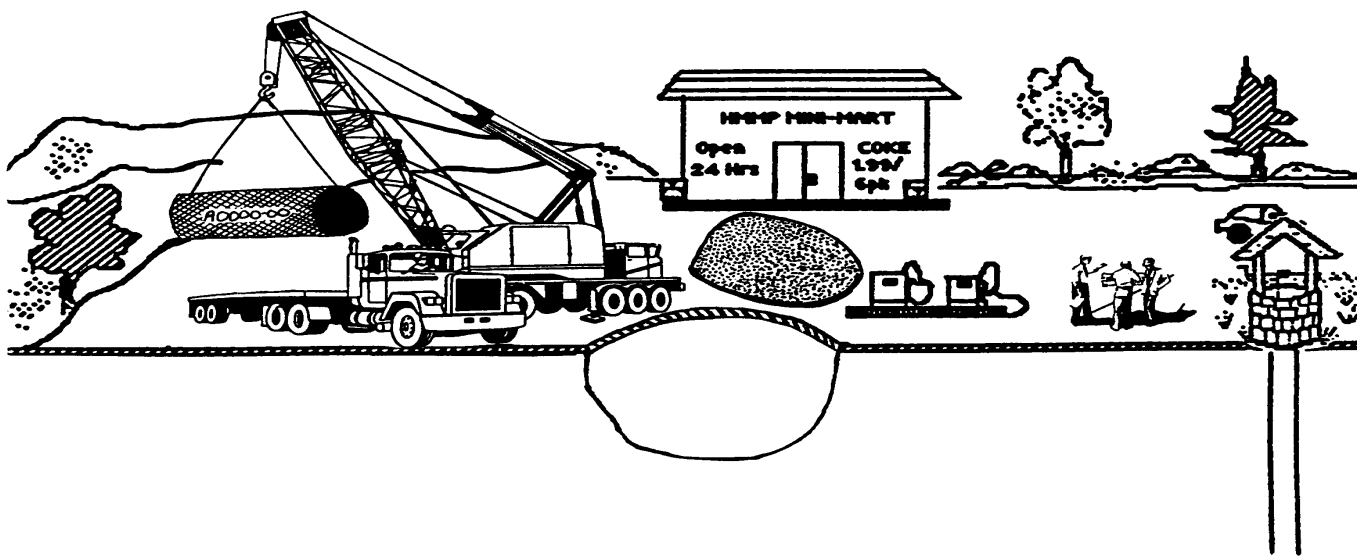


REQUIREMENTS FOR PERMANENT CLOSURE OF UNDERGROUND HAZARDOUS SUBSTANCE STORAGE TANKS



County of Kern
Public Health Services Department
Environmental Health Division
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Introduction

California Health and Safety Code Chapter 6.7, pertains to the regulation of underground tanks storing hazardous substances. Section 25298 states that:

- (a) No person shall abandon an underground tank system or close or temporarily cease operating an underground tank system, except as provided in this section.
- (b) An underground tank system that is temporarily taken out of service, but which the owner or operator intends to return to use, shall continue to be subject to all the permit, inspection, and monitoring requirements of this chapter and all applicable regulations adopted by the board pursuant to Section 25299.3, unless the owner or operator complies with subdivision (c) for the period of time the underground tank system is not in use.
- (c) No person shall close an underground tank system unless the person undertakes all of the following actions:
 - (1) Demonstrates to the local agency that all residual amounts of the hazardous substance or hazardous substances which were stored in the tank system prior to its closure have been removed, properly disposed of, and neutralized.
 - (2) Adequately seals the tank system to minimize any threat to the public **safety** and the possibility of water intrusion into, or runoff from, the tank system.
 - (3) Provides for, and carries out, the maintenance of the tank system as the local agency determines is necessary for the period of time the local agency requires.
 - (4) Demonstrates to the appropriate agency, which has jurisdiction over the site, that the site has been investigated to determine if there are any present, or were past, releases, and if so, that appropriate corrective or remedial actions have been taken.

It is very important to note that no work involving the removal or abandonment of tanks or piping can begin without first obtaining a permit from the Environmental Health Division. The applicant and all subcontractors need to obtain any other required permits. They are to also comply with all applicable Health and Safety laws - including the Uniform Fire Code and Cal OSHA regulations - concerning personal protection and safety. Section 25299 refers to violations and penalties and states, in part, that:

- (a) Any operator of an underground tank system shall be liable for a civil penalty of not less than five hundred dollars (\$500) or more than five thousand dollars (\$5,000) for each underground storage tank for each day of violation for any of the following violations:
 - (5) Failure to properly close an underground tank system, as required by Section 25298.
- (b) Any owner of an underground tank system shall be liable for a civil penalty of not less than five hundred dollars (\$500) or more than five thousand dollars (\$5,000) per day for each underground storage tank, for each day of violation, for any of the following violations:
 - (3) Abandonment or improper closure of any underground tank system subject to this chapter.

Standards and guidelines have been developed for compliance with the California Health and Safety Code, Chapter 6.7. This handbook explains all applicable requirements for permanent tank closure. The Kern County Environmental Health Division is the designated permitting authority for the provisions of this ordinance.

The Uniform Fire Code, as adopted by local city and county fire departments, has strict requirements for the handling of containers that store or have stored flammable and combustible liquid. Fire department officials enforce the provisions of this code. The major requirements are incorporated in this handbook.

It is important to note that fire departments within the county may require a standby engine company, or fire inspector, to be present when the tank closure process represents a hazard to life or property. All standby fees charged by the fire department will be incurred by the permittee, as they are not included in the Environmental Health Division permit fee.

How to Obtain a Permit for Permanent Tank Closure

Applications for closure permits can be obtained at the Public Services Building at 2700 "M" Street or by telephoning (661) 862-8740 or at <http://www.co.kern.ca.us/eh>

The applications should be filled out completely (both sides) and submitted at least two (2) weeks before closure to insure prompt attention to your application. The use of the answer "NA" (not applicable) is unacceptable. The following summarizes some important points of the permit application:

FRONT SIDE:

This portion of the permit application is divided into several sections:

Facility Information-

Facility name, address (Township/Range/Section, if a rural location) should be given. Be sure to include the nearest cross street.

Owner's Information-

The owner's name and address should be given.

Contractor's Information-

The contractor should have current copies of the following information on file with this Division:

1. Current pocket copy, with the expiration date, of a contractor's license with the proper classification as approved by the Contractors State License Board. The following classifications are currently approved:
 - a. General A
 - b. C-61/D-40 (Issued prior to January 18, 2001)
 - c. General B with restrictions
2. All contractors shall also have a hazardous substance certification on their licenses
3. Current copies of Certificate of Workers' Compensation.
4. Site safety plans with Cal OSHA requirements addressed.

California contractor's license numbers will be verified before permit issuance.

Please include a project contact name and telephone number.

Sampler-

All companies retrieving samples should have a written copy of their

sampling protocol on file with the Environmental Health Division.

Laboratory-

The name and address of the State Certified Laboratory to be used shall be provided.

Disposal-

The decontamination contractor shall have a copy of his decontamination procedures on file with this Division. All hazardous wastes shall be hauled under manifest by a licensed hazardous waste hauler. Underground storage tanks are to be sent to a scrapping facility or to a state licensed disposal facility.

Tank Information-

If the tank to be closed has been assigned a number on an existing Permit to Operate, use the same number when filling out "tank #" column. State the tank volume in gallons.

BACK SIDE:

All the information requested is to be included in a plot diagram in order for the application to be accepted as complete. Please attach an additional page if more space is needed.

The application is to be signed by the owner or an authorized representative to be accepted. When the application is approved by the permitting authority, it becomes the permit.

The permits for tank closure from the Environmental Health Division also function as Kern County Fire Department permits. However, if the tank to be closed is within an incorporated city within the county, then a separate permit may also be required from the city fire department that has jurisdiction.

The Air Pollution Control District is to be notified in writing within one (1) week after the removal of any gasoline tanks, including aviation grade gasoline tanks.

Permit fees are assessed at the time of the permit application.

The approved permit must be obtained before beginning any work associated with the tank closure.

Tank and/or Piping Removal

Removal of the tanks and associated product piping is recommended unless it is not feasible due to adjacent building foundations or buildings constructed over the tanks.

If the tanks and/or piping are to be removed, the following requirements will apply:

1. All conditions noted on the permit are to be strictly followed including but not limited to:
 - Notification of the regulatory agencies involved (Environmental Health Division, Fire Department, Cal OSHA, etc.)
 - Posting of the permit on the job site in clear view.
 - Approval from the specialist issuing the permit for any changes in the original application before beginning any work.
2. The interior of the tank should be rinsed with pressurized water or steam to remove residual hazardous wastes. Pipes or lines are to be water flushed into the tank. The rinsing and removal of the rinseate is to be documented; all such wastes are considered hazardous unless proven otherwise. If hazardous wastes are not removed, as described, the entire tank shall be manifested as a hazardous waste and taken to an approved site. A copy of the manifest, signed by the disposal facility, is to be provided to the Environmental Health Division within fourteen (14) days of tank or rinseate removal.
3. The contractor decontaminating the tank is to have a copy of their decontamination procedure on file with the Environmental Health Division.
4. The contractor shall use an explosivity meter that measures LEL (lower explosive limit) to ensure the tank(s) have been decontaminated. A maximum 5% LEL reading is to be reached for the tank to be decontaminated and no longer considered a hazardous waste. The LEL level shall be noted on the tank tracking form issued with the permit. The contractor shall have documentation of training in the use of the explosivity meter on file with the Environmental Health Division, and a record of monthly equipment calibration on site.
5. All lines are to be removed, disconnected and/or sealed, and also any sections of connecting lines that are not to be used in the future.
6. **The tank may not be removed until the inspector is present.** The Environmental Health Division requires two working days notification. Only excavation to expose the top of the tank, high pressure rinsing and removal of flammable/combustible liquids by pumping, and inerting as described in #7 below may be done without an inspector present.

7. The tank is to be inerted before removal by displacement using an inert gas, such as carbon dioxide. The oxygen level will be verified by the Environmental Health Division's meter to be below 10%.

Example: Use of either carbon dioxide or dry ice - 2 lbs. per 100 gallons of tank capacity or 20 lbs. per 1,000 gallons of tank capacity.

Note: Dry ice should be placed in the tank at least four hours before the Environmental Health Division's inspection.

Warning: If a liquid or gas inerting agent is to be used, the dispensing device shall be electrically grounded to the tank.

8. The tank shall meet the following purging and/or inerting conditions:
 - A. Any remaining liquid shall be pumped from the tank before purging so that less than 8 gallons of liquid remain in the tank.
 - B. The tank shall be purged through a vent pipe that discharges at least 10 feet above ground level.
 - C. No emission shall result in any odors detectable at or beyond the property line.
 - D. No emission shall endanger the health, safety, comfort or repose of any person.
 - E. The vent lines shall remain attached to the tank until the inspector arrives to authorize the removal.

Tank and/or Piping Abandonment in Place

The following requirements apply to in place abandonment of tanks and piping:

1. All conditions noted on the permit are to be strictly followed, including but not limited to:
 - Notification of the regulatory agencies involved (Environmental Health Division, Fire Department, Cal OSHA, etc.)
 - Posting of the permit on the job site in clear view.
 - Approval from the specialist issuing the permit is to be granted for any changes in the original application before beginning any work.
2. The preliminary site assessment described on pages 10-13 of this handbook is to be completed, results submitted to the Kern County Environmental Health Division, and approval granted before any of the following required steps are taken.
3. The interior of the tank should be water or steam-rinsed under pressure, or the equivalent, to remove residual hazardous wastes; pipes or lines are to be water flushed into the tank. Documentation of the rinsing and removal of the rinseate is to be made; all such wastes are considered hazardous wastes, unless proven otherwise, and shall be transported under manifest. A copy of the manifest, signed by the disposal facility, is to be provided to the Environmental Health Division within fourteen (14) days of rinseate removal.
4. The contractor decontaminating the tank is to have a copy of their decontamination procedure on file with the Environmental Health Division.
5. The contractor shall use an explosivity meter that measures LEL (lower explosive limit) to ensure the tank(s) have been decontaminated. A maximum 5% LEL reading is to be reached for the tank to be decontaminated and no longer considered a hazardous waste. The LEL level shall be noted on the tank tracking form issued with the permit. The contractor shall have documentation of training in the use of the explosivity meter on file with the Environmental Health Division, and a record of monthly equipment calibration on site.
6. The ends of the tank are to be exposed, unless they are under a building.
7. The fill drop tube is to be removed, and all lines attached to the tank disconnected except for the vent line. The vent line should be left attached and open during the entire abandonment process.
8. **The tank may not be filled or punctured until the inspector is present.** The Environmental Health Division requires two (2) working days' notification. Only excavation to expose the top of the tank, high pressure rinsing and removal of flammable/combustible liquids by pumping, and inerting as described in #9 below may be done without an inspector present.

9. The tank should be inerted before filling by use of an inert gas, such as carbon dioxide. The oxygen level will be verified, by the Environmental Health Division's meter, to be below 10%.

Example: Use of either carbon dioxide or dry ice - 2 lbs. per 100 gallons of tank capacity or 20 lbs. per 1,000 gallons of tank capacity.

Note: Dry ice should be placed in the tank at least four hours before the Environmental Health Division's inspection.

Warning: If a liquid or gas inerting agent is to be used, the dispensing device shall be electrically grounded to the tank.

10. The tank shall meet the following purging and/or inerting conditions:

- A. Any remaining liquid shall be pumped from the tank before purging so that less than 8 gallons of liquid remain in the tank.
- B. The tank shall be purged through a vent pipe that discharges at least 10 feet above ground level.
- C. No emission shall result in any odors detectable at or beyond the property line.
- D. No emission shall endanger the health, safety, comfort or repose of any person.
- E. The vent lines shall remain attached to the tank until the inspector arrives to authorize the filling.

11. All caps in the top of the tank are to be removed. If the caps, at the ends of the tank, cannot be removed or do not exist, the tank is to be punctured in a safe manner that reduces deformation. At least two holes at opposite ends of the tank are required before the tank filling process can begin.

12. The tank should be filled with a two-sack concrete mix. Only enough water to allow smooth flow and good compaction should be added to the concrete mix. The filling process is to continue until the material flows from all holes in the top of the tank. Care is to be taken in the filling process to prevent voids from occurring.

13. The vent lines are to be disconnected and the tank capped.

14. The backfill over the tank should be compacted to Kern County Public Works standards.

Tank Disposal

Tanks that have been removed can only be reused as underground tanks if they meet all current requirements for new tank installations and are recertified by the manufacturer. Most of the old tanks do not meet these requirements. Under no circumstances, can the old tanks be used for storing potable water or foodstuff. Any proposed reuse of the tank above ground shall have written approval from the appropriate agency before tank removal.

The methods that currently exist for tank disposal are:

1. **Recycling:** The most common tank "disposal" method is recycling. This is done by companies that engaged in salvage operations designed for tanks having once stored flammable and combustible materials. The Environmental Health Services neither endorses nor implies endorsement of the capabilities, procedures or repute of these companies.
2. **Hazardous Waste Disposal:** Tanks can also be transported under manifest as a hazardous waste to a state permitted Hazardous Waste Disposal or Treatment Facility.
3. **Treatment for Non-Hazardous Disposal:** Disposal of a tank at a local sanitary landfill can take place if all of the following conditions are met:
 - A. The tank is fiberglass.
 - B. The tank will be crushed on site before transportation to the landfill.
 - C. The tank is certified on site before crushing as (1) free of any residual hazardous substances, and (2) reduction of the LEL (lower explosive limit) to 0%.
 - D. Prior written fire department approval for crushing on site.
 - E. Prior written approval from the Environmental Health Division, Solid Waste Program and the Kern County Waste Management Department.

All tanks are to be marked at the site of removal with the permit number and the county number (15) conspicuously spray painted on the side. The tracking form, included with the Underground Storage Tank Removal Application packet, is to accompany the tank to its final destination. The disposal, recycling, or treatment facility accepting the tank is to sign and return the tracking form to the Environmental Health Division. The permittee is responsible for insuring that this form is returned within fourteen (14) days of the tank removal. All tanks will be tracked for proper decontamination and disposal in this manner.

Any tanks that are "cut" on site are to be certified as suitable for "hot work" by a professional engineer (special inspector) trained and qualified to provide this assessment (see appendix for minimum qualifications required for this type of special inspector). All "hot work" on tanks is subject to Kern County Fire Department written approval.

Preliminary Site Assessment

The preliminary site assessment is an indicator used in determining whether contamination may exist in the environment due to unauthorized releases from underground tanks and associated pipelines. This also represents the minimum verification required to show that there has been no significant soil contamination resulting from a discharge around the tank system.

It is important to note that if significant contamination is found at the preliminary site assessment stage, the full lateral and vertical extent of the contamination plume is to be determined. This is known as "Site Characterization" and is much more extensive than the minimal sampling guidelines of preliminary site assessment described below. A discussion of site characterization and mitigation is available in a separate handbook entitled UT-35.

The preliminary site assessment consists of minimal sampling to find out whether further studies are needed under a "Site Characterization" workplan. The general requirements for sampling that are applicable to all permits are as follows:

- A. Samples are to be obtained at the time of tank removal (or before filling the tank with inert material for abandonment in place).
- B. All samples are to be obtained by lab personnel or individuals knowledgeable of E.P.A. sampling procedures under SW846 (e.g., preventing cross contamination between samples, obtaining undisturbed samples in appropriate containers). All companies retrieving samples are to have a written copy of their sampling protocol on file with the Environmental Health Division.
- C. All samples shall be analyzed by a state certified hazardous waste laboratory.
- D. Samples shall be analyzed for constituents representative of the substance(s) stored.

EXAMPLES:

For gasoline (leaded/unleaded):

Benzene, toluene, ethyl benzene, xylene, total petroleum hydrocarbons (for gasoline), and MTBE.

For diesel fuel:

Benzene and total petroleum hydrocarbons (for diesel).

For waste oil:

Lead and oil and grease.

For crude oil:

Oil and grease.

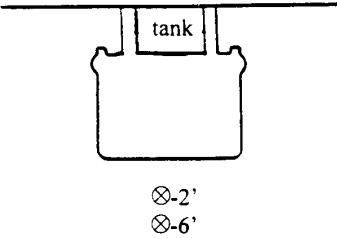
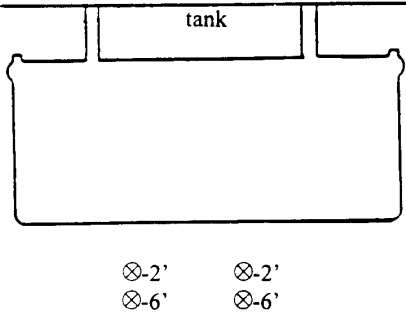
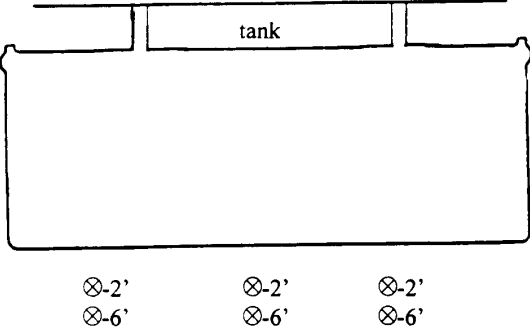
- E. Results of the sample analyses are to be submitted to the Environmental Health Services Department within three (3) working days after completion of the analysis.

If the preliminary site assessment suggests significant environmental contamination, the Environmental Health Division will notify the owner/operator that site characterization and mitigation will be necessary.

Minimum Location and Depths for Preliminary Site Assessment

Tanks

The soil samples are to be retrieved from areas below the tank unless it is not feasible to do so. Any deviation from the minimum standards described on this page needs to receive approval from the specialist issuing the permit to be accepted. The number of samples that are to be retrieved is dependent on the tank volume and size. The following list provided minimum requirements for specified tank volumes.

<u>ILLUSTRATION</u> (showing sample locations)	<u>NOMINAL VOLUME</u> (gallons)	<u>NUMBER OF SAMPLES & DEPTHS</u>	<u>LOCATION</u>
 <p style="text-align: center;">⊗-2' ⊗-6'</p>	less than or equal to 1000 gallons	1 sample @ 2' 1 sample @ 6'	center of the tank
 <p style="text-align: center;">⊗-2' ⊗-2' ⊗-6' ⊗-6'</p>	greater than 1000 and less than or equal to 10,000 gallons	2 samples @ 2' 2 samples @ 6'	1/3 of the way in from each end
 <p style="text-align: center;">⊗-2' ⊗-2' ⊗-2' ⊗-6' ⊗-6' ⊗-6'</p>	greater than 10,000 gallons	3 samples @ 2' 3 samples @ 6'	center and 1/4 of the way in from each end

If the permittee believes that these sampling requirements are not feasible, an alternate sampling plan is to be submitted to the Division, including a detailed explanation of the reasons that sampling cannot be done at the required locations and depths. Alternate sampling is to be approved before the samples are retrieved.

Piping and other appurtenances

Soil samples are to be retrieved from areas below pipelines extending from the tank and below dispenser islands. Samples shall be retrieved for every twenty (20) linear feet of pipeline, at two (2) and six (6) feet below the piping. They should also be retrieved directly under each dispenser area at two (2) and six (6) feet.

APPENDIX

All "hot work" on tanks is subject to Kern County Fire Department written approval

Minimum Special Inspector Qualifications - for certifying tanks for "hot work":

EITHER:

A: Marine Chemist as certified by the National Fire Protection Association

OR:

B: 1. California registered engineer preferably from one of the following disciplines:

Chemical
Industrial
Mining/mineral
Fire Protection

2. Able to provide proof of successful completion of a manufacturer's training course to operate, calibrate and maintain a LEL and/or oxygen level testing instrument(s) approved by the Kern County Fire Department.
3. Able to provide records of manufacturer recommended maintenance and calibration for the instrument(s) in (2) above
4. Items (2) and (3) above should be provided to a Kern County Environmental Health Division Representative and/or Kern County Fire Department Representative upon demand
5. Subject to Kern County Fire Department approval