



Permanent Closure of Aboveground Storage Tank Systems

What You Need to Know

The purpose of this fact sheet is to provide guidance to oil storage facility owners, operators, and/or environmental professionals regarding the requirements for the proper closure of shop-fabricated aboveground storage tank (AST) systems in accordance with the Code of Maryland Regulations (COMAR) 26.10.17.13 and Petroleum Equipment Institute (PEI) RP 1700 “*Recommended Practices for the Closure of Underground Storage Tank and Shop-Fabricated Aboveground Storage Tank Systems*”, and for the proper closure of field-erected AST systems in accordance with the COMAR 26.10.18.12.

Applicability

Who must comply with the AST closure regulations and guidance?

- An owner, an operator, and a person in charge of an AST system with a shop-fabricated AST that is required under COMAR 26.10.01.10 to be registered (including those covered by an Individual Oil Operations Permit).
- An owner, an operator, and a person in charge of an AST system with a field-erected AST.
- These requirements do not apply to residential heating oil AST systems at a single-family residence. Residential heating oil tank must be closed in accordance with PEI RP 1700; however, this task is addressed by another fact sheet.

AST System Permanent Closure Process

I have an AST system at my property. I do not use this AST system and want to permanently remove it from the property. What must I do to properly close or remove this AST system?

- **Evidence of a spill, release, or discharge discovered during the AST closure activities must be reported to MDE immediately, but not later than 2 hours, following discovery. Call (410) 537-3442 during work hours or 1-866-633-4686 after normal business hours.**
- **30 Days Prior to Beginning Closure Activities**
 - Notification – Notify the Oil Control Program (OCP) AST and Permits Section in writing of the pending closure.
 - Coordinate with appropriate local authorities to obtain any required permits.



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- Sampling Plan – Provide the OCP Remediation Division with a proposed sampling plan to determine if there is evidence of a spill, release, or discharge where contamination is most likely to be present.
 - At a minimum, the plan must describe the assessment work to be performed and include a scaled site diagram showing the proposed subsurface soil sampling in the following required locations:
 - Within and immediately outside the secondary containment dike, if present;
 - Within the footprint of the removed AST, including underneath and around the perimeter of a concrete pad if present; and
 - Beneath underground piping (including any dispensers to be removed) associated with the AST.
 - The number of samples required will be dependent upon the dimensions of the AST footprint, length of underground piping, number of dispensers, and the presence or absence of secondary containment.
 - All soil samples must be collected a minimum of 2 feet below the ground surface and/or an existing concrete pad, and 2 feet below the bottom of the piping trench in natural undisturbed soils.
 - All soil samples must be analyzed for:
 - Full suite volatile organic compounds (VOCs), including fuel oxygenates and naphthalene, using EPA Method 8260,
 - Total petroleum hydrocarbons – diesel and gasoline range organics (TPH-DRO and TPH-GRO), using EPA Method 8015, and
 - Additional analyses may be required based on the type of oil the system stored.
 - Provide detailed to-scale site maps and diagrams annotating the AST system, associated piping, secondary containment, and other vital site characteristics. All proposed sampling locations should be clearly marked on the site diagram/map. If advance inspection of the site revealed any evidence of a previous petroleum release, this should be documented on the site plan.



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- **AST System Closure Activities**
 - OCP recommends hiring a contractor that has experience working with flammable and combustible liquids and dismantling ASTs (when necessary).
 - **Any work involving underground piping must be completed in the continuous on-site presence of a certified UST system technician or remover and in accordance with the UST Closure procedures in COMAR 26.10.10.02D.** A list of companies that employ MDE certified UST system technicians and removers can be found on the OCP Fact Sheets, Publications, and Reports webpage.
 - Taking the AST System Out-of-Service – If the AST system to be closed is a shop-fabricated AST, then the closure must be completed in accordance with PEI RP 1700.
 - Remove all oil from the AST system;
 - Isolate all piping connected to the AST;
 - Remove all waste materials from the AST system, including storage tank-bottom sludge, and dispose of these materials in compliance with applicable federal, State, and local laws; and
 - Purge all petroleum vapors and maintain the AST system vapor free.
 - Remove all aboveground and underground piping associated with the AST system.
 - Any portions of the AST system that are to remain in place must be properly cleaned and abandoned or put back into service in accordance with applicable COMAR regulations.
 - Remove the AST and associated piping from the site.
- **Sampling Activities**
 - OCP recognizes that removal of the AST system may be necessary prior to the implementation of the approved sampling plan, coordinate these activities with OCP personnel in advance. When removing the AST system, any petroleum-impacted soil encountered must be excavated to the extent practicable for proper off-site disposal.



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- Upon receiving written approval, implement the sampling plan. **OCP personnel must be on-site during the completion of the sampling plan.** OCP reserves the right to require additional soil samples and/or waive sampling locations based on observed site conditions / analytical data.
- **Within 30 days** of completing the permanent closure, including the approved site assessment, provide the OCP AST and Permits Section with written notification amending the facility's AST registration and/or the Individual Oil Operations Permit.
- **Within 45 days** of completing the permanent AST closure, including the approved site assessment, provide the OCP Remediation Division with an AST Closure Report that includes a narrative of the work completed, a scaled site diagram showing the sampling locations / depths, analytical results and laboratory reports, documentation verifying proper disposal of generated waste materials (e.g. tank, piping, liquids, soils), a summary of findings / conclusions / recommendations, and any photographic documentation.
- OCP will review the documentation and notify the owner/ operator of additional requirements.

Underground Piping Associated with an AST System

I have an AST system, that has underground piping. I want to close or remove only this piping, what must I do? Can I permanently abandon this piping in the ground? Can I purge the lines and leave them in place?

- All underground piping associated with an AST system must be properly removed and assessed under the guidance of a Maryland-certified UST system remover or technician.
- At minimum, the OCP recommends collection of soil samples every 20 feet of underground piping installed. Additional soil samples should be collected at any location where elevated photoionization detector (PID) response indicates a release of petroleum and/or petroleum impacted soils are required to be removed. These locations may include underneath product dispensers, corrosion perforations, piping unions, or piping elbows.
- All soil samples must be analyzed for:
 - Full suite VOCs, including fuel oxygenates and naphthalene by EPA Method 8260,



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- TPH-DRO and TPH-GRO by EPA Method 8015, and
- Additional analyses may be required based on the type of oil the system stored.
- If it is determined that the underground piping cannot be removed, and closure in place is necessary, OCP will require:
 - A letter from a professional engineer (PE) that states justifications on why the piping cannot safely be removed, or removal is not possible, and
 - A *Piping Assessment Work Plan* for the collection /and analysis of the assessment soil samples as required above and the methods proposed for properly cleaning and closing the piping in place. This work plan must be reviewed and approved by the OCP Remediation Division.
 - Once received, conduct the approved Work Plan activities in the presence of OCP personnel.
- **Within 30 days** of completing the permanent piping closure (removal or approved closure in-place), including the approved piping assessment, provide the OCP AST and Permits Section with written notification amending the facility's AST registration and/or the Individual Oil Operations Permit.
- **Within 45 days** of completing the permanent piping closure, including the approved piping assessment, provide the OCP Remediation Division with a Piping Closure Assessment Report that includes a narrative of the work completed, a scaled site diagram showing the sampling locations and depths, analytical results and laboratory reports, documentation verifying proper disposal of generated waste materials (e.g. tank, piping, liquids, soils), a summary of findings, conclusions and recommendations, and any photographic documentation.
- OCP will review the documentation and notify the owner/operator of additional requirements.

What is the approved fill material for proper piping abandonment?

- The approved fill material is a flowable concrete slurry that will function to completely fill the piping and eliminate all void space.



Maryland
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Questions

If you have additional questions, regarding removal of an AST system, underground piping, or sampling questions, please contact the Oil Control Program at 410-537-3442 or (800) 633-6101 x3442.

To report a spill, release, or discharge call 1-866-633-4686. Available 24 hours a day.

Limitations

This fact sheet is provided for informational purposes. This document is not intended, nor should it be interpreted to be a regulation, as defined in Section 10-101, State Government Article. The MDE encourages you to read and understand the regulations that govern the operation of underground storage systems found in Code of Maryland Regulations 26.10 "Oil Pollution Control and Storage Tank Management."