UNDERGROUND STORAGE TANK (UST) CLOSURES

PERMIT PROCESS

Closure of a UST for the storage of hazardous materials generally requires a permit issued by Environmental Health Services. There are some USTs which are exempt by regulation from operation and closure standards, such as agricultural tanks under 1100 gallons and home heating oil tanks. Owners of such tanks are encouraged to close their tanks under permit in order that a permanent record of the closure is established.

There are two methods of permanent closure, which include tank removal and tank closure in place. Closure by removal will generally be required unless the removal might cause damage to an adjacent structure or removal is otherwise impractical.

Another closure method is temporary closure. This method applies to a UST in which the storage of hazardous substance has ceased, but the UST will again be used for the storage of a hazardous substance within the next 12 consecutive months. At the end of 12 consecutive months during which the UST is temporarily closed, Environmental Health Services may approve an extension of the temporary closure period for a maximum period of up to 12 months. Before an extension may be granted a site assessment must be completed consisting of sampling under tanks, piping and dispensers pursuant to California Code of Regulations, Title 23, Section 2672(d).

APPLICATION

Application begins by completing and filing an Application For Closure Permit accompanied by the appropriate permit fee.

The applicant must also contact other agencies having jurisdiction, such as the local fire and building departments, regarding compliance with their permitting requirements and regulations.

APPLICANT

Contractors or tank owners may file an application for the closure of a UST system. An application cannot be approved or permit issued until a closure contractor has been approved.

The applicant must provide proof that the closure contractor possesses a valid license issued by the Contractor’s State License Board with a UST Closures Hazardous
Substance Certification abbreviated as "HAZ" on the license. Licenses issued prior to 1992 may be approved if they are Class A or the grandfathered Class C-61/D-40. License classes are included in the State Water Board document LG-48-5. The above referenced licenses are acceptable provided they have the Hazardous Substance Certification.

The applicant must provide information on how the required sampling will be accomplished. Contractors must hire a third party consultant to take samples. A state certified laboratory must be used to analyze samples.

The applicant must provide information regarding the cleaning and disposition of the tank(s). This information must include whether the tank will be cleaned onsite and hauled non-hazardous or hauled as a hazardous waste for offsite cleaning. Information must identify an approved tank disposal facility and a certification of tank destruction must be provided.

PERMIT

A closure permit does not supersede the requirements of Uniform Fire and Building Code permits required by the local agencies having jurisdiction. Closure application approval and permit issuance is coordinated with other local oversight agencies.

A permit may be issued if Environmental Health Services is confident that the contractor possesses the necessary qualifications and that the UST closure is not opposed by other local agencies having jurisdiction. If permits expire prior to the start of the closure project, the permit can be reissued for reasonable cause upon written request.

CLOSURE PROCESS

During the closure process there are one or more inspections conducted by Environmental Health Services. Contractors are required by permit to provide at least a 48-hour notice before the time of the requested inspection. Upon contractor's notification, the closure is assigned to the appropriate staff inspector.

The regulations governing excavation and operation of equipment are primarily enforced by Cal-OSHA. Unsafe working conditions will be brought to the contractor's attention and referred to Cal-OSHA if warranted. Regulations governing fire safety are primarily enforced by the local fire agency. Unsafe fire conditions will be brought to the contractor's attention and referred to the local fire agency in an expeditious manner.

REMOVAL CLOSURES

The contractor must not remove the tank from the excavation until the inspector has arrived.

There are two options for Removal Closure: 1. UST cleaned on-site and certified non-hazardous or 2. Handled as a hazardous waste.
1. UST CLEANED ON SITE:
Pursuant to California Code of Regulations (CCR) Title 22, Division 4.5, Chapter 20, Article 1: A workplan must be provided to document compliance with CCR 67383.3. (attached) This workplan must document all compliant decontamination procedures, permitted recycling facility and employee training documentation. If the tank is cleaned onsite, the tank must be rinsed until clean with a mild solution of soap and water or hot water. A vacuum tanker truck is required to collect the rinsate for treatment or disposal at an approved offsite facility. The inspector should verify that the vacuum truck firm is currently registered as a hazardous waste hauler and that the rinsate is transported under manifest to an approved facility. The inspector will verify the certification has been completed pursuant to CCR 67383.3(e) and visually inspect the adequacy of cleaning. This is done by viewing the tank interior using an explosion proof light (a mirror works well when sunlight is present) to determine if the residue has been substantially removed.

The contractor must have a functional, recently calibrated gas detector on site capable of reading the lower explosive limit (LEL) and oxygen level percentage. The inspector will verify that explosive vapors have been purged from the tank by verifying the detector reading at the bottom, middle and upper portions inside the UST. The tank should not contain dry ice at this time because the dry ice may interfere with the LEL reading. To inert the tank and prevent explosive vapors from reforming, dry ice is placed in the tank. Twenty five (25) pounds of dry ice for each 1000 gallons of tank capacity is required. Nitrogen or carbon dioxide gas may also be allowed in place of dry ice for inerting tanks. Whichever inerting substance is used, the inspector must verify that the oxygen level in the tank is less than 5 percent at the bottom, middle and upper inside of the tank.

2. UST NOT CLEANED ON SITE HANDLED AS A HAZARDOUS WASTE: Pursuant to California Code of Regulations (CCR) Title 22, Division 4.5, Chapter 20, Article 1: A workplan must be provided to document compliance with CCR 67383.3. (attached) This workplan must document all compliant decontamination procedures, permitted disposal facility and employee training documentation. The above cleaning procedure is not needed if the tank is to be hauled as hazardous waste under manifest by a licensed hazardous waste hauler. In this case the tank must all fuel removed and be inerted with dry ice or an inert gas, as explained above, and the oxygen level in the tank must be less than 5 percent. The tank is inerted to ensure that the tank can be removed from the excavation and hauled safely to an approved hazardous waste disposal facility.

TO BE COMPLETED FOR OPTION 1 OR 2: After inerting, all openings (bungs) in the tank must be closed except for a single 1/8 inch opening, which will allow the tank to vent. Adequate equipment must be present to lift the tank from the excavation. The tank must never be dragged in contact with the ground. The contractor will be requested to spray paint a tracking number on each removed tank. This number is commonly the closure permit number.

After the tank is removed from the excavation, sampling can begin. The inspector will provide direction to the person collecting samples as to the appropriate sampling location. The purpose of sampling is to determine if a release from the tank or piping
system has caused contamination.

For tanks less than 1000 gallons, one sample is required from beneath the tank at either the middle or near the fill end of the tank, 2 feet below the level where native soil is first encountered. Any other areas of the excavation that show evidence of possible contamination should also be sampled. Tank capacities of more than 1000 gallons require at least 2 samples taken 2 feet deep in native soil beneath each end of the tank, usually 3 to 4 feet in from each end of the tank.

Other sample locations are the piping trench and the area under the dispensers. After removal of the piping and dispenser islands, samples will be taken under dispenser islands and under approximately each 20 lineal feet of the piping trench. Since most leaks in piping occur at the unions or joints and not along the unjointed portions, sampling below the piping will focus on the areas where the unions or joints were previously located. Samples under piping and dispensers are usually collected 2 feet deep in the native soil. Generally, all piping is required to be removed for disposal.

CLOSED IN PLACE

Closure of a UST in place is often performed when removal of a UST could threaten an adjacent structure or removal is otherwise impractical.

The closure process usually begins by slant boring beneath the tank. For tanks less than 1000 gallons one sample is required from native soil beneath either the middle or near the fill end of the tank. For tanks larger than 1000 gallons at least two samples are required from native soil beneath each end of the tank, usually 3 to 4 feet in from each end of the tank.

Another approved sampling method includes boring or trenching vertically on each long dimensional side of the tank instead of slant boring beneath the tank. Soil samples are collected from beneath the tank, 2 feet below the level where native soil is first encountered.

In borings or trenches where groundwater is encountered, sampling of soil from the boring in the capillary fringe or in the trench wall immediately above the water level is advised.

Sampling under UST piping and dispensers is performed in the same manner as described in the REMOVAL CLOSURE section. Generally, all piping is required to be removed for disposal. However, where piping removal may cause excessive damage to structures, piping may be cleaned and filled with wet cement slurry as described below.

If soil and/or groundwater samples confirm that significant contamination is present the tank will likely have to be removed in order to remove or remediate the contamination.

Closure in place continues by exposing the tank openings and the tank is cleaned as described in the REMOVAL CLOSURE section. No inerting is required. The tank is then filled with a wet concrete slurry (usually 2 bags of cement per cubic yard of sand).

Care must be taken to ensure that no bridging or voids occur and that the tank is
completely filled to the top openings. The tank excavation may be backfilled once the
tank has been filled with slurry.

TEMPORARY CLOSURE

The temporary closure process begins with cleaning and inerting of the tank as
described in the REMOVAL CLOSURE section and the inspection procedures in that
section also apply to temporary closure. After cleaning and inerting of the tank and
cleaning of any associated product piping all tank fill and access locations and piping,
except for required vent piping, must be sealed using locking caps or concrete plugs.
Power service must be disconnected to any turbine pumps or dispensers but left
connected to any corrosion protection system.

The tank must be inspected by the owner or operator at least once every 3 months to
verify that the temporary closure measures are still in place.

At the end of a temporary closure period exceeding 12 months, including any extension
granted, the owner may reuse the tank only if the tank meets the requirements for a
new tank or the tank is upgraded.

SAMPLE TESTING

A copy of the report prepared by the inspector during the closure inspection should
sufficiently document the tank closure, describe the sampling locations and direct the
contractor or consultant on sample testing. Samples of soil and groundwater should be
analyzed according to current EPA protocols for all products which the tank once held
as follows:

1. Gasoline - analyze for TPH as gasoline BTEX, MTBE, TAME, TBA, DIPE, ETBE
   with EPA 8250 GCMS combination. If a tank was used to store leaded gasoline
   or gasoline, additional analysis for lead (EPA 6010, 7420 or 7421) may be
   required.

2. Diesel - analyze for TPH as diesel (EPA 8015-M or 8270 GCMS). If the sample
   significantly exceeds the State Action Level for TPH, additional analysis for
   PAH's (EPA 8270 or 8310) may be required.

3. Waste Oil - analyze for TPH as oil and grease (EPA 8270, C10-C40). If the sample
   significantly exceeds the State Action Level for TPH, additional analysis
   for PCB's (EPA 8080) or chlorinated hydrocarbons (EPA 8010, 8240 or 8260)
   may be required.
(a) Except as provided in subsections (b), (c), and (d) of section 67383.1, any tank system that is identified as a hazardous waste pursuant to chapter 11 of this division, and that is destined to be disposed, reclaimed or closed in place shall be exempt from regulation under this division if the tank system is managed in accordance with all of the requirements of this section:

(1) Prior to initiating cleaning, cutting, dismantling, or excavation of a tank system, the owner or operator of the tank system shall notify the appropriate CUPA in writing of the information specified below. If there is no CUPA, then the owner or operator shall notify the LIA and send a copy to the authorized agency. However, information already provided to the CUPA, authorized agency or LIA pursuant to compliance with another statutory or regulatory requirement need not be resubmitted:

(A) The location of the tank system;

(B) The date(s) the tank system will be cleaned and/or excavated, or closed in place;

(C) A brief description of the tank system;

(D) The identification of the hazardous material or hazardous waste last held in the tank supported by:

   1. A statement signed by the tank operator certifying the identity of the material or waste last stored or accumulated in the tank; or

   2. If residuals remain in the tank in sufficient quantity to be collected and analyzed, a chemical analysis of the residual in the tank;

   (E) The name and credentials of the individual who will provide certification pursuant to subsection (f), when applicable; and

   (F) The intended disposition and destination of the tank system.

(b) Except as provided in subsection (c), any of the following procedures may be used for the onsite cleaning and closure of a tank system:

(2) American Petroleum Institute, Safe Entry and Cleaning of Petroleum Storage Tanks, API Publication 2015, American Petroleum Institute, 1220 L Street, N.W., Washington, DC 20005, May 1994;


(4) Procedures approved by the CUPA, authorized agency or LIA.

(c) Non-sparking, cold-cutting tools or a non-sparking cold-cutting process shall be used if the tank held a flammable or combustible material, and the tank, piping and/or appurtenances are to be cut onsite, unless an alternate method is approved by the CUPA, authorized agency or LIA.

(d) All sludge, scale, debris, residue, and rinseate generated during the tank closure process shall be managed in accordance with all applicable requirements of this division.

(e) At the completion of the cleaning process the tank system shall meet all of the following:

1. All piping and appurtenances shall be free of product, sludge, rinseate and debris to the extent that no material can be poured or drained from them when held in any orientation (e.g., tilted, inverted, etc).

2. The tank, upon inspection, shall be visually free of product, sludge, scale (thin, flaky residual of tank contents), rinseate and debris, except that residual staining caused by soil and waste consisting of light shadows, slight streaks, or minor discolorations, and soil and waste in cracks, crevices, and pits may be present.

(A) The inspection to verify that the requirements of subsection (e)(2) are met shall be conducted

1. through an existing manhole in the tank or one newly installed in the tank, or through holes cut into the tank wall in accordance with the requirements of this section so as to allow for visual inspection of the entire tank interior, without the need to enter the tank physically or

2. if the tank is not cut, following cleaning, by using a light with an internal inspection lamp approved for Class I, Division I locations, a mirror to reflect light into the container, or other appropriate device upon approval of the CUPA, authorized agency or LIA.

(B) If the tank held a hazardous material or hazardous waste that had the potential to generate flammable vapors, and the tank was cut onsite, a combustible gas indicator (CGI) which is properly calibrated shall be used to measure the concentration of flammable vapor at the top, center and bottom of the cut tank. The concentration of flammable vapor shall be zero percent of the Lower Explosive Limit (LEL) for the material that was contained in the tank; and the oxygen concentration shall be the same as that of the ambient air, approximately 20.8%;
(C) If the tank held a hazardous material or hazardous waste that had the potential to generate flammable vapors, is intended to be transported, and was not cut onsite, the tank shall be cleaned and inerted using one of the methods listed in subsection (b), inspected pursuant to subsection (e)(2)(A)2 and transported in accordance with the provisions of section 67383.5. (The tank shall be inspected to ensure that it meets the conditions of paragraph (2) of this subsection before it is inerted.)

(D) If a tank has been cut onsite, but it is not to be transported offsite or closed in place, it shall be cleaned using one of the methods specified in subsection (b) and inspected pursuant to subsection (e)(2)(A)1.

(f) The cleaned tank system shall be certified as meeting the standards of paragraphs (e)(1) and (2) of this section by the CUPA, authorized agency or LIA, or one of the following professionals, certified or registered in California:

(1) certified industrial hygienist;

(2) certified safety professional;

(3) certified marine chemist;

(4) registered environmental health specialist;

(5) registered professional engineer; or

(6) registered environmental assessor, Class II, as defined in section 25570.3, Health and Safety Code; or

(7) a contractor properly licensed by the Contractor’s State License Board (CSLB) to contract for the removal of underground storage tanks and who holds a Hazardous Substance Removal Certification issued by the CSLB.

(g) The certificate issued pursuant to subsection (f) of this section shall be submitted on the Hazardous Waste Tank Closure Certification page of the Unified Program Consolidated Form (x/99)), Appendix E of Title 27 CCR, or an alternative version or a computer generated facsimile as allowed pursuant to Title 27, CCR, Sections 15610 and 15620. The submittal must include the Business Activities Page, and the Business Owner/Operator pages of the Unified Program Consolidated Form (x/99)). The certificate shall include the following:

(1) the tank owner’s name and address;

(2) the address of tank closure site;

(3) the tank’s State identification number, if applicable;

(4) the statement that the tank is visually free of product, sludge, scale, rinseate and debris;
(5) if applicable, the tank’s interior atmosphere readings for concentrations of flammable vapor and oxygen;

(6) the name, professional classification, registration or certification number if applicable, signature, address and phone number of the certifying person; and

(7) the date and time of certification.

(h) Copies of the certificate shall be provided to the following:

(1) CUPA, authorized agency or LIA;

(2) owner and/or operator of the tank system;

(3) the contractor responsible for the removal of the tank system; and

(4) the recycling or disposal facility to which the tank is transported.

(i) A copy of the certificate shall accompany the tank to the recycling/disposal facility.

(j) A person who treats a tank by employing physical methods to satisfy the standard in subsection (e)(2) is authorized to perform such treatment for purposes of Health and Safety Code Section 25201.