



County of Orange, Health Care Agency, Environmental Health
1241 E. Dyer Rd., Ste. 120., Santa Ana, CA 92705
(714) 433-6000

Standard Operating Procedure

Closure in Place of an Underground Storage Tank

These guidelines apply to the owner of an underground storage tank (UST) subject to the permanent closure requirements of the California Code of Regulations (CCR) Title 23, Division 3, Chapter 16, Underground Storage Tank Regulations, Article 7. Closure Requirements and their agents, who are closing a UST in place.

1. Whenever possible, USTs should be closed permanently via removal. For sites where removal is not feasible, written justification must be provided that is signed/stamped by a registered professional (most commonly a Professional Engineer) indicating the rationale for in-place abandonment. Acceptable scenarios for in-place abandonment include proximity to a building or utility line such that removal will jeopardize the structural integrity of the building or utility line, limited overhead clearance, and multiple USTs in the same cavity where one or more UST will remain.
2. Submit a completed Facility Modification Application to Environmental Health. Applications may be obtained in person at the address provided above or downloaded from the following website: <https://www.ochealthinfo.com/sites/hca/files/import/data/files/14600.pdf>. The application should be submitted at least 30 calendar days prior to the expected date of the UST closure activity. The following must be submitted with the application:
 - a. A copy of a letter of approval for in-place abandonment from the Orange County Fire Authority or local fire department and City Building Department, and
 - b. One set of closure plans. Closure plans must include:
 - i. A site location map,
 - ii. A plot plan (maximum size 11x17) that:
 - Identifies site location, inclusive of cross streets and a North arrow,
 - Shows existing structures, utilities and all existing USTs and associated piping,
 - Identifies those USTs to be closed in place,
 - Clearly identifies the entire length of any piping proposed for closure in place, and
 - Includes the size of the USTs to be closed and the types of hazardous substances that have been stored in them.
 - iii. A sampling plan that meets the requirements of the California Code of Regulations (CCR), Title 23, Division 3, Chapter 16, Article 7. Closure Requirements, Section 2672 (d), including the following:
 - Proposed locations of borings,
 - Boring method (e.g., hollow stem auger, direct push, etc.),
 - Sampling collection protocol,
 - Number of samples, and
 - Sampling intervals and depth.

Note: Where directed by Environmental Health, the borings drilled for UST closure are also to confirm the depth to groundwater. If the depth to groundwater is less than 30 feet from the bottom of the UST, then a groundwater investigation will be required.

3. The applicant must apply for and obtain appropriate permits from the Orange County Fire Authority or local fire department, County Planning and Development Services Department or city building department, and the South Coast Air Quality Management District (SCAQMD).
4. Once the closure plans are approved and appropriate permits issued, the applicant is responsible for scheduling an onsite inspection with Environmental Health and a concurrent inspection with the Orange County Fire Authority or local fire department for inspection of the UST closure and oversight of soil sampling (see Section 6 below regarding soil sampling). To schedule an appointment with Environmental Health's Land and Water Quality Section call a minimum of 48 hours prior to the desired appointment.
5. When closing a UST in place, the owner of the UST must comply with applicable provisions of the CCR Section 2672 (b) & (c) which include the following:
 - a. All residual liquid, solids, or sludges in the UST shall be removed and disposed of as hazardous waste or recyclable material;
 - b. The UST shall be completely filled with an inert solid approved by the Orange County Fire Authority or local fire department;
 - c. If the UST(s) contained a hazardous substance that could produce flammable vapors at standard temperature and pressure, then the UST shall be inerted to levels that shall preclude explosion or to such lower vapor levels as may be required by the Orange County Fire Authority or local fire department. (Note: A representative from the Orange County Fire Authority or local fire department must be present prior to initiating this procedure.), and;
 - d. All piping associated with the UST closure shall be removed and disposed unless its removal may damage significant structures, or there is other piping presently being used and contained in the same trench, in which case, the piping to be closed shall be emptied of all contents and capped.
6. Per CCR Section 2651 (d), the owner of the UST must demonstrate upon closure that no unauthorized release has occurred. This demonstration is based on sensory observations, monitoring equipment readings, soil sample analysis and/or water sample analysis. Sample collection points are to be determined as follows:
 - a. Environmental Health staff must be onsite to observe pipeline conditions and direct sampling in trenches where pipelines are to be removed. The area beneath the UST(s) to be closed in place and any associated piping to be closed in place must be assessed for an unauthorized release through the placement of borings and soil sampling approved in the sampling plan. Environmental Health staff must be onsite to oversee the placement of the borings and sample collection;
 - b. Samples are to be collected, handled and analyzed per CCR Section 2649 and as indicated below:
 - i. Sample collection activities are to be performed by staff provided by the project consultant or the laboratory doing the sample analysis. The laboratory doing the sample analysis or the project consultant must provide the sample collection supplies required to facilitate the approved sampling protocol. A cooler or ice chest with ice is required to be present onsite so that the samples may be

chilled immediately after sampling. When a sample is collected, an identifying label should be attached and the sample placed in a plastic bag where needed to avoid water damage to the label;

- ii. The samples should be transported, per arrangements made by the tank owner, to a State Certified Laboratory immediately after sampling accompanied by the Chain of Custody form provided by Environmental Health. The receiving laboratory is to indicate on the Chain of Custody form in the designated laboratory section whether the samples were received in a chilled state and whether County seals were intact upon arrival; and,
 - iii. Samples collected at diesel or gasoline storage sites must be analyzed by an appropriate method for total petroleum hydrocarbons (TPH). TPH (GC/FID) with carbon chain identification is recommended for diesel sites. Total purgeable petroleum hydrocarbons [TPPH (GC/MS)] as gasoline is recommended for gasoline sites. Samples collected in association with tanks in use prior to 1992 must be analyzed for organic lead. In addition, analysis by EPA Method 8260B full scan is required to analyze for volatile organic compounds (VOCs) that include benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, 1,2-dichloroethane (EDC [or 1,1-DCA]) and 1,1-dibromoethane (EDB), ethanol, Methyl Tertiary Butyl Ether (MTBE) and all other fuel oxygenates.
 - iv. Samples collected at waste oil tank storage sites must be analyzed for TPH with carbon chain identification using EPA Method 8015 or for total recoverable petroleum hydrocarbons using EPA Method 1664, for full scan VOCs including BTEX, EDC, EDB, MTBE and all other fuel oxygenates, and chlorinated solvents by EPA Method 8260B, and for polycyclic aromatic hydrocarbons using EPA Method 8310 or 8270C (SIM Mode)¹. In addition, soil samples must be analyzed for wear metals (cadmium, chromium, nickel, lead, and zinc). Detection limits for all reported constituents must meet appropriate data quality objectives.
7. The detection of a reportable unauthorized release, based on field observations and/or the results of the soil and groundwater sample analysis, shall require compliance with the reporting requirements of CCR Section 2652 and the initial abatement and corrective action requirements of Articles 5 and 11 of Title 23, Division 3, Chapter 16, CCR.
8. Documentation required to be forwarded to this Agency includes:
- a. Copies, signed by the receiving State permitted facility, of all Uniform Hazardous Waste Manifests used to transport the residual or rinseate liquid, solids, or sludge waste removed from the tanks; and
 - b. Original (wet) copies of the laboratory analytical report and the white copy of the OCHCA Chain of Custody form sent with the samples to the laboratory – with all required information completed by the laboratory.

Where the above requirements are successfully completed and an unauthorized release requiring further action is not discovered, a completion of a UST closure letter will be issued to the UST owner by Environmental Health. Should an actionable unauthorized release be discovered, Environmental Health's Site Mitigation Section will open a UST cleanup case and, upon satisfactory completion of the required corrective action, a letter of remedial action completion will be issued.

If you have any questions or need additional information, please contact Environmental Health at (714) 433-6000.

¹ Analytical methods listed above are subject to revision or update by EPA. Suggested test methods may require updating as analytical procedures are promulgated.