

GA EPD Guidance

Low Level Hydrostatic Integrity Test for UST Containment Sumps

By December 15, 2020, owners and operators must test single walled containment sumps used for interstitial monitoring of piping to ensure they are liquid tight. These tests must be performed once every three years. Testing is not required if the containment sump is double walled and the integrity of both walls is periodically monitored at the same frequency of walkthrough inspections described in 40 CFR 280.36.

Testing methods that may be used to test UST Containment sumps:

- Requirements developed by the manufacturer (only if the manufacturer has a developed test method);
- Code of practice developed by a nationally recognized association or independent testing laboratory- GA EPD accepts integrity testing listed in PEI RP 1200.
- Requirements determined by the Department to be no less protective of human health and the environment than the two requirements listed above.

EPA has determined that low liquid level alternative test meets the requirements and conditions in this procedure and is no less protective of the human health and environment as the first two requirements. GA EPD adopted EPA's low level hydrostatic testing of containment sumps. Testing procedure is outlined in the next three (3) pages. A completed copy of the *GA EPD 3-yr Containment Sump Integrity Test (low level)* must be maintained by the UST owner for at least 3 years. The forms and test procedure is may be found at: <https://epd.georgia.gov/underground-storage-tank-forms>.

GA EPD

Low Level Hydrostatic Integrity Procedure Test for UST Containment Sumps

The following low level hydrostatic test procedure is a copy of EPA's test procedure.

You may also find the test procedure on EPD's website at:

<https://epd.georgia.gov/underground-storage-tank-forms>.

And EPA's website:

<https://www.epa.gov/ust/underground-storage-tank-ust-technical-compendium-about-2015-ust-regulations#spillbuckets>

Spill Buckets, Under Dispenser Containment Sumps, Containment Sumps Category Containment Sump – Alternative Test Procedures Question & Answer Addendum

Required Conditions:

The sumps must meet these conditions to use this test method and comply with the requirements of GUST Rule 39140 CFR 280.35(1)(ii)(C).

- A liquid sensor is mounted and remains at the lowest point in the sump.
- An owner is required to test the functionality of the liquid level sensor in conjunction with the low level sump test and verify that the sensor works correctly and shuts down the appropriate pump or dispenser. In addition, 40 CFR 280.40(a)(3)(ii) requires an annual test of any liquid sensor used as part of a release detection system. The test of the liquid level sensor performed at the time of low level sump testing may be used to comply with the annual sensor test requirements of 40 CFR 280.40(a)(3)(ii), if all other conditions of 40 CFR 280.40 are completed as required.
- And either:
 - The pump automatically shuts off when liquid activates the sensor, or
 - The dispenser automatically shuts off when liquid activates the sensor, and the facility is always staffed when the pumps are operational

To use these procedures, ensure all sensors are properly installed and programmed so that they shut off either the pump or dispenser per the instructions above when the sensor detects liquid. ***You may only use these instructions if your sensors are programmed to both alarm and shut off when in contact with any liquid.***

Pre-testing Checks:

1. Confirm the sump has no cracks, holes, or compromised boots located in the portion of the sump where water will be added during the low liquid sump test. The test requires you add at least 4 inches of water above the height required for sensor activation, so this area must be free of cracks, holes, or compromised boots. If any of these are present in this area, this test method cannot be used. ***Document on GA EPD test report form.***
 - Visually inspect the entire sump. Cracks, holes, or compromised boots anywhere in the sump, including above the sensor activation level, may indicate a degrading sump. Consider replacing or repairing worn components
2. Determine if there is liquid present in the sump at levels high enough to trigger a properly positioned sensor, even if the alarm is not activated. Remove any debris or liquid in the containment sump prior to testing. ***Document on GA EPD test report form***
 - Determine if there is liquid present in the sump at levels high enough to trigger a properly positioned sensor, even if the alarm is not activated. An active alarm may need to be treated as a suspected release per 40 CFR 280.50. Remove any debris or liquid in the containment sump prior to testing.
3. Identify if sensors' positions are elevated or otherwise manipulated to prevent activation.
 - Visually inspect the sensor and electrical connections for signs of damage or corrosion to a point where functioning may be impaired. Signs of corrosion suggest the sensor may soon deteriorate and become inoperable. If you believe the sensor is damaged, check with the manufacturer. ***Document in 'repairs needed' section of GA EPD form.***

Testing Steps

Part A contains steps to test sump sensors for functionality and the ability to shut down product flow. Part B contains steps to test the integrity of the sump itself.

A. Functional Testing Steps:

1. Prepare for the sensor functionality test by determining and documenting how the test should be performed.
 - Determine the manufacturer of your sensor and details of how the manufacturer specifies a functionality test be performed. A functionality test is performed by adding sufficient liquid to the sump to ensure the sensor activates, unless the manufacturer specifies a different method.

- Different sensor manufacturers may specify different procedures or volumes of water to properly test their products; you must perform the sensor activation test according to the sensor manufacturer's instructions for testing non-discriminating or discriminating sensors. Some manufacturers may specify testing in a container other than in the sump. If your manufacturer specifies testing in the sump, proceed to complete the test by moving to step 2. If the manufacturer specifies testing in a separate container, complete the test and replace the sensor in the sump and proceed to step 2.
 - Ensure you keep written documentation from the manufacturer detailing the required procedure and minimum amount of liquid required to activate the sensor.
2. Secure a measuring stick vertically against the wall nearest the lowest level of the sump and ensure it is in a visually accessible place so you can read the markings on the measuring stick. Use a clamp, tape, or other adhesive method to immobilize the stick for the entire course of the test, even while the measuring stick is underwater. Leave several inches of markings visible, ideally between 2 to 8 inches from the bottom of the sump. Some owners may choose to use a float and console type of probe instead of a measuring stick.¹
 3. Immerse the sensor in liquid at least to a height that ensures the sensor is activated and alarm activates. **Document level on GA EPD test report form.**
 4. Determine if the sensor is in alarm. **Document on GA EPD test report form.**
 - You may only use this low level procedure if the sensor alarm activates at the level set per manufacturer's instructions. If a sensor failed, you may use this procedure only if the failed sensor is repaired or replaced and an alarm activates.
 5. If the sensor alarms successfully, verify that either: The pump has automatically shut off when liquid activated the sensor; or the dispenser has automatically shut off when liquid activated the sensor, and the facility is always staffed when the pumps are operational. **Document on EPD Form.**
 6. If the sensor passed the visual inspection, the functional inspection for alarm, and each pump or dispenser is disabled, continue to part B liquid tightness and integrity testing.

¹ It may be impractical to access the bottom of some sumps to install a measuring stick against the wall. For this reason or other reasons, some owners or operators may choose to use a float and console type of probe to perform liquid integrity testing. Owners planning to use a float and console type method should position it in the sump now in lieu of securing a measuring stick against the wall.

B. Testing the integrity of a containment sump:

1. If necessary, add more water into the sump until the liquid level is at least 4 inches above the height required to activate the sensor. **Record the level on GA EPD test report form.**
 - If you are testing other sumps, remove the sensor from this sump now before adding water. Removing the sensor from the liquid allows for testing other sensors in the UST system for functionality and positive shutdown without interrupting the one-hour liquid tightness test of this sump
2. Wait 5 minutes.
 - Waiting allows the water level sufficient time to settle in case there is sump deflection from the weight of the added water.
3. Measure and record the liquid height in the sump. **Record** the level and the current time on the EPD test report form.
4. Do not disturb the water in the sump for at least one hour.
5. After one hour has elapsed since measuring the height of the liquid, check the liquid level again. **Record the** liquid measurement and the current time on the GA EPD test report form. Record the level and time
6. Compare the two liquid measurement numbers. If the level has dropped by more than 1/8 inch, then the sump failed the low liquid level hydrostatic integrity test. **Write** pass or fail

C. After Completing The Tests:

1. Remove the measuring stick or probe from the sump.
2. Remove as much water from the sump as possible. Ensure you properly dispose of the sump test water according to all legal requirements.
3. Reposition the sensor, if needed, and replace the sump cover and manhole cover.