Introduction:

This method may be used to test the tightness of containment sumps, under-dispenser containment, and spill containment basins (e.g., “spill buckets”) in order to comply with State of Rhode Island Department of Environmental Management regulations and U.S. EPA regulations. A full level hydrostatic tightness test may be required when a facility is deemed ineligible for low-level hydrostatic testing due to equipment limitations (e.g., no liquid level sensor or positive shutdown device), compliance violations (e.g., improper placement, alteration or defeating of liquid level sensors), or circumstances which require a full hydrostatic test. A full level hydrostatic is always required for spill containment basins.

Eligibility requirements:

Generally, all spill containment basins, sumps, and under-dispenser containments are eligible for full level hydrostatic testing. The only exceptions would be if, upon inspection, structural damage or obvious cracks, holes, or other damage is present which would require replacement rendering the test unnecessary.

Initial Survey:

Prior to commencing any test, the tester must perform a survey of any component that is to be tested. The following conditions must be met in order to move on to the next step:

- Inspect all boots, seals, compression fittings, joints, and bulkhead fittings for evidence of cracking, severe degradation, tears, or other damage. All damaged components must be replaced prior to proceeding.
- Inspect the inside of the sump, under-dispenser containment, or spill containment basin and ensure that it is clean and contains no liquid or other debris;
- Inspect the interior walls of the sump, under-dispenser containment, or spill containment basin for evidence of cracks, holes, fiberglass delamination, excessive rust, staining/discoloration, or evidence of liquid instruction. You may need to clean the interior of the sump in order to provide a good view of all surfaces. In the event the component has any damage beyond superficial rust, corrosion, or abrasion, it must be repaired or replaced prior to testing.

If these conditions are met, a full level hydrostatic test may be performed.

Full Hydrostatic Test Procedure:

Note: The full level hydrostatic test procedure outlined in PEI RP-1200 may also be used. However, you must still submit all results on the DEM form and complete all fields from Step 1 and 9 below

1) Download the Full hydrostatic Test Form from our website at http://www.dem.ri.gov/ust
2) Fill the sump, under-dispenser containment, or spill containment basin with liquid such that final liquid level is within 1” of the top of the component. If a liquid other than water is used, it must have a specific gravity and viscosity within 1% of water at standard temperature and pressure.
3) Allow the liquid to sit undisturbed for 15 minutes. This will allow the liquid to settle and reach an equilibrium with the sump walls.
4) After 15 minutes has elapsed, measure the liquid level depth using a ruler and record the depth on the test form; this will be your starting point and your T=0 point. Alternatively, you can also mark the liquid level on the wall of the sump using a permanent marker.

5) After 15 minutes has elapsed (e.g., T=15), measure the liquid level in the sump, under-dispenser containment, or spill containment basin and record on the test form. If the liquid level has dropped ≥⅛” (0.125”), the component has failed and you must immediately empty all liquid from the component. If the liquid level remains unchanged or has dropped < ⅛” (0.125”), proceed to step 6.

6) Allow the liquid to sit undisturbed for an additional 45 minutes. It may be advisable to place a cover or tarp over the manway to limit evaporation on hot days, or, prevent water intrusion when it is raining or snowing.

7) After a total of 60 minutes has elapsed (e.g., T=60 min), measure the liquid level using a ruler and record the final depth on the test form. Alternatively, you can mark the final liquid level on the wall of the sump with a permanent marker.

8) The final change in depth is determined by subtracting the initial measured water depth from the final measured water depth, OR, if you marked the wall of the sump, measure the distance between the mark made at the start of the test and the mark at the end of the test. Record this value on the test form. If the final change in water depth is ≥ ¼” (> 0.125”), the sump is considered to have failed the tightness test and DEM must be notified immediately by calling (401) 222-2797.

9) All data collected during the test, as well as the change in liquid level, must be recorded on the DEM-provided hydrostatic testing form and submitted to DEM within 30 days of the test, or in the case of failed tests, 7 days.