.

25. If a high level audible alarm and/or drop tube flapper valve are used as an overfill device and tested every three years according to OAR 340-150-0310(9), do UST systems still containing a ball float vent valve need to test the ball float valve every three years?

    Answer: (November 2020) Only the method of overfill prevention being used to meet the UST rules must meet the overfill prevention inspection requirement in OAR 340-150-0310(9). Owners and operators must ensure any secondary overfill methods they use do not interfere with the primary method they use to meet the overfill prevention requirement. You should not use an automatic shutoff device if the UST receives pressurized deliveries. Ball float overfill devices cannot be used with co-axel drop tubes.

Release Detection Equipment Operability Testing

26. Does piping require annual testing?

    Answer: Pressurized piping that does not utilize interstitial monitoring leak detection is required to have annual precision (0.1gph) testing or monthly (0.2gph) testing. Unsafe suction piping that does not utilize interstitial monitoring leak detection is required to have precision (0.1gph) testing conducted once every three years. Safe suction piping is not required to have precision testing conducted and any piping system that utilizes interstitial monitoring is not required to have precision testing conducted so long as the interstitial monitoring is being properly completed and an automatic line leak detector is installed and functionally tested annually.

27. If a high product or max product alarm is documented, is this considered a suspected release?

    Answer: The terms “high product” and “max product” alarms are specific to Veeder-Root tank monitors. Typically, a high product alarm is set at 95 percent and max product alarm is set at the full volume setting for the tank. Because exposing the fittings at the top of the tank to fuel during deliveries can lead to a release of fuel through any of the various tank top fittings, a max product alarm or other full volume alarms is an unusual operating condition under OAR 340-150-0500(1)(b) and a suspected release. This alarm must be reported to DEQ within 24 hours unless the tank monitor is immediately tested and found to be defective but not leaking and the cause is immediately repaired. If those actions cannot be taken, then the alarm must be reported to DEQ and DEQ may request pressure-decay testing or other site assessment sampling.

28. If a facility installs OPW-flex works equipment, including the setup shown in Figure 1.0, then what are the monitoring requirements in regards to interstitial piping leak detection?

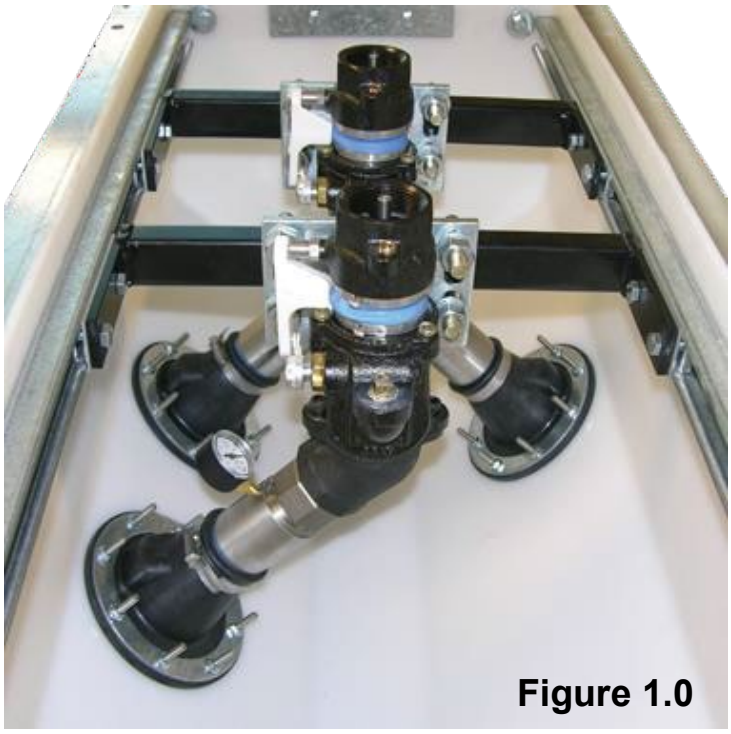


Figure 1.0

Answer: The UDC in this situation is considered secondary containment. For sites using interstitial monitoring as the primary leak detection method for piping, the UDC sump must have a sensor installed and be monitored by the method outlined in OAR 340-150-0465, and tightness tested at least every three years as outlined in OAR 340-150-0310.

29. Do line tightness tests records need to be available for three years?

Answer: (November 2020)No, an owner and permittee must retain, at a minimum, the most recent completed line test, whether that was an annual or triennial test per OAR 340-150-0410(8). However, a line leak detector test records will need to be kept for as long as the equipment is in use in accordance with OAR 340-150-0400(5).

30. Does DEQ require that all alarms remain undeleted from an ATG alarm history in order to verify sensors/probes have been tested?

Answer: The facility owner/operator must be able to provide verification to DEQ upon request that functional testing of leak detection equipment (sensors/probes), spill containment and overfill prevention equipment has been completed as required. ATG alarm history records can be used to verify that certain types of functional testing has been performed. UST service provider reports are a more common means of documenting that all components are tested and functional.

31. If a line tightness test fails, is it a suspected release condition?

Answer: Yes, OAR 340-150-0410(9) requires failed line tightness tests to be reported as a suspected release with the associated requirement for immediate investigation.

32. If an ALLD is not installed on the turbine head-works (for example some older turbine models) what is required to make sure the piping is it in compliance with Oregon leak detection requirements?

Answer: Per OAR 340-150-0400, UST systems must provide a method of release detection that can detect a release from **any** portion of the UST and underground piping that routinely contains a regulated substance. Piping in a tank top sump is considered underground piping.

All portions of pressurized piping must have 3gph leak detection. Past installation practices have left some UST systems with mechanical leak detectors installed downstream of the turbine pump and other pipe sections and fittings/couplings. This set-up leaves those upstream portions of pressurized piping without 3 gph leak detection.

To ensure all portions of pressurized pipping has 3 gph leak detection the owner could:

- Option 1: Install a leak detector on the turbine head;
- Option 2: Install an electronic leak detector anywhere on the pressurized piping;
- Option 3: If options 1 and 2 cannot be implemented the DEQ may allow owners to use a combination of an automatic leak detector **and** interstitial monitoring. For this option, the automatic leak detector must be installed in the tank top sump; the tank top must be hydrostatically tested before use; a positive shutoff sensor must be connected to the turbine for facilities without attendants, or an alarm only functioning sensor for facilities with attendants on-site during operation hours; the sensors must be installed at the lowest point of the tank top sump; and monthly interstitial monitoring per OAR 340-150-0465 must be conducted. Prior to implementing this option contact the DEQ.

Note: Please refer to Section 7 of the Oregon Department of Environmental Quality's *Underground Storage Tank Compliance Program 2018 Rule Changes & Other Related Guidance Directive* for more information on automatic line leak detection.

33. Why are these ALLD setups currently a violation when these facilities have been in compliance during previous inspections?

Answer: Although DEQ strives to accurately observe and record the compliance status of each UST component during an inspection, previous passing compliance determinations do not guarantee that the UST system is in compliance. Ultimately, it is the permittee's responsibility to ensure that the UST system is installed and operated in compliance with applicable regulations.

In most cases, there may be several options for compliance which should be determined by consultation with a licensed UST Service Provider and the equipment's manufacturer. Supplemental information is also available from other sources such as the EPA and the National Work Group on Leak Detection Evaluations.

34. What records of functional equipment testing (spill prevention, overfill prevention, release detection) are required?

An owner is ultimately responsible for keeping testing records necessary to demonstrate compliance with various testing requirements. All of the testing records must demonstrate that the equipment used functions per manufacture's specification.

Walkthrough Inspections

35. Do mandatory monthly UST systems walkthrough inspections require a specific form be used?

Answer: DEQ does not have a state-specific, required form to document monthly walkthrough inspections. An owner or service provider may use any documentation necessary to comply with the monthly inspections record-keeping requirement, as long as the form contains all information required in OAR 340-150-0315 and is kept on site or made available to DEQ upon request. Forms from other states or the Petroleum Equipment Institute form (PEI 900) may be used in Oregon.

36. Who is required to perform the monthly walkthrough inspection as described in 340-150-0315?

Answer: If conducting monthly walkthrough inspections per OAR 340-150-0315(a), then anyone can perform the inspection, including facility employees or outside contractors. The person or people conducting the inspection should fully understand the system being inspected and must document the inspection on an appropriate form.

Oregon recommends that a Class A or Class B operator be assigned this duty.

General Q & As

37. Do equipment repairs require notifying DEQ?

Answer: No. Repair means "restoring to proper operating condition a tank, pipe, spill prevention equipment, overfill prevention equipment, corrosion protection equipment, release detection equipment, or other UST system component, that has caused a release of a regulated substance from the UST system or has failed to function properly." Repairing a UST system does not require notifying DEQ.

38. Can a facility with a broken/failed spill bucket still receive deliveries until a replacement or repair can be made?

Answer: Yes. Oregon DEQ does not prohibit fuel deliveries to UST systems that have a damaged spill bucket or a spill bucket that has failed a tightness test. However, owners and permittees should know that operating a UST system without a properly maintained and operating spill bucket constitutes a violation and a repair or replacement must be accomplished immediately. Most importantly, accepting fuel deliveries with a leaky spill bucket could result in a release of fuel and contamination of soil and/or groundwater.

39. Are repairs for spill buckets (inserts) allowed and is there a specific fluid volume capacity?

Answer: Failed or damaged spill buckets can be repaired, as long as the repair method conforms to a nationally recognized standard or manufacturer-recommended practice and utilizes compatible materials. Neither federal nor Oregon UST rules specify a minimum volume capacity. (November 2020) DEQ recognizes NLPA/KWA Standard 823 for a standard available for spill bucket repair.

40. Do sump sensors (interstitial monitoring for piping) have to shut down turbines?

Answer: EPA guidance specifies that sump sensors must respond to liquid by shutting down all associated turbines and thus preventing a larger leak **if the site is unattended at any time** (e.g., cardlock facilities). If the site is attended at all times, then the sump sensor is allowed to shut down a dispenser, instead of a turbine.

41. If a service provider notices an equipment failure (e.g., damaged sump, piping or failed tightness test), is there an obligation to report a suspected release?

    Answer: Most reporting requirements are the responsibility of UST system permittees/owners. However, Oregon's UST Service Provider/Supervisor rules (340-160-0020) requires a service provider to report within 72 hours "… any condition relating to a UST System that has or may result in a release to the environment …" Such conditions would not typically include repair/replacement work activities, but would include observation of accumulating fuel in containment sumps and failed primary line tightness testing. A failed spill bucket or a containment sump tightness test does not obligate a licensed service provider to submit a report to DEQ, unless there is evidence that a release of fuel, such as fuel present in the sump may have occurred.

42. Is it required to shut down all grades of product running through a dispenser when a stand-alone sensor (ex. DC404) detects liquid in a UDC?

    Answer: The only time you are required to shut down your turbine, based on a sensor status from the UDC, is during low-level sump testing. EPA guidance specifies that sump sensors must respond to liquid by shutting down all associated turbines and thus preventing a larger leak **if the site is unattended at any time** (e.g., cardlock facilities). If the site is attended at all times, then the sump sensor is allowed to shut down a dispenser, instead of a turbine.

43. Are service providers required to keep records of service performed, or does the responsibility fall solely on the facility permittee/owner?

    Answer: Records are required to be kept by the owner or permittee on-site or made available by the owner or permittee for review by DEQ upon request.

44. Does DEQ expect to return to the 3-year inspection cycle and is it possible that a facility is inspected at lesser intervals?

    Answer: Yes, as part of the grant received by DEQ from the EPA, DEQ must inspect each regulated UST facility at least every three years. A facility may be inspected at lesser intervals.

45. If only a dispenser is swapped and all work is being done aboveground, is a facility required to add under dispenser containment?

    Answer: Yes, under dispenser containment is required for any new, moved or modified dispenser. "Swapping" or replacement of a new dispenser would require installation of an under containment sump if an under dispenser containment sump does not already exist. Note that if

no piping is modified as part of the new dispenser and sump installation, then interstitial monitoring and associated sump tightness testing and sensor would not be required.

46. Is the emergency stop button tested during a DEQ compliance inspection?

    Answer: No. Although, emergency stop buttons are an essential component of the safe operation of an UST systems, this component is required by other regulatory bodies.

47. Does the DEQ have "shut down" authority? Besides fines and civil suits, can the DEQ require a business to shut down?

    Answer: While DEQ does not have the ability to immediately shut down a facility, a permittee's operating certificate can be revoked, resulting in the inability to receive fuel deliveries.

48. Is there a timeline in which single-walled steel tanks are to be decommissioned as has been required by certain other states?

    Answer: No. There is no requirement to decommission single-wall steel tanks in Oregon.

49. If a site uses multiple leak detection methods or multiple over-fill devices is it required that each of these devices are functional (does the redundant method require testing)?

    Answer: If a facility has multiple overfill devices, only one must be tested every three years and verified to be properly installed, operational, and not interfere with any other overfill devices.

    For release detection methods, per OAR 340-150-0400(3), the permittee must select its primary release detection method and the components for that method must be tested for functionality on an annual basis. Only this selected release detection method is required to be tested annually.

50. Is a tank storing fuel containing greater than 10% ethanol (E10) or 20% biodiesel (B20) required to demonstrate compatibility? If yes, is there a specific criteria for determining the compatibility?

    Answer: Yes. Both federal and Oregon's rules have always required demonstrating compatibility for any regulated substance stored in an UST. Most recently, the rules have specifically identified demonstrating compatibility for regulated substances containing greater than 10% ethanol or 20% biodiesel. See OAR 340-150-0135 and OAR 340-150-0160. Three options for meeting the compatibility requirements are described in the rule:
    - A certification from a nationally recognized testing laboratory (for example, UL); or
    - Specific written approval by the equipment manufacturer; or
    - Another option determined by DEQ to be as protective of human health and the environment.

    Informational notes:
    - The compatibility requirements apply to any UST system component – not just tanks.

- Pre-1981 manufactured single wall fiberglass tanks are not approved for fuel storage with any concentration of ethanol.
- Registering new tanks and changing contents to store fuels greater than 10% ethanol or 20% biodiesel requires submittal of the "To Operate Regulated USTs Containing Alternative Fuel" checklist.

51. If a double-walled tank has a vacuum gauge is the owner required to test the vacuum gauge?

    Answer: Maybe. If an UST system utilizes interstitial monitoring as a monthly tank leak detection method then the owner must be able to demonstrate that any of the interstitial monitoring leak detection equipment is installed and operated in accordance with manufacturer specifications and a national code of practice (for example, PEI RP-1200). The revised Federal UST rule and Oregon's 2018 rule do not require triennial integrity testing of tank annular spaces. However, pressure/vacuum gauges and annular sensors must be functionally tested as per OAR 340-150-0400(2).

52. Can a tank be installed within a tank as a means to make it double-walled?

    Answer: Yes, but all equipment must be listed for its intended purpose by a recognized, third-party laboratory and must be fully compatible with the substance stored.

53. Does replacement or repair of shear valve or components above the shear valve, require a precision tightness test after the work is completed per OAR 340-150-0350 (5)?

    Answer: No. A repair, as defined in DEQ's UST regulations, means restoring to proper operation a component of an UST system. Since a shear valves or components above the shear valve are not UST components (i.e., beneath the ground surface), the repair would not require a tightness test. That said, a precision tightness testing after such work is completed is recommended by DEQ.

54. Are pipe and fittings in a sump considered underground?

    Answer: Yes. Per OAR 340-150-0010(17) connected piping includes all piping which is beneath the ground surface. It does not limit connected piping to that which is in contact with earthen materials.

55. What is the compliance date for the new 2018 rules? Does it begin on or before October 2020?

    Answer: Owners and permittees must be in compliance with all new requirements included in the 2018 revisions to Oregon's UST rules by Oct. 1, 2020. For example, all spill buckets must be tightness-tested and all containment sumps used for interstitial monitoring must be tested prior to Oct. 1, 2020. This date excludes some reporting, administrative and compatibility requirements for alternative fuels which became effective on June 1, 2018, at the time the new rules became effective.

56. Will owners be receiving documentation about the rule changes effective on Oct. 1, 2020?

Answer: Yes. DEQ has and will continue to provide information to permittees and owners on the rule changes. For example, an abbreviated implementation/tank fee increase outline was mailed in January 2019 to permittees with the annual compliance fee invoice. This outline includes a review of deadlines for compliance with various new testing requirements.

DEQ will be publishing a directive on the 2018 UST rule changes that can be used by facility owners and service providers.

Service providers and UST owners participated in several Service Provider Roundtable Q&A sessions with DEQ. The intention of the meetings were to address questions and concerns from the regulated community about the rule changes. The meeting notes are on DEQ Tank's web page under the Service Provider Roundtable Meetings tab.

During inspections, DEQ has and will continue to educate permittees and owners about upcoming implementation deadlines and requirements.

57. Are there different testing requirements in those counties in Oregon where a customer can pump his/her fuel?

Answer: No. With the exception that facilities proposing to use low-level sump testing that also allow unattended fueling must install automatic line leak detectors that provide audible/visual alarm **and** positive shut down of the turbine pump. Additional information available in the EPA document titled, "Low Liquid Level UST Containment Sump Testing Procedures" which can be found by doing a web search.

58. Does the department require notification for replacement of shear valve?

Answer: See the answer to question 37 (Do equipment repairs require notification) above. Similarly, replacement of a shear valve is not considered a UST system modification and thus, notification is not required.

59. How much fuel in a containment sump constitutes a suspected release?

Answer: The suspected release rule referenced above in Question 4 simply states that "free product" in a "secondary containment" area constitutes a suspected release. DEQ inspectors interpret this to mean that there must be more than just a sheen on water in a sump. There must be a 'recoverable' amount of fuel. For example, if the accumulation of fuel in the containment sump is enough to soak into an absorbent pad then the incident should be reported as a suspected release. Facility operators and UST contractors must use reasonable judgement in making this determination. When in doubt please contact the regional inspector to consult.

60. Is pulling out existing flexible plastic piping and pulling new flexible plastic piping a repair, replacement, modification or something else?

Answer: This type of work is occurring more and more frequently as the older Total Containment and Environ thermoplastic piping ages and degrades or even fails. In short, this

type of work is considered replacement and a modification. Both 30 and 3-day notifications are required and the "replaced" piping triggers both the interstitial monitoring and site assessment requirements.

61. When do discovered tanks need to be reported and are Service Provider and Supervisor licenses required to complete decommissioning of discovered tanks?

    Answer: Reporting/notification, permitting, decommissioning and any other regulatory requirements for discovered tanks depend on important specifics of the discovered tank. Not all underground petroleum storage tanks fall under State and Federal UST regulations. For example, discovered underground tanks used as heating oil tanks are exempt from the requirements of a UST system (OAR 340-150-0008). Heating oil tanks are subject to a separate set of DEQ rules (see http://www.deq.state.or.us/lq/tanks/hot/homeowners.htm for more information about heating oil tanks). UST regulations are also not applicable to discovered tanks that are known to have been empty since at least 1974 (OAR 340-150-0006). In many instances it is not known when a discovered tank last held fuel or even what type of fuel it held or what it was used for. ***DEQ encourages prompt reporting to a regional UST inspector when any underground tank is discovered so that circumstances can be evaluated and appropriate compliance actions can be taken.***

    Reporting/notification, permitting and decommission of discovered tanks is no different than previously registered tanks. However, discovery of tanks that are unregistered typically occurs during construction projects and 30 & 3-day notices are not reasonably expected. It is DEQ's intent to facilitate the removal of discovered tanks and the continuation of construction projects. As noted above, prompt reporting and review with UST staff is the best way to ensure project work is able to continue smoothly. A DEQ licensed decommissioning supervisor is required to oversee the discovered tank decommissioning and site assessment work. DEQ inspectors may approve shortened decommissioning schedules without citing violation(s). When necessary, inspectors may issue the 3-day approval and ask the contractor to leave the excavation open for an inspection by DEQ staff at an available time. ***In all cases, it is important for UST Service Providers/Supervisors to ensure proper site assessment sampling is completed before backfill of excavation.***

62. Can facility owners replace thermoplastic piping without sump testing, site assessment sampling, new sump sensors and daily interstitial leak detection requirements?

    Answer: This is a very important question that has been asked more and more frequently as the old Total Containment and Environ plastic piping ages and fails. Installation of new tanks and/or piping triggers the requirement for double-wall equipment and use of interstitial monitoring, as per OAR 340-150-0300. DEQ will not approve an exemption or deferral from these requirements. Containment sump tightness testing is required in order to demonstrate interstitial monitoring can be properly performed. It is also required by most codes, standard practices and manufacturers at the time of installation. In addition, site assessment sampling may be required depending on the nature of the piping replacement work. Generally, site assessment sampling will be required anytime a containment sump has failed a tightness test or fuel is suspected to have been released from the UST system.

DEQ recognizes that the double-wall and interstitial monitoring requirements may inhibit some facility owners from proactively replacing older thermoplastic piping (Environ/Total Containment) or other piping manufactured and approved under the pre-2005 UL 971 standards. However, once such piping begins to show signs of degradation facility owners and Service Providers would be well served to take prompt action to replace the piping before the piping fails and causes a costly release of fuel. The effort and expense of changing to interstitial monitoring will be much less than the cost of conducting environmental assessment and potential loss of property value due to petroleum contamination.

63. Why and when is hydrostatic sump testing required?

Answer: Currently, hydrostatic sump testing is generally required under two different situations; 1) suspected release investigation (for example, fuel discovered in containment sump); and, 2) anytime interstitial monitoring is used as a leak detection method. When fuel is discovered in a containment sump for any reason a hydrostatic test is required to determine if the fuel has been contained or possibly released into the environment. If a sump test fails or cannot be properly performed for some reason then site assessment sampling is required. Hydrostatic sump testing is also required when interstitial monitoring is to be used in order to demonstrate fuel will be fully contained and detected by a sump sensor. Petroleum Equipment Institute recommended practice (PEI/RP 1200-12) describes the most commonly used hydrostatic sump testing method and provides a form for recording the test results.

64. When replacement of thermoplastic piping (for example, Environ and Total Containment) is being performed is it necessary to perform hydrostatic tightness testing of containment sumps both *before* the old piping is removed and *after* the new piping is installed?

Answer: Hydrostatic testing of containment sumps before piping is removed and replaced is not specifically called for in Oregon's UST rules. Containment sump testing before flexible plastic piping is pulled out of a chase for replacement is recommended by DEQ inspectors in order to demonstrate that the sump was or was not liquid tight before the piping replacement work began and may be part of a suspected release investigation. Containment sump testing after new piping has been installed is always going to be required because installation of new piping requires the use of interstitial monitoring as a leak detection method.

65. Piping replacement vs. piping repair.

Answer: Although Oregon's UST rules do include specific definitions for repair and replacement there is still some uncertainty about how these definitions and the rules that use these terms translate to specific situations at UST facilities. Most importantly, how are these terms interpreted to apply to situations where flexible piping (Total Containment, Environ, etc…) is pulled out of the chase pipe and "replaced" by pulling in new flexible piping? This type of work is considered a "replacement" of piping and triggers the site assessment requirements of 340-150-0180 and the interstitial monitoring requirements of 340-150-0300 (see questions 7 and 8 above). The definition of repair only applies to situations where some portion of a UST system has failed. One example of a repair as relates to piping, is the situation where a flexible pipe or fitting has failed at the tank top sump. In some cases, the piping can be

cut and re-fit with a new fitting and re-attached. Such work is considered a repair and must be completed according to manufacturer recommended practices or a nationally recognized industry standard.

66. Is there an on-line option for facility owners to complete the required Class A/B UST System Operator Training?

    Answer: Yes – currently there is one training vendor with on-line Class A/B operator training. Please see the list of Oregon DEQ approved A/B training vendors at this DEQ web site: https://www.oregon.gov/deq/tanks/Pages/UST-Training.aspx

9. Appendix B

Failed Sump Test Suspected Release Investigation Questionnaire Report

Failed Sump Test Suspected Release Investigation Questionnaire Report

When a sump (turbine sump, UDC, or transition sump) used for interstitial monitoring leak detection fails a tightness test, DEQ must be notified of a "suspected release" condition within 24 hours unless the cause of the failure is repaired within 24 hours and there is no release from the UST system. Suspected releases require an investigation to be completed within 7 days, unless DEQ allows longer.

A. **A precision line tightness test will need to be completed of the fuel lines associated with the failed sump within 7 days.** A record of that line tightness test along with answers to the following questions needs to be submitted within 7 days or another period of time agreed to by the Department, of a notification of a failed sump test.

B. **Please provide - photos and/or detailed diagrams of the sump.**

C. **Please answer the following questions;**

1. Which sump(s) failed?
2. Exactly where and how did the sump(s) test fail?
3. Are there penetrations on the floor of the sump(s)?
4. What does the alarm history show for the sensors in the associated sump(s)?
5. Have there been other suspected releases at the site, within the last three years, where fuel has been found in the sump(s)? If yes, please list dates.
6. Are there observation wells in tank nest?
7. Are there or has there been any conditions to suggest that fuel has been in the sump(s)? If yes, explain.
8. Were sensors found to be functional on day of testing?

9. Were sensors set to activate below lowest penetration?
10. Were sensors set at lowest point in sump(s)?
11. If present, is chase piping open to the containment sump(s)?
12. When and how will sump(s) be repaired/replaced and tested again?

Answers to these questions will help the UST inspector to determine what additional steps, if any, are needed for completion of the investigation. Possible future steps could include; testing tightness of secondary space of lines, sampling observation wells in tank nest and/or site assessment.

10. Work Cited

Tennessee Department of Environment and Conservation. *Pressurized piping: Standardized Inspection Manual.* 2015. www.tn.gov/content/dam/tn/environment/documents/ust_si-process_technical-chapter-3-5_pressurized-piping.pdf. (P.24)

11. Record of Revisions to IMD

Revision	Date	Changes	Editor
0	12/19/19	New Document	Mitch Scheel
1	01/06/20 21	Overfill, Answers to questions #20, 25, and 29.	Eric Kelley