



County of Fresno

DEPARTMENT OF PUBLIC HEALTH

UNDERGROUND STORAGE TANK CLOSURE GUIDELINES

Revised May 2009

Purpose

This document has been prepared as a guide for underground storage tank (UST) owners and other interested parties. The goal of the tank closure process is to ensure that:

- The USTs are removed or abandoned safely;
- Proper permits are obtained prior to initiating any work on the property;
- Soil samples are obtained properly; and
- All paperwork is submitted in order, to the appropriate agencies.

It is imperative that USTs be closed properly. Proper closure prevents costly delays and ensures that you gather enough data to make informed decisions, which may impact the future use or sale of the property.

1. General Criteria

It is the UST owner's responsibility to ensure that the closure process is completed in a lawful manner. In most circumstances, the owner will retain a qualified and licensed contractor to perform all work at the site.

1.1. Contractor Licensing Requirements

Any work to upgrade, install, or remove USTs is subject to contractor licensing if the total cost of such work is \$500 or more. Under current Contractors State License Board (CSLB) policy, only those contractors holding one of the following classifications are properly licensed to contract for such work:

- **Plumbing Contractors (C-36)** – A plumbing contractor provides a means for a supply of safe water, ample in volume and of suitable temperature for the purpose intended and the proper disposal of fluid waste from the premises in all structures and fixed works. This classification includes but is not limited to:
 - Piping, storage tanks and venting for a safe and adequate supply of gases and liquids for any purpose, including vacuum, compressed air and gases for medical, dental, commercial and industrial uses;
 - The maintenance and replacement of all items described above and all health and safety devices such as, but not limited to, gas earthquake valves, gas control valves, back flow preventers, water conditioning equipment and regulating valves.

NOTE: Plumbing Contractors may work on any UST that provides a service to a building. This includes storage tanks for service stations. Any other type of UST may only be worked on by a General Engineering Contractor (A).

- **Limited Specialty Contractor (C-61-D-40)** – A service station maintenance contractor installs and/or removes underground fuel storage tanks up to 20,000 gallons which have been or are to be used for dispensing gasoline, diesel fuel, waste oil or kerosene (no chemicals). This work involves the installation and/or removal of all incidental tank related piping, electrical work, including the installation of vapor probes in back fill areas of the tanks and any associated calibration work, including but not limited to the testing and adjustment of leak detection and vapor recovery equipment, such as automatic tank gauges, leak line detectors, vapor recovery lines, and in-station diagnostics. This contractor also performs the installation of auto hoisting equipment, grease racks, compressors, air hoses, and other service station equipment.

NOTE: Licensees holding this classification prior to January 18, 2001, may perform all the work as described above. Licenses issued after this date may perform the "calibration" work only.

- **General Engineering Contractors (A)** - General Engineering Contractors may work on any UST for any purpose and at any location.
- **General Building (B)** - General Building Contractors may work on a UST tank only if such work is performed under a *contract to construct or remodel a building which housed people, animals or personal property*, and the work involves the use of at least two or more unrelated trades, or is subcontracted to the appropriate license.

A contractor possessing any one of the above licenses may contract to apply interior lining to a UST. In accordance with Local Guidance (LG) 136-1, "Interior Lining and Cathodic Protection of Underground Storage Tanks," a contractor may also apply interior lining if possessing one of these licenses:

- Painting and Decorating (C-33)
- Limited Specialty/Synthetic Products (C-61/D-12)
- Limited Specialty/Protective Coating (C-61/D-51)

Only those contractors holding one of the following classifications are properly licensed to contract for installation of bladders:

- General Engineering Contractor (A)
- Plumbing Contractor (C-36)
- Limited Specialty/Protective Coating (C-61/D-51) if issued prior to January 18, 2001.

For information regarding the qualifications necessary to design, certify, install, and test corrosion protection systems see LG 145, "Clarification of Corrosion Specialist and Cathodic Protection Tester."

Summary of Contractor Licensing Requirements

	General Building (A)	General Building (B)	Painting and Decorating (C-33)	Plumbing (C-36)	Limited Specialty/Synthetic Products (C-61/D-12)	Limited Specialty (C-61/D-40)	Limited Specialty/Protective Coating (C-61/D-51)
To upgrade, install, or remove USTs if the aggregate costs of such work is \$500 or more	X	X		X		X	
To contract to apply interior lining	X	X	X	X	X	X	X
To contract for installation of bladders	X			X			X

Hazardous Substance Certification

In accordance with Business and Professions Code (B&PC) Section 7058.7, a contractor must possess a Hazardous Substance Certification issued by the CSLB to:

- **Install or remove** an underground storage tank. However, a contractor who is not certified may bid on or contract for the installation or removal, as long as the work is performed by a contractor who is certified.
- **Upgrade** an underground storage tank. Upgrading means installation of a bladder system, application of interior lining, and installation of striker plates that are permanently bonded to the tank bottom. A contractor does not need to possess this certification to install spill containment or overfill prevention devices, fill pipes, vapor recovery systems, or leak detection equipment. Again, a contractor who is not certified may bid on or contract for the installation or removal, as long as the work is performed by a contractor who is certified.
- **Engage in removing or remediating the release of a hazardous substance** at the site or to correct the conditions that threaten the release of a hazardous substance (pursuant to Sections 25355.5 and 25356 Health and Safety Code). Per B&PC, Section 7058.7, "removal or remedial action" refers to work in which the contractor digs into the ground surface, removes the material, and the work is at a hazardous substance release site as identified in Section 25356 of the Health and Safety Code. These provisions of the Health and Safety Code apply to hazardous substances other than petroleum. The hazardous substance certification is not required for corrective action at petroleum UST sites.

All questions on this issue should be directed to the Licensing Staff of the Contractors State License Board at (916) 255-3900 or (800) 321-2752.

1.2. Site Security

Excavations opened during or after tank removal operations shall be safeguarded by fencing until backfilled. The contractor may use barricades during excavation; however, the site shall be supervised continuously.

1.3. Site Safety

Ensuring that all work is performed safely is the contractor's responsibility. **All contractors must have an established safety program and safety manager onsite during all work.** All contractors performing work must implement all safety standards established by the State of California, Department of Industrial Relations, Occupational Safety and Health Administration (Cal OSHA). Specific Safety Orders include, but may not be limited to, the following:

Health and Safety Training

- Hazardous Waste Operations and Emergency Response
- Hazard Communication

Construction Safety Orders

- Code of Safe Practice for Contractors
- Trench/Excavation Safety Orders
- Heavy Equipment Operation
- Traffic Control

General Industry Safety Orders

- Confined Space Entry
- Permissible Exposure Limits
- Personal Protective Equipment
- Proper Hand Tools for Possible Explosive Environment

For more specific details contact Cal OSHA Consultation Services at (559) 454-1295.

1.4. Product, Vent, and Vapor Recovery Lines

All product, vent, and vapor recovery lines associated with the tank system must be removed during the abandonment process. If structures or site-specific conditions impede removal, prior authorization for leaving the piping in place shall be obtained from this Department.

2. Permit and Notification Requirements

Prior to conducting any activity associated with an underground storage tank closure, a permit shall be obtained from the Fresno County Department of Public Health. Additional permits may be necessary from the local fire department, building department, or law enforcement agency that has site jurisdiction.

2.1. Closure Permit (Removal or Abandonment-In Place)

The tank owner or the owner's representative shall obtain the permit in person. The permit requires the following information:

- Name, address, and license number of all contractors working on the project.
- Name, address, and waste transporter identification number of the tank cleaner and the tank destination.
- Name, address, and registration number of all consultants working on the project.
- Name, address, and phone number of the site/tank owner.
- Tank size and age, and the current and previously stored product.

An example closure permit is enclosed in Attachment A. In addition to submitting a completed application, all permit fees and the state surcharges (if not already paid) shall be paid at the time of permit issuance. All companies hired to work on the site must have current copies of valid Worker's Compensation Insurance, Contractor's licenses, and a Statement of Qualifications on file with this Department. After obtaining a closure permit, an inspection appointment must be scheduled. The appointment must be made 48 hours prior to the inspection and the closure must be completed no later than 90 days after permit issuance.

2.2. Grading Permits

The local Building Department that has jurisdiction over your facility may require a grading permit. Prior to obtaining a tank abandonment permit, you must demonstrate to this Department that the Building Department has reviewed the project and determined if a grading permit is necessary. This is demonstrated using the form in Attachment B, which may be obtained from the appropriate Building Department.

2.3. Cal/OSHA Excavation Permit

All excavations must be done in accordance with Cal/OSHA criteria. The contractor must obtain excavation permits and they must be available onsite for inspection.

2.4. Fire Department Notification

The Fire Department that has site jurisdiction shall be contacted prior to initiating closure procedures.

2.5. Traffic Control Permits or Encroachment Permits

In some cases, removing a tank safely may require traffic control, land closure, or other site-specific issues of concern to local law enforcement or public works departments. The owner or contractor shall ensure that all necessary notifications are made in advance of the removal.

3. Tank Cleaning & Disposal

All underground storage tanks that contained hazardous materials are hazardous waste. In order to recycle a tank or dispose of it at a non-hazardous disposal site, the tank must be decontaminated through a prescribed cleaning process. If hazardous wastes and residues are not removed as described, the entire tank must be manifested as hazardous waste and transported by a registered hazardous waste hauler to a state-permitted hazardous waste treatment, storage, or disposal facility.

The contents and rinsate removed from a tank, and any tank that is not decontaminated, are considered to be hazardous waste. They must be transported by a registered hazardous waste hauler and require a California Hazardous Waste Manifest.

3.1. Decontamination and Recycling for Non-Hazardous Disposal

- 3.1.1. All piping contents must be drained into the tank and the tank contents must then be removed and disposed of properly.
- 3.1.2. The tank interior must be cleaned using a high-pressure washer and, if necessary, an approved detergent.
- 3.1.3. All sludge, residue, and rinsate must be removed and disposed of properly.
- 3.1.4. The materials and rinsate volume shall be documented on the waste manifest.
- 3.1.5. The tank shall be managed in compliance with RCRA regulations.
- 3.1.6. Immediately after cleaning the tank interior, a properly calibrated combustible gas meter must read below 5% of the lower-explosive limit (LEL).
 - 3.1.6.1. The contractor shall demonstrate the capability to use, maintain, and calibrate the metering equipment. The contractor shall certify on the Fresno County inspection form that the cleaning process was properly conducted and the LEL results did not exceed 5%.
 - 3.1.6.2. The contractor shall maintain with the meter a calibration record according to manufacturer's specification.

- 3.1.7. The tank must be inerted by displacement using an inert gas, such as carbon dioxide. Environmental Health Specialist shall be present while inerting the tanks prior to tank removal. **IMPORTANT: Do not inert the tank until Environmental Health Specialist is present.**
 - 3.1.7.1. A minimum of fifteen pounds of carbon dioxide or dry ice, per 1,000 gallons of tank capacity, shall be used to inert the tank.
 - 3.1.7.2. If a liquid or gas inerting agent is used, the dispensing device must be bonded to the tank.
- 3.1.8. All tanks will be marked at the site with the Fresno County permit number.
- 3.1.9. The responsibility for determining if waste is non-hazardous remains with the waste generator. Some companies may accept tanks for reconditioning and reuse, or recycling. Under no circumstances should previously used underground storage tanks be used for storing potable water or foodstuffs. As a protection from future liability, the contractor should obtain assurance that the final tank destination is in conformance with land use regulations.
- 3.1.10. A copy of the "Permit to Abandon" is to accompany the tank(s) to the final destination. Fresno County must receive proof of proper tank disposal within fourteen (14) days of the removal.

3.2. Hazardous Waste Disposal

IMPORTANT: See instructions above for Decontamination and Recycling for Non-Hazardous Disposal

- 3.2.1. Prior to inspection and removal, the tank must be inerted by displacement, using an inert gas such as carbon dioxide. If dry ice is employed, it must be introduced at least four (4) hours before inspection of the removal process. Upon inspection the contractor must demonstrate and certify that the oxygen level inside the tank is below 10% by volume or that the atmosphere inside the tank is below 5% of the Lower Explosive Level (LEL) for the material that was stored in the tank.
- 3.2.2. All tanks will be marked at the site with the Fresno County permit number assigned.
- 3.2.3. Tanks which have not been properly decontaminated must be transported under a California State Hazardous Waste Manifest to a State-permitted hazardous waste treatment, storage, or disposal facility. Contact the State Department of Toxic Substances Control Help Line at (800) 728-6942 or (916) 255-3617 or the regional office at (559) 297-3901 to obtain information on permitted facilities.
- 3.2.4. A copy of the Closure Permit is to accompany the tank(s) to the final destination. Fresno County must receive proof of proper tank disposal within fourteen (14) days of the removal.

4. Soil Sampling Procedures

Upon removing the underground storage tank, dispenser, and piping, soil samples and/or groundwater shall be obtained under the direction of the Fresno County Department of Public Health.

4.1. Who May Take Soil or Groundwater Samples?

Soil samples shall be obtained by a professional engineer, geologist, or authorized representative of a State-approved laboratory. The number of samples must be approved by the Environmental Health Specialist.

4.2. Sampling Procedure

- 4.2.1. All soil samples shall be taken from the backhoe bucket, unless the excavation has been safely graded or shored.
- 4.2.2. The consultant contracted to perform the soil sampling shall be prepared to obtain samples by using a hand auger or similar equipment if the Environmental Health Specialist deems it necessary.
- 4.2.3. Soil samples shall be collected in thin-walled stainless steel or brass cylinders at least 3" long by 1" diameter. Cylinders shall be pounded into the soil with a wooden mallet.
- 4.2.4. Each end of the sampling cylinder shall be covered with Teflon (or an acceptable alternate material), capped with polyethylene lids, labeled, and sealed with custody seals.
- 4.2.5. Samples shall be transported in an ice chest containing blue ice and kept at 4° C. A thermometer with a protected bulb shall be carried in the ice chest.
- 4.2.6. U.S. Environmental Protection Agency approved chain-of-custody records shall be kept to track the possession of a sample from the time it is taken in the field until the time it is analyzed.

4.3. Number and Location of Samples

In general, the minimum number of soil samples required will be based on the tank size, the number and location of the dispensers, and the length of pipe associated with the tank(s). All piping must be exposed and prepared for removal unless otherwise approved by the Environmental Health System prior to the tank removal inspection appointment. All dispensers shall be removed prior to the tank removal inspection appointment.

The following criteria apply:

Tank Size	Minimum Number of Soil Samples	Location of Soil Samples
Less than 5,000 gallon tank	One (1) per tank	Fill or pump end of the tank
5,000 - 12,000 gallon tank	Two (2) per tank	One (1) at each end of the tank.
Over 12,000 gallon tank	Three (3) or more per tank	Ends and middle of the tank.
Piping	One (1) for every 20 feet	3 feet below the piping
Dispenser	One (1) per dispenser	5 feet below the dispenser

NOTE: If groundwater is anticipated to be encountered in the excavation of the tank pit, the sampler must be prepared to obtain water samples at the direction of the Environmental Health Specialist.

4.4. Sample Analysis

All samples must be analyzed by a laboratory that is certified by the California State Department of Toxic Substance Control for the analysis method requested. The specific analyses generally requested for petroleum hydrocarbons are defined in the Regional Water Quality Control Board, Central Valley Region "Tri-Regional Board Staff Recommendations for Preliminary Investigation and Evaluation of Underground Storage Tank Sites, Appendix A, Table #2 – Recommended Minimum Verification Analyses for Underground Storage Tank Investigations" (See Attachment C). If the tank was used to store products or waste other than those listed, then the analysis requested shall be resolved at the time the Permit to Abandon is issued. Prior to permitting, documentation regarding the stored material may be requested.

NOTE: Alternate analytical methods are acceptable if the laboratory performing the tests provides documentation of California State Certification that is adequate enough to ensure the analysis integrity.

5. Paperwork and Closure Documentation

Within 30 days of the tank closure date the following information must be submitted to the Fresno County Department of Public Health:

- Underground Storage Tank Unified Program Consolidated Forms reflecting permanent underground tank closure. (See Attachment D)
- Copies of all the closure process sample analytical results.
- A scaled site drawing which includes the sample locations and depths, and the tank, dispenser, and piping locations.

- Copies of laboratory chain of custody forms and documentation of precision and accuracy.
- Proper tank disposal documentation.

6. Guidance and Reference Materials

- National Fire Protection Association (NFPA)
1 Batterymarch Park
Quincy, Massachusetts
USA 02269-7471
Telephone: (800) 344-3555 or (617) 770-3000 Fax: (617) 770-0700
Email: custserv@nfpa.org
<http://www.nfpa.org>
- American Petroleum Institute (API)
1220 L Street, N.W.
Washington, D.C.
USA 20005-4070
Telephone: (202) 682-8000 Fax (202) 682
Email: <http://www.api.org/contactus.cfm>
<http://www.api.org>
- “How to Clean USTS” by Alex Ralston
Petcon, Inc.
P.O. Box 6225
Jackson, MS
USA 39288
Telephone: (800) 852-8374 Fax: (601) 939-7312
Email: petcon@bellsouth.net
<http://www.petconinc.com>
- “Appendix A – Reports, Tri-Regional Board Staff Recommendations for Preliminary Investigation and Evaluation of Underground Tank Sites.” California Environmental Protection Agency, Regional Water Quality Control Board, Central Valley Region, 16 April 2004
http://www.waterboards.ca.gov/centralvalley/water_issues/underground_storage_tanks/tri-regionals_appendix_a.pdf