

UNDERGROUND STORAGE TANK (UST)  
CLOSURE PROCEDURES

GENERAL REQUIREMENTS

A permit issued by Merced County Department of Environmental Health (MCDEH) is required for the closure of any Underground Storage Tank (UST)\*. The permit shall be issued prior to commencing work at the subject site. **Failure to comply with these written Health and Safety requirements given herein will result in immediate permit suspension and work stoppage on the project.**

**Pre-closure requirements:**

1. All electrical equipment connected to or used in association with USTs shall be disconnected or removed prior to tank closure.
2. USA Dig shall be contacted (1-800-642-2444) prior to completion of the UST Closure Plan. All underground utilities identified shall be indicated on the UST Closure Plan plot map.
3. Consult the local fire jurisdiction for additional specific closure or permit requirements. Obtain all permits required by any local, State or federal agencies.

**Closure requirements:**

The following permanent closure requirements are per California Code of Regulations Title 23, Division 3, Chapter 16 section 2670:

1. Should "tank rinsing" be conducted, the rinse residue shall be handled under manifest by an appropriately licensed hazardous waste hauler. A photocopy of the Uniform Hazardous Waste Manifest shall be provided to this department within 45 days from manifested date.
2. All UST(s) shall be removed from the site on the same calendar day as they are removed from the ground. UST(s) shall not be removed unless transportation is available to transport them to their new destination.
3. Once removed, there are two options for disposal of the UST:
  - a. The UST or any part thereof can be disposed of as hazardous waste and under manifest. The manifested waste shall be sent to a treatment, storage, disposal (TSD) facility, permitted by the California Department of Toxic Substances Control (DTSC) as a facility that may receive USTs. **A photocopy of the Uniform Hazardous Waste Manifest shall be provided to MCDEH within 45 days from the disposal date.**
  - b. The UST may be offered for a specific reuse. The owner or operator of the tank shall provide MCDEH, within the time frame specified by MCDEH:
    - The name of the new owner and new operator of the UST;
    - The location of intended use; and
    - The nature of intended use.

**\*For the purpose of this document, "UST" shall mean** anyone or combination of tanks, including pipes connected thereto, which are used for the storage of hazardous substances, the volume of which (including the volume of the underground pipes connected thereto) is 10% or more beneath the surface of the ground. A UST does not include any of the following: (1) A tank or combination of manifolded tanks with a capacity of 1,100 gallons or less which is located on a farm and stores fuel used primarily for agricultural purposes; (2) A tank which is located on a farm or at a residence of a person, which has a capacity of 1,100 gallons or less and which stores heating oil for consumptive use on the premises where stored.

**Important Note:** UST(s) shall be properly rinsed (see attachment) and transported directly to the new owner/operator or TSD. For tanks that have held nitrocellulose, pyrozylin solutions, nitrates, perchlorates, peroxides, or other materials which may contain enough oxygen to support combustion in an otherwise inert atmosphere, or any tank which has held reactive or unstable materials, shall require a separate removal plan submitted to MCDEH. This removal plan shall be based on the product manufacturer’s guidelines for removal.

**UST Closure Permit Application:**

1. A UST Closure Permit Application must be completed and submitted with the UST Tank Closure Plan to MCDEH for approval. **Incomplete or illegible forms will not be accepted.** Submit, or have on file with this office, a Certificate of Workers Compensation Insurance and verification of contractors' license showing license number and type. Acceptable types of contractor’s license are (C-36), (A), or if tank is less than 20,000 gallons a (C-61- D-40). **USTs may only be closed by a contractor certified by the State of California in hazardous substance removal.**
2. Within 20 days of the receipt of plans, MCDEH shall notify the person submitting plans of their approval or disapproval. The contractor will be notified, and the permit will be issued. No work may be initiated prior to permit issuance. Failure to comply with Health and Safety requirements contained herein will result in immediate permit suspension and work stoppage of the project.

When plans are approved and a permit is issued, an appointment must be scheduled with MCDEH for tank closure. **Tank closure appointments will be made between the hours of 8:00 A.M. and 4:00 P.M. Monday through Friday,** legal Merced County holidays excepted.

3. Permitting fees (effective July 1, 2019 – June 30, 2020)

Temporary Closure (per tank-not to exceed 12 months)...	\$1,025.00
Permanent Closure (per tank).....	\$1,025.00

**TANK CLOSURE PERMITS EXPIRE SIX MONTHS AFTER THE PERMIT ISSUANCE DATE. All work must be completed within six months of the permit approval.** Fees are due and payable prior to issuance of a permit. Failure to obtain any required permit prior to commencing work will result in the assessment of a penalty of three times the regular permit fee.

**Health and Safety Requirements:**

1. During all operations, care shall be taken to insure that there are no sources of ignition within 100 feet of the closure activities (includes smoking, welding, cutting, etc.) unless otherwise approved by the on-site MCDEH inspector.
2. The contractor shall utilize physical barriers (barricades, cones, tape, etc.) to create a perimeter extending at least 100 feet from the UST location. Vehicular traffic, pedestrians, and all unauthorized personnel shall be excluded from this area during the removal and loading of any UST, unless otherwise approved by the on-site MCDEH

inspector. The contractor shall coordinate exclusion with the appropriate law enforcement jurisdiction, or other agencies, as required. *MCDEH shall require that the area of exclusion be posted with **NO SMOKING** signs.*

3. All individuals involved in any portion of UST closure shall utilize personal protective equipment and act in accordance with appropriate State and federal OSHA guidelines and regulations.
4. At least two fire extinguishers (Class A-2 BC-20) shall be available on-site. They shall have a current State Fire Marshal service tag attached.
5. Equipment capable of safely conducting the closure shall be required. The MCDEH inspector shall make the determination whether equipment is adequate and appropriate.

#### **General Requirements for Closure of USTs and Piping:**

1. The applicant or contractor shall maintain on site, at all times work is being conducted on or around UST(s), a **combustible gas indicator** capable of measuring the lower explosive limits (LEL) in percentages, and an **oxygen meter** capable of measuring oxygen (O<sub>2</sub>) in percentages. The gas indicator and meter will be maintained in good repair and calibrated in accordance with manufacturer's specifications, or as needed.
2. All UST(s) and piping shall be rendered "product free" prior to closure. All lines shall be disconnected from the UST except the one through which tank venting occurs.
3. All pipelines shall be removed and disposed of unless removal might damage structures or other pipes that are being used and that are contained in a common trench, in which case the piping to be closed shall be emptied of all contents and capped.
4. If UST(s) are removed, removal shall be conducted in the presence of the MCDEH inspector. Provide 48 – hour notification, prior to removal. The fire jurisdiction shall be notified, and may have separate closure permitting requirements.
5. If UST(s) are closed in place, all openings on the UST shall be plugged or capped, except for a vent, which shall be extended to a point 12 feet above the natural grade.
6. An inspection by MCDEH will be required, once the UST(s) have been exposed, product removed, lines disconnected, the UST(s) purged, and inerted. **NO WORK** beyond these steps shall be performed until the approval granted by a representative of MCDEH and the local fire agency. **IF FREE PRODUCT IS OBSERVED in the excavation, the site shall be immediately stabilized by backfilling to eliminate a flammable or combustible hazard. MCDEH and the appropriate fire jurisdiction shall be notified immediately.**

#### **Tank Removal Requirements:**

1. The contractor shall be responsible to complete all of the following requirements in this section of the closure document. Also, it's the responsibility of the tank owner/operator, or their agent, to maintain the site in a safe and secure manner.
2. Tank rinsing shall be done only after written approval is given by MCDEH and as follows:
  - a. The name and address of the licensed hazardous waste hauler and the facility that receives the rinse/residue shall be provided on the UST Closure Plan.
  - b. Equipment used in the rinsing procedure shall be capable of heating the water used to at least 220° Fahrenheit.
  - c. A cleaning agent shall be used which contains a high surfactant, capable of removing any sludge or residue adhering to the UST(s).

- d. A copy of the Uniform Hazardous Waste Manifest returned by the TSD facility which received the rinse/residue shall be provided to MCDEH within 45 days from the manifest date.
3. Demonstrate, to the satisfaction of the MCDEH inspector, that flammable vapors around the work area and in the UST(s) are not in explosive concentrations. Non-explosive conditions in the work area are demonstrated by showing that vapors within the tank, excavations, and the work area are less than 20% of the lower explosive limit (LEL). Non-explosive conditions in the UST(s) will be demonstrated by assuring that vapors within the tank are less than 10% oxygen content.
4. Tank inerting shall be accomplished as follows:
  - a. When the outside temperature does not exceed 70° F, a minimum of **30 pounds** of dry ice (CO<sub>2</sub>) per 1,000 gallons of tank capacity shall be added.
  - b. When the outside temperature exceeds 70° F, a minimum of **50 pounds** of dry ice (CO<sub>2</sub>) per 1,000 gallons of tank capacity shall be added.

Note: Dry ice should be introduced a minimum of one hour in advance, but no earlier than four hours before the UST closure inspection.
5. **Prior to transportation of the UST(s) offsite**, the contractor shall ensure the following:
  - a. Providing each UST(s) with one opening in the top of the tank having a diameter of 1/8 inch. All other openings shall be capped or plugged with rubber, plastic or metal caps/plug.
  - b. Demonstration upon request, that the atmosphere within the UST(s) is less than 10% oxygen.
  - c. Demonstration of the O<sub>2</sub> level at least once every half-hour following removal the UST(s). If the oxygen level raises above 10%, dry ice shall be added to lower the oxygen content to less than 10%.

Sampling Requirements:

1. Samples shall be collected at the direction of and in the presence of a MCDEH inspector.
2. The manner of sampling shall be in accordance with the [Regional Water Quality Control Board Leaking Underground Fuel Tank Guidance Manual](#). (See excerpts at the end of these procedures.)
3. All soil and water samples shall be taken utilizing appropriate sampling equipment and protocol, shall be accompanied by a chain of custody form and shall be immediately transported as per Regional Water Quality Control Board (RWQCB) guidelines to a state-certified laboratory for analysis.
4. Samples shall be submitted for analysis to a laboratory certified by the California Department of Health Services to perform the required analysis. Samples shall be analyzed for the substances previously stored in the tank by methods specified in the most recent RWQCB guidelines, refer to Tables 12-1, 12-2, and 16-1. Additional analyses may be required by MCDEH.
5. Results of all laboratory analyses shall be provided to MCDEH. Signed copies of chain of custody forms shall be submitted with all sample results. Chain of custody documents shall indicate the condition of the sample seal at the time the sample was received by the laboratory. Sample results without chain of custody forms which provide all required documentation will be considered invalid and re-sampling will be required.

**Table 12-1: Summary of Sampling Recommendations at UST Sites: Water Is Not Present**

1. Collect samples at a minimum of 2 vertical feet into native soil.
2. If areas of obvious contamination are observed, they are to be sampled.

Tank Size	Minimum No. of Soil Samples	Location of Soil Samples
Less than 12,000 gallons	TWO per tank	One from directly below each opposite end of the tank
Equal to or greater than 12,000 gallons	THREE per tank	One from below the center of the tank and one from directly below each end of the tank
Connected piping	ONE	Every 20 linear feet, and under pipe fittings
Dispensers	ONE	Below each removed dispenser

Notes:

Additional samples may be added to adequately characterize the excavation.

**Table 12-2: Summary of Sampling Recommendations at UST Sites: Water Is Present**

1. The tank pit may be purged and allowed to refill before sampling. The purged water is to be handled correctly for disposal.
2. The water sample is to be representative of water in the tank pit.

Tank Size	Minimum No. of Soil Samples	Location of Soil Samples	Minimum No. of Water Samples
Less than 12,000 gallons	TWO per tank	One from side wall next to opposite ends of the tank, at the soil/groundwater interface	ONE
Equal to or greater than 12,000 gallons or tank cluster	FOUR per tank	One from side wall next to each end of the tank, at the soil/groundwater interface	ONE
Connected piping	ONE	Every 20 linear feet, and under pipe fittings	N/A
Dispensers	ONE	Below each removed dispenser	N/A

Notes:

Additional samples may be added to adequately characterize the excavation.

N/A: Not Applicable

**Table 16-1: Individual Analytes and Methods for Soil and Groundwater Samples at LUFT Sites**

Source Fuel / Product Type	Analytes	Analytical Method(s)	Comments
Gasoline	BTEX, naphthalene, MTBE, TBA (plus EDC, EDB for pre-1992 release) <sup>1</sup>	EPA 8260B/C	organic lead (GC-ECD) only if pre-1992 product is present
Jet A/JP5/JP8, Diesel #1 or #2, Fuel oil #1 or #2	BTEX, naphthalene, MTBE	EPA 8260B/C	MTBE <sup>3</sup>
Heavy Fuel Oils (bunker fuel, etc.)	BTEX, MTBE, naphthalene	EPA 8260B/C	MTBE <sup>3</sup>
	16 priority pollutant PAHs <sup>2</sup>	EPA 8270 SIM	
Waste (Used) Motor Oil	BTEX, naphthalene, chlorinated VOCs, MTBE, TBA	EPA 8260B/C	
	16 priority pollutant PAHs <sup>2</sup>	EPA 8270 SIM	
	Wear Metals: cadmium, chromium, nickel, lead, zinc	EPA 6010/6020 or EPA 7000/7010	Soil only

**Notes:**

- BTEX Benzene, toluene, ethylbenzene, and xylene
- EDB 1,2-dibromoethane
- EDC 1,2-dichloroethane
- Jet A Commercial jet fuel
- JP5 Jet Propellant 5, military jet fuel
- JP8 Jet Propellant 8, military jet fuel
- MTBE Methyl *tertiary* butyl ether
- PAH Polycyclic aromatic hydrocarbon
- TBA t-Butyl alcohol
- VOC Volatile organic compound

- 1) Samples to be analyzed for lead scavengers EDC and EDB only if release is pre-1992. If age of release is unknown, analyze for both oxygenates (MTBE and TBA) and scavengers.
- 2) 16 priority pollutant PAHs = naphthalene, acenaphthene, acenaphthylene, anthracene, phenanthrene, fluorene, chrysene, fluoranthene, pyrene, benzo(b)fluoranthene, benzo(a) pyrene, benzo(k)fluoranthene, benzo(a)anthracene, indeno(1,2,3-c,d)pyrene, dibenz(a,h)anthracene, benzo(g,h,i)perylene.
- 3) MTBE to be analyzed at all LUFT sites unless regulatory agency has determined that the tank contained only diesel or jet fuel per California Health & Safety Code (H&SC) §25296.15(a).