



Linda S. Adams
Secretary for
Environmental Protection

State Water Resources Control Board

Division of Water Quality

1001 I Street, Sacramento, California 95814 ♦ (916) 341-5775
Mailing Address: P.O. Box 2231, Sacramento, California 95812
FAX (916) 341-5808 ♦ Internet Address: <http://www.waterboards.ca.gov>



Arnold Schwarzenegger
Governor

March 25, 2008

LG 162-3 INSTALLATION AND MONITORING REQUIREMENTS FOR UNDERGROUND STORAGE TANKS INSTALLED ON OR AFTER JULY 1, 2003

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

To: Local Agencies and Other Interested Persons

The purpose of this letter is to answer some common questions that have arisen to date¹ about the new installation and monitoring requirements for underground storage tanks (USTs)² installed (1) on or after July 1, 2003 and prior to July 1, 2004 and (2) on or after July 1, 2004. Discussion of these new installation and monitoring requirements is divided into two parts, as follows:

- ♦ Part I explains requirements for USTs installed on or after July 1, 2003 and prior to July 1, 2004. These USTs must comply with the requirements outlined in Section 25290.2 of the H&S Code³. The requirements are presented in question and answer format, listed numerically as Questions 1-10.
- ♦ Part II explains requirements for USTs installed on or after July 1, 2004 in addition to the applicable requirements of Part I. These USTs must comply with requirements outlined in Section 25290.1 of the H&S Code⁴. The additional requirements are presented in question and answer format, listed alphabetically as Questions A-D.

¹ This letter is intended as a working document and may be periodically updated as new information becomes available and new questions arise.

² The term "underground storage tank" means tank and piping used for the storage of a hazardous substance. [H&S Code, §25281(x)(1).] The term "underground tank system" or "tank system" means an underground storage tank, connected piping, ancillary equipment, and containment systems. [H&S Code, §25281(y).]

³ These requirements became effective on July 7, 2003 with the enactment of Assembly Bill 1702 (Stats. 2003, Ch. 42), an urgency measure.

⁴ These requirements became effective on January 1, 2003 with the enactment of Assembly Bill 2481 (Stats. 2002, Ch. 999).

PART I: USTs INSTALLED ON OR AFTER JULY 1, 2003 AND PRIOR TO JULY 1, 2004.

1. What does “product tight” mean?

For UST systems installed before July 1, 2003, “product tight” is defined to mean impervious to the (liquid) substance that is contained, so as to prevent seepage of the substance stored. [H&S Code §25281(o).] However, for UST systems installed on or after July 1, 2003, statute defines the term “product tight” to mean “impervious to the liquid and vapor of the substance that is contained, or is to be contained, so as to prevent seepage of the substance from the containment.” [H&S Code §25290.2(a).] UST owners and operators may install UST systems approved in accordance with Sections 2631 (b) and (d), Title 23, California Code of Regulations (CCR), as applicable. If at any point in time the State Water Resources Control Board (State Water Board) staff determine that an existing component or testing standard is deficient, the manufacturer of the equipment or testing organization will be informed and asked to resolve any concerns or deficiencies.

2. How can sumps and under-dispenser containment (UDC) connected to USTs installed on or after July 1, 2003 meet the product tight requirement?

UST systems installed on or after July 1, 2003 must be designed and installed such that there are no pathways for liquids or vapors to enter the backfill. For sumps, the “product tight” requirement may be satisfied by installing and maintaining sumps which have barriers that extend to grade level or covers, such that there is a product tight barrier between the sump containment and the backfill. For UDCs, the “product tight” requirement may be satisfied through the use of containment structures that extend to grade level such that there is a product tight barrier between the UDC and the backfill. Sump and UDC penetration (entry) fittings must also be product tight. Furthermore, sumps and UDCs must be properly installed, operated, and maintained to provide protection against the entry of liquids and vapors into the backfill.

3. For USTs installed on or after July 1, 2003, can secondary containment be open to rainfall or water intrusion?

No. All secondary containment components must be installed to prevent water intrusion into the system by precipitation, infiltration, or surface runoff. [H&S Code, §25290.2(c)(3).] The primary function of this requirement is to keep water out of the containment areas (e.g., tanks, piping, sumps, UDC) so that, in the event of a release, the stored substance can be detected and contained until it is cleaned up. In response to the detection of water into these containment areas, the owner or operator must remove and properly dispose of such water, identify the source(s), and correct the problem to prevent further water intrusion. The owner or operator should not make any modifications to the UST system that would nullify or void manufacturer warranties or independent testing organization approvals.

4. Has the definition of “pipe” changed for USTs installed on or after July 1, 2003?

Yes. Vent piping, vapor recovery piping, and fill pipes that are beneath the surface of the ground and installed in conjunction with a UST system on or after July 1, 2003 are regulated “pipe” and are subject to secondary containment requirements. [H&S Code, §25290.2(j).]

5. Are the piping exemptions provided in H&S Code, Section 25281.5(a)(4) and (b)(1), and the secondary containment exemptions in Section 2636(a), Title 23, CCR applicable to USTs installed on or after July 1, 2003?

No. The piping exemptions provided in H&S Code, Section 25281.5(a)(4) and (b)(1), are not applicable for UST systems installed on or after July 1, 2003. [H&S Code, §25290.2(j).] Additionally, the secondary containment exemptions (for vent and tank riser piping, vapor recovery piping, and safe suction piping) in Section 2636(a), Title 23, CCR are not applicable for USTs installed on or after July 1, 2003. There are no exemptions from the secondary containment requirement for USTs installed on or after July 1, 2003.

6. What type of post-installation testing is required for USTs installed on or after July 1, 2003, and when should the testing be completed?

The UST must be tested after installation, and before it is placed into use, using one of the following three test methods: (1) enhanced leak detection (ELD), (2) an inert gas pressure test certified by a third-party and approved by the State Water Board, or (3) a test method deemed equivalent to ELD and approved by the State Water Board in regulation. [H&S Code, §25290.2(i).]

As of the date of this letter, three tests have been determined to meet the ELD performance criteria and are allowable for post-installation testing:

Vendor	Test Method
Praxair Services, Inc.	Enhanced Tracer Tight [®]
CGRS, Inc.	iota [®] VaporTite - V005 and Enhanced Tracer Tight [®]
Leak Detection Technologies, Inc	MD Leak

The three ELD test methods can be used when there is no fuel in the system. The Enhanced Tracer Tight[®] test and the MD Leak test may also be conducted with fuel in the UST. To conduct either test with fuel, the owner or operator should first obtain approval from the local agency to have fuel delivered to the UST. Prior to approving a fuel delivery, the local agency may need to verify that all pertinent installation requirements have been met. A UST system should not be put into service until the facility has been issued a valid operating permit by the local agency.

If the results of post-installation testing indicate that the UST system is leaking liquid or vapor, the owner or operator must take appropriate actions to correct the leakage, and retest the system using the same approved test method until the system is no longer leaking liquid or vapor.

7. What requirements apply to a UST installation if installation started prior to July 1, 2003, but is not completed until after July 1, 2003?

If the tank and associated piping are not placed in the ground prior to July 1, 2003, the UST is subject to the new installation and monitoring requirements of H&S Code, Section 25290.2. [H&S Code, §25290.2.] As always, the local agency must have approved the installation plan prior to placement of the tank and associated piping in the ground.

Please note the following for a UST placed in the ground prior to July 1, 2003, following approval of the installation plan by the local agency. Such a UST is not subject to the new installation and monitoring requirements of H&S Code, Section 25290.2. However, the owner/operator of that UST system is required to perform a one-time ELD test on or before January 1, 2005, if the UST system is located within 1,000 feet of a public drinking water well. [H&S Code, §25290.2(i)(3); H&S Code, §25292.5(a) and (b).]

8. Does a repair or modification to a UST, NOT installed in accordance with H&S Code, Section 25290.2, subject the UST to the requirements of this section?

No, not unless the tank is replaced. USTs only become subject to H&S Code, Section 25290.2 when the tank is replaced. Therefore, for USTs installed prior to July 1, 2003, replacement of spill containment, sumps, product piping, vapor recovery piping, or vent piping would not subject the component or the UST system to the new installation and monitoring requirements of H&S Code, Section 25290.2.

9. What components of USTs installed on or after July 1, 2003 and prior to July 1, 2004 are required to be monitored in accordance with H&S Code, Section 25290.2(d)?

As for all USTs installed since January 1, 1984, USTs installed on or after July 1, 2003 and prior to July 1, 2004 must also be equipped with a continuous monitoring system “capable of detecting the entry of the hazardous substance stored in the primary containment into the secondary containment.” [H&S Code, §25290.2(d); CCR, §2630(d).] All sumps, UDCs, and the interstitial spaces of tanks and piping (including product, vent, vapor recovery, and fill pipe) must have sensors that are capable of detecting liquid releases from the primary containment. Components subject to the monitoring requirement of Section

25290.2(d) include, but are not limited to, riser piping and access points on top of the tank, which provide access to the primary containment of the tank and may be in contact with vapors of the stored product.

10. For USTs installed on or after July 1, 2003 and prior to July 1, 2004, is an annual line tightness test on pressurized piping required?

Yes. As for all USTs installed since January 1, 1984, the requirement for “underground pressurized piping ... (to) be tightness tested annually” also applies to USTs installed on or after July 1, 2003 and prior to July 1, 2004. [H&S Code, §25290.2(g); H&S Code, §25291(f).] The annual line tightness testing requirement may be met by satisfying the criteria specified in CCR, Title 23, Section 2636(g)(1-5).

PART II: USTs INSTALLED ON OR AFTER JULY 1, 2004.

In addition to the requirements discussed below (Questions A-D of Part II), USTs installed on or after July 1, 2004 are subject to all of the installation and monitoring requirements presented in the responses to Questions 1-8 of Part I. For USTs installed on or after July 1, 2004, references to the “July 1, 2003” date in Part I should be substituted with “July 1, 2004.” The H&S Code citations relevant to USTs installed on or after July 1, 2003 and July 1, 2004 are provided in the table below. Note that Questions 9 and 10 of Part I do not apply to USTs installed on or after July 1, 2004.

Question Number	H&S Code Citation for USTs Installed On or After July 1, 2003 and Prior to July 1, 2004 (Part I)	H&S Code Citation for USTs Installed On or After July 1, 2004 (Part II)
1	H&S Code §25290.2(a)	H&S Code §25290.1(a)
2	—	—
3	H&S Code §25290.2(c)(3)	H&S Code §25290.1(c)(3)
4	H&S Code §25290.2(j)	H&S Code §25290.1(k)
5	H&S Code §25290.2(j)	H&S Code §25290.1(k)
6	H&S Code §25290.2(i)	H&S Code §25290.1(j)
7	H&S Code §25290.2	H&S Code §25290.1
8	H&S Code §25290.2	H&S Code §25290.1

A. In accordance with H&S Code, Section 25290.1(e), which components of USTs installed on or after July 1, 2004 must be continuously monitored using vacuum, pressure, or interstitial liquid level measurement methods?

The interstitial space of the tank and product piping (including fill, vent, and vapor recovery piping), that are beneath the surface of the ground must be maintained under constant vacuum or pressure. Statute also requires that a breach in the primary or secondary containment be detected before the liquid or vapor of the stored substance is released to the environment. Continuous vacuum, pressure, or interstitial liquid level measurement methods can be used to satisfy these

requirements. As with all leak detection equipment used to monitor the UST system, these methods must be third-party certified and should be listed in Local

Guidance (LG) Letter 113. LG 113 can be found on our website at:
http://www.waterboards.ca.gov/ust/leak_prevention/lg113/index.html

It is important to note that regulated piping begins where piping exits/enters the tank and continues to the point where piping extends above the surface of the ground (e.g., at a shear valve). Statute does not provide an exemption for single-walled piping transitions contained in sumps, or single-walled piping transitions in UDCs, or fill piping contained in sumps. The following options may be used to satisfy the requirements for single-walled piping transitions contained in sumps; single-walled piping transitions contained in UDCs; and fill piping contained in sumps:

- i. The entire piping length, including piping within sumps or UDCs, must be double-walled and continuously monitored using vacuum, pressure, or interstitial liquid level measurement methods; **or**
- ii. The interstitial space between the primary (i.e., single-walled transition pipe or fill piping) and secondary containment (i.e., sump, UDC) must be continuously monitored using vacuum or pressure. (Note: Interstitial liquid level measurement would not be appropriate for this option.); **or**
- iii. The single-walled transition pipe or fill piping must be contained within a double-walled sump and/or double-walled UDC that either: (1) extends to the surface or (2) has a double-walled product tight lid that is continuously monitored using vacuum, pressure, or interstitial liquid level measurement methods. The secondary containment (of the sump or UDC, including penetration fittings) must be continuously monitored using vacuum, pressure, or interstitial liquid level measurement methods.

Pursuant to Section 2637(a)(6) of Title 23, CCR, portions of the UST system which are continuously monitored using vacuum, pressure, or interstitial liquid level measurement methods are exempt from periodic secondary containment testing. Therefore, periodic secondary containment testing is not required for secondary containment of tank and piping that are continuously monitored using vacuum, pressure, or interstitial liquid level measurement methods. Please note that annual certification of the leak detection equipment is still required.

- B. What components of USTs installed on or after July 1, 2004 are required to be monitored in accordance with H&S Code, Section 25290.1(d)?**
Section 25290.1 requires that the “underground storage tank system” be designed and constructed with a continuous monitoring system. Tank and product piping monitored using constant vacuum, pressure, or interstitial liquid level measurement methods satisfy this requirement through Section 25290.1(e). However, other parts of the UST system not subject to Section 25290.1(e) must

satisfy the monitoring requirement in Section 25290.1(d). These components include, but are not limited to, riser piping and access points on top of the tank, which provide access to the primary containment of the tank and may be in contact with vapors of the stored product.

The requirement for sumps and UDCs to have sensors is as follows. Sumps and UDCs installed and monitored in accordance with paragraph A.i, above, must have sensors that are capable of detecting liquid and vapor releases from the primary containment. No sensors are required for sumps and UDCs installed and monitored in accordance with paragraph A.ii, above. Sumps and UDCs installed and monitored in accordance with paragraph A.iii, above, are only required to have sensors that are capable of detecting liquid releases.

C. For UST components monitored continuously using vacuum, pressure, or interstitial liquid level measurement methods, is additional testing or evaluation necessary?

If the component's current listing includes approval for its use with continuous monitoring using vacuum, pressure, or interstitial liquid level measurement methods, no further testing or evaluation is necessary. However, if the component's current listing does not include approval of its use with continuous monitoring using vacuum, pressure, or interstitial liquid level measurements, additional testing or evaluation may be necessary. Owners and operators should ensure that UST components are approved for use with a continuous monitoring system using pressure, vacuum, or interstitial liquid level measurement methods consistent with the requirements outlined in Sections 2631 (b) and (d), Title 23, CCR, as applicable.

D. For USTs installed on or after July 1, 2004, is the annual line tightness test on pressurized piping required?

No. For USTs installed on or after July 1, 2004, an annual line tightness test on the primary piping is not required.

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

Sincerely,

Original signed by

Kevin Graves, P.E., Manager
Underground Storage Tank Program