



Danny Brevard <danny@accent-us.com>

Request for test method acceptance

ODonnell, Veronica (DEP) <veronica.odonnell@state.ma.us>
To: Danny Brevard <danny@accent-us.com>

Wed, Jun 12, 2019 at 3:44 PM

Hi Danny:

MassDEP's current regulations concerning spill bucket and sump testing state that the regulatory standard that must be met is at 80.21 and 80.20 "...tightness test at installation to ensure the spill bucket (or sump) is liquid tight using vacuum, pressure, or liquid testing. the standard for declaring a failure is 1/8 inch or greater loss of water within one hour (which is equal to a release/leakage rate of 0.05 gallons per hour in a typical 12-inch diameter basin.)" AND at 80.27 and 80.28 which has the same standard for periodic testing.

Although your table below states what the conversions of 0.125 inches are in gph, owners and operators of large sumps, etc., would need to show a smaller loss than 1/8" per hour to meet the 0.5 gph standard. It is the standard of 0.5 gph that must be met, not the 1/8" inch loss itself.

We have updated our regulations to include any EPA regulations that were not covered by our current regulations, including the verbiage on hydrostatic testing and the procedure to be used, and including that statement that vacuum or pressure testing must be equivalent to the hydrostatic standard. These regs are undergoing in-house review. When we are ready to go to public comment with them, it will be posted on our website.

If the NWGLDE states that your test is a vacuum test, as you have indicated, and that it meets our regulatory standard, UST owners and operators could use the method. However, if that statement cannot be made, the testing procedure would not be deemed to meet our regulations and would therefore not be an acceptable method of spill bucket or sump testing.

I do have one question for you....how does your method take into account the variations in soil types, grain size and permeability? Would clayey, fine-grained soils show that same results as sandy, coarse-grained soils? Just curious.

If you have any other questions, please do not hesitate to contact me.

Veronica

[Quoted text hidden]

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June 13, 2019

Subject: Discussion of the leak rate induced during the Evaluation of the Accent Environmental Dri-sump Containment Tightness Testing Method and how it is compared to the 1/8" loss of water over 1 hour in a 12 inch diameter spill bucket.

To Whom it May Concern:

Dri-sump Containment Tightness Test method is a Vacuum Method (Negative Pressure) designed to test the tightness of secondary and spill containments associated with underground storage tanks. The leak rate used during the evaluation is equivalent to the standard for declaring a failure of 1/8 inch or greater loss of water within one hour in a 12 inch diameter spill containment bucket, which is \geq a release/leakage rate of 0.05 gallons per hour.

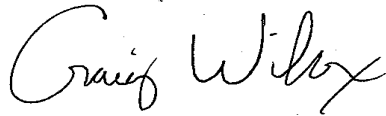
The Dri-sump method utilizes vacuum (negative pressure), rather than water, as the method of leak detection, therefore a precisely calibrated orifice was utilized during the evaluation to determine the performance of the method. When performing the evaluation of the Dri-sump method, the US EPA evaluation standards on the orifice calibration were followed. The induced leak rate was calibrated to the standard of a 0.1 gal/h leak or less with a pressure equivalent to a 4-foot column of unleaded fuel (1.236 PSI).

When considering any leak detection method for use on secondary and spill containment where the measured level of water is the tool utilized to indicate whether the containment is leaking, there is a general rule that if there is a loss of 1/8" or more of water during the 1 hour test, then the containment is considered leaking. When considering this type of method for use on a typical 12 inch diameter spill bucket, the depth of water used during the test is approximately 12 inches. When calculating the leak rate present with 1/8" loss of water over a 1 hour period in a spill bucket, which

is the threshold for determining a leak, the calculated leak rate is approximately 0.05 gallon per hour. When considering the PSI created at the lower most point of the spill bucket with a water depth of 12 inches, the calculated pressure is approximately 0.433 PSI. This is important when comparing a method that measures the loss of water and a method that utilizes vacuum as the tool for detecting a leak. The orifice that was used when evaluating the Dri-sump leak detection method was precisely calibrated at just under 0.1 gal/h, 0.095 gal/h to be exact, utilizing a 4 foot head of unleaded fuel, which produces a PSI of 1.236 PSI which is significantly higher than what is created in a 12 inch spill bucket. When the same orifice is exposed to 0.433 PSI, the PSI created in a spill bucket with 12 inches of water, the leak rate of water produced is approximately 0.047378 gallon per hour which is less than that 0.05 gal/h standard utilized when determining if a 12 inch diameter spill bucket is leaking.

Sincerely,

KEN WILCOX ASSOCIATES, INC.

A handwritten signature in cursive script, reading "Craig Wilcox". The signature is written in black ink and is positioned above the printed name.

Craig D. Wilcox, President