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GUIDELINES FOR TESTING SPILL BUCKETS

(Available electronically at <http://www.waterboards.ca.gov/ust>)

To: Local Agencies and Other Interested Persons

The purpose of this letter is to provide guidance for testing spill containment structures (spill buckets) as required annually by California Health and Safety Code (HSC), Chapter 6.7, Section 25284.2. Although the HSC requires annual spill bucket testing, neither the HSC nor Title 23, Chapter 16, of the California Code of Regulations (CCR) specify how this testing should be done, or by whom.

In response to concerns expressed by local agencies and the regulated community regarding the need for consistent spill bucket testing procedures, State Water Resources Control Board (State Water Board) Underground Storage Tank (UST) Program staff convened a workgroup comprised of local UST regulatory agency inspectors, UST owners/operators, service technicians, Department of Toxic Substances Control (DTSC) staff, and State Water Board staff. The workgroup developed the enclosed spill bucket testing guidelines to promote consistency and effectiveness of spill bucket testing. Additionally, the workgroup developed the enclosed "Spill Bucket Testing Report Form" to record and submit test results to the appropriate local UST regulatory agency.¹

If you have questions regarding this document, please contact the UST Program at (916) 341-5775 or ust@waterboards.ca.gov.

Sincerely,

[Original Signed By]

Elizabeth L. Haven, Manager
Underground Storage Tank Program

Enclosure 1: Guidelines for Testing Spill Buckets
Enclosure 2: Spill Bucket Testing Report Form

¹ Unless otherwise specified, the testing guidelines described in the enclosures are not mandatory. We encourage implementation of these recommendations during spill bucket testing. We also encourage spill bucket manufacturers to incorporate these guidelines into their recommended testing procedures, to the extent practicable.



INTRODUCTION

This document is intended to provide underground storage tank (UST) owners and operators with a practical test method that can be used to meet the requirement for annual spill bucket testing. Typically, spill bucket testing can be completed with minimal added time or expense by the service technician while performing the annual Monitoring System Certification. These guidelines are intended to assist owners and operators with all spill buckets, both direct buried (in contact with earthen material) and located within secondary containment sumps, regardless of the date of installation. Although annual testing is required for spill buckets installed on UST fill pipes, we also recommend annual testing of spill buckets on vapor recovery risers². Spill buckets on vapor recovery risers may be exposed to liquid (condensed vapor) hazardous substances during fuel delivery. Therefore, ensuring that these buckets are liquid-tight helps reduce the risk of a release to the environment.

APPLICABLE REGULATORY REQUIREMENTS AND RECOMMENDATIONS

Health and Safety Code (HSC), Chapter 6.7, Section 25284.2 requires that spill buckets be tested annually. California Code of Regulations (CCR), Title 23, Section 2635(b) requires that all USTs be equipped with a spill bucket which has a minimum capacity of 5 gallons and is protected from galvanic corrosion. The purpose of the spill bucket is to collect and contain any product/waste that spills during filling of the UST. A spill bucket is neither intended nor designed for the *storage* of hazardous substance, but rather to *contain* a small spill. Therefore, any hazardous substance collected in a spill bucket must be promptly removed, either by draining it into the primary storage tank or collecting it and disposing of it properly. The purpose of spill bucket testing is to ensure that the spill bucket is capable of containing the substance until it is detected and properly removed.

SPILL BUCKET TESTING

These procedures should³ be followed when conducting visual inspection and vacuum or hydrostatic testing of spill buckets. *Note:* This document does not cover all site safety provisions that may be applicable when performing this type of work. When working at UST facilities, personnel must adhere to applicable federal, state, and local safety standards.

Part I: Spill Bucket Testing Preparation

- A. Notify the Local Agency.** Owners/operators should notify the local UST regulatory agency at least 48 hours prior to conducting the test.
- B. Spill Bucket Testing Qualifications.** We recommend that testing be conducted by a qualified service technician as defined in CCR, Title 23, Section 2715(i). Spill bucket testing performed by anyone other than a service technician should only be conducted when approved and witnessed by the local UST regulatory agency. *Note:* Some local UST regulatory agencies do not accept test results unless an agency inspector is present during the test and/or the test is performed by a qualified service technician.
- C. Secure the Work Area as Appropriate.** Use caution tape, cones, or other barricade to prevent traffic from entering the work area. When working at an UST facility, adhere to all applicable federal, state, and local safety standards.
- D. Cleaning and Visual Inspection of the Spill Bucket.** Spill buckets should be kept clean and free of liquid (water and fuel) and debris. If liquid or debris is found in the spill bucket it should be

² Some regulatory agencies may require testing of vapor recovery spill buckets pursuant to local ordinance.

³ The term "should," as used in these guidelines, is to be construed as a recommendation and not a mandate.

carefully removed and properly disposed of prior to testing, and this should be documented on the “Spill Bucket Testing Report Form.” Spill buckets should be clean before testing. Fuel, rags, absorbents, water, and other materials used to clean the spill bucket may contain some residual hazardous substance, and may need to be managed/disposed of as hazardous waste. After cleaning, the spill bucket and fill cap should be inspected for any visible signs of leakage or damage. A spill bucket that is visibly damaged or leaking (e.g., obvious leaks on the fill pipe below the bucket, cracked spill bucket bottom or sides, etc.) does not need to be tested, but should be recorded as a failure on the “Spill Bucket Testing Report Form” and must be fixed or replaced. After fixing or replacing, the spill bucket must be tested. Prior to replacing a spill bucket, check with the local UST regulatory agency to see if a permit is required.

Part II: Test Procedures

Several approaches to testing spill buckets are currently in use. Although a simple hydrostatic “lake test” is most common, other methods such as vacuum testing or precision liquid level measurement devices can be used as well. In fact, these test methods may be preferable to the lake test because they are more sensitive, faster, and, in the case of vacuum methods, generate no hazardous waste and can identify the location of leaks. Common test methods are discussed below:

A. Vacuum Test Methods

Vacuum-based testing is performed by placing a sealed lid over the spill bucket while a partial vacuum is drawn within the bucket. The vacuum level within the sealed spill bucket is measured over time, and a pass/fail determination is made based on the rate at which the vacuum level decays. Use of a leak indicating solution (e.g., soapy water) and a clear lid to seal the spill bucket provides a visual indication of leaks as air entering the spill bucket causes bubbles. The test duration and pass/fail criteria for vacuum testing must be at least as sensitive as discussed in part II, section B(1), below. Vacuum testing must also test at least the same volume of the spill bucket as discussed in part II, section B(1). *Note: The pressure-based drop tube/overflow prevention valve test (TP-201.IC or 1D) required by the Air Resources Board (ARB) does not test the same volume of the spill bucket, and therefore is not considered to be an equivalent method.*

Because they are quick, can identify the location of leaks, and generate no hazardous waste, vacuum-based methods are preferred for testing spill buckets. While vacuum testing has many advantages over the traditional hydrostatic lake test, there are some important limitations to be aware of:

1. Special equipment is required for vacuum-based testing, so tests should only be conducted by a qualified service technician.
2. Some spill buckets cannot be sealed at the top and therefore cannot be tested using vacuum-based methods.
3. Applying vacuum in excess of the manufacturer’s maximum recommended level may damage the spill bucket. ***Never apply vacuum exceeding the manufacturer’s maximum recommended level.***
4. Components within the spill bucket, such as the fill adapter, nipple, vapor recovery adapter, or drop tube should not be removed in order to perform the vacuum test. If the fill adapter, nipple, vapor recovery adapter, or drop tube are removed for testing or troubleshooting, or the spill bucket drain valve is fixed or replaced, a qualified technician must conduct drop tube and drain valve leak checks per ARB test procedure(s).

B. Hydrostatic Methods

- 1) **Standard Lake Test** - A standard lake test for spill buckets is easy to perform and requires no special equipment. The test is performed by filling the spill bucket with test fluid and observing the fluid level over time. Any drop in fluid level is an indication that the spill bucket may be leaking. Recommended procedures for a standard lake test are as follows:
 - a) **Test Duration and Fluid** - A lake test of at least one hour is recommended. Water with a small amount (a few drops) of common soap or detergent (such as “Dawn”) is the recommended testing fluid. Adding a small amount of soap to the water reduces surface tension, making the test fluid properties more similar to fuel. Use of fuel as a test fluid may pose a fire and safety hazard, and increase the probability of an unauthorized release in the event of spill bucket failure. Therefore, it is not recommended, especially for testing of direct-bury spill buckets.⁴
 - b) **Test Fluid Level** - It is our understanding that spill buckets commonly fail at the upper sealing area, around the joint(s) where two or more parts of the spill bucket assembly come together. Therefore, it is important to test as much of the spill bucket volume as is possible. The test fluid should cover the top joint, and be no less than 1.5 inches below the top of the spill bucket, regardless of the spill bucket’s capacity. This level will typically be above the fill cap, meaning that a leaking cap will result in a failed test. Technicians should inspect the cap and gasket, and repair or replace defective parts prior to adding test fluid. A tape measure or other measuring device should be used to measure the level of test fluid at the start of the test and again at the end of the test.
 - c) **Test Pass/Fail Criteria** - Any observable decrease in test fluid level during the test should be declared a failure. This includes test fluid loss caused by a failed spill bucket drain valve. Even if a failed drain valve is leaking test fluid into the UST rather than to the environment, it may adversely affect performance of the UST vapor recovery system and be a source of vapor releases from the UST. Therefore, failed drain valves should be promptly repaired and the spill bucket re-tested.
- 2) **Accelerated Precision Hydrostatic Test** - Hydrostatic tests of less than one hour can be used if they are at least as sensitive as the procedures described above in part B(1). To achieve the same sensitivity as the one-hour lake test in less time, accelerated hydrostatic tests require the use of precision measuring equipment. This specialized measurement equipment should only be used by a qualified service technician who has been trained in the proper use of the equipment. Accelerated hydrostatic testing should use the same test fluid and test at least the same volume of the spill bucket as discussed in part B(1). The test duration and pass/fail criteria should be made by the manufacturer of the measurement equipment, based on the sensitivity of the equipment. More sensitive equipment allows for shorter test duration. However, pass/fail criteria should not be less stringent than those prescribed for the one-hour lake test in part II, section B(1).

Part III: Reporting of Test Results

Spill bucket test results should be recorded on the enclosed “Spill Bucket Testing Report Form” or, if testing is done at the time of secondary containment testing, in Section 9 of the “Secondary Containment Testing Report Form.” These forms can be found at <http://www.waterboards.ca.gov/ust/forms/>. UST

⁴ Some local UST regulatory agencies may prohibit the use of fuel as test fluid in spill buckets, especially direct-bury.

owners and operators should submit spill bucket test results (pass or fail) to the local UST regulatory agency within 30 days of the completion of the test. Additionally, UST owners and operators must maintain test results on-site or off-site at a readily available location, if approved by the local UST regulatory agency, for a period of at least *three* years, as is required by CCR, Title 23, Section 2712(b).

Part IV: Management of Hydrostatic Test Fluids

- A. Classification of Test Fluid.** Thorough cleaning of spill buckets prior to testing will minimize contamination of the test fluid. In order to reduce the amount of hazardous waste generated from hydrostatic spill bucket testing, the Department of Toxic Substances Control (DTSC) recommends using new test fluid whenever possible. If the spill bucket is cleaned of all hazardous substance residues prior to the beginning of the test, the test fluid will typically not become hazardous waste.
- B. Reuse of Test Fluid.** If all hazardous substance residue is not cleaned from the spill bucket prior to the beginning of the test, or if the test fluid is used or reused repeatedly and contaminants build up in the test fluid, then the test fluid may become hazardous. Test fluid that is reused is not considered to be waste pursuant to U.S. EPA' s "continued use" policy, provided that the test fluid is not disposed of, burned or incinerated, accumulated speculatively, or reclaimed. The hazardous waste generator⁵ shall determine if the test fluid is a hazardous waste. More information regarding hazardous waste determination can be found in CCR, Title 22, Section 66262.11.
- C. Leakage of Test Fluid.** If the test fluid is reused and the test fluid leaks from the spill bucket during a test (i.e., the test fails), or if it is otherwise accidentally disposed of to the environment, the hazardous waste generator must take all appropriate measures to address the release (e.g., implement the facility' s emergency response/contingency plan).
- D. Disposal and Transportation of Test Fluid.** If the test fluid is reused, immediately following its final reuse, the generator must classify the test fluid pursuant to CCR, Title 22, Section 66262.11. If the reused test fluid is hazardous waste, it must be managed in accordance with all applicable requirements. Hazardous waste generators may accumulate hazardous wastes in closed tanks or containers, and must complete a Uniform Hazardous Waste Manifest and use a registered hazardous waste transporter to transport the hazardous waste to either a permitted hazardous waste facility or to another location authorized to accept the waste. The disposal of hazardous waste is not allowed without a permit from DTSC. Hazardous waste generators who wish to conduct hazardous waste treatment on-site must first obtain a permit per CCR, Title 22, Section 66270.1 or HSC, Section 25189.5. *Note:* Hazardous waste may not be disposed of to sewers, storm drains, surface waters, or to the land without a permit from DTSC and the Regional Water Quality Control Board.

⁵ A hazardous waste generator is defined in CCR, Title 22, Section 66261.2.