



STATE OF MAINE

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Common Terms Associated with Petroleum Dispensing Systems Including Underground and Aboveground Tanks

These definitions are provided to assist in understanding terms used in TankSmart. In some cases, the definitions are identical to definitions in Maine's groundwater protection statutes (38 M.R.S.A., sections 561 et seq.), and the department Rules for Underground Oil Storage Facilities (Chapter 691). In other cases, there is no corresponding definition in statute or rule, or we made the definition more specific to the purposes of the TankSmart training.

Administrative Consent Agreement (ACA)

A legal contract between the Department and a person or company to resolve environmental violations, and in some cases, pay a civil monetary penalty. An ACA includes a binding, voluntary agreement by the violator to take corrective action to resolve violations without litigation.

Air Eliminator

A device that is usually located at the dispenser and is incorporated into the line of suction systems to remove any air that may get into the fuel. This allows the fuel to be properly dispensed and metered accurately.

Ancillary Equipment

Devices including but not limited to, piping fittings, flanges, valves and pumps used to distribute, meter or control the flow of oil to or from an underground oil storage tank.

Annual Inspection

Inspection of an underground tank and all associated equipment including but not limited to the tank, piping, sumps, dispensers, electronic monitoring, drop tubes, overfill devices, and all records related to the underground tank or aboveground tank with underground piping.

Automatic Tank Gauge (ATG)

An electronic device for the measuring of fuel and water levels in a tank. By monitoring the level of the liquid the ATG can perform leak tests of the underground tank and with some additional accessories can also monitor underground pressurized piping for leaks. An ATG can also be a device which monitors probes in the interstitial space of a tank and in sumps located under dispensers and at the tank top.

Ball-Float Valve (Ball-Float Vent)

An overfill prevention device that operates by restricting the flow of air out of the underground tank through the vent line. By limiting the flow of air out of the tank it limits the flow of fuel into the tank.

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Cathodic Protection

A method of protecting underground metal equipment, such as steel tanks and piping, from corrosion. There are two types of cathodic protection: galvanic and impressed current. Both systems use sacrificial anodes and impressed current systems use an electrical current supplied through a rectifier.

Certified Underground Oil Storage Tank Inspector (CTI)

Any person certified under 32 M.R.S.A., section 10002 to inspect underground oil storage tanks and facilities.

Certified Underground Oil Storage Tank Installer (CTI)

Any person certified under 32 M.R.S.A., section 10002 to install underground oil storage tanks and facilities. A CTI may also inspect underground oil storage tanks and facilities and oversee the removal of tanks that have stored a Class 1 liquid such as gasoline or aviation fuel.

Clean-up Order

A document issued by the Department that requires a person responsible for a petroleum discharge to take immediate corrective actions to mitigate the threat to the environment or public health posed by the discharge. A person to whom a clean-up order is issued may appeal the findings and decision to the Board of Environmental Protection within 10 working days of receipt.

Coaxial Vapor Recovery

A Stage I gasoline vapor recovery method where two hoses connect to a single adaptor fitting attached to the fill pipe that allows vapors to be recovered from the tank when a fuel delivery is being made. The fitting vents vapors out of the tank in a space between the drop tube and the tank riser while fuel is added to the tank via the drop tube.

Containment Sump (Piping Sump, Tank Top Sump)

A liquid tight container on the top of the underground storage tank. Sumps normally contain a variety of components including the submersible pump head, piping from the pump to the dispensers, electrical conduit and junction boxes, and a leak detection device. The purposes of the sump are to contain leaks, and keep water and soil away from sensitive components.

Continuous Monitoring

Use of a monitoring device capable of automatic, continuous unattended operation, which will provide a clear, audible or visual indication of the presence of liquid hydrocarbons or hydrocarbon vapors outside of a primary hydrocarbon container or the loss of the primary containment structure's integrity.

Crash Valve (Shear Valve, Emergency Shut-off Valve)

A mechanical device required on pressurized piping and located under the dispenser. The crash valve is attached to the concrete island and will automatically close, shutting off delivery of fuel to the dispenser in the event of a fire inside the dispenser or as the result of a severe impact such as a vehicle crashing into the dispenser.

Daily Inventory

Accounting practices for oil stock control, including at a minimum: (1) a record of all bulk liquid receipts; (2) a record of all liquid dispersed from the facility; (3) a daily reconciliation between sales, use, receipts and inventory-on-hand; and (4) a monthly summary of inventory results maintained in accordance with the requirements of the Department's rules.

Delivery Prohibition

A written order issued by the commissioner, after a facility owner or operator has failed to comply with a Notice of Violation, that prohibits deliveries to, and dispensing product from an underground oil storage tank until the violation is corrected. A delivery prohibition order may be appealed to the Board of Environmental Protection within 5 working days of receipt.

Department

The Maine Department of Environmental Protection.

Discharge

Any spilling, leaking, pumping, pouring, emitting, escaping, emptying, or dumping.

Dispenser

A device that measures and transfers petroleum fuels from an underground or aboveground storage tank. The fuel may be delivered by pressure or via a suction pump attached to the dispenser. Dispensers come in a variety of forms including but not limited to blending dispensers where the fuel is blended at the dispenser to the proper octane, multi-product dispensers that dispense several grades or types of fuel, and satellite dispensers which are common at truck stops for fueling both sides of a truck at the same time.

Dispenser Sump (Dispenser Pan)

A liquid tight container under the dispenser designed to contain leaks and drips from dispenser components, similar to the sump at the top of the tank called the containment sump. The sump also isolates metal components from direct contact with soil. Dispenser sumps installed after March 14, 2004, must be electronically monitored.

Double-Walled Piping

Piping consisting of a double wall of material designed such that breach of the primary wall will result in the detection of liquid in the interstitial space. Double walled piping may be constructed from any of several approved materials including fiberglass, cathodically protected steel, and a variety of flexible plastics.

Common Terms Associated with Petroleum Dispensing Systems

Double-Walled Tank

A tank which provides secondary containment and interstitial space monitoring.

Drop Tube

A tube installed in a riser pipe that extends from the top of the riser to less than 6 inches of the bottom of the tank. The drop tube is where the delivery of fuel is made. The drop tube increases the rate at which a delivery can be made and reduces the amount of vapors generated during a fuel drop.

Emergency Stop Switch (Emergency Shut Off)

A clearly marked switch either inside the business or outside at the dispenser area that cuts off power to the pumps, fuel dispensers, and related electrical equipment.

Fill Cap

A round removable cover that latches to the fill adaptor and is used to seal the fill pipe opening when a delivery is not taking place.

Groundwater Monitoring

A method of leak detection which involves periodically checking wells around the tank field that were put in during the tank installation for the presence of oil on the surface of the water. The water table where this leak detection method is used must be within 20 feet of the surface to be effective.

Impressed Current Cathodic Protection

A cathodic protection system that relies on direct current supplied by a power source external to the electrode system.

Interstitial Monitoring

A leak detection method where the area between the inner and outer walls of double-walled tanks and double-walled piping are checked for liquids or where a vacuum on the interstitial space is monitored to determine if there is a leak.

Interstitial Space (Interstice or Annular Space)

The space between the inner and outer walls of a double-walled tank or double-walled piping.

Leak

A loss or gain of 0.1 gallons or more per hour as determined by a precision test or other tank and piping tightness test methods capable of detecting a 0.1 gallon or more per hour product loss or gain.

Leak Detection

Any procedures or equipment that may be used to determine if an underground tank or piping is discharging product outside of its primary containment in a manner not controlled by the operator. Leak detection methods include but are not limited to inventory control, interstitial monitoring, and tank and line testing.

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Line Leak Detector (LLD)

A mechanical or electronic device that is used to detect leaks in a pressurized system. Mechanical LLDs must be able to detect a single 3 gallon per hour leak by slowing the flow of product. Electronic LLDs can be programmed to detect a 3 gallon per hour (gross) or a 0.2 gallon per hour or a 0.1 gallon per hour leak.

Marketing and Distribution Facility

A facility where oil is stored for eventual resale.

Monitoring Well

A slotted pipe made of PVC or some other material that is placed in the ground vertically and used to facilitate sampling of groundwater to detect contamination. See GROUNDWATER MONITORING.

Motor Fuel

Oil that is motor gasoline, aviation gasoline, #1 or #2 diesel fuel or any grade of gasohol typically used in the operation of a vehicle or motor engine (including emergency generators).

Oil

Oil, oil additives, petroleum products and their by-products of any kind and in any form including, but not limited to, petroleum, fuel oil, sludge, oil refuse, oil mixed with other nonhazardous waste, crude oils and all other liquid hydrocarbons regardless of specific gravity. Oil does not include propane.

Operator

Any person who is in control of and responsible for the daily operation of an underground oil storage facility or tank.

Out of Service Facility or Tank

A facility or tank, neither receiving nor dispensing oil, but may be returned to service or is awaiting abandonment pursuant to Department Rules.

Overfill Alarm

An external, outdoor audible and/or visual warning device that alerts delivery personnel that the tank is nearly full and delivery must cease. It should be set at a maximum of 90 % of tank capacity.

Owner

Any person whom alone, or in conjunction with others owns an underground oil storage facility.

Penetration Fitting

Fittings designed to provide liquid tight seals around piping or conduit that is penetrating the wall of a containment sump.

Personal Protective Equipment (PPE)

Equipment designed to protect workers from injuries and illnesses occurring in the workplace as the result of exposure to hazards. PPE may include steel toed shoes, hard hats, reflective vests, gloves, safety glasses and hearing protection.

Piping Line Tightness Test

A precision test on a product line that must detect a 0.1gallon per hour leak.. It can be a pressure test, vacuum test or a tracer test.

Poppet

A disk inside of a Stage I vapor-recovery adaptor which prevents vapors from escaping from the tank from the time the vapor adaptor cap is removed and the vapor recovery hose is connected.

Precision Test

A tank or piping line tightness test, approved by the commissioner, that is capable of detecting a leak, a loss or gain of 0.1 gallon per hour with a probability of detection of at least 95 percent and a probability of false alarm of five (5) or less percent as determined by an independent testing laboratory using protocols approved by the U.S. Environmental Protection Agency or a nationally recognized independent testing organization, including, but not limited to, the American Society for Testing and Materials (ASTM) and the National Work Group on Leak Detection Evaluations (NWGLDE). The test must be conducted by a tester who is certified by the test manufacturer. The tester must certify that the test was conducted in accordance with the manufacturer's instructions.

Pressurized-Piping

Piping that is charged by a submersible pump located in a sump at the top of the underground storage tank. Pressurized piping installed after September 15, 1991 must be secondarily contained and have continuous electronic monitoring. All pressurized piping must include inline leak detection.

Pressurized-Pump System

Fuel delivery system that uses a submersible pump located near the bottom of the tank to force fuel under pressure to the dispenser(s). See SUBMERSIBLE PUMP.

Riser

A vertical section of pipe that extends from an opening located on the top of the underground tank to the surface. Risers may contain drop tubes, or provide access to the interior of the tank for a variety of electronic devices. Risers are commonly four inches in diameter. Vent risers extend above the ground and allow for the venting of vapors from the tank to the atmosphere.

Safe Suction System (European Suction System)

A term used to describe a suction pumping system where the following exists: there is only one check valve that is located immediately below the pump, the pump itself is higher than the tank, and the piping from the pump slopes evenly back to the tank. Safe suction is “safe” because any breach in the piping wall will result in the product in the line draining back to the tank and the loss of prime.

Secondary Containment

A system installed so that any product that is discharged or has leaked from the primary containment is prevented from reaching the soil or ground water outside the system for the anticipated period of time necessary to detect and recover the discharged material.

Sensor

An electronic device that is able to detect liquid, vapor, or changes in pressure or vacuum in the interstitial space, the tank top or dispenser sump, or an observation well. Different sensors react to conditions present based on what they are designed to detect. Some sensors react only to petroleum, others to water, and still others detect liquid without differentiation.

Single-Walled Piping

Piping consisting of a single wall of material designed to contain liquid petroleum. Single-walled piping may be made of any of several approved materials including fiberglass, cathodically protected steel, a variety of flexible plastics, and in the case of heating oils, copper. Copper piping installed prior to September 16, 1991 must be installed in a chase to keep it isolated from the backfilled soils and after that date it must be secondarily contained.

Single-Walled Tank

An underground tank constructed with a single wall of material designed to contain liquid petroleum. Tanks may be made of fiberglass or cathodically protected steel. Single-walled tanks could not be legally installed after September 16, 1991.

Soil Vapor Monitoring

A method of leak detection that works by sensing petroleum vapors outside of the tank and piping.

Spill Bucket (Spill Containment Manhole)

A liquid tight container placed around the fill pipe of an underground tank and designed to capture small spills and drips that may occur when the delivery hose is disconnected.

Stage I Vapor Recovery

A system of piping and hoses designed to transfer gasoline vapors from the underground tank during the transfer of product from the tanker truck.

Stage II Vapor Recovery

A system of pipes, nozzles and hoses designed to transfer vapors from a vehicle to the storage tank as the vehicle is fueled from the tank.

Statistical Inventory Analysis (SIA) or Statistical Inventory Reconciliation (SIR)

A process of evaluating the various sources of errors present in daily inventory records and capable of detecting a leak or discharge of 0.1 gallons per hour with a 95 percent probability and a 5 percent chance of a false alarm.

Submersible Pump

The pump located inside the underground storage tank designed to supply fuel to dispensers under pressure. The intake of the pump is located between 4 and 6 inches off the bottom of the tank where it is submerged in fuel. The top of the submersible pump is located in a sump at the top of the tank. This is a pressurized pumping system.

Suction Piping

Piping that draws fuel from an underground tank by way of a pump located at the dispenser. See SAFE SUCTION

Tank

See UNDERGROUND OIL STORAGE TANK (UST)

Tank Chart

A chart provided by the underground tank manufacturer that enables measurements of fuel in the tank to be converted from inches of product, in 1/8" increments, to gallons of product. An accurate tank chart is essential for making precise assessments of the fuel level of a tank.

Tank Gauge Stick

A wooden stick long enough to reach the bottom of a tank that is marked off in 1/8" increments for the measurement of fuel. The stick is inserted in the tank at the fill pipe and the level of fuel and water on the stick is measured. Special paste is applied to the stick to detect water in the fuel and to more accurately measure the fuel level. Tank content volume is then calculated by comparing the measurements to a "tank chart" for the specific tank and converting the inches of product to gallons of product.

Tank Pad

The area, usually made of concrete, that is directly over the top(s) of the underground petroleum storage tank(s). The tank pad is usually at the same grade as the surrounding area.

Tank Tightness Test

A precision test which may include volumetric tank tightness tests or non-volumetric tank tightness tests. Tank tightness tests must be conducted in strict accordance with Department Rules and the manufacturer's operating procedures.

Tank-Top Sump

A liquid tight container attached to the top of the underground storage tank. Sumps contain a variety of components related to the dispensing of fuel, including the submersible pump related to a pressurized dispensing system. The pump is connected to a variety of devices including piping and power source with electrical conduit. The piping and electrical conduit both must penetrate the sidewalls of the sump with liquid tight connections. Sumps are designed to hold and detect, through electronic leak detection, discharges of petroleum and/or water infiltration. They also protect sensitive equipment from exposure to the corrosive effects of soil and water. Other sumps may provide access to the tank interstitial or annular space, vapor recovery, fill/drop tubes, ball float vent access, and other tank top installed equipment.

Two Point Vapor Recovery

A vapor recovery system that uses 2 hoses and 2 locations, one hose to drop fuel into the underground tank and one hose to remove the vapors from the tank and return them to the tanker truck.

Underground Oil Storage Facility

Underground oil storage facility," also referred to as "facility," means any underground oil storage tank or tanks, together with associated piping and dispensing facilities located under any land at a single location and used, or intended to be used, for the storage or supply of oil.

Underground Oil Storage Tank (UST or tank)

Any container, 10% or more of its volume being beneath the surface of the ground and which is used, or intended to be used, for the storage, use, treatment, collection, capture or supply of oil, but does not include any tanks situated in an underground area if these tanks or containers are situated upon or above the surface of a floor and in such a manner that they may be readily inspected. This does not include underground propane storage tanks, underground oil water separators, storm water and emergency catch basins, and hydraulic lift tanks. Overflow tanks associated with oil-water separators are still considered an underground oil storage tank.

Vapor Recovery Adaptor

A special fitting that is installed at the top of a Stage I vapor recovery riser that allows connection of a hose from the truck to the tank for the recovery of vapors. The adaptor has a "poppet" valve that is normally closed to prevent vapors from leaving the tank unless connected to a hose attached to the tanker truck dropping fuel.

Vent Cap

A device that is installed at the top of the vent pipe to prevent precipitation from entering the tank. Some vent caps for gasoline systems are also designed to open only when the pressure or vacuum exceeds a certain level so that vapors are not released to the atmosphere continuously.