



# Hodgens Engineering Service

*"Treating others the way we like to be treated"*

## SPPC Bulk Facility Client Alert

### Tank Testing Services: Integrity Testing vs. Tightness Testing

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HES specializes in developing Spill Prevention, Control and Countermeasure (SPCC) Plans. Since 1994, I have written over 500 plans for clients in a dozen states. As a specialist in SPCC planning, I stay abreast of resources for my clients. I have also come across a widespread problem with the method used to test some tanks.

Petroleum marketers risk spending thousands of dollars for a test that *does not satisfy* EPA, and think that they are in compliance. While testing tanks is required, not all tests are acceptable to EPA. To satisfy the SPCC requirements, tests of tanks must demonstrate "integrity" of tank construction, not just "tightness."

While the problem is widespread across ND, SD and neighboring states, I am only aware of one firm that is representing that the *tightness* test they provide is an *integrity* test. Due to the highly technical nature of the requirements for tank testing, and the unwillingness of EPA to identify certified providers for this service, it is understandable how this problem can continue to occur. The fear of not satisfying EPA is significant!

EPA requires operators to perform specific testing for tanks:

"Test each aboveground container for integrity on a regular schedule, and whenever you make material repairs. The frequency of and type of testing must take into account container size and design (such as floating roof, skid-mounted, elevated, or partially buried). **You must combine visual inspection with another testing technique** such as **hydrostatic** testing, **radiographic** testing, **ultrasonic** testing, **acoustic emissions** testing, or another system of **non-destructive shell testing...**" Word for word from the Federal Regulations, found in 40 CFR Part 112.8(c)(6)

EPA allows an alternative to integrity testing for certain tanks: **continuous leak detection.**

**Integrity testing evaluates tank construction materials, not whether it is leaking at the time of the test.**

EPA defines integrity testing as

"any means to measure the strength (structural soundness) of the container shell, bottom, and/or floor to contain oil and may include leak testing to determine whether the container will discharge oil. It includes, but is not limited to, testing foundations and supports of containers..."<sup>1</sup>

In a paper<sup>2</sup> prepared by an EPA consultant, and found on the US EPA [website](#)

**Incorrect expectations and confusion concerning integrity testing:** Many SPCC Plans may lack sufficient detail about integrity testing to allow a clear understanding of the tests to be performed by the certified inspector. The simple fact that the certified inspection requires more than just a structural integrity test may be a surprise to many tank owners. A certified inspection report is likely to discuss tank deficiencies in terms of industry codes but may not provide a direct link between the applicable regulations and the industry standard which covers the actual deficiency.

**The test procedure that has been marketed throughout the Midwest as an "integrity" test is Estabrook's [EZY 3 Locator Plus](#).** From the [EZY 3 Locator Plus](#) website, this test:

- is an acoustically based system.
- consists of a microphone placed in the ullage of the underground tank. The Microphone is connected ... to a head set enabling the test operator to listen to the acoustic sounds in the tank.

<sup>1</sup> Page 47119 of the July 17, 2002 Federal Register analysis of 40 CFR §112.8(c)(6)

<sup>2</sup> **Confusion for Tank Owners: When Integrity Testing Finds Tank Deficiencies Not Directly Referenced in the SPCC Rule**  
By Ed Fahnlne, P.E., URS Corporation April 2006

