

SOUTHWEST OHIO FIRE SAFETY COUNCIL

STANDARD #32.08.0 (1994) - REMOVAL AND DISPOSAL OF UNDERGROUND PETROLEUM STORAGE TANKS

32.08.1 Scope: The following standard for the removal of flammable and combustible liquid underground tanks is based on API Recommended Practice 1604 (Dec. 1987), NFPA Standard 327 (1987 edition), Ohio Fire Code Article 28 and the Ohio State Fire Marshal's Petroleum Underground Storage Tank Closure Assessment Requirements (6/89).

Underground storage tank systems that have held flammable or combustible liquids should be handled with extreme care during disposal in place, removal, storage, or disposal off site.

The new Federal EPA underground tank regulations and Bureau of Underground Storage Tank Regulation (BUSTR) have had major impact upon business, industry and local code enforcement agencies. It is the intent of this standard to assist those who must deal with these new regulations and requirements. In the State of Ohio, the prime agency responsible for enforcing the Federal EPA regulations established for underground tanks containing flammable, combustible and/or hazardous materials is BUSTR, which is a Division of the Ohio State Fire Marshal's Office. If there is environmental contamination from other sources other than underground tanks or piping systems attached thereto, or the contamination has reached a stream or river the responsibility for Federal EPA regulations and environmental contamination will be the responsibility of the Ohio EPA.

Tank removal, disposal, transportation and storage involves environmental hazards, human health hazards and fire hazards. The intent of the new (BUSTR) regulations is to allow local control for fire safety hazards and to require that environmental and health hazards be controlled by the Division of State Fire Marshal, Bureau of Underground Storage Tank Regulations.

32.08.2 Responsibilities: It is the responsibility of the Underground Storage Tank (UST) owner and/or operator to notify the Ohio State Fire Marshal's Office at least 30 days before beginning permanent closure or change-in-service, of intent to permanently close or make a change-in-service of an underground storage tank that has contained flammable and/or combustible liquids or hazardous materials. The only exception at present for closure notification is for underground heating oil tanks.

Division of State Fire Marshal
Bureau of Underground Storage Tank Regulations
8895 East Main Street
Reynoldsburg, OH 43068-0687
(614) 752-7938

In addition, the UST owner and/or operator must also file for a permit from the local fire official to install, remove or alter in any way any underground tank per the Unified Fire Code Article 32, Section FM-2800.2 or Ohio Fire Code Article 28, Section FM-2800.1. This includes underground storage tanks for heating oil.

Note: At this time, fuel oil for heating purposes is not regulated through Ohio BUSTR.

The UST owner and/or operator shall provide the following information when applying for an underground storage tank permit.

1. Number of and size (gallons) of tanks to be removed.
2. Date of removal and start time of excavation.
3. Contractor, site supervisor and/or environmental engineer conducting removal and contact phone numbers.
4. Agency to be utilized for product removal.
5. Pre-evaluation report to include the following:
 - *Characteristics and type of materials in tank
 - *Method of cleaning/purging
 - *Method of making removed tanks non-tanks
 - *Method of transportation
 - *Agency used to conduct soil testing
 - *Type of construction of tank (steel/fiberglass)
6. Copy of written notification to BUSTR of intent to conduct removal (closure), except heating oil tanks.
7. Details of any welding and cutting operations to be conducted on the underground tanks.
8. Scaled site drawing (1 inch = 40 feet) showing:
 - *Tank locations/size
 - *Dispenser and piping locations
 - *Building locations
 - *Property line
 - *Utilities
 - *Property owner/tank owner
 - *Date of tank removal
 - *Safety barrier protection for excavation noise
 - *Underwriters tank number if available.

Additional permits shall be required for the cutting or welding on tanks during the removal process. The Unified Fire Code requires a welding/cutting permit under Chapter 22, Section F-2200.2.

32.08.3 Definitions:

API: American Petroleum Institute
1220 L Street N.W.
Washington, DC 20005
(202) 682-8000

BONDING: The electrical interconnection (metallic bond wire or metal to metal contact) between two conductors otherwise insulated from or remotely electrically connected to each other.

BUSTR: Bureau of Underground Storage Tank Regulations
Division of State Fire Marshal
Bureau of Underground Storage Tank Regulations
P. O. Box 687
Reynoldsburg, OH 43068-0687
(614) 752-7938

EPA: Ohio Environmental Protection Agency
Southwest District Office
40 South Main Street
Dayton, OH 45402

(513) 449-6357
Central District Office 1-800-686-2330

INERTING: The use of an inert gas to reduce the oxygen content of the atmosphere in an enclosed space to a concentration at which combustion cannot take place.

NFPA: National Fire Protection Association
Batterymarch Park
Quincy, MA 02269-9101
(617) 770-3000

PURGING: The process of displacing the flammable vapors from an enclosure.

UNIFIED FIRE CODE: The fire code established by the Southwest Ohio Fire Safety Council which consists of the BOCA National Fire Code and the Southwest Ohio Fire Safety Council Standards.

UST: Underground Storage Tanks

32.08.4 Pre-evaluation/assessment: Work on tanks or containers that have held flammable or combustible liquids or gases shall be performed under the supervision of persons/operators who understand the fire and explosion potential involved. Workers/operators shall be sufficiently skilled to safely carry out the operations necessary.

The code official shall be provided with a report documenting the type and characteristics of the previous contents of the tank. (MSDS or other approved chemical data documents).

Before cleaning or removal is started on tanks or containers that may be under pressure, the pressure shall be reduced to atmospheric pressure. The tank or container contents shall be vented to a safe location.

Before any tank is cleaned or removed that has contained nitrocellulose, pyroxylin solutions, nitrates, chlorates, perchlorates, peroxides, and any other materials that may have contain enough oxygen to support combustion in an otherwise inerted atmosphere shall be reported to the code official in a written pre-evaluation report and said report shall provide necessary details for the safe cleaning or removal.

Tanks or containers that have contained reactive or unstable materials shall not be cleaned until information has been obtained on safe cleaning procedures. A copy of said information shall be provided the code official in the pre-evaluation report. Special precautions are required on the selection of nonreactive cleaning materials.

32.08.5 Testing: The tank atmosphere and the excavation area shall be tested at regular intervals (minimum of every 10 to 15 minutes and before the entry of personnel) with an approved (U.L. Listed) and properly calibrated combustible gas detector/indicator. The combustible gas detector/indicator shall be calibrated in accordance with the manufacture specifications. Atmosphere conditions shall be tested for flammable vapors as follows:

1. Before commencing alterations or repairs
2. Immediately before and after starting any weld-cutting, or heating operations
3. Frequently during the course of removal (minimum of every 10 to 15 minutes)

All work shall be stopped immediately when the presence of flammable vapors is indicated by test with a combustible gas detector/indicator. The source of the flammable vapor release shall then be located and removed.

The tank vapor space is to be tested by placing the combustible gas detector/indicator probe into the fill opening with the drop tube removed. Readings shall be taken at the bottom, middle and upper portions of the tank; and the instrument shall be cleared after each reading. If the tank is equipped with a non-removable fill tube, reading shall be taken through another hole. Liquid product should not enter the testing probe as it will damage the combustible gas detector/indicator element. Readings of (20) twenty percent or less of the lower flammable limit must be obtained before the tank is considered safe for removal.

Combustible gas detectors/indicators readings may be misleading where the tank atmosphere contains less than (5) five percent oxygen, as in a tank vapor freed with CO₂ (carbon dioxide), N₂ (nitrogen), or other inert gas. In general readings in oxygen-deficient atmospheres will be on the high, or safe side. When tanks have been inerted using CO₂, N₂ or other inert gases test reading shall also be taken with an approved (U.L. Listed) oxygen indicator to assess the oxygen level.

It is essential that the site operator using the combustible gas detector/indicator be well schooled in the use of the instrument and that he perform the checks recommended by the manufacturer. The vapor content of the gas leaving the tank shall be tested periodically while ventilation or air purging is in progress. If an air remover is used to exhaust air from the tank, the discharge from the air remover will be diluted with air used in the jets, but the results will still be indicative of the change of vapor concentration within the vessel and when the desired low concentration is reached, the condition of the tank may be checked by taking samples at the appropriate (3) level points.

In the case of a tank or container inerted with nitrogen, the oxygen content may be measured directly by an oxygen indicator. When carbon dioxide is used, the oxygen percentage can be calculated from the percentage of carbon dioxide in the tank measured by means of an approved (U.L. Listed) carbon dioxide indicator instrument.

32.08.6 Cleaning/purging: Cleaning operations shall be conducted in the open if practicable. Where indoor cleaning is necessary, ventilation shall be sufficient to prevent the accumulation of flammable vapors.

Any equipment that may provide a source of ignition shall not be permitted within the vicinity of the tank (25 feet minimum) to be cleaned or purged until the area has been tested and found to be free of flammable vapors.

Disconnect or remove sources of ignition from the vicinity of the tank (25 feet minimum) before venting or cleaning operations are started. All electrical equipment in the vicinity of the tank shall be in accordance with NFPA 70 referenced in Chapter 44 of the fire code.

Appropriate steps shall be taken to protect personnel from harmful vapors or gases.

Empty and drain the tank and associated piping of all contents. This shall include removal of liquids, residue (sludge), and or gases from any system piping, traps, and standpipes. Flushing with a proper cleaning liquid may be necessary. Piping systems shall be drained to the tank prior to removal.

All removed materials shall be safely disposed of in accordance with Federal and State EPA requirements. A copy of the waste disposal reports shall be forwarded to the code official.

Prior to the removal of the tank from the ground the gauge pipe, vapor recovery truck connections, submersible pumps, and other tank fixtures shall be removed. The drop tube and fill pipe shall also be removed, except when it is planned to be used to vapor-free the tank by using an eductor-type air mover or diffused air blower. Cap or remove all non-product lines, such as vapor recovery lines, except the vent line. The vent line shall remain connected until the tank is purged. Temporarily plug all other tank openings so that all vapors will exit through the vent line during the vapor-freeing process. Cracks or other damaged sections shall be plugged.

In certain cases it may be impossible to remove all potentially hazardous liquids or residues that will produce flammable vapors when heated. Such residue may be trapped behind heavy scale or rust and may be difficult to detect. Whenever examination or testing after cleaning indicates that this hazardous condition exists, hot work (welding/cutting) shall not proceed without additional precautions being taken. As a minimum, an inert atmosphere shall be maintained in the tank while hot work progresses.

32.08.6.1 Chemical cleaning: The tank may be cleaned with a chemical solution. The use of goggles, gloves, and other necessary protective clothing shall be used when cleaning with chemicals. When using a proprietary cleaning solution, the manufacturer's instructions shall be followed. A typical cleaning procedure for using trisodium phosphate is as follows:

1. Insert the hose through the connection or vent and fill the tank with water until it overflows. Extend the hose to the bottom of the tank to get agitation from the bottom causing any remaining vapor, liquid, scum, or sludge to be carried upward and out of the tank. The overflow liquid needs to be controlled so as not to create an environmental or safety hazard. The cleaning solution can not be dumped into the excavation site if it is contaminated.

2. Drain the tank.

3. Dissolve sufficient trisodium phosphate in hot water so that the final concentration of the solution will be 2 to 4 oz. per gallon when the tank is liquid full. Pour the solution into the tank and fill with water.
4. Introduce steam into the bottom of the tank either through a bottom connection or through a pipe to the bottom that enters the vessel through the filling connection or through the vent. Maintain the solution at a temperature of 170 to 190 degrees Fahrenheit and at intervals during the steaming, add enough water to allow discharge by controlled overflowing of any of the tank materials. Ventilation of the area shall be provided for the removal of any flammable vapors. Means shall be provided for the preventing of potentially hazardous material from entering a public sewer. Continue steaming at the maximum temperature for at least 15 to 20 minutes or longer, if necessary, so as to reach a point where no appreciable amount of volatile liquid, scum or sludge appears at the top of the tank.
5. Drain the tank.
6. After cleaning, the tank shall be inspected internally to determine if any volatile material or vapors exist. Such inspection may be made with the aid of either an approved flashlight or trouble light (U.L. listed for Class I, Division I hazardous locations), or a mirror may be used to reflect light into the container. If examination shows that the tank is not clean the procedure shall be repeated.
7. If the tank appears clean, then a test shall be conducted with a combustible gas detector/indicator to determine if the atmosphere is within acceptable limits (less than 20% LEL).

32.08.6.2 Purging: Flammable vapors shall be completely removed when possible. The removal of flammable vapors may be accomplished by one of the following methods as detailed herein. These methods provide a means for temporary vapor-freeing of the tank atmosphere. However it is important to recognize that any tank may continue to be a source of flammable vapors even after cleaning or following one of the vapor-freeing methods described herein. For this reason caution must always be used when handling or working around tanks that have contained flammable or combustible liquids. Before initiating any work in the tank area or on a tank, a combustible gas detector/indicator reading shall be taken to assess vapor concentrations in the tank and work area

Vent all vapors from the tank at a minimum height of 12 feet above grade and 3 feet above any adjacent roof lines until the tank is purged of flammable vapors. The work area shall be free from sources of ignition.

Flammable vapors may be purged with an inert gas such as carbon dioxide (CO₂) or nitrogen (N₂). This method should not be utilized if the tank is to be entered for any reason, as the tank atmosphere will be oxygen deficient. The inert gas shall be introduced through a single tank opening at a point near the bottom of the tank opposite the vent. When inert gases are used, they shall be introduced under low pressure to avoid the generation of static electricity. When using CO₂ or N₂ pressure in the tank shall not exceed 5 pounds per square inch.

CAUTION: The process of introducing compressed gases into the tank may create a potential ignition hazard as a result of the development of static electricity charges. The discharge device must be grounded. Explosions have resulted from the discharging of CO₂ fire extinguishers into tanks containing flammable vapor-air mixtures. CO₂ fire extinguisher shall not be used for inerting flammable atmospheres in underground tanks.

Flammable vapors may be purged in underground tanks by adding solid carbon dioxide (dry ice) to the tank in the amount of at least 1.5 pounds per 100 gallons of tank capacity. The carbon dioxide (dry ice) shall be crushed and distributed evenly over the greatest possible area in the tank. As the dry ice vaporizes, flammable vapors will flow out of the tank and may surround the area. Therefore, where possible, plug all tank openings except the vent after introducing the solid CO₂ (dry ice) and continue to observe all safety precautions regarding flammable or combustible vapors. Make sure that all the dry ice has evaporated and then test the tank atmosphere prior to proceeding.

CAUTION: Skin contact with dry ice may produce burns.

Flammable vapors may also be exhausted from the tank using one of the following methods.

Ventilation may be accomplished by the use of an eductor-type air mover which is usually driven by compressed air. The eductor-type unit must be properly bonded to prevent the generation and discharge of static electricity. When using this method, the fill (drop) tube should remain in place to ensure ventilation at the bottom of the tank. Tanks equipped with fill (drop) tubes that are not removable shall be purged by this method. An eductor extension shall be used to discharge vapors a minimum of 12 feet above grade.

Ventilation using a diffused air blower may also be used. When using this purging method, it is imperative that the air-diffusing pipe be properly bonded to prevent the discharge of a spark. Fill (drop) tubes must be removed to allow proper diffusion of the air in the tank. The air supply should be from a compressor that has been checked to ensure a clean air supply and is free from volatile vapors. Air pressure in the tank shall not exceed 5 pounds per square inch.

32.08.6.3 Steam: Steam can be used to clean and vapor-free a tank. However, a large static charge can build up on the nozzle of the steam jet. Insulated objects on which the steam impinges can also become charged. If steam is to be used for either purging or cleaning a tank or other equipment, the steam discharge nozzle and all conductive insulated objects subject to impingement or condensation should be bonded to the tank or be grounded. **STEAM PURGING OF TANKS SHOULD BE AVOIDED WHEN SUITABLE ALTERNATIVES ARE AVAILABLE.**

32.08.6.4 Water: One of the simplest methods for vapor-freeing a tank is to fill the tank with water. However, in most areas, regulatory requirements for the treatment/disposal of water used in the vapor-freeing process may make this method cost-prohibitive. Before employing this method you will need to consult EPA and BUSTR regulations. Evaluation of the material stored in the tank will need to be conducted prior to the use of this method. If the tank contained polar solvent/water miscible materials, this method will require special handling of the waste material.

1. Fill the tank with water until the floating product nears the fill opening. Remove the floating product and place it in a suitable container for proper disposal. Care shall be exercised to ensure that neither product nor waste is spilled into the tank excavation.
2. In the process of filling the tank with water, flammable vapors will be expelled through both the vent and fill openings, but primarily at the fill opening. Strict safety precautions shall be observed. To minimize this escape of vapors through the fill opening, the opening may be temporarily capped. It is important that the atmosphere be tested in the vicinity of the tank excavation in order to monitor vapor travel and hazardous atmosphere areas.

3. When the tank is free of vapor, pump out the tank water and dispose of the waste in a manner approved per local, state, and federal regulations. No discharge of liquid to a storm, sewer, ditch or other surface water or ground water is permitted without expressed approval of the Ohio EPA. The discharge

of liquids to the sanitary sewer is not allowed without the permission of the local sanitary sewer district. Soil and other contaminated solid waste materials must be tested and treated and/or disposed of in accordance with state and local requirements.

32.08.7 Disposal In place: The Unified Fire Code does allow for disposal/abandonment in place in accordance with Article 28, Section F-2806.11. This is to be permitted only when the removal of the tank is impossible due to structural collapse considerations or other conditions which would not allow the safe removal of the tank. The tank is required to also meet all the requirements established by the local and/or state (BUSTR) regulations.

1. Drain product piping into the tank, being careful to avoid any spillage to the excavation area. Disconnect product piping from the tank and remove. If piping cannot be removed it shall be capped.
2. Remove liquids and residues from the tank by using explosion proof or approved air driven pumps. Pump motors and suction hoses must be bonded to the tank or otherwise grounded to prevent electrostatic ignition hazards. It may be necessary to use a hand pump to remove the last few inches of liquid and residue from the bottom of the tank. The tank must be properly cleaned of all hazardous materials and said materials properly disposed of. If a vacuum truck is used for removal of liquids or residues, the area of operation for the vacuum truck must be vapor-free. The truck shall be located upwind from the tank and outside the path of probable vapor travel. The vacuum truck location atmosphere shall be tested to ensure that the area is free of flammable vapors. The vacuum pump exhaust gases shall be discharged through a hose of adequate size and length downwind of the truck and tank area. See API Publication 2219 for vacuum truck operating and safety practices.
3. Excavate to the top of the tank.
4. Remove the drop tube, fill pipe, gauge pipe, vapor recovery truck connection, submersible pumps, and other tank fixtures. Cap or remove all non-product lines, such as vapor recovery lines, except for the vent line. The vent line shall remain connected or other approved venting methods shall be provided until the tank is purged. Temporarily plug all other tank openings.
5. Purge the tank of flammable vapors. Vent all vapors a minimum of 12 feet above grade and 3 feet above any adjacent roof lines. Monitor the tank for flammable vapor with a combustible gas indicator/detector until the tank atmosphere has been brought to less than 20 percent of the lower flammable limit (LEL).

6. One or more holes may be cut in the tank top after purging if the existing tank openings are not adequate for introduction of the inert material used to fill the tank.
7. Proceed to introduce a suitable solid inert material through openings in the top of the tank. It is important to fill the tank so there will be no void spaces that will allow the collection or trapping of flammable/combustible vapors.
8. Only approved materials shall be used to fill the tank. The use of sand will not be permitted unless it can be shown the tank can be filled in a manner that would not leave any void spaces. An approved slurry material shall be used. The material needs to be capable of meeting specification for normal structural ground compaction. The practice of disposal in place should be avoided if at all possible. Future construction over abandoned underground tanks can cause serious structural collapse or damage.
9. After the tank is filled with inert material, all tank openings shall be plugged or capped unless the top of the tank was removed or destroyed in order to allow filling.
10. Soil samples shall be taken at the following locations: (This may be accomplished in two ways.)
 - a. If tanks can be safely entered, and holes can be cut in the bottom, the soil beneath the tank(s) may be sampled through the holes using a hand soil sampling tool. The holes shall be located near each end of the tank.
 - b. If the tank can not be entered, then soil brings shall be taken using a drill rig and split tube or thin walled tube samplers. The brings shall be located as close as possible (less than 3 feet) from each end of the tank. Soil brings along piping runs and pump islands shall be located immediately adjacent to these structures.

Samples from each soil boring shall be collected at three (3) feet intervals starting at approximately two feet below the ground surface and ending at approximately twenty foot in depth or auger refusal. If ground water is encountered above the twenty foot depth, then the last sample collected in the boring(s) shall be from the last several inches above the saturated zone.

32.08.7.1 Recordkeeping: When underground tanks are disposed in place, the owner shall keep a permanent record of the tank location, the date of disposal in place, and the method of conditioning the tank for disposal. All local, state, and federal regulatory requirements shall be followed. A record of tank removal shall be so noted on the property deed.

The tank owner shall inform a potential buyer of the presence of abandoned underground tanks when properties are sold. A copy of the BUSTR and Unified Fire Code Permits shall be provided the future buyer of said properties.

32.08.8 Removal: Observe all safety practices as discussed in the previous sections. All tank owners/operators shall secure the required permits prior to the removal of any underground tank that has contained flammable or combustible materials. The owner/operator must notify the State Fire Marshal's Office of BUSTR at least 30 days before beginning permanent closure or change in service of an underground tank. The notification must be in writing.

1. Drain product piping into tank, being careful to avoid any spillage. Properly cap or seal any product piping that is to remain for continued service. If piping is to be abandoned, it shall be removed.
2. Remove liquids, residues, and any other waste material from the tank. If necessary the tank shall be cleaned in an approved manner. Water, product or other liquids, sludges and any other material removed from the tank and the excavation zones must be tested and disposed of in accordance with state (BUSTR/EPA) and local requirements. No discharge or liquid to a storm, sewer, ditch or other surface water or groundwater is permitted without the express approval of the Ohio EPA. Discharge of liquids to the sanitary sewer is not allowed without the permission of the local sanitary sewer district. Soil and other contaminated solid waste must be tested and treated and/or disposed of in accordance with state and local requirements.
3. Excavate to the top of the tank and conduct vapor test.
4. Remove fill pipe, gauge pipe, vapor recovery truck connection, submersible pumps, and other tank fixtures. Remove the drop tube, except when it is used to vapor free the tank. Cap or seal any piping if it is to be continued in service. All abandoned piping shall be removed. Temporarily plug all other tank openings so that vapors will exit through the vent line during the vapor-freeing process.
5. Clean and purge the tank in accordance with 28.06.6 during the removal process. Vent all vapors from the tank at a minimum of 12 feet above grade and 3 feet above any adjacent roof lines until the tank is purged of flammable vapors. The work area shall be kept free of ignition sources.
6. After the tank has been freed of vapors and before it is removed from the excavation, plug or cap all accessible holes. One plug shall have a 1/8 inch vent hole to prevent the tank from being subjected to excessive differential pressure caused by temperature

changes. The tank shall be positioned with the vent hole in upward position so as to allow venting at all time

7. Excavate the tank to uncover it for removal. Vapor tests shall be conducted before, during and after this period.
8. Soil samples shall be taken during a tank removal process as required per the BUSTR tank closure requirements. At least (3) samples must be sent to a laboratory for analysis.

Soil samples shall be taken in the following locations:

*At points where strong odors or soil discoloration indicates the presence of contamination.

*If tanks are being removed, from the floor of the excavation site at both ends of the tank.

*Underneath each pump island on the supply line side.

*Every 20 feet, or segment thereof, along piping runs, or, if piping will be exposed, under swing joints, pipe elbows, and flex connectors.

*Beneath piping sections where leaks are known or suspected to have occurred; (a minimum of two samples along the piping are required - one at island and one along the piping run)

*When tanks are abandoned in place, soil sampling must be performed in accordance with BUSTR requirements.

9. If a release is confirmed during the tank closure, closure assessment, or by subsequent sample analysis, the owner/operator must contact BUSTR and the local fire official within 24 hours to report the release. The necessary actions after reporting will vary with several factors including the degree of contamination, the depth of ground water, and the nature of the surrounding land use.

10. Remove the tank from the excavation and place it on a level surface. Use wood blocks to prevent movement of the tank after removal and prior to loading on a truck or trailer for transportation. Used screwed (boiler) plugs to plug any corrosion holes in the tank.

When partially or totally removing an existing underground storage system, a small amount of contaminated backfill may be encountered. Contaminated backfill may be a potential safety hazard. Spills and drips shall be contained to minimize contamination during removal. Contaminated material shall be handled in accordance with state (BUSTR/EPA) and local requirements.

11. Tanks shall be labeled after removal from the ground, but prior to removal from the site. The tank label shall contain a warning against certain types of reuse. The former contents and present vapor state of each tank, including vapor-freeing treatment and date shall be indicated. The label shall have legible letters of a minimum height of two (2) inches.

Example:

DANGER/FIRE HAZARD

TANK HAS CONTAINED LEADED GASOLINE*

NOT VAPOR FREE

NOT SUITABLE FOR STORAGE OF FOOD OR LIQUIDS
INTENDED FOR HUMAN OR ANIMAL CONSUMPTION

DATE OF REMOVAL: 00/00/0000
MONTH/DAY/YEAR

*Or other flammable/combustible liquid. The owner/operator shall use the applicable material designation, for example, DIESEL

Tanks that have held leaded motor fuels shall be clearly labeled. (See API Publication 2015A for additional guidelines)

TANK HAS CONTAINED LEADED GASOLINE
LEAD VAPORS MAY BE RELEASED IF HEAT
IS APPLIED TO THE TANK

12. Tanks shall be removed from the site as promptly as possible, after being removed the excavation hole. The tank shall be removed from the site on the same day as the removal. The only exception will be for special conditions that have been previously approved by the code official. If permitted by the code official, any tank located out of the excavation hole overnight shall be required additional safeguards.
13. Before any tank is removed from the site, the tank atmosphere shall be checked with a combustible gas indicator/detector to ensure that it does not exceed 20 percent of the lower flammable limit.
14. Where possible all underground tanks removed from service (tank closure) shall be made non-tanks (destroyed for further use) at the removal site. Steel tanks that have holes or leaks shall be made a non-tank at the site prior to removal. Sufficient holes shall be made in the tanks to, render them unfit for further use by puncturing, cutting or drilling numerous holes in all sections of the tank. (sides, bottom, and top).

IT IS CRITICAL THAT ALL SAFETY PRECAUTIONS BE FOLLOWED WHEN MAKING A TANK A NON-TANK.

All tanks being destroyed (non-tank) shall be purged of all flammable vapors. Welding and cutting shall only be conducted on tanks that contain an atmosphere of less than 20 percent of the lower flammable limit.

32.08.9 Transportation: The tank shall be properly secured to the truck or trailer for transportation to the storage or disposal facility. Vehicles and trailers used to transport tanks shall be in sound mechanical condition (brakes, lights, tires, etc.). Transport vehicles shall be provided with an approved portable fire extinguisher having a minimum rating of 40-B:C.

The tank shall be transported with the 1/8 inch vent hole located at the uppermost point on the tank. Tanks shall be transported in accordance with all federal, state, and local regulations.

The tank atmosphere shall be tested prior to removal of the tank from the truck or trailer, unless the tank was made a non-tank at the excavation site. All flammable vapors and liquids should be removed from the tank. If the tank is to be stored or made a non-tank at the receiving site, the safety requirements specified in 28.06.8 shall be complied with prior to moving or working on the tank.

32.08.10 Storage: Even though used tanks have been vapor-freed at one time, they cannot be guaranteed to remain vapor free. Tanks shall be vapor-freed before placed in storage. Tanks shall also be free of all liquids and residues. All tank openings shall be tightly plugged or capped, with one plug having a 1/8 inch vent hole to prevent excessive differential pressure caused by temperature changes. Tanks shall be stored with the vented plug at the highest point on the tank. All tanks shall be properly labeled as specified in 28.06.8.

Used tanks shall be stored in secure areas. A fenced area, apart from other facilities shall be provided. The entrance to the storage area shall be provided with a placard that states the following:

"NO SMOKING OR OPEN FLAMES PERMITTED IN THIS AREA"

Used tanks shall not be stored within 25 feet of the fence line of the storage area. Combustible materials shall not be stored in the same area as the used tanks.

32.08.10.1 Condition of sale: A bill of sale shall be used to transfer tank ownership. The bill of sale shall include the purchaser's acknowledgement that he assumes all liability related to the tank. Bills of sale shall indicate the former use of the tank.

32.08.11 Disposal/non-tank: Tanks shall be disposed of (non-tanks) when they are no longer fit for the storage of flammable or combustible liquids. Whether sold to a scrap dealer or disposed of at an acceptable facility, sufficient holes shall be made in the tanks to render them unfit for further use. After a tank has been vapor-freed, it shall be rendered unsuitable for future use as a storage tank by puncturing, cutting, or drilling numerous

holes in all sections of the tank. All tanks shall be properly labeled and a bill of sale shall be used to transfer tank ownership.

When tanks are scrapped out they shall be photographed and copies of the photos shall be sent to the previous owner and to those federal, state or local agencies requiring such.