

DEPARTMENT OF LABOR AND EMPLOYMENT

Division of Oil and Public Safety

UNDERGROUND STORAGE TANKS AND ABOVEGROUND STORAGE TANKS

7 CCR 1101-14

[Editor's Notes follow the text of the rules at the end of this CCR Document.]

ARTICLE 1 GENERAL PROVISIONS

1-1 Statement of Basis and Purpose.

These regulations are promulgated to establish rules for the design, installation, registration, construction, and operation of storage tanks used to store regulated substances, including petroleum, other than material classified as hazardous wastes under Subtitle C of the U.S. Solid Waste Disposal Act and to describe the financial responsibility of petroleum storage tank owners/operators.

The main purpose of these regulations is to reduce damage to the environment, and risk to the public caused by leaking petroleum storage tanks and to mitigate such damage effectively when it occurs.

The 1999 amendments to these regulations incorporate an adaptation of the American Society of Testing and Materials Standard E 1739-95 into the requirements of Article 5 of these regulations. These amendments are intended to facilitate the incorporation of risk-based contaminant screening levels into the process of investigating and remediating petroleum releases.

The 2008 amendments to these regulations incorporate the UST provisions of the Federal Energy Policy Act of 2005. These amendments include secondary containment and installer certification requirements for new and upgraded UST systems, delivery prohibition provisions and UST operator training requirements. The amendments also include revisions to the UST closure requirements.

1-2 Technical Rationale.

The technical requirements of these regulations are supported by many studies made by petroleum industry associations, the National Fire Protection Association, the American Society of Testing and Materials, and by studies made by or at the behest of the U.S. Environmental Protection Agency. They represent the consensus of opinion of informed persons, as to the best methods for reducing hazards, posed by storage tanks, to acceptable levels.

1-3 Statutory Authority.

The amendments to these regulations have been created pursuant to Title 8 Article 20.5 Sections (202) and (302) of the Colorado Revised Statutes.

1-4 Effective Date.

These amended rules shall be effective on April 14, 2011. The prior editions of the combined UST/AST regulations were published January 1, 2009, August 1, 2008, April 30, 2006, May 30, 2005, August 1, 2004, August 1, 2002, February 1, 1999, and January 1, 1997. Prior editions of the UST rules were published effective September 30, 1995 and December 1, 1989. Prior editions of the AST rules were published effective September 30, 1995 and October 1, 1994. A prior edition of the Emission Inspection rules was published effective January 1, 1990.

1-5 Definitions.

Terms in these regulations shall have the same definitions as those found in Articles 20 and 20.5 of Title 8 of the Colorado Revised Statutes. In addition, unless the context otherwise requires:

- (1) "Aboveground release" means any release to the surface of the land or to surface water. This includes, but is not limited to, releases from the above-ground portion of an UST system and aboveground releases associated with overfills and transfer operations as the regulated substance moves to or from an UST system.
- (2) "Ancillary equipment" means any devices including, but not limited to, such devices as piping, fittings, flanges, valves, and pumps used to distribute, meter, or control the flow of regulated substances to and from an UST.
- (3) "AST" means an aboveground storage tank, which is not permanently closed.
- (4) "AST system" means all ASTs at a facility, all the connected piping and ancillary equipment, all loading facilities, and all containment systems if applicable.
- (5) "Atmospheric Tank" is a storage tank that has been designed to operate at pressures from atmospheric through 0.5 psig (760 mm Hg through 780 mm Hg) measured at the top of the tank.
- (6) "Attenuation" is the reduction in concentrations of chemical(s) of concern in the environment with distance or time due to processes such as diffusion, dispersion, adsorption, chemical degradation, biodegradation, and other similar chemical, biological, or physical processes.
- (7) "Belowground release" means any release to the subsurface of the land and/or to groundwater. This includes, but is not limited to, releases from the belowground portions of an AST or UST system, and belowground releases associated with overfills and transfer operations as the regulated substance moves to or from an AST or UST system.
- (8) "Beneath the surface of the ground" means beneath the ground surface or otherwise covered with earthen materials.
- (9) "Bulk Plant" is that portion of a property where liquids are received by tank vessel, pipelines, tank car, or tank vehicle and are stored or blended in bulk for the purpose of distributing such liquids by tank vessel, pipeline, tank car, tank vehicle, portable tank or container. [Note: A bulk plant is normally a wholesale fuel facility where petroleum products are stored prior to resale or redistribution.]
- (10) "Capillary fringe" is the zone immediately above the water table, where water is drawn upward by capillary attraction.
- (11) "Cathodic protection" is a technique to prevent corrosion of a metal surface by making that surface the cathode of an electrochemical cell. For example, an UST or AST system can be cathodically protected through the application of either galvanic anodes or impressed current.
- (12) "Cathodic protection tester" means a person who can demonstrate an understanding of the principles and measurements of all common types of cathodic protection systems as applied to buried or submerged metal piping and UST and AST systems. At a minimum, such persons must have education and experience in soil resistivity, stray current, structure-to-soil potential, and component electrical isolation measurements of buried metal piping and UST and AST systems.
- (13) "CERCLA" means the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended.

- (14) "Certificate of Eligibility" is a document that entitles the bearer to participate in the Fund without further determination of compliance by the Director, if that bearer is a mortgagee who has acquired, by foreclosure or receipt of a deed in lieu of foreclosure, property on which the petroleum storage tanks covered by the certificate are located.
- (15) "Chemicals of concern" (COCs) are chemical compounds that have been identified for evaluation due to specific risks to human health and/or the environment.
- (16) "Committee" means the Petroleum Storage Tank Committee created in C.R.S. § 8-20.5-104.
- (17) "Compatible" means the ability of two or more substances to maintain their respective physical and chemical properties upon contact with one another for the design life of the tank system under conditions likely to be encountered.
- (18) "Connected piping" means all piping including valves, elbows, joints, flanges, and flexible connectors attached to a tank system through which regulated substances flow. For the purpose of determining how much piping is connected to any individual AST or UST system, the piping that joins two systems should be allocated equally between them.
- (19) "Corrective action" is the sequence of actions that include any or all of the following: interim remedial action, remediation, operation and maintenance, monitoring of progress, and termination of remedial action.
- (20) "Corrosion expert" means a person who, by reason of thorough knowledge of the physical sciences and the principles of engineering and mathematics acquired by a professional education and related practical experience, is qualified to engage in the practice of corrosion control on buried or submerged metal piping systems and metal tanks. Such a person must be accredited or certified as being qualified by the National Association of Corrosion Engineers or be a registered professional engineer who has certification or licensing that includes education and experience in corrosion control of buried or submerged metal piping systems and metal tanks.
- (21) "Crossgradient" is in the direction of equal static head.
- (22) "Dielectric material" means a material that does not conduct direct electrical current. Dielectric coatings are used to electrically isolate systems from the surrounding soils. Dielectric bushings are used to electrically isolate portions of the system (e.g., tank from piping).
- (23) "Director" means the Director of the Division of Oil and Public Safety of the Colorado Department of Labor and Employment or any designees thereof which may include certain employees of the Division of Oil and Public Safety of the Colorado Department of Labor and Employment or other persons.
- (24) "Downgradient" is in the direction of maximum decreasing static head.
- (25) "Effective porosity" is the volume fraction of the soil (or rock) that is available to transport water. The effective porosity does not include isolated pore spaces.
- (26) "Electrical equipment" means underground equipment that contains dielectric fluid that is necessary for the operation of equipment such as transformers and buried electrical cable.
- (27) "Electrolyte" means the soil or liquid adjacent to and in contact with the systems, including the moisture and other chemicals contained in it; the electrically conductive material between the tank and its environment;
- (28) "Excavation zone" means the volume containing the UST system and backfill material bounded by

the ground surface, walls, and floor of the pit and trenches into which the UST system is placed at the time of installation.

- (28a) "Existing" means that an underground tank, piping or motor fuel dispensing system is in place when a new installation or replacement of an underground tank, piping, or motor fuel dispensing system begins.
- (29) "Existing tank" means an UST system used to contain an accumulation of regulated substances or for which installation commenced before December 22, 1988. Installation is considered to have commenced if:
- (a) the owner/operator has obtained all federal, state, and local approvals or permits necessary to begin physical construction of the site or installation of the UST system; and if,
 - (b)
 - (1) either a continuous on-site physical construction or installation program has begun; or,
 - (2) the owner/operator has entered into contractual obligations, which cannot be cancelled or modified without substantial loss, for physical construction at the site or installation of the UST system to be completed within a reasonable time.
- (30) "Exposure pathway" is the course that a chemical of concern takes from a source area to a point of exposure. An exposure pathway describes a unique mechanism by which a person or sensitive environment is assumed to be exposed to a chemical of concern. Each exposure pathway includes a source, an exposure route, and a point of exposure. If the exposure point differs from the source, transport or exposure media (e.g., air, water, dust) are also included. All exposure pathways are assumed to be complete unless an exposure pathway elimination criteria is demonstrated. Exposure pathway elimination criteria are listed in the Owner/Operator Guidance Document.
- (31) "Farm tank" is a tank located on a tract of land devoted to the production of crops or raising animals, including fish, and associated residences and improvements. A farm tank must be located on the farm property. "Farm" includes fish hatcheries, rangeland and nurseries with growing operations.
- (32) "Fire resistant tank" is an atmospheric single or double walled AST with thermal insulation that has been evaluated for resistance to physical damage and for limiting the heat transferred to the primary tank when exposed to a hydrocarbon pool fire, and is listed in accordance with UL 2080 or an equivalent test procedure, and meets the additional requirements of NFPA.
- (33) "Flow-through process tank" is a tank that forms an integral part of a production process through which there is a steady, variable, recurring, or intermittent flow of materials during the operation of the process. Flow-through process tanks do not include tanks used for the storage of materials prior to their introduction into the production process or for the storage of finished products or by-products from the production process.
- (34) "Fraction of organic carbon" is the fraction by weight of total naturally occurring organic carbon in a soil sample.
- (35) "Free product" refers to a regulated substance that is present as a nonaqueous phase liquid (e.g., liquid not dissolved in water.)
- (36) "Fund" means the Petroleum Storage Tank Fund created in C.R.S. § 8-20.5-103.

- (37) "Gathering lines" means any pipeline, equipment, facility, or building used in the transportation of oil or gas during oil or gas production or gathering operations.
- (38) "Good Engineering Practice", "Good Engineering Standards", and "Nationally Recognized Standard" means in accordance with standards developed by nationally recognized laboratories or associations such as: Underwriters Laboratory (U.L.), American National Standards Institute (ANSI), American Petroleum Institute (API), American Society for Testing and Materials (ASTM), American Society of Mechanical Engineers (ASME), Steel Tank Institute (STI), National Association of Corrosion Engineers (NACE), or the National Fire Protection Association (NFPA).
- (39) "Gradient" is the slope of the water table in the direction of groundwater flow. This slope is typically expressed as a unit change in water table elevation per unit horizontal distance (e.g. ft/ft).
- (40) "Hazardous substance UST system" means an UST system that contains a hazardous substance defined in section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (but not including any substance regulated as a hazardous waste under subtitle C) or any mixture of such substances and petroleum, and which is not a petroleum UST system.
- (41) "Heating oil" means petroleum that is No. 1, No. 2, No. 4--light, No. 4--heavy, No. 5--light, No. 5--heavy, and No. 6 technical grades of fuel oil; other residual fuel oils (including Navy Special Fuel Oil and Bunker C); and other fuels when used as substitutes for one of these fuel oils. Heating oil is typically used in the operation of heating equipment, boilers, or furnaces.
- (42) "Hydraulic conductivity" is the coefficient of proportionality describing the rate at which water can move through a permeable medium.
- (43) "Hydraulic lift tank" means a tank holding hydraulic fluid for a closed-loop mechanical system that uses compressed air or hydraulic fluid to operate lifts, elevators, and other similar devices.
- (43a) "Imminent threat to human health or safety or the environment" means a condition that creates a substantial probability of harm, when the probability and potential extent of harm make it reasonably necessary to take immediate action to prevent, reduce, or mitigate the actual or potential damages to human health or safety or the environment.
- (44) "Industrial property" is property currently zoned industrial by the local zoning authority.
- (45) "Infiltration rate" is the volume of water traveling through the unsaturated zone and reaching groundwater per unit time.
- (45a) "Installation of a New Motor Fuel Dispenser System" means the installation of a new motor fuel dispenser and the equipment necessary to connect the dispenser to the UST system. It does not mean the installation of a motor fuel dispenser installed separately from the equipment needed to connect the dispenser to the UST system. For purposes of these rules, the equipment necessary to connect the motor fuel dispenser to the UST system may include check valves, shear valves, unburied risers or flexible connectors, or other transitional components that are beneath the dispenser and connect the dispenser to the underground piping.
- (46) "Lens", as referred to in the Tier 2 model, is a horizontal unit of soil which can be assigned different soil properties (e.g. hydraulic conductivity and moisture content), and which is located between a petroleum vapor source and the ground surface or a building. The lens is typically used to estimate volatile chemical diffusion rates when there are units with variable moisture content above a vapor source.
- (47) "Liquid trap" means sumps, well cellars, and other traps used in association with oil and gas

production, gathering, and extraction operations (including gas production plants), for the purpose of collecting oil, water, and other liquids. These liquid traps may temporarily collect liquids for subsequent disposition or reinjection into a production or pipeline stream, or may collect and separate liquids from a gas stream.

- (48) "Marine Service Station" is that portion of a property where liquids used as fuels are stored and dispensed from fixed equipment on shore, piers, wharves, or floating docks into the fuel tanks of self-propelled craft, including all facilities used in connection therewith.
- (49) "Media" are intervening substances through which something is transmitted or carried (e.g. soil, water, or air).
- (50) "Mortgagee" refers to a mortgagee or the holder of an evidence of debt secured by a mortgage or deed of trust.
- (51) "Motor fuel" means petroleum or a petroleum-based substance that is motor gasoline, aviation gasoline, No. 1 or No. 2 diesel fuel, fuel products as defined in C.R.S. § 8-20.5-101(6), or any grade of gasohol, and is typically used in the operation of a motor engine.
- (51a) "Motor fuel dispensing facility" means that portion of a property where motor fuels are stored and dispensed from fixed equipment into the fuel tanks of motor vehicles or marine craft or into approved containers, including all equipment used in connection therewith.
 - (a) "Fleet vehicle motor fuel dispensing facility" means a motor fuel dispensing facility at a commercial, industrial, governmental, or manufacturing property where motor fuels are dispensed into the fuel tanks of motor vehicles that are used in connection with the business or operation of that property by persons within the employ of such business or operation.
- (52) "New UST" means an UST system that will be used to contain an accumulation of regulated substances and for which installation commenced on or after December 22, 1988 (see also "Existing Tank.")
- (53) "Noncommercial purposes" with respect to motor fuel at farms and residences means not for resale.
- (54) "Operational life" refers to the period beginning when installation of the tank system has commenced until the time the tank system is properly closed.
- (55) "Out of Service" means that the tank is not being operated in accordance with its intended purpose.
- (56) "Overfill" is a release that occurs when a tank is filled beyond its capacity, resulting in a discharge of the regulated substance to the environment.
- (57) "Owner(s)/operator(s)" means that the task to which this phrase is attached may be performed by either the owner or the operator. If neither the owner nor the operator performs the task, both shall be in violation of these regulations. Duplication of the task is not required. This definition applies to all persons who meet the statutory definition of "owner" or "operator" other than orphaned or abandoned tank owners.
- (58) "Person" means an individual, trust, firm, joint stock company, federal agency, corporation, state, municipality, commission, political subdivision of a state, or any interstate body. "Person" also includes a consortium, a joint venture, a commercial entity, and the United States Government.
- (59) "Petroleum AST system" means an AST system that contains petroleum or a mixture of petroleum with de minimis quantities of other substances. Such systems include those containing motor

fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, and used oils.

- (60) "Petroleum UST system" means an UST system that contains petroleum or a mixture of petroleum with de minimis quantities of other regulated substances. Such systems include those containing motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.
- (61) "Pipe" or "Piping" means a hollow cylinder or tubular conduit that is constructed of non-earthen materials and in accordance with NFPA or other nationally recognized piping standards for petroleum storage tanks. Piping routinely contains and conveys regulated substances from the underground tank(s) to the dispenser(s) or other end-use equipment. Such piping includes any elbows, couplings, unions, valves, or other in-line fixtures that contain and convey regulated substances from the underground tank(s) to the dispenser(s). This definition does not include vent, vapor recovery, or fill lines not connected to remote fills.
- (62) "Pipeline facilities (including gathering lines)" are new and existing pipe rights-of-way and any associated equipment, facilities, or buildings.
- (63) "Point of Compliance" (POC) is a point or location some specified distance hydraulically downgradient of the activity being monitored for compliance.
- (64) "Point of Exposure" (POE) is the location at which a person or sensitive environment is assumed to be exposed to a chemical of concern. POEs for benzene, toluene, ethylbenzene and xylenes are: property boundaries, surficial soils, subsurface utilities, structures, groundwater wells, surface water, and sensitive environments. POEs for MTBE are: water supply wells that are used for human consumption and surface water features that are used for human consumption.
- (65) "Process or Processing" is an integrated sequence of operations. The sequence may be inclusive of both physical and chemical operations and may involve, but is not limited to, preparation, separation, purification, or change in state, energy content, or composition.
- (65a) "Product Deliverer" means any person who delivers or deposits product into an UST. This term may include major oil companies, jobbers, petroleum transportation companies, or other product delivery entities.
- (65b) "Protected tank" is an atmospheric AST with integral secondary containment and thermal insulation that has been evaluated for resistance to physical damage and for limiting the heat transferred to the primary tank when exposed to a hydrocarbon pool fire and is listed in accordance ANSI/UL 2085 or an equivalent test procedure, and meets the additional requirements of NFPA.
- (65c) "Red Tag" means a tag, device, or mechanism on the tank's fill pipes that clearly identifies an UST as ineligible for product delivery. The tag or device is easily visible to the product deliverer and clearly states and conveys that it is unlawful to deliver to, deposit into, or accept product into the ineligible UST. The tag, device, or mechanism is generally tamper resistant.
- (66) "Reimbursement" means an assignment of money from the Fund to reimburse a person for approved costs incurred in remediating petroleum contamination.
- (67) "Regulated substance" for UST systems has the same meaning as in C.R.S. § 8-20.5-101(13). "Regulated substance" for AST systems means regulated fuel products as defined in C.R.S. § 8-20.5-101(6), including alternative fuels and renewable fuels as defined in CRS 8-20.5-101(2.5) and (14.5).
- (68) "Release detection" means determining whether a release of a regulated substance has occurred from the UST or AST system into the environment or into the interstitial space between the UST

or AST system and its secondary barrier or secondary containment around it.

(69) "Remediation" means actions taken to reduce concentrations of chemicals of concern (including natural attenuation), or prevent migration of chemicals of concern to POEs. Remediation shall be implemented for sites where no further action is not appropriate.

(70) "Repair" means to restore a tank or system component that has caused a release of product from the UST or AST system.

(70a) "Replace" This term applies to underground storage tanks and piping.

For underground storage tanks – Replace means to remove an existing underground tank and install a new underground tank.

For piping – Replace means to remove and put back in any amount of piping connected to an UST system. The secondary containment requirements for replaced piping is triggered when a minimum of 50% or 50 feet (whichever is less) of the total length of piping connected to a single underground tank is replaced. The total length of piping connected to a single underground tank includes the length piping from that tank to the farthest connected dispenser, including piping runs between dispensers connected to that tank.

(71) "Residential property" is property currently zoned residential by the local zoning authority.

(72) "Residential tank" is a tank located on property used primarily for dwelling purposes.

(73) "Residual water content" is the fraction of water remaining in soil after gravity drainage.

(74) "Risk-based screening level(s)" (RBSLs) are the risk-based corrective action target levels for chemical(s) of concern.

(75) "Saturated zone" is the subsurface zone which occurs below the water table. The soil pores are filled with water, and the moisture content equals the porosity.

(76) "Secondary Containment" This term applies to AST and UST Systems

For AST systems secondary containment is containment which prevents any release from an AST system from reaching land or waters outside of the containment area.

For UST systems secondary containment is a release prevention and release detection system for an underground tank and/or piping. The release prevention part of secondary containment is an underground tank and/or piping having an inner and outer barrier. Between these two barriers is a space for monitoring. The release detection part of secondary containment is a method of monitoring the space between the inner and outer barriers for a leak or release of regulated substances from the underground tank and/or piping (called interstitial monitoring). Interstitial monitoring must meet the release detection requirements in 7 C.C.R. 1101-14 §2-4-4 (g).

(77) "Secondary Containment Tank" is a shop fabricated AST which includes a steel or reinforced concrete secondary shell that will provide containment of the entire capacity of the inner tank in case of leaks or ruptures of the inner tank and having means for monitoring the interstitial space for a leak.

(78) "Sensitive Environment" is an area of particular environmental value where regulated petroleum contamination could pose a greater threat than in other less sensitive areas. Sensitive environments include: critical habitat for federally endangered or threatened species, national parks, national monuments, national recreation areas, national wildlife refuges; national forests,

campgrounds; recreational areas, game management areas, wildlife management areas, designated federal wilderness areas, wetlands, wild and scenic rivers, state parks, state wildlife refuges, habitat designated for state endangered species, fishery resources, state designated natural areas, wellhead protection areas, classified groundwater areas, and county or municipal parks.

- (79) "Septic tank" is a water-tight covered receptacle designed to receive or process, through liquid separation or biological digestion, the sewage discharged from a building sewer where the effluent from such receptacle is distributed for disposal through the soil and settled solids and scum from the tank are pumped out periodically and hauled to a treatment facility.
- (80) "Service Station" is a place where motor fuels are sold to the general public for cash or credit and are dispensed into the fuel tanks of motor vehicles or approved containers. This does not include unattended cardlock system facilities at bulk plants which only use proprietary cards specific to the cardlock system in question.
- (80a) "Significant Violation" means the failure of a person to comply with any requirement of Article 2 of 7 C.C.R. 1101-14, which includes any of the following:
- (a) A violation that is causing, or threatens to cause a liquid release of a regulated substance from an UST system, including, but not limited to: the failure of any required overfill prevention system, where the failure is causing or threatens to cause a release; or the failure of a required spill containment structure, where the failure is causing or threatens to cause a release to the environment due to a spill or an overfill.
 - (b) A violation that impairs the ability of an UST system to detect a liquid leak or contain a liquid release of a regulated substance in the manner required by law, including, but not limited to: tampering with leak detection equipment so that the equipment is no longer capable of detecting a leak at the earliest possible opportunity.
 - (c) A chronic violation or a violation that is committed by a recalcitrant violator.
- (81) "Site classification" is a qualitative evaluation of a site based on known or readily available information to identify the need for interim remedial actions and further information gathering.
- (82) "Site-specific target level(s)" (SSTLs) are the risked-based remedial action target levels for chemical(s) of concern developed for a particular site under the Tier 2 evaluation.
- (83) "Soil bulk density" is the dry weight of soil per unit volume.
- (84) "Source concentration" is the highest concentration, in soil and/or groundwater and /or vapor, of the chemicals of concern.
- (85) "Storm-water or wastewater collection system" means piping, pumps, conduits, and any other equipment necessary to collect and transport the flow of surface water run-off resulting from precipitation, or domestic, commercial, or industrial wastewater to and from retention areas or any areas where treatment is designated to occur. The collection of storm water and wastewater does not include treatment except where incidental to conveyance.
- (86) "Subsurface soils" are all soils located at a depth of greater than one meter below the ground surface.
- (87) "Surface impoundment" is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials) that is not an injection well.

- (88) "Surficial soils" are all soils located from the ground surface to a depth of one meter below ground surface.
- (89) "Temporary closure" means the time between when a tank is out of service and is permanently closed.
- (90) "Tier 1 evaluation" is a risk-based analysis which includes a comparison of the highest levels of contamination remaining on the site with the Tier 1 RBSLs. Each completed exposure pathway must be evaluated. The completed exposure pathway with the lowest RBSLs for a given media will determine the cleanup goals for the site.
- (91) "Tier 1A evaluation" is a risk-based analysis to develop site-specific risk-based screening levels (SS-RBSLs) for complete exposure pathways utilizing the Tier 1 models and incorporating data collected from the site. The completed exposure pathway with the lowest SS-RBSLs will determine the cleanup goals for a given media at the site.
- (92) "Tier 2 evaluation" is a risk-based analysis to develop site-specific target levels (SSTLs) for complete exposure pathways utilizing saturated and unsaturated zone models such as API DSS VADSAT or BP RISC. Acceptable models for the unsaturated zone will be analytical, transient, capable of modeling one dimensional dispersion and degradation, and calculating effective solubility for individual constituents in a mixture. Acceptable models for the saturated zone will be analytical or semi analytical, transient, and simulate retardation, degradation, one dimensional flow and three dimensional dispersion. The Tier 2 evaluation incorporates data collected from the site. The completed exposure pathway with the lowest SSTLs for a given media will determine the cleanup goals for the site.
- (93) "Total porosity" is the volume of pore spaces divided by the total volume of soil.
- (93a) "Transportation-related facilities" as used in these regulations means facilities where all ASTs with capacities from 660 to 39,999 gallons are regulated by the USDOT.
- (94) "Unattended Cardlock System" is a vehicle fueling facility, which uses a mechanical or electronic method of tracking fuel deliveries using an identification card.
- (95) "Underground area" means an underground room, such as a basement, cellar, shaft or vault, providing enough space for physical inspection of the exterior of the tank situated on or above the surface of the floor.
- (95a) "Under-Dispenser Containment" (UDC) means containment underneath a dispenser that will prevent leaks from the dispenser from reaching soil or groundwater. Such containment must:
- Be liquid-tight on its sides, bottom, and at any penetrations;
 - Be compatible with the substance conveyed by the piping; and
 - Allow for visual inspection and access to the components in the containment system and/or be monitored.
- (96) "Unsaturated zone" is a subsurface zone, which occurs above the water table. The soil pores are only partially filled with water, and the moisture content is less than the porosity.
- (97) "Upgrade" means the addition or retrofit of some systems (such as cathodic protection, lining, modification of the system piping, or spill and overfill controls, etc.) to improve the ability of an UST or AST system to prevent the release of product.

- (98) "UST" means an underground storage tank which is not permanently closed.
- (99) "UST system" means an UST, connected underground piping, underground ancillary equipment, and containment system, if any.
- (100) "Van Genuchten's N" is a parameter, used in the Tier 2 models, to estimate long-term average moisture content in the unsaturated zone.
- (101) "Vault" means an enclosure (other than a secondary containment tank), either above or below-grade, that completely encloses an AST.
- (102) "Wastewater treatment tank" means a tank that is designed to receive and treat an influent wastewater through physical, chemical, or biological methods.

1-6 Codes, Documents or Standards incorporated by reference.

The following codes, documents or standards are incorporated by reference:

American National Standards Institute Standard B31, American National Standard Code for Pressure Piping, published October 14, 2003.

American National Standards Institute Standard B31.3, Petroleum Refinery Piping, published February 14, 2002.

American National Standards Institute Standard B31.4, Liquid Petroleum Transportation Piping System, published August 5, 2002.

American Petroleum Institute Recommended Practice 1604, Removal and Disposal of Used Underground Petroleum Storage Tanks, published November 2001.

American Petroleum Institute Publication 1615, Installation of Underground Petroleum Storage Systems, published November 2001.

American Petroleum Institute Publication 1621, Recommended Practice for Bulk Liquid Stock Control at Retail Outlets, published 1993.

American Petroleum Institute Publication 1626, Storing and Handling Ethanol and Gasoline-Ethanol Blends at Distribution Terminals and Service Stations, published January 18, 2000.

American Petroleum Institute Publication 1627, Storage and Handling of Gasoline-Methanol/Co-solvent Blends at Distribution Terminals and Service Stations, published January 18, 2000.

American Petroleum Institute Publication 1631, Recommended Practice for the Interior Lining of Existing Steel Underground Storage Tanks, published June 2001.

American Petroleum Institute Publication 1632, Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems, published June 2002.

American Petroleum Institute Publication 2015, Cleaning Petroleum Storage Tanks, published August 2001.

American Petroleum Institute Publication 2015A, Lead Hazard Associated with Tank Entry, published 1982.

American Petroleum Institute Publication 2015B, Cleaning Open Top and Floating Roof Tanks, published

August, 1981.

American Petroleum Institute Publication 2200, Repairing Crude Oil, Liquefied Petroleum Gas, and Product Pipelines, published May 1999.

American Society of Testing and Materials Standard D5, Test for Penetration for Bituminous Materials, published June 1, 2005.

American Society of Testing and Materials Standard D4021-86, Standard Specification for Glass-Fiber-Reinforced Polyester Underground Petroleum Storage Tanks, published June 15, 1992.

Association for Composite Tanks ACT-100, Specification for the Fabrication of FRP Clad Underground Storage Tanks, published 1989.

EPA Form 50 FR 46602, published November 8, 1985

Hazardous and Solid Waste Amendments of 1984, Public Law 98-616

National Association of Corrosion Engineers Standard RP-01-69, Control of External Corrosion on Submerged Metallic Piping Systems, published April 11, 2002.

National Association of Corrosion Engineers Standard RP-02-85, Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems, published April 6, 2002.

National Fire Protection Association Publication NFPA 30, Flammable and Combustible Liquids Code, 2008 Edition.

National Fire Protection Association Publication NFPA 30A, Code for Motor Fuel Dispensing Facilities and Repair Garages, 2008 Edition.

National Fire Protection Association Publication NFPA 70, National Electrical Code, published August 18, 2005.

National Fire Protection Association Publication NFPA 80, Standard for Fire Doors and Fire Windows, published 1999.

National Fire Protection Association Publication NFPA 90A, Standard for the Installation of Air Conditioning and Ventilating Systems, published January 2, 2003.

National Fire Protection Association Publication NFPA 91, Standard for the Installation of Blower and Exhaust Systems for Dust, Stock, and Vapor Removal or Conveying, published August 4, 2004.

National Fire Protection Association Publication NFPA 385, Standard for Tank Vehicles for Flammable and Combustible Liquids, published 1990.

National Institute for Occupational Safety and Health, Criteria for a Recommended Standard, Working in Confined Spaces, DHHS (NIOSH) Publication No.80-106, December 1979.

National Leak Prevention Association Standard 631, Spill Prevention, Minimum 10 Year Life Extension of Existing Steel Underground Tanks by Lining Without the Addition of Cathodic Protection, published 1991.

Petroleum Equipment Institute Publication RP100, Recommended Practices for Installation of Underground Liquid Storage Systems, published 2005.

Steel Tank Institute, Specification for STI-P3 System of External Corrosion Protection of Underground

Steel Storage Tanks, published July 2005.

Underwriters Laboratories Subject 971, UL Listed Non-Metal Pipe, published January 2, 2004.

Underwriters Laboratories Standard 58, Standard for Steel Underground Tanks for Flammable and Combustible Liquids, published July 27, 1998.

Underwriters Laboratories Standard 567, Pipe Connectors for Flammable and Combustible and LP Gas, published October 22, 2004.

Underwriters Laboratories Standard 1316, Standard for Glass- Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products, published April 2, 1996.

Underwriters Laboratories Standard 1746, Corrosion Protection Systems for Underground Storage Tanks, published February 8, 2002.

Underwriters Laboratories of Canada CAN4-S603-M85, Standard for Steel Underground Tanks for Flammable and Combustible Liquids, published 2000.

Underwriters Laboratories of Canada CAN4-S603.1-M85, Standard for Galvanic Corrosion Protection Systems for Underground Tanks for Flammable and Combustible Liquids, November 2003.

Underwriter's Laboratories of Canada CAN4-S615-M83, Standard for Reinforced Plastic Underground Tanks for Petroleum Products, published 1998.

Underwriters Laboratories of Canada CAN4-S631-M84, Isolating Bushings for Steel Underground Tanks Protected with Coatings and Galvanic Systems, published 1998.

Underwriters Laboratories of Canada CAN4-S633-M81, Flexible Underground Hose Connectors, published August 1999.

Underwriters Laboratories of Canada Guide ULC-107, Glass Fiber Reinforced Plastic Pipe and Fittings for Flammable Liquids, published 1993.

1-7 Inspection of incorporated codes.

Interested parties may inspect the referenced incorporated materials by contacting the Program Manager, Oil Inspection Section, 633 17th Street, Suite 500, Denver, CO 80202 and/or The State Depository Libraries.

1-8 Later amendments not included.

This rule does not include later amendments to or editions of the incorporated material.

ARTICLE 2 UNDERGROUND STORAGE TANKS Eff. 08/01/2008

Section 2-1 UST Program Scope and Interim Prohibition.

2-1-1 Applicability.

(a) These UST regulations apply to all owners/operators of an UST system except as otherwise provided in paragraphs (b), (c), and (d) of this section. Any UST system listed in paragraph (c) of this section must meet the requirements of section 2-1-2.

(b) The following UST systems are excluded from these regulations:

- (1) Any UST system holding hazardous wastes listed or identified under Subtitle C of the Solid Waste Disposal Act, or a mixture of such hazardous waste and other regulated substances;
 - (2) Any wastewater treatment tank system that is part of a wastewater treatment facility regulated under Section 402 or 307(b) of the Clean Water Act;
 - (3) Equipment or machinery that contains regulated substances for operational purposes such as hydraulic lift tanks and electrical equipment tanks;
 - (4) Any UST system whose capacity is 110 gallons or less;
 - (5) Any UST system that contains a de minimis concentration of regulated substances; and
 - (6) Any emergency spill or overflow containment UST system that is expeditiously emptied after use.
- (c) Deferrals. The following types of UST systems are deferred from all parts of these regulations except section 2-1-2 and Article 5:
- (1) Wastewater treatment tank systems;
 - (2) Any UST systems containing radioactive material that are regulated under the Atomic Energy Act of 1954 (42 U.S.C. § 2011 and following);
 - (3) Any UST system that is part of an emergency generator system at nuclear power generation facilities regulated by the Nuclear Regulatory Commission under 10 C.F.R. Part 50, Appendix A;
 - (4) Airport hydrant fuel distribution systems; and
 - (5) UST systems with field-constructed tanks.
- (d) Deferrals. Section 2-4 (the release detection requirements) does not apply to any UST system that stores fuel solely for use by emergency power generators.
- (e) Requirements For Secondary Containment. Secondary containment requirements apply to new or replaced underground tanks and piping regulated under Colorado Revised Statutes §8-20.5-101 except those excluded by regulation at 7 C.C.R. 1101-14 §2-1-1(b) and those deferred by regulation at 7 C.C.R. 1101-14 §2-1-1(c). New or replaced underground tanks and piping used for emergency power generation [deferred from release detection by 7 C.C.R. 1101-14 §2-1-1 (d)] must meet these requirements. These requirements also apply to new motor fuel dispenser systems connected to UST systems.

2-1-2 Interim Prohibition for deferred UST systems.

- (a) No person may install an UST system listed in section 2-1-1(c) for the purpose of storing regulated substances unless the UST system (whether of single or double-wall construction):
- (1) Will prevent releases due to corrosion or structural failure for the operational life of the UST system;
 - (2) Is cathodically protected against corrosion, constructed of non-corrodible material, steel clad with a non-corrodible material, or designed in a manner to prevent the release or threatened release of any stored substance; and

- (3) Is constructed or lined with material that is compatible with the stored substance.
- (b) Notwithstanding paragraph (a) of this section, an UST system without corrosion protection may be installed at a site that is determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life. Owners/operators must maintain records that demonstrate compliance with the requirements of this paragraph for the remaining life of the system.

[Note: The National Association of Corrosion Engineers Standard RP-02-85, "Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems," may be used as guidance for complying with paragraph (b) of this section.]

2-1-3 Determination of Ownership and Use.

An UST which was in use before December 22, 1988 and which was not closed in accordance with national fire codes in effect at the time is considered to be in use until permanently closed in accordance with these regulations. An UST in use on or after December 22, 1988 is considered to be in use until permanently closed in accordance with these regulations.

Section 2-2 UST Design, Construction, Installation, and Notification.

2-2-1 Application for UST Permit.

An application must be submitted to the Director for approval before beginning construction:

- (a) On any new UST system used to store regulated substances.
- (b) On an UST system that is being upgraded to the standards described in these regulations or applicable statutes.

2-2-2 Construction Requirements.

No person may install, or cause to be installed, a new or replacement UST system or facility until:

- (a) An application, as described in section 2-2-3 has been approved by the Director;
- (b) The installation plan has been reported to the local Fire Department having jurisdiction; and
- (c) The application/inspection fee described in section 2-2-5 has been paid.

2-2-3 Application Requirements.

The application required by section 2-2-1 must include:

- (a) Site Plan - A dimensioned drawing of the facility, showing the name and address of the facility, the location of existing tanks and piping that will remain at the facility, as well as new tanks and piping proposed in the application, the location of dispensers and buildings at the facility, the location of property lines, the location and names of streets adjacent to the facility; and
- (b) A written application containing information about the proposed construction as follows:
 - 1. Method to be used to prevent releases of regulated substances due to corrosion of the UST system; including piping and any swing joints or flexible connectors that will routinely contain regulated substances;

2. Method to be used to prevent overfilling the UST;
3. Method to be used to prevent spills during transfer operations;
4. Leak detection method that will be used;
5. Type of pump that will be used for dispensing the UST contents;
6. Type of in-line leak detector to be used, if pressurized piping system is to be used;
7. Size and type of existing tanks and pipelines that will continue in use at the facility;
8. Size and type of tanks and pipelines to be installed;
9. Depth of burial of the tanks;
10. Type of backfill material to be used;
11. Surface coverage of the tanks in traffic areas;
12. Method to be used to prevent flotation of the tank;
13. Regulated substances to be stored at the facility;
14. Name and address of the facility;
15. Name and address of the operator of the facility;
16. Name and address of the owner of the UST system; and
17. Type of Vapor Recovery System to be used at the facility.

The name and address of the installer, the name of the tank manufacturer, and the tank serial numbers should be included if known at the time of application submission; otherwise they must be supplied when the installation is inspected.

The Director will make available an application form to facilitate submission of the required information.

2-2-4 Inspection of the Facility during Construction.

The Director will make an inspection of the UST system before completion of construction activities to verify that the construction is proceeding according to plan. The owner/operator shall provide the Director with a 72 hour notice prior to the time of inspection. This inspection will be as detailed as practicable; but does not exempt the owner/operator from certifying that the installation was made according to all the technical requirements of these regulations.

2-2-5 Plan Review and Installation Inspection Fee.

Each owner/operator must remit a fee of one hundred fifty (\$150) dollars to the Director to cover the costs of the site plan review and installation inspection, for each UST installation or upgrade construction plan submitted.

2-2-6 Denial, Revocation, or Modification of Permit.

- (a) An UST permit application may be denied if the UST installation or operation is not in conformance

with these regulations; or is not in conformance with both Code 30 and Code 30-A of the National Fire Protection Association.

- (b) An UST permit may be denied if the permit application is not complete or is determined to be inaccurate.
- (c) An UST permit may be revoked if the UST installation or operation is not in conformance with these regulations or is not in conformance with either Code 30 or Code 30-A of the National Fire Protection Association. An UST permit is automatically revoked six months after the date of issue unless the Director grants an extension in writing.
- (d) Six months or later after an UST permit is issued, the permit may be modified by subsequent statutory or regulatory changes.

2-2-7 Access to premises and records of UST facilities.

Any duly authorized agent or employee of the Director shall have authority to enter in or upon the premises of any facility that contains an UST system, containing a regulated substance, for the purpose of verifying that such UST system and its required records are in compliance with these regulations.

2-2-8 Performance standards for new and replaced UST systems.

In order to prevent releases due to structural failure, corrosion, or spills and overfills for as long as the UST system is used to store regulated substances, all owners/operators of new and replaced UST systems must meet the following requirements.

- (a) Tanks. Secondary containment and interstitial monitoring is required for all new underground tanks installations. If an existing underground tank is replaced, the secondary containment and interstitial monitoring requirements apply only to the replaced underground tank. The secondary containment requirements do not apply to repairs meant to restore an underground tank to operating condition. Each tank must be properly designed and constructed, and any portion underground that routinely contains product must be protected from corrosion, in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory as specified below:

- (1) The tank is constructed of fiberglass-reinforced plastic; or

[Note: The following industry codes may be used to comply with paragraph (a)(1) of this section: Underwriters Laboratories Standard 1316, "Standard for Glass- Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products"; Underwriter's Laboratories of Canada CAN4-S615-M83, "Standard for Reinforced Plastic Underground Tanks for Petroleum Products"; or American Society of Testing and Materials Standard D4021-86, "Standard Specification for Glass-Fiber-Reinforced Polyester Underground Petroleum Storage Tanks."]

- (2) The tank is constructed of steel and cathodically protected in the following manner:

- (i) The tank is coated with a suitable dielectric material;
- (ii) Field-installed cathodic protection systems are designed by a corrosion expert;
- (iii) Impressed current systems are designed to allow determination of current operating status as required in section 2-3-2(c); and
- (iv) Cathodic protection systems are operated and maintained in accordance with section

2-3-2; or

[Note: The following codes and standards may be used to comply with paragraph (a)(2) of this section:

- (A) Steel Tank Institute "Specification for STI-P3 System of External Corrosion Protection of Underground Steel Storage Tanks";
- (B) Underwriters Laboratories Standard 1746, "Corrosion Protection Systems for Underground Storage Tanks";
- (C) Underwriters Laboratories of Canada CAN4-S603-M85, "Standard for Steel Underground Tanks for Flammable and Combustible Liquids," and CAN4-G03.1-M85, "Standard for Galvanic Corrosion Protection Systems for Underground Tanks for Flammable and Combustible Liquids," and CAN4-S631-M84, "Isolating Bushings for Steel Underground Tanks Protected with Coatings and Galvanic Systems"; or
- (D) National Association of Corrosion Engineers Standard RP-02-85, "Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems," and Underwriters Laboratories Standard 58, "Standard for Steel Underground Tanks for Flammable and Combustible Liquids."]

(3) The tank is constructed of a steel-fiberglass-reinforced-plastic composite; or

[Note: The following industry codes may be used to comply with paragraph (a)(3) of this section: Underwriters Laboratories Standard 1746, "Corrosion Protection Systems for Underground Storage Tanks," or the Association for Composite Tanks ACT-100, "Specification for the Fabrication of FRP Clad Underground Storage Tanks."]

(4) The tank is constructed of metal without additional corrosion protection measures provided that:

- (i) The tank is installed at a site that is determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life; and
- (ii) Owners/operators maintain records that demonstrate compliance with the requirements of paragraph (a)(4)(i) of this section for the remaining life of the tank; or

(5) The tank construction and corrosion protection are determined by the Director to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health and the environment than paragraphs (a)(1) through (4) of this section.

(b) Piping. Secondary containment and interstitial monitoring is required for all new piping installations, including piping to remote fills. For replaced piping, secondary containment and interstitial monitoring is required for the total length of piping connected to a single UST whenever more than 50% or 50 feet (whichever is less) of the piping connected to that tank is replaced. Installation of new or replaced piping will require the installation of containment sumps (UDC, STP or transition) on both ends of the secondarily contained pipe for interstitial monitoring. These secondary containment requirements do not apply to repairs meant to restore piping to operating condition. Solely for purposes of determining when secondary containment is required by these

rules, a repair is any activity that does not meet the definition of replace. These secondary containment requirements also do not apply to vent piping, vapor recovery piping, and fill pipes not connected to remote fills.

The piping that routinely contains regulated substances and is in contact with the ground must be properly designed, constructed, and protected from corrosion in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory as specified below:

(1) The piping is constructed of fiberglass-reinforced plastic; or

[Note: The following codes and standards may be used to comply with paragraph (b)(1) of this section:

- (A) Underwriters Laboratories Subject 971, "UL Listed Non-Metal Pipe";
- (B) Underwriters Laboratories Standard 567, "Pipe Connectors for Flammable and Combustible and LP Gas";
- (C) Underwriters Laboratories of Canada Guide ULC-107, "Glass Fiber Reinforced Plastic Pipe and Fittings for Flammable Liquids"; and
- (D) Underwriters Laboratories of Canada Standard CAN 4-S633-M81, "Flexible Underground Hose Connectors."]

(2) The piping is constructed of steel and cathodically protected in the following manner:

- (i) The piping is coated with a suitable dielectric material;
- (ii) Field-installed cathodic protection systems are designed by a corrosion expert;
- (iii) Impressed current systems are designed to allow determination of current operating status as required in section 2-3-2(c); and
- (iv) Cathodic protection systems are operated and maintained in accordance with section 2-3-2; or

[Note: The following codes and standards may be used to comply with paragraph (b)(2) of this section:

- (A) National Fire Protection Association Standard 30, "Flammable and Combustible Liquids Code";
- (B) American Petroleum Institute Publication 1615, "Installation of Underground Petroleum Storage Systems";
- (C) American Petroleum Institute Publication 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems"; and
- (D) National Association of Corrosion Engineers Standard RP-01-69, "Control of External Corrosion on Submerged Metallic Piping Systems."]

(3) The piping is constructed of metal without additional corrosion protection measures provided that:

- (i) The piping is installed at a site that is determined by a corrosion expert to not be corrosive enough to cause it to have a release due to corrosion during its operating life; and
- (ii) Owners/operators maintain records that demonstrate compliance with the requirements of paragraph (b)(3)(i) of this section for the remaining life of the piping; or

[Note: National Fire Protection Association Standard 30, "Flammable and Combustible Liquids Code"; and National Association of Corrosion Engineers Standard RP-01-69, "Control of External Corrosion on Submerged Metallic Piping Systems," may be used to comply with paragraph (b)(3) of this section.]

- (4) The piping construction and corrosion protection are determined by the Director to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health and the environment than the requirements in paragraphs (b)(1) through (3) of this section.

(c) Spill and overflow prevention equipment.

- (1) Except as provided in paragraph (c)(2) of this section, to prevent spilling and overflowing associated with product transfer to the UST system, owners/operators must use the following spill and overflow prevention equipment:

- (i) Spill prevention equipment that will prevent release of product to the environment when the transfer hose is detached from the fill pipe (for example, a spill catchment basin); and

- (ii) Overflow prevention equipment that will:

- (A) Automatically shut off flow into the tank when the tank is more than 95 percent full; or

- (B) Alert the transfer operator when the tank is more than 90 percent full by restricting the flow into the tank or triggering a high-level alarm.

- (2) Owners/operators are not required to use the spill and overflow prevention equipment specified in paragraph (c)(1) of this section if:

- (i) Alternative equipment is used that is determined by the Director to be no less protective of human health and the environment than the equipment specified in paragraph (c)(1)(i) or (ii) of this section; or

- (ii) The UST system is filled by transfers of no more than 25 gallons at one time.

(d) Dispensers.

- (1) Under-dispenser containment shall be required for all new motor fuel dispenser systems. A motor fuel dispenser system is considered new when:

- (i) A dispenser is installed at a location where there previously was no dispenser (new UST system or new dispenser location at an existing UST system), or

- (ii) An existing dispenser is removed and replaced with another dispenser and the equipment used to connect the dispenser to the UST system is replaced at any

point below the fire valve. This equipment may include unburied flexible connectors or risers or other transitional components that are beneath the dispenser and connect the dispenser to the piping.

(iii) An existing dispenser is removed and replaced with another dispenser and the dispenser island has to be modified (break concrete) to install the dispenser.

(2) Under-dispenser containment shall not be required when an existing dispenser is removed and replaced with another dispenser that is not considered a new dispenser.

(e) Minimum Secondary Containment Requirements. At a minimum, secondary containment systems must be designed, constructed, and installed to:

(1) Contain regulated substances released from the tank system until they are detected and removed. To meet this requirement all secondary containment systems including containment sumps shall be tested for leaks at the time of installation and within 30 days of a year thereafter using a testing method listed by the National Workgroup on Leak Detection Evaluations (NWGLDE) or using alternate test methods approved by the Director.

(2) Prevent the release of regulated substances to the environment at any time during the operational life of the UST system. Routine testing of the secondary containment system is not required. However if free product is detected in a containment sump, the sump shall be tested at that time for leaks using a testing method listed by the NWGLDE or using alternate test methods approved by the Director.

(3) Be checked for evidence of a release at least every 30 days.

(4) Interstitial monitoring must meet the requirements of 7 C.C.R. 1101-14 §2-4-4 (g). If interstitial monitoring is the sole method of release detection for the UST system, sump sensors shall be installed and each sensor shall be tested for functionality by manual tripping on an annual basis.

(f) Installation. All tanks and piping must be properly installed in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory and in accordance with the manufacturer's instructions.

[Note: Tank and piping system installation practices and procedures described in the following codes may be used to comply with the requirements of paragraph (f) of this section:

(1) American Petroleum Institute Publication 1615, "Installation of Underground Petroleum Storage System"; or

(2) Petroleum Equipment Institute Publication RP100, "Recommended Practices for Installation of Underground Liquid Storage Systems"; or

(3) American National Standards Institute Standard B31.3, "Petroleum Refinery Piping," and American National Standards Institute Standard B31.4 "Liquid Petroleum Transportation Piping System."]

Effective January 1, 2009 all tanks and piping must be properly installed by an OPS certified installer. To obtain OPS certification, applicants shall submit a completed Installer Certification Application with a copy of a current certificate issued by the International Code Council (ICC) indicating he or she has passed the ICC UST Installation/Retrofitting examination, or installer certification documentation from other

states that have equivalent certification requirements.

- (g) Certification of installation. All owners/operators must demonstrate compliance with paragraph (f) of this section by providing a certification of compliance on the UST registration form in accordance with section 2-2-10.
- (h) Pursuant to C.R.S. § 8-20.5-204, the owner/operator is required to notify the Director and receive approval by the Director of the installation.

2-2-9 Upgrading of existing UST systems.

- (a) Alternatives allowed. Not later than December 22, 1998, all existing UST systems must comply with one of the following:
 - (1) New UST system performance standards under section 2-2-8; or
 - (2) Upgrading requirements in (b) through (d) of this section; or
 - (3) Closure requirements under section 2-5 of these regulations, including applicable requirements for corrective action under Article 5.
- (b) Tank upgrading requirements. Steel tanks must be upgraded to meet one of the following requirements in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory:
 - (1) Internal lining. A tank may be upgraded by internal lining if:
 - (i) The lining is installed in accordance with the requirements of section 2-3-4, and
 - (ii) Within 10 years after lining, and every 5 years thereafter, the lined tank is internally inspected and found to be structurally sound with the lining still performing in accordance with original design specifications.
 - (2) Cathodic protection. A tank may be upgraded by cathodic protection if the cathodic protection system meets the requirements of section 2-2-8(a)(2)(ii), (iii), and (iv) and the integrity of the tank is ensured using one of the following methods:
 - (i) The tank is internally inspected and assessed to ensure that the tank is structurally sound and free of corrosion holes prior to installing the cathodic protection system; or
 - (ii) The tank has been installed for less than 10 years and is monitored monthly for releases in accordance with section 2-4-4(d) through (h); or
 - (iii) The tank has been installed for less than 10 years and is assessed for corrosion holes by conducting two (2) tightness tests that meet the requirements of section 2-4-4(c). The first tightness test must be conducted prior to installing the cathodic protection system. The second tightness test must be conducted between three (3) and six (6) months following the first operation of the cathodic protection system; or
 - (iv) The tank is assessed for corrosion holes by a method that is determined by the Director to prevent releases in a manner that is no less protective of human health and the environment than paragraphs (b)(2)(i) through (iii) of this section.

(3) Internal lining combined with cathodic protection. A tank may be upgraded by both internal lining and cathodic protection if:

(i) The lining is installed in accordance with the requirements of section 2-3-4; and

(ii) The cathodic protection system meets the requirements of section 2-2-8(a)(2)(ii), (iii), and (iv).

[Note: The following codes and standards may be used to comply with this section:

(A) American Petroleum Institute Publication 1631, "Recommended Practice for the Interior Lining of Existing Steel Underground Storage Tanks";

(B) National Leak Prevention Association Standard 631, "Spill Prevention, Minimum 10 Year Life Extension of Existing Steel Underground Tanks by Lining Without the Addition of Cathodic Protection";

(C) National Association of Corrosion Engineers Standard RP-02-85, "Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems"; and

(D) American Petroleum Institute Publication 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems."]

(c) Piping upgrading requirements. Metal piping that routinely contains regulated substances and is in contact with the ground must be cathodically protected in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory and must meet the requirements of section 2-2-8(b)(2)(ii), (iii), and (iv).

[Note: The codes and standards listed in the note following section 2-2-8(b)(2) may be used to comply with this requirement.]

(d) Spill and overflow prevention equipment. To prevent spilling and overflowing associated with product transfer to the UST system, all existing UST systems must comply with new UST system spill and overflow prevention equipment requirements specified in section 2-2-8(c).

2-2-10 Registration of UST Systems.

(a) Each owner/operator of an UST system must register each system with the Director within 30 days after the first day on which the system is actually used to contain a regulated substance. This registration must be renewed annually, on or before the calendar date of the initial registration, in each succeeding year after 1989. The owner/operator is required to pay a registration fee as set by statute for each tank registered.

(b) All UST systems and facilities must be registered on a form provided by the Director, regardless of use, size, or type of regulated substance stored therein; and regardless of whether the tanks and facilities are in service or out of service.

[Note: Owners/operators of UST systems that were in the ground on or after May 8, 1986, unless taken out of operation on or before January 1, 1974, were required to notify the Colorado Department of Health in accordance with the Hazardous and Solid Waste Amendments of 1984, Public Law 98-616, on a form published by EPA on November 8, 1985 (50 FR 46602) unless notice was given pursuant to section 103(c) of CERCLA. Owners/operators who have not complied with the notification requirements may use the registration form described in section 2-

2-10(b)]

- (c) Owners required to register tanks under paragraph (a) of this section must register each tank they own. Owners may register several tanks using one registration form, but owners who own tanks located at more than one place of operation must file a separate registration form for each separate place of operation.
- (d) Any time there is a change in operation, including upgrading of the UST system, changes in operation including a change of owner or operator, or completed closure of an UST system, the owner/operator is required to submit an updated registration form within 30 days.
- (e) Registration forms required to be submitted under paragraph (a) and (d) of this section must provide all of the required information for each tank.
- (f) All owners/operators of new UST systems must certify in the registration form, compliance with the following requirements:
 - (1) Installation of tanks and piping under section 2-2-8(f);
 - (2) Cathodic protection of steel tanks and piping under section 2-2-8(a) and (b);
 - (3) Financial responsibility under Article 6 of these regulations; and
 - (4) Release detection under sections 2-4-2 and 2-4-3.
- (g) All owners/operators of new UST systems must certify in the registration form that the method used to install the UST system complies with the requirements in section 2-2-8(g).
- (h) After July 1, 1989, any person who sells a tank intended to be used as an UST must notify the purchaser of such tank of the owner's registration obligations under paragraph (a) of this section.
- (i) The registration form supplied by the Director will meet the requirements of section 9002 of the federal Solid Waste Disposal Act as amended.
- (j) The required fee for UST registration is the amount required per tank per year as authorized by C.R.S. § 8-20.5-102; and the fee for the installation plan review and the installation inspection is set at \$150.00, as authorized by C.R.S. § 8-20.5-204, to cover the costs of administering this section.
- (k) Upon satisfaction of the registration requirements, the Director will issue an annual certificate of registration for each registered facility which shall be posted or maintained onsite, such that it is readily available for inspection by OPS inspectors or delivery personnel.

Section 2-3 General Operating Requirements.

2-3-1 Spill and overfill control.

- (a) Owners/operators must ensure that releases due to spilling or overfilling do not occur. The owner/operator must ensure that the volume available in the tank is greater than the volume of product to be transferred to the tank before the transfer is made and that the transfer operation is monitored constantly to prevent overfilling and spilling.

[Note: The transfer procedures described in National Fire Protection Association Publication 385 may be used to comply with paragraph (a) of this section. Further guidance on spill and overfill prevention appears in American Petroleum Institute Publication 1621, "Recommended Practice for Bulk Liquid Stock Control at Retail Outlets," and National Fire Protection Association Standard

30, "Flammable and Combustible Liquids Code."]

- (b) The owner/operator must report, investigate, and clean up any spills and overfills in accordance with section 4-4.

2-3-2 Operation and maintenance of corrosion protection.

All owners/operators of steel UST systems with corrosion protection must comply with the following requirements to ensure that releases due to corrosion are prevented for as long as the UST system is used to store regulated substances:

- (a) All corrosion protection systems must be operated and maintained to continuously provide corrosion protection to the metal components of that portion of the tank and piping that routinely contain regulated substances and are in contact with the ground.
- (b) All UST systems equipped with cathodic protection systems must be inspected for proper operation by a qualified cathodic protection tester in accordance with the following requirements:
 - (1) Frequency. All cathodic protection systems must be tested within 6 months of installation and at least every 3 years thereafter or according to another reasonable time frame established by the Director; and
 - (2) Inspection criteria. The criteria that are used to determine that cathodic protection is adequate as required by this section must be in accordance with a code of practice developed by a nationally recognized association.

[Note: National Association of Corrosion Engineers Standard RP-02-85, "Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems," may be used to comply with paragraph (b)(2) of this section.]

- (c) UST systems with impressed current cathodic protection systems must also be inspected every 60 days to ensure that the equipment is running properly.
- (d) For UST systems using cathodic protection, records of the operation of the cathodic protection must be maintained (in accordance with section 2-3-5) to demonstrate compliance with the performance standards in this section. These records must provide the following:
 - (1) The results of the last three inspections required in paragraph (c) of this section; and
 - (2) The results of testing from the last two inspections required in paragraph (b) of this section.

2-3-3 Compatibility.

Owners/operators must use an UST system made of or lined with materials that are compatible with the substance stored in the UST.

[Note: Owners/operators storing alcohol blends may use the following codes to comply with the requirements of this section:

- (A) American Petroleum Institute Publication 1626, "Storing and Handling Ethanol and Gasoline-Ethanol Blends at Distribution Terminals and Service Stations"; and
- (B) American Petroleum Institute Publication 1627, "Storage and Handling of Gasoline-Methanol/Cosolvent Blends at Distribution Terminals and Service Stations."]

2-3-4 Repairs allowed.

Owners/operators of UST systems must ensure that repairs will prevent releases due to structural failure or corrosion as long as the UST system is used to store regulated substances. The repairs must meet the following requirements:

- (a) Repairs to UST systems must be properly conducted in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory.

[Note: The following codes and standards may be used to comply with paragraph (a) of this section: National Fire Protection Association Standard 30, "Flammable and Combustible Liquids Code"; American Petroleum Institute Publication 2200, "Repairing Crude Oil, Liquefied Petroleum Gas, and Product Pipelines"; American Petroleum Institute Publication 1631, "Recommended Practice for the Interior Lining of Existing Steel Underground Storage Tanks"; and National Leak Prevention Association Standard 631, "Spill Prevention, Minimum 10 Year Life Extension of Existing Steel Underground Tanks by Lining Without the Addition of Cathodic Protection."]

- (b) Repairs to fiberglass-reinforced plastic tanks may be made by the manufacturer's authorized representatives or in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory.
- (c) Metal pipe sections and fittings that have released product as a result of corrosion or other damage must be replaced. Fiberglass pipes and fittings may be repaired in accordance with the manufacturer's specifications.
- (d) Repaired tanks and piping must be tightness tested in accordance with sections 2-4-4(c) and 2-4-5(b) within 30 days following the date of the completion of the repair unless:
 - (1) The repaired tank is internally inspected in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory; or
 - (2) The repaired portion of the UST system is monitored monthly for releases in accordance with a method specified in section 2-4-4(d) through (h); or
 - (3) Another test method is used that is determined by the Director to be no less protective of human health and the environment than those listed above.
- (e) Within 6 months following the repair of any cathodically protected UST system, the cathodic protection system must be tested in accordance with section 2-3-2(b) and (c) to ensure that it is operating properly.
- (f) UST system owners/operators must maintain records of each repair for the remaining operating life of the UST system that demonstrate compliance with the requirements of this section.

2-3-5 Reporting and record keeping.

Owners/operators of UST systems must cooperate fully with inspections, monitoring and testing conducted by the Director, as well as requests for document submission, testing, and monitoring by the owner/operator pursuant to section 9005 of Subtitle I of the Resource Conservation and Recovery Act, as amended.

- (a) Reporting. Owners/operators must submit the following information to the Director:
 - (1) Registration for all UST systems (§ 2-2-10), which includes certification of installation for new UST systems (§ 2-2-8(e));

- (2) Reports of all releases including suspected releases (§ 4-1), spills and overfills (§ 4-4), and confirmed releases (§ 5-2);
 - (3) Corrective actions planned or taken including initial abatement measures and initial site characterization (§ 5-2), and corrective action plans (§ 5-3); and
 - (4) A notification before temporary closure, permanent closure or change-in-service (§ 2-5-2).
 - (5) A notification before installation of a new dispenser.
- (b) Record keeping. Owners/operators must maintain the following information:
- (1) A corrosion expert's analysis of site corrosion potential if corrosion protection equipment is not used (§ 2-2-8(a)(4)and (b)(3)).
 - (2) Documentation of operation of corrosion protection equipment (§ 2-3-2);
 - (3) Documentation of UST system repairs (§ 2-3-4(f));
 - (4) Recent compliance with release detection requirements (§ 2-4-6); and
 - (5) Results of the site investigation conducted at permanent closure (§ 2-5-5).
- (c) Availability and Maintenance of Records. Owners/operators are required, upon request, to provide all records referenced in these regulations to the Director. Owners/operators must keep the required records either:
- (1) At the UST site and immediately available for inspection by the Director; or
 - (2) At a readily available alternative site so they can be sent to the Director upon request; or
 - (3) In the case of permanent closure records required under section 2-5-5, owners/operators are also provided with the additional alternative of mailing closure records to the Director if they cannot be kept at the site or an alternative site as indicated above.
- (d) Notwithstanding the above, for Fund reimbursement purposes, persons may be required to maintain the above or other records in accordance with Fund requirements.

Section 2-4 Release Detection.

2-4-1 General requirements for all UST systems.

- (a) Owners/operators of new and existing UST systems must provide a method, or combination of methods, of release detection that:
- (1) Can detect a release from any portion of the tank and the connected underground piping that routinely contains product;
 - (2) Is installed, calibrated, operated, and maintained in accordance with the manufacturer's instructions, including routine maintenance and service checks for operability or running condition; and
 - (3) Meets the performance requirements in sections 2-4-4 and 2-4-5, with any performance claims and their manner of determination described in writing by the equipment manufacturer or installer. In addition, methods used after December 22, 1991 except for

methods permanently installed prior to that date, must be capable of detecting the leak rate or quantity specified for that method in sections 2-4-4(b), (c), and (d) or 2-4-5(a) and (b), with a probability of detection of 0.95 and a probability of false alarm of 0.05.

- (b) When a release detection method operated in accordance with the performance standards in sections 2-4-4 and 2-4-5 indicates a release may have occurred, owners/operators must notify the Director in accordance with Article 4.
- (c) Owners/operators of all UST systems must have complied with the release detection requirements of this section 2-4 by December 22, of the year listed in the following table:

Schedule for Phase-in of Release Detection

Schedule for Phase-in of Release Detection					
Year System Was Installed	Year When Release Detection is Required (by December 22 of the year indicated)				
	1989	1990	1991	1992	1993
Before 1965 or date unknown	RD	PP			
1965 - 1969		PP/RD			
1970 - 1974		PP	RD		
1975 - 1979		PP		RD	
1980 - 1988		PP			RD
New UST	PP/RD Immediately upon installation				

PP = Must have begun release detection for all pressurized piping in accordance with sections 2-4-2(b)(1) and 2-4-3(b)(4).

RD = Must have begun release detection for tanks and suction piping in accordance with sections 2-4-2(a), 2-4-2(b)(2), and 2-4-3.

- (d) Any existing UST system that does not apply a method of release detection that complies with the requirements of this section must complete the closure procedures in section 2-5 immediately.

2-4-2 Requirements for petroleum UST systems.

Owners/operators of petroleum UST systems must provide release detection for tanks and piping as follows:

- (a) Tanks. Tanks must be monitored at least every 30 days for releases using one of the methods listed in section 2-4-4(d)-(h) except that:
 - (1) UST systems that meet the performance standards in sections 2-2-8 or 2-2-9, and the monthly inventory control requirements in section 2-4-4(a) or (b), may use tank tightness testing (conducted in accordance with section 2-4-4(c)) at least once every 5 years until December 22, 1998, or until 10 years after the tank is installed or upgraded under section 2-2-9(b), whichever is later;
 - (2) UST systems that do not meet the performance standards in sections 2-2-8 or 2-2-9 may use

monthly inventory controls (conducted in accordance with section 2-4-4(a) or (b)) and annual tank tightness testing (conducted in accordance with section 2-4-4(c)) until December 22, 1998 when the tank must be upgraded under section 2-2-9 or permanently closed under section 2-5-2; and

(3) Tanks with a capacity of 1,000 gallons or less may use weekly tank gauging (conducted in accordance with § 2-4-4(b)).

(b) Piping. Underground piping that routinely contains regulated substances must be monitored for releases in a manner that meets one of the following requirements:

(1) Pressurized piping. Underground piping that conveys regulated substances under pressure must:

(i) Be equipped with an automatic line leak detector which meets the requirements of section 2-4-5(a); and

(ii) Have an annual line tightness test conducted in accordance with section 2-4-5(b) or have monthly monitoring conducted in accordance with section 2-4-5(c).

(2) Suction piping. Underground piping that conveys regulated substances under suction must either have a line tightness test conducted at least once every 3 years and in accordance with section 2-4-5(b), or use a monthly monitoring method conducted in accordance with section 2-4-5(c). No release detection is required for suction piping that is designed and constructed to meet the following standards:

(i) The below-grade piping operates at less than atmospheric pressure;

(ii) The below-grade piping is sloped so that the contents of the pipe will drain back into the storage tank if the suction is released;

(iii) Only one check valve is included in each suction line;

(iv) The check valve is located directly below and as close as practical to the suction pump; and

(v) A method is provided that allows compliance with paragraphs (b)(2)(ii)-(iv) of this section to be readily determined.

2-4-3 Requirements for hazardous substance UST systems.

Owners/operators of hazardous substance UST systems must provide release detection that meets the following requirements:

(a) Release detection at existing UST systems must meet the requirements for petroleum UST systems in section 2-4-2. By December 22, 1998, all existing hazardous substance UST systems must meet the release detection requirements for new UST systems in paragraph (b) of this section.

(b) Release detection at new hazardous substance UST systems must meet the following requirements:

(1) Secondary containment systems must be designed, constructed and installed to:

(i) Contain regulated substances released from the UST system until they are detected and removed;

(ii) Prevent the release of regulated substances to the environment at any time during the operational life of the UST system; and

(iii) Be checked for evidence of a release at least every 30 days.

[Note: The provisions of 40 CFR 265.193, Containment and Detection of Releases, may be used to comply with these requirements.]

(2) Double-walled tanks must be designed, constructed, and installed to:

(i) Contain a release from any portion of the inner tank within the outer wall; and

(ii) Detect the failure of the inner wall.

(3) External liners (including vaults) must be designed, constructed, and installed to:

(i) Contain 100 percent of the capacity of the largest tank within its boundary;

(ii) Prevent the interference of precipitation or groundwater intrusion with the ability to contain or detect a release of regulated substances; and

(iii) Surround the tank completely (i.e., it is capable of preventing lateral as well as vertical migration of regulated substances).

(4) Underground piping must be equipped with secondary containment that satisfies the requirements of paragraph (b)(1) of this section (e.g., trench liners, jacketing of double-walled pipe). In addition, underground piping that conveys regulated substances under pressure must be equipped with an automatic line leak detector in accordance with section 2-4-5(a).

(5) Other methods of release detection may be used if owners/operators:

(i) Demonstrate to the Director that an alternate method can detect a release of the stored substance as effectively as any of the methods allowed in section 2-4-4(b)-(h) can detect a release of petroleum;

(ii) Provide information to the Director on effective corrective action technologies, health risks, and chemical and physical properties of the stored substance, and the characteristics of the UST site; and,

(iii) Obtain written approval from the Director to use the alternate release detection method before the installation and operation of the new UST system.

2-4-4 Methods of release detection for tanks.

Each method of release detection for tanks used to meet the requirements of section 2-4-2 must be conducted in accordance with the following:

(a) Inventory control. Product inventory control (or another test of equivalent performance) must be conducted monthly to detect a release of at least 1.0 percent of flow-through plus 130 gallons on a monthly basis in the following manner:

(1) Inventory volume measurements for regulated substance inputs, withdrawals, and the amount still remaining in the tank are recorded each operating day;

- (2) The equipment used is capable of measuring the level of product over the full range of the tank's height to the nearest one-eighth of an inch;
- (3) The regulated substance inputs are reconciled with delivery receipts by measurement of the tank inventory volume before and after delivery;
- (4) Deliveries are made through a drop tube that extends to within one foot of the tank bottom;
- (5) Product dispensing is metered and recorded within an accuracy of 6 cubic inches for every 5 gallons of product withdrawn; and
- (6) The measurement of any water level in the bottom of the tank is made to the nearest one-eighth of an inch at least once a month.

[Note: Practices described in the American Petroleum Institute Publication 1621, "Recommended Practice for Bulk Liquid Stock Control at Retail Outlets," may be used, where applicable, as guidance in meeting the requirements of this paragraph.]

(b) Manual tank gauging. Manual tank gauging must meet the following requirements:

- (1) Tank liquid level measurements are taken at the beginning and ending of a period of at least 36 hours during which no liquid is added to or removed from the tank;
- (2) Level measurements are based on an average of two consecutive stick readings at both the beginning and ending of the period;
- (3) The equipment used is capable of measuring the level of product over the full range of the tank's height to the nearest one-eighth of an inch;
- (4) A leak is suspected and subject to the requirements of Article 4 if the variation between beginning and ending measurements exceeds the weekly or monthly standards in the following table:

Tank Capacity (Gallons)	Tank Dimensions	Weekly Standard 1 Test (Gallons)	Monthly Standard Average of 4 Tests (Gallons)
550	N/A	10	5
551-1,000	N/A	13	7
1,000	64" (diameter) x 73" (length)	9	4
1,000	48" (diameter) x 128" (length)	12	6
1,001 - 2,000	N/A	26	13

- (5) Only tanks of 1,000 gallons or less nominal capacity may use manual tank gauging as the sole method of release detection. Tanks of 1,001 to 2,000 gallons may use this method in place of inventory control in section 2-4-4(a). Tanks of greater than 2,000 gallons nominal capacity may not use this method to meet the requirements of this section.

(c) Tank tightness testing. Tank tightness testing (or another test of equivalent performance) must be capable of detecting a 0.1 gallon per hour leak rate, with a probability of detection of 0.95, from any portion of the tank that routinely contains product while accounting for the effects of thermal expansion or contraction of the product, vapor pockets, tank deformation, evaporation or

condensation, and the location of the water table.

- (d) Automatic tank gauging. Equipment for automatic tank gauging that tests for the loss of product and conducts inventory control must meet the following requirements:
- (1) The automatic product level monitor test can detect a 0.2 gallon per hour leak rate from any portion of the tank that routinely contains product; and
 - (2) Inventory control (or another test of equivalent performance) is conducted in accordance with the requirements of section 2-4-4(a).
- (e) Vapor monitoring. Testing or monitoring for vapors within the soil gas of the excavation zone must meet the following requirements:
- (1) The materials used as backfill are sufficiently porous (e.g., gravel, sand, crushed rock) to readily allow diffusion of vapors from releases into the excavation area;
 - (2) The stored regulated substance, or a tracer compound placed in the UST system, is sufficiently volatile (e.g., gasoline) to result in a vapor level that is detectable by the monitoring devices located in the excavation zone in the event of a release from the tank;
 - (3) The measurement of vapors by the monitoring device is not rendered inoperative by the groundwater, rainfall, or soil moisture or other known interferences so that a release could go undetected for more than 30 days;
 - (4) The level of background contamination in the excavation zone will not interfere with the method used to detect releases from the tank;
 - (5) The vapor monitors are designed and operated to detect any significant increase in concentration above background of the regulated substance stored in the UST system, a component or components of that substance, or a tracer compound placed in the UST system;
 - (6) In the UST excavation zone, the site is assessed to ensure compliance with the requirements in paragraphs (e)(1)-(4) of this section and to establish the number and positioning of monitoring wells that will detect releases within the excavation zone from any portion of the tank that routinely contains product; and
 - (7) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.
- (f) Groundwater monitoring. Testing or monitoring for liquids on the groundwater must meet the following requirements:
- (1) The regulated substance is immiscible in water and has a specific gravity of less than one;
 - (2) Groundwater is never more than 20 feet from the ground surface and the hydraulic conductivity of the soil(s) between the UST system and the monitoring wells or devices is not less than 0.01 cm/sec (e.g., the soil should consist of gravels, coarse to medium sands, coarse silts or other permeable materials);
 - (3) The slotted portion of the monitoring well casing must be designed to prevent migration of natural soils or filter pack into the well and to allow entry of regulated substance on the water table into the well under both high and low groundwater conditions;

- (4) Monitoring wells shall be sealed from the ground surface to the top of the filter pack;
 - (5) Monitoring wells or devices intercept the excavation zone or are as close to it as is technically feasible;
 - (6) The continuous monitoring devices or manual methods used can detect the presence of at least one-eighth of an inch of free product on top of the groundwater in the monitoring wells;
 - (7) Within and immediately below the UST system excavation zone, the site is assessed to ensure compliance with the requirements in paragraphs (f)(1)-(5) of this section and to establish the number and positioning of monitoring wells or devices that will detect releases from any portion of the tank that routinely contains product; and
 - (8) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.
- (g) Interstitial monitoring. Interstitial monitoring between the UST system and a secondary barrier immediately around or beneath it may be used, but only if the system is designed, constructed and installed to detect a leak from any portion of the tank that routinely contains product and also meets one of the following requirements:
- (1) For double-walled UST systems, the sampling or testing method can detect a release through the inner wall in any portion of the tank that routinely contains product;

[Note: The provisions outlined in the Steel Tank Institute's "Standard for Dual Wall Underground Storage Tanks" may be used as guidance for aspects of the design and construction of underground steel double-walled tanks.]

- (2) For UST systems with a secondary barrier within the excavation zone, the sampling or testing method used can detect a release between the UST system and the secondary barrier;
 - (i) The secondary barrier around or beneath the UST system consists of artificially constructed material that is sufficiently thick and impermeable (not more than 0.000001 cm/sec for the regulated substance stored) to direct a release to the monitoring point and permit its detection;
 - (ii) The barrier is compatible with the regulated substance stored so that a release from the UST system will not cause a deterioration of the barrier allowing a release to pass through undetected;
 - (iii) For cathodically protected tanks, the secondary barrier must be installed so that it does not interfere with the proper operation of the cathodic protection system;
 - (iv) The groundwater, soil moisture, or rainfall will not render the testing or sampling method used inoperative so that a release could go undetected for more than 30 days;
 - (v) The site is assessed to ensure that the secondary barrier is always above the groundwater and not in a 25-year flood plain, unless the barrier and monitoring designs are for use under such conditions; and,
 - (vi) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

- (3) For tanks with an internally fitted liner, an automated device can detect a release between the inner wall of the tank and the liner, and the liner is compatible with the substance stored.
- (h) Other methods. Any other type of release detection method, or combination of methods, can be used if:
 - (1) It can detect a 0.2 gallon per hour leak rate or a release of 150 gallons within a month with a probability of detection of 0.95 and a probability of false alarm of 0.05; or
 - (2) The Director may approve another method if the owner/operator can demonstrate that the method can detect a release as effectively as any of the methods allowed in paragraphs (c)-(h) of this section. In comparing methods, the Director shall consider the size of release that the method can detect and the frequency and reliability with which it can be detected. If the method is approved, the owner/operator must comply with any conditions imposed by the Director on its use to ensure the protection of human health and the environment.

2-4-5 Methods of release detection for piping.

Each method of release detection for piping used to meet the requirements of section 2-4-2 must be conducted in accordance with the following:

- (a) Automatic line leak detectors. Methods which alert the owner/operator to the presence of a leak by restricting or shutting off the flow of regulated substances through piping or triggering an audible or visual alarm may be used only if they detect leaks of 3 gallons per hour at 10 pounds per square inch line pressure within 1 hour. An annual test of the operation of the leak detector must be conducted in accordance with the manufacturer's requirements.
- (b) Line tightness testing. A periodic test of piping may be conducted only if it can detect a 0.1 gallon per hour leak rate at one and one-half times the operating pressure.
- (c) Applicable tank methods. Any of the methods in section 2-4-4(e)-(h) may be used if they are designed to detect a release from any portion of the underground piping that routinely contains regulated substances.

2-4-6 Release detection record keeping.

All UST system owners/operators must maintain records in accordance with section 2-3-5 demonstrating compliance with all applicable requirements of this section. These records must include the following:

- (a) All written performance claims pertaining to any release detection system used, and the manner in which these claims have been justified or tested by the equipment manufacturer or installer, must be maintained for 5 years, or for another reasonable period of time determined by the Director, from the date of installation;
- (b) The results of any sampling, testing, or monitoring must be maintained for at least 1 year, or for another reasonable period of time determined by the Director, except that the results of tank tightness testing conducted in accordance with section 2-4-4(c) must be retained until the next test is conducted; and
- (c) Written documentation of all calibration, maintenance, and repair of release detection equipment permanently located on-site must be maintained for at least one year after the servicing work is completed, or for another reasonable time period determined by the Director. Any schedules of required calibration and maintenance provided by the release detection equipment manufacturer must be retained for 5 years from the date of installation.

- (d) Notwithstanding the above, to be eligible for the Fund, persons may be required to maintain the above or other records in accordance with Fund requirements.

Section 2-5 Out of Service UST Systems and Closure.

2-5-1 Temporary closure.

- (a) Owners/operators shall notify the Director in writing at least 10 days prior to placing an UST system in temporary closure, and at that same time submit records documenting the prior 12 months of release detection and corrosion protection testing (if applicable) for tanks and lines. In lieu of submitting these records, owner/operator may conduct a precision tightness test on the tanks and lines and complete a site assessment in accordance with section 2-5-3, and submit these results with the temporary closure notification.
- (b) When an UST system is temporarily closed, owners/operators must continue operation and maintenance of corrosion protection in accordance with section 2-3-2, and any release detection in accordance with section 2-4. Articles 4 and 5 must be complied with if a release is suspected or confirmed. However, release detection is not required as long as the UST system is empty. The UST system is empty when all materials have been removed using commonly employed practices so that no more than 2.5 centimeters (one inch) of residue, or 0.3 percent by weight of the total capacity of the UST system, remain in the system.
- (c) When an UST system is temporarily closed for 3 months or more, owners/operators must also comply with the following requirements:
 - (1) Leave vent lines open and functioning; and
 - (2) Cap and secure all other lines, pumps, manways, and ancillary equipment.
- (d) When an UST system is temporarily closed for more than 12 months, owners/operators must permanently close the UST system in accordance with sections 2-5-2 to 2-5-5, unless the Director provides a written extension of the 12-month temporary closure period. Owners/operators must complete a site assessment in accordance with section 2-5-3 before such an extension can be applied for.
- (e) Owner/operators shall notify the Director in writing no more than 30 days prior to placing a UST back in service, and at that same time submit documentation of passing tightness tests to include (ullage) for the tanks and lines conducted within the past 30 days.

2-5-2 Permanent closure and changes-in-service.

- (a) At least 10 days before beginning either permanent closure or a change-in-service under paragraphs (b) and (c) of this section, owners/operators must notify the Director of their intent to permanently close or make the change-in-service, unless such action is in response to corrective action. The required assessment of the excavation zone under section 2-5-3 must be performed after notifying the Director, but before completion of the permanent closure or a change-in-service.
- (b) To permanently close a tank, owners/operators must empty and clean it by removing all liquids and accumulated sludges. All tanks taken out of service permanently must also be either removed from the ground or filled with an inert solid material.
- (c) Continued use of an UST system to store a non-regulated substance is considered a change-in-service. Before a change-in-service, owners/operators must empty and clean the tank by removing all liquid and accumulated sludge and conduct a site assessment in accordance with section 2-5-3.

[Note: The following cleaning and closure procedures may be used to comply with this section:

- (A) American Petroleum Institute Recommended Practice 1604, "Removal and Disposal of Used Underground Petroleum Storage Tanks";
- (B) American Petroleum Institute Publication 2015, "Cleaning Petroleum Storage Tanks";
- (C) American Petroleum Institute Recommended Practice 1631, "Interior Lining of Underground Storage Tanks," may be used as guidance for compliance with this section; and
- (D) The National Institute for Occupational Safety and Health "Criteria for a Recommended Standard...Working in Confined Space" may be used as guidance for conducting safe closure procedures at some hazardous substance tanks.]

2-5-3 Assessing the site at closure or change-in-service.

- (a) Before permanent closure or a change-in-service is completed, owners/operators must measure for the presence of a release where contamination is most likely to be present at the UST site, as specified in Article 5. The requirements of this section are satisfied if one of the external release detection methods allowed in section 2-4-4(e) or (f) is operating in accordance with the requirements in section 2-4-4 at the time of closure, and indicates no release has occurred.
- (b) If contaminated soils, contaminated groundwater, or free product as a liquid or vapor is discovered under paragraph (a) of this section, or by any other manner, owners/operators must begin corrective action in accordance with Article 5.

2-5-4 Applicability to previously closed UST systems.

When directed by the Director, the owner/operator of an UST system permanently closed before December 22, 1988 must assess the excavation zone and close the UST system in accordance with this section if releases from the UST may, in the judgment of the Director, pose a current or potential threat to human health and the environment.

2-5-5 Closure records.

Owners/operators must maintain records in accordance with section 2-3-5 that are capable of demonstrating compliance with closure requirements under this section. The results of the excavation zone assessment required in section 2-5-3 must be maintained for at least 3 years after completion of permanent closure or change-in-service in one of the following ways:

- (a) By the owners/operators who took the UST system out of service;
- (b) By the current owners/operators of the UST system site; or
- (c) By mailing these records to the Director if they cannot be maintained at the closed facility.

[Note, all applicants to the Fund may be required to maintain closure records until reimbursement is complete.]

Section 2-6 Delivery Prohibition.

Delivery prohibition is prohibiting the delivery, deposit, or acceptance of product to an UST that has been determined by OPS to be ineligible for such delivery, deposit, or acceptance. For purposes of this section,

the term “UST” means those tanks that satisfy the definition of UST in §8-20.5-101 C.R.S., except for those tanks identified in 7 C.C.R. 1101-14 §2-1-1 (b) and (c) as excluded or deferred storage tanks. These requirements apply to regulated substance USTs. OPS will prohibit delivery, deposit, or acceptance of product on an individual UST basis, not to every UST at a facility except if warranted.

UST owners/operators and product deliverers are responsible for not delivering, depositing, or accepting product to an UST identified by OPS as ineligible to receive product.

2-6-1 Criteria for Delivery Prohibition.

(a) Field Inspection: OPS shall prohibit delivery, deposit, or acceptance of product during an inspection if any of the following conditions exist:

- (1) Required spill prevention equipment is not installed, or functional;
- (2) Required overfill protection equipment is not installed, or functional;
- (3) Required leak detection equipment is not installed, or functional;
- (4) Required corrosion protection equipment is not installed, or functional; or
- (5) Upon the discovery of a significant violation that poses an imminent threat to human health or safety or the environment. In addition to delivery prohibition, OPS may also require the removal of product from the tank.
- (6) Failure to register or maintain current registration on an UST.

(b) Enforcement Notice: OPS shall prohibit delivery, deposit, or acceptance of product if the owner/operator of that tank has been issued a written warning or citation (Settlement Agreement or Notice of Violation per § 8-20.5-107 C.R.S.) under any of the following circumstances and the owner/operator has failed to take corrective action within the requested time frame:

- (1) Inability to demonstrate proper operation and/or maintenance of leak detection equipment;
- (2) Inability to demonstrate proper operation and/or maintenance of spill, overfill, or corrosion protection equipment;
- (3) Discovery of a significant violation that poses an imminent threat to human health or safety or the environment. In addition to delivery prohibition, OPS may also require the removal of product from the tank.

2-6-2 Red Tag Mechanisms Used to Identify Ineligible USTs.

Upon determination that any of the criteria for delivery prohibition have been met including the discovery of a significant violation that poses an imminent threat to human health or safety or the environment, OPS will attach a red tag to each fill pipe of the ineligible UST clearly identifying the tank as ineligible for delivery, deposit, or acceptance of product. Before affixing a red tag to the fill pipe of an UST system, OPS shall document the level of stored product in the tank.

The red tag will be attached to the fill pipe using a tamper-resistant wire seal so that the tag is visible to any person attempting to deliver a regulated substance to the UST. The red tag will have the following content:

(a) A red tag shall be red in color and made of plastic or other durable and damage resistant material.

(b) Red tags shall bear the following information on both sides of the tag:

- (1) The following wording, printed in white at the top of the tag in all capital letters in at least 36 point bold-faced type: "DELIVERY PROHIBITED!"
- (2) The following wording, printed in white below the wording described in subsection (b)(1) in at least 16 point type: "Delivering a regulated substance, or removing, defacing, altering, or otherwise tampering with this tag may result in civil penalties of up to \$5000 per day."
- (3) Printed below the wording described in subsection (b)(2), the following wording in at least 16 point type: "If you have questions call OPS (303)318-8547"
- (4) Following the wording described above, there shall be a blank area at least 1/2 inch wide by four inches long in which the OPS inspector shall write legibly in permanent ink at the time of placement, the date, facility identification number, product type, and the inspector's initials.

No owner or operator of a facility or delivery person may deposit or allow the deposit of a regulated substance into an UST system that has a red tag affixed to the system's fill pipe. Unless authorized by OPS, no person shall remove, deface, alter, or otherwise tamper with a red tag so that the information contained on the tag is not legible.

2-6-3 Notification Processes For UST Owners/Operators and Product Deliverers

- (a) Immediately after affixing a red tag, OPS shall notify the operator, if present on site, of the significant violation(s) for which the red tag was issued, along with a written Field Violation Form noting the violations. OPS shall also request current owner/operator contact information for future notifications.
- (b) Within 24 hours of affixing a red tag, OPS shall notify the owner in writing of the significant violation(s) for which the red tag was issued.
- (c) Within 24 hours of affixing a red tag, OPS shall add the red tagged tank(s) to the OPS website list of facilities that have delivery prohibitions.
- (d) If a permit is required by OPS in order to correct one or more significant violations identified, OPS shall, to the extent feasible, expedite its review and issuance of such permit(s).

2-6-4 Reclassifying Ineligible UST as Eligible to Receive Product.

- (a) Upon notification by the owner or operator documenting to the satisfaction of OPS that there was not a significant violation or the significant violation has been corrected, or an emergency condition as described in section 2-6-6 exists, OPS shall provide verbal and written authorization to the owner or operator to remove the red tag. If OPS disputes the notification provided by the owner or operator, then the procedural provisions of § 8-20.5-107 C.R.S. shall apply, except that the owner/operator may request and be entitled to an informal conference with the Director within three working days. A delivery prohibition required by a red tag shall remain in effect during the time the procedural provisions of § 8-20.5-107 C.R.S. are invoked, unless the owner or operator requests and the Director grants a stay of the effect of the red tag.
- (b) By close of business (5pm) that same day OPS will also remove that tank from the OPS website list of facilities that have delivery prohibitions.
- (c) OPS may inspect the UST system within five business days of notification to determine whether the system continues to be in significant violation, regardless of whether it has authorized removal of

the red tag by the owner or operator. If, upon inspection, OPS determines that the system is no longer in significant violation and it has not already authorized removal of the red tag, OPS shall immediately remove the red tag.

- (d) Upon removing a red tag from an UST system, OPS shall document the level of stored product in the tank. If the owner or operator removes a red tag pursuant to written authorization by the field inspector, the owner or operator shall document the level of stored product in the tank immediately after removing the red tag.
- (e) A red tag that has been removed by the owner or operator shall be returned to the OPS within five business days, or sooner if requested by the field inspector.

2-6-5 Delivery Prohibition Deferral in Rural and Remote Areas.

OPS may decide not to identify an UST as ineligible for delivery, deposit, or acceptance of product if such a prohibition would jeopardize the availability of, or access to, motor fuel in any rural and remote areas. However, OPS shall only defer application of delivery prohibition for 30 days after determining an UST is ineligible for delivery, deposit, or acceptance of product.

2-6-6 Delivery Prohibition Deferral in Emergency Situations.

In emergency situations, the Director may decide not to identify an UST as ineligible for delivery, deposit, or acceptance of product if such a prohibition is not in the best interest of the public, even in the cases of significant and/or sustained noncompliance. In such emergency situations, OPS shall only defer application of delivery prohibition for up to 180 days after determining an UST is ineligible for delivery, deposit, or acceptance of product.

2-6-7 Removal of Red Tag from Emergency Generator Tank Systems.

OPS may remove or authorize the removal of a red tag from an emergency generator tank system before a significant violation has been corrected if OPS determines that an emergency situation exists requiring operation of the system and the delivery of petroleum is necessary for the continued operation of the system during the emergency.

Section 2-7 Operator Training.

UST operator training is a requirement designed to ensure knowledge regarding operating and maintaining UST systems. These requirements apply to UST systems regulated under Subtitle I, except those excluded by regulation in 7 C.C.R. 1101-14 §2-1-1(b) and those deferred by regulation in 7 C.C.R. 1101-14 §2-1-1(c).

2-7-1 Classes of Operators.

For purposes of implementing the operator training requirements, these regulations establish Colorado specific operator training, testing and certification requirements for three classes of operators identified as Class A, Class B, and Class C. Owners/operators are required to identify and designate, for each UST system or group of UST systems at a facility, at least one named individual for each class of operator outlined in these regulations. All individuals designated as a Class A, B, or C operator must, at a minimum, be trained and certified according to these regulations by December 31, 2009.

Separate individuals may be designated for each class of operator described above or an individual may be designated to more than one of the above operator classes. An individual who is designated to more than one operator class must be trained in each operator class for which he or she is designated. Because an individual may be designated for more than one operator class, OPS will allow a training approach that encompasses training for more than one operator class.

To assist in identifying responsible individuals to be trained pursuant to these regulations, the following sections characterize, in general terms, each class of operator. These sections also identify general training requirements pertaining to operating and maintaining UST systems.

2-7-2 Class A Operator.

A Class A operator has primary responsibility to operate and maintain the UST system. The Class A operator's responsibilities include managing resources and personnel, such as establishing work assignments, to achieve and maintain compliance with regulatory requirements. The general and minimum requirements for a Class A operator are as follows:

- (a) General Requirements: This individual focuses on the broader aspects of the statutory and regulatory requirements and standards necessary to operate and maintain the UST system. For example, this individual typically ensures that appropriate individual(s):
 - (1) Properly operate and maintain the UST system.
 - (2) Maintain appropriate records.
 - (3) Are trained to operate and maintain the UST system and keep records.
 - (4) Properly respond to emergencies caused by releases or spills from UST systems at the facility.
 - (5) Make financial responsibility documents available to OPS as required.
- (b) Minimum Requirements: The Class A operator must be trained in the following:
 - (1) A general knowledge of UST system requirements so he or she can make informed decisions regarding compliance and ensure appropriate individuals are fulfilling operation, maintenance, and recordkeeping requirements and standards of these regulations regarding:
 - (i) Spill prevention
 - (ii) Overfill prevention
 - (iii) Release detection
 - (iv) Corrosion protection
 - (v) Emergency response
 - (vi) Product compatibility
 - (2) Financial responsibility documentation requirements.
 - (3) Notification requirements.
 - (4) Release and suspected release reporting.
 - (5) Temporary and permanent closure requirements.
 - (6) Class C operator training requirements.

2-7-3 Class B Operator.

A Class B operator implements applicable UST regulatory requirements and standards in the field. This individual implements day-to-day aspects of operating, maintaining, and recordkeeping for USTs at one or more facilities. The general and minimum requirements for a Class B operator are as follows:

- (a) General Requirements: This individual typically monitors, maintains, and ensures:
 - (1) Release detection method, recordkeeping, and reporting requirements are met.
 - (2) Release prevention equipment, recordkeeping, and reporting requirements are met.
 - (3) All relevant equipment complies with performance standards.
 - (4) Appropriate individuals are trained to properly respond to emergencies caused by releases or spills from UST systems at the facility.

- (b) Minimum Requirements: Compared with training for the Class A operator, training for the Class B operator will provide a more in-depth understanding of operation and maintenance aspects, but may cover a more narrow breadth of applicable regulatory requirements. The Class B operators training must encompass the following:
 - (1) Components of UST systems.
 - (2) Materials of UST system components.
 - (3) Methods of release detection and release prevention applied to UST components.
 - (4) Operation and maintenance requirements of these regulations that apply to UST systems and include:
 - (i) Spill prevention
 - (ii) Overfill prevention
 - (iii) Release detection
 - (iv) Corrosion protection
 - (v) Emergency response
 - (vi) Product compatibility
 - (5) Reporting and recordkeeping requirements.
 - (6) Class C operator training requirements.

2-7-4 Class C Operator.

A Class C operator is an employee and is, generally, the first line of response to events indicating emergency conditions. This individual is responsible for responding to alarms or other indications of emergencies caused by spills or releases from UST systems. This individual notifies the Class B or Class A operator and appropriate emergency responders when necessary. Not all employees of the facility are necessarily Class C operators.

(a) General Requirements: This individual typically:

- (1) Controls or monitors the dispensing or sale of regulated substances, or
- (2) Is responsible for initial response to alarms or releases.

(b) Minimum Requirements: At a minimum, the Class C operator must be trained to:

- (1) Take action in response to emergencies (such as, situations posing an immediate danger or threat to the public or to the environment and that require immediate action) or alarms caused by spills or releases from an UST system.

2-7-5 Acceptable Training and Certification Processes.

Operator training must evaluate operator knowledge of the minimum training requirements described for each class of operator in Section 2-7-2 through 2-7-4 of these regulations. The following is a list of acceptable approaches to meet training requirements stated in these regulations:

- (a) Possession of a current certificate issued by the International Code Council (ICC) indicating he or she has passed the Colorado UST System Class A or B Operator exam.
- (b) For Class C operator training, possession of a current certificate issued by the owner indicating that he or she has successfully completed training conducted by a certified Class A or Class B operator.
- (c) An operator training program that has received prior OPS approval. The program may include in-class, on-line, or hands-on training. Such a program must include an evaluation of operator knowledge through testing, practical demonstration, or other tools determined as acceptable by the state.
- (d) To address operators responsible for UST systems in multiple states, OPS may accept operator training certification verification from other states that have equivalent operator training requirements.

2-7-6 Training and Certification Deadlines and Schedules.

- (a) By January 1, 2010, owners of UST systems shall submit a signed statement to OPS indicating that the owner understands and is in compliance with all applicable UST requirements, and identifying the designated Class A or B operator(s) for each facility owned. The owner shall inform OPS of any change of designated Class A or B operator(s) no later than 30 days after the change. Documentation identifying the designated Class C operators shall be maintained on site.
- (b) Effective January 1, 2010, designated Class A and B operators shall be trained and possess a current certificate issued by the International Code Council (ICC) indicating he or she has passed the Colorado UST System Class A or B operator exam.
- (c) Effective January 1, 2010, designated Class C operators shall be trained and possess a current certificate issued by a Class A or B operator that developed or conducted the training.
- (d) After January 1, 2010 new operators shall be trained within the following timeframes:
 - (1) Class A and Class B operators must be trained within 30 days after assuming full operation and maintenance responsibilities at the UST system.
 - (2) Class C operators must be trained before assuming full responsibility for responding to

emergencies.

2-7-7 Retraining Requirements.

If OPS determines an UST system is out of compliance, the Class A and/or Class B operator must be retrained and recertified within 90 days. At a minimum, an UST system is out of compliance if the system:

- (a) Meets any of the delivery prohibition criteria outlined in Section 2-6-1, or
- (b) Is not in significant compliance with other requirements, such as temporary or permanent closure, tank registration or financial responsibility.

2-7-8 Monthly Visual Inspections.

- (a) The designated Class A or B operator or a delegated designee shall perform monthly visual inspections of all UST systems for which they are designated. The results of each inspection shall be recorded on a monthly inspection checklist. The monthly visual inspection shall include the following:
 - (1) Inspecting for the presence of any sensor alarm conditions, and responding to alarm conditions appropriately.
 - (2) Inspecting the integrity of the spill containment or manholes (cracks, holes, bulges etc), and for the presence of regulated substance, water, or debris in spill containers (fill and vapor recovery).
 - (3) Inspecting hanging hardware on dispensers and/or other visible piping for the presence of regulated substance leakage.
- (b) The designated operator(s) or delegated designee shall provide the owner or operator with a copy of each monthly inspection checklist, and alert the owner or operator of any condition discovered during the monthly visual inspection that may require follow-up actions.
- (c) The owner or operator shall maintain a copy of the monthly inspection checklist and all attachments for the previous twelve months. The records shall be maintained on-site for all attended facilities or, if approved by OPS, off-site at a readily available location.

2-7-9 Annual Operational Compliance Inspections.

- (a) The designated Class A or B operator(s) shall perform an annual operational compliance inspection of all UST systems for which they are designated. The annual operational compliance inspection shall include, but is not limited to, the following:
 - (1) Compiling and reviewing monthly release detection, visual inspection and corrosion protection records from the prior twelve months.
 - (2) Compiling and reviewing the alarm history report or log for the prior twelve months, and checking that each alarm condition was documented and responded to appropriately, including the reporting of suspected or confirmed releases.
 - (3) Conducting functionality testing on all line leak detectors, sump sensors and overflow prevention equipment in accordance with manufacturers specifications to ensure proper installation and operation.
 - (4) Checking that all required testing and maintenance for the UST system have been

completed, and documenting the dates these activities occurred.

- (5) Verifying that all designated Class C operators have been trained in accordance with Sections 2-7-4 and 2-7-5 of these regulations.
 - (6) Completing an Annual Operational Compliance Inspection Report and Certification Form for each facility using forms provided by OPS.
- (b) The designated Class A or B operator(s) shall provide the owner or operator with a copy of the annual operational compliance inspection report, and alert the owner or operator of any condition discovered during the annual compliance inspection that may require follow-up actions.
- (c) The owner or operator shall submit a copy of the annual operational compliance inspection report and all attachments for the previous twelve months to OPS on an annual basis or within 30 days of an OPS request for records.

ARTICLE 3 ABOVEGROUND STORAGE TANKS

Section 3-1 Applicability

- (a) All provisions in these regulations apply to all regulated substance AST systems unless specifically restricted to a specific system. Aside from meeting these regulatory requirements, all AST systems must meet local fire district rules, zoning rules, and requirements of other authorities having jurisdiction over AST systems. It will be the owner/operator's responsibility to ensure compliance with all such requirements.

- (1) For the purposes of these regulations, a tank's capacity is determined by the aggregate capacity of all individual primary tank compartments contained within the outer shell or structure of the tank, whether there is a shared bulkhead or not. Each compartment of an AST must meet the operational requirements contained herein individually (e.g. venting, overfill prevention, release detection, etc.)

Example: A single concrete-encased UL 2085 AST whose construction consists of two individual 500 gallon UL 142 ASTs wrapped in a polyethylene liner is considered as having a capacity of 1,000 gallons. Each compartment (tank) must be equipped to meet operational requirements.

- (b) The following ASTs or AST systems are excluded from these regulations:
- (1) Any AST whose capacity is greater than 39,999 gallons or less than 660 gallons.
 - (2) Any AST system that contains a de minimis concentration of regulated substances.
 - (3) Any AST systems containing radioactive material that are regulated under the Atomic Energy Act;
 - (4) Any AST system that is part of an emergency generator system at nuclear power generation facilities;
 - (5) ASTs used to store liquefied petroleum gases that are not liquid at standard temperature and pressure.
 - (6) ASTs used to store liquids whose fluidity is less than that of 300 penetration asphalt when tested in accordance with ASTM D 5.

- (c) The following are not included in the definition of "Aboveground storage tank" found at C.R.S. § 8-20.5-101(2), and are excluded from these regulations:
- (1) A wastewater treatment tank system that is part of a wastewater treatment facility;
 - (2) Equipment or machinery that contains regulated substances for operational purposes;
 - (3) Farm and residential tanks or tanks used for horticultural or floricultural operations.
 - (4) Aboveground storage tanks located at natural gas pipeline facilities that are regulated under state or federal natural gas pipeline acts;
 - (5) Aboveground storage tanks associated with natural gas liquids separation, gathering, and production;
 - (6) Aboveground storage tanks associated with crude oil production, storage, and gathering;
 - (7) Aboveground storage tanks at transportation-related facilities regulated by the federal department of transportation;
 - (8) Aboveground storage tanks used to store heating oil for consumptive use on the premises where stored;
 - (9) Aboveground storage tanks used to store flammable and combustible liquids at mining facilities and construction and earthmoving projects, including gravel pits, quarries, and borrow pits where, in the opinion of the director of the division of oil and public safety, tight control by the owner or contractor and isolation from other structures make it unnecessary to meet the requirements of this article;
- (d) In addition to the requirements in these regulations, C.R.S. § 8-20-231 requires that the design, construction, location, installation, and operation of all other liquid fuel product tank systems greater than 60 gals conform to the minimum standards prescribed by the applicable sections of the current edition of NFPA fire code. This includes the testing and inspection requirements contained therein.

Section 3-2 Installation and Registration

3-2-1 Application for Permit for ASTs.

- (a) An application must be submitted to and approved by the Director, before beginning construction;
- (1) On any new or used/reinstalled AST system that will store a regulated substance; or
 - (2) Before beginning construction on any existing regulated substance AST system at a facility that is being upgraded to the standards described in these regulations or applicable statutes.
 - (A) This requirement applies to alterations made to tanks, piping, or equipment affecting their operation, to containment (diking or impounding), and to the security provisions of 3-3-3(e) or (f).

Note: Where a tank will be moved from and returned to its original location in order to allow an alteration to its containment (e.g., changing from bare earthen diking to lined earth or concrete diking), or where a tank will be moved to a new location outside of its current footprint, a permanent closure must be performed

in accordance with 3-4-7(c), and an application must be submitted for its reinstallation. For tanks installed before October 1, 1994 that will be moved from and returned to their original location, requests for variance from separation requirements of 3-3 that cannot be met must be made in writing at the time of application.

(b) The application must include:

- (1) Site Plan - A dimensioned drawing of the facility, showing the name and address of the facility, the location of existing tanks and piping that will remain at the facility, as well as new tanks and piping proposed in the application, the location of dispensers and buildings at the facility, the location of loading/unloading facilities, the location of guard posts and fences, the location of property lines, and the location and names of streets adjacent to the facility; and
- (2) A written application, using the form supplied by the Director, containing information about the proposed construction as follows:
 - (A) Name and address of the facility;
 - (B) Name and address of the owner of the AST system;
 - (C) Description of work;
 - (D) Facility information;
 - (E) Tank information;
 - (i) If a used AST will be installed/reinstalled, the requirements of 3-4-8 apply, and the results of the required inspections and testing must be submitted with the application.
 - (F) Piping information;
 - (G) Additional information;
 - (H) Buried piping installation information;
 - (I) Installer information;

3-2-2 AST Facility Inspections Required.

- (a) Except in emergencies, if underground piping will be replaced or added to the AST system, the Director must be notified at least 72 hours prior to beginning the air pressure/soap solution test of the piping in order that an inspection of the system may be scheduled at that time. Emergency situations will be dealt with individually by the Director, possibly by delegation of the inspection.
- (b) The Director will make an inspection of the AST system, to verify that the facility was constructed according to plan. This inspection will be as detailed as practicable, but does not exempt the owner/operator from certifying that the installation was made according to all the requirements of these regulations. The owner/operator shall provide the Director with a 72 hour notice prior to the filling of the tank system.

3-2-3 Denial or Revocation of Permit.

- (a) An AST permit application may be denied or revoked if the AST installation or operation is not in conformance with these AST regulations or is not in conformance with all applicable sections of the National Fire Protection Association codes.
- (b) An AST permit may be denied or revoked if the AST permit application is not complete or is determined to be inaccurate.
- (c) An AST permit may be revoked if the AST installation or operation is not in conformance with the NFPA Codes in effect at the time of installation, and may be revoked for misrepresentation of facts in the application.
- (d) An AST permit may be revoked if an inspection by the Director reveals that the construction performed is not in accordance with the installation plan submitted for approval; and may be revoked for failure to meet the operating or fire safety rules established by these regulations or established by the various provisions of the NFPA Codes that apply to the AST facility.
- (e) An AST system permit is automatically revoked six months after the date of issue unless the Director grants an extension in writing.
- (f) Six months or later, after an AST permit is issued, the permit may be modified by subsequent statutory or regulatory changes.

3-2-4 Access to Premises and Records.

The Director shall have authority to enter in or upon the premises of any facility that contains an AST system containing a regulated substance, for the purpose of verifying that such AST system and its' required records are in compliance with these regulations.

3-2-5 Registration and Notification for ASTs.

- (a) AST Registration Required.

All ASTs and facility data must be registered, re-registered or updated on a form provided by the Director, regardless of whether the ASTs and facilities are currently in service or out of service, according to the following provisions:

- (1) The registration form must be filled out as completely as possible by the owner/operator of the AST; and must include each tank owned or operated at the facility.
- (2) Owners/operators may provide notice for several tanks at a single facility using one notification form, but owners/operators who own or operate tanks located at more than one facility must file a separate notification form for each separate facility.

- (b) Registration Timing.

Each owner/operator of an AST must register each AST with the Director as follows:

- (1) By July 1, 1993 if the tanks were not registered previously; and
- (2) Within 30 days after the first day on which any AST is actually used to contain a regulated substance; and
- (3) This registration information must be updated within 30 days after any additional tank construction, AST system upgrading, temporary or permanent closure, or changes in operation including a change of owner or operator, has been completed.

(4) This registration must be renewed annually during the month designated by the Director, and during the same month in each succeeding year thereafter.

(c) Registration Fee Required.

The owner/operator is required to pay an annual registration fee in the amount allowed by the current state law for each regulated tank owned or operated, until the regulated AST is permanently closed as in section 3-4-7(c) or until the owner/operator has instituted a change-in-service to a substance other than a regulated substance as in section 3-4-7(d).

(d) Tank Vendor Responsibility.

Any person who sells a tank intended to be used as an AST must notify the purchaser of such tank of the purchaser's registration and registration fee obligations under this section.

Section 3-3 Performance Standards for ASTs

These performance standards apply to regulated AST systems that store stable liquids in atmospheric ASTs where internal operating pressures do not exceed 2.5 psi. Requirements for the storage of other liquids in other types of ASTs at greater operating pressures are found in NFPA 30, and must be followed.

3-3-1 Definitions.

For the purposes of this section 3-3 the following definitions shall apply:

(a) COMBUSTIBLE LIQUID - A liquid having a flash point at or above 100°F (37.8°C). Combustible Liquids are classified as follows:

(1) CLASS II liquids have a flash point at or above 100°F (37.8°C) and below 140°F (60°C).

(2) CLASS IIIA liquids have a flash point at or above 140°F (60°C) and below 200°F (93°C).

(3) CLASS IIIB liquids have a flash point at or above 200°F (93°C).

(b) FLAMMABLE LIQUID - A liquid having a flash point below 100°F (37.8°C) and having a Reid vapor pressure not exceeding 40 psia (2068 mmHg) at 100°F (37.8°C). Flammable Liquids are classified as Class I liquids. Class I liquids are further subclassified as follows:

(1) CLASS IA liquids have a flash point below 73°F (22.8°C) and a boiling point below 100°F (37.8°C).

(2) CLASS IB liquids have a flash point below 73°F (22.8°C) and a boiling point at or above 100°F (37.8°C).

(3) CLASS IC liquids have a flash point at or above 73°F (22.8°C) and below 100°F (37.8°C).

(c) LIQUID - is any material that has a fluidity greater than that of 300 penetration asphalt when tested in accordance with ASTM D 5, Test for Penetration for Bituminous Materials. When not otherwise identified, the term "liquid" shall mean both flammable and combustible liquids.

[Note 1: Class I flammable liquids include all grades of Gasoline, and most motor fuels blended using alcohol and MTBE (methyl-tert-butyl-ether).]

[Note 2: Class II combustible liquids include #1 and #2 Diesel Fuels, #1 and #2 Heating Oil, Kerosene, and Jet-A grade Jet fuel.]

[Note 3: Class III combustible liquids include most Lubricating Oils, and Heavy Fuel oils.]

3-3-2 Design and Construction of Tanks.

All tanks shall be designed and built in accordance with recognized good engineering standards for the material of construction being used and shall be of steel or approved noncombustible material, with the following limitations and exceptions:

- (a) The material of tank construction shall be compatible with the liquid to be stored. In case of doubt about the properties of the liquid to be stored, the supplier, producer of the liquid, or other competent authority shall be consulted.
 - (1) Tanks designed and intended for aboveground use shall not be used as underground tanks.
 - (2) Tanks designed and intended for underground use shall not be used as aboveground tanks.
- (b) Tanks constructed of combustible materials shall be subject to the approval of the Director and limited to:
 - (1) Use where required by the properties of the liquid stored, or
 - (2) Storage of Class IIIB liquids aboveground in areas not exposed to spill or leak of Class I or Class II liquid, or
 - (3) Storage of Class IIIB liquids inside a building protected by an approved automatic fire extinguishing system.
- (c) Atmospheric tanks shall not be used for the storage of a liquid at a temperature at or above its boiling point. Atmospheric tanks shall be labeled and shall be built, installed, and used within the scope of a nationally recognized construction standard; such as U.L. 142, or API Standard 650, or an equivalent standard.
- (d) Secondary Containment Tanks may be installed without special drainage or diking if they are constructed to meet all the following requirements:
 - (1) The capacity of the tank shall not exceed 12,000 gallons for Class I liquids or 20,000 gallons for Class II and IIIA liquids; and
 - (2) All piping connections to the tank are made above the normal maximum liquid level; and
 - (3) Means are provided to prevent the release of liquid from the tank by siphon flow; and
 - (4) The outer tank must contain a release from any portion of the inner tank within the outer wall; and
 - (5) For ASTs installed after September 30, 1994, spacing between adjacent tanks shall be not less than three (3) feet (0.9 M); and
 - (6) Tanks that are not listed as UL 2085 Protected Tanks must be protected from collisions as described in section 3-3-3; and
 - (7) The system must prevent spills by either:
 - (A) A check valve and a shutoff valve with a quick-connect coupling or a dry-break valve which is installed in the piping at a point where connection and disconnection is

made for delivery from the vehicle to any AST; or

(B) If the delivery hose is connected directly to the tank, the fill line at the tank shall be equipped with a tight-fill device for connecting the hose to the tank to prevent or contain any spill at the fill opening during delivery operations; and

(8) All ASTs installed at service stations after September 30, 1994 must prevent overfills by means of equipment that will shut off liquid flow to the tank when the liquid level in the tank reaches 95% of capacity or sound an audible alarm when the liquid level in the tank reaches 90% of capacity.

3-3-3 Security.

- (a) Where tanks are supported above the foundations, tank supports shall be installed on firm foundations. Steel supports or exposed piling supports for tanks storing Class I, Class II, or Class IIIA liquids shall be protected by materials having a fire resistance rating of not less than 2 hours.
- (b) Every tank shall be so supported as to prevent the excessive concentration of loads on the supporting portion of the tank shell.
- (c) The area within the fence (if applicable) and within any dike shall be kept free of vegetation, debris, and any other material that is not necessary to the proper operation of the tank and piping system.
- (d) After December 22, 1996, tanks that are not listed as UL 2085 Protected Tanks where fuel is dispensed into vehicles shall be protected against vehicular collision by suitable barriers, which may include buildings and open space which the Director approves in writing.
- (e) Tanks which are not enclosed in vaults, shall be enclosed with a chain link fence at least 6 ft (2 m) high. The fence shall be separated from the tanks by at least 10 ft (3 m) and shall have a gate that is secured against unauthorized entry. This requirement applies to:
 - (1) Tanks at motor fuel dispensing facilities, and
 - (2) Tanks at all other facilities that have an individual or aggregate capacity of 12,000 gallons or more.

Exception: Tanks are not required to be enclosed with a fence if the property on which the tanks are located has a perimeter security fence.

- (f) Tanks that are unsupervised for any period of time, or are located in isolated/remote areas, shall be secured and shall be marked to identify the fire hazards of the tank and the tank's contents to the general public. Where necessary to protect the tank from tampering or trespassing, the area where the tank is located shall be secured.
- (g) For ASTs installed after September 30, 1994, tank supports and foundations shall be designed to minimize the possibility of uneven settling of the tank and to minimize corrosion in any part of the tank.

3-3-4 Location and Installation of Propane ASTs.

- (a) The minimum horizontal separation between an LP-Gas container and a Class I, Class II or Class IIIA liquid storage tank installed after September 30, 1994 shall be 20 ft (6 m). When flammable or combustible liquids storage tanks are within a diked area, the LP-Gas containers shall be outside the diked area and at least 10 ft (3 m) away from the centerline of the wall of the diked area. For

all tanks, suitable measures shall be taken to prevent the accumulation of Class I, Class II, or Class IIIA liquids under adjacent LP-Gas containers such as by dikes, diversion curbs, or grading.

- (b) Subsection (a) shall not apply when LP-Gas containers of 125 gal (475 L) or less capacity are installed adjacent to fuel oil supply tanks of 660 gal (2498 L) or less capacity. No horizontal separation is required between aboveground LP-Gas containers and underground flammable and combustible liquids tanks installed in accordance with UST rules.

3-3-5 Location and Installation of ASTs at Service Stations.

(Motor Fuel Dispensing Facilities and Repair Garages)

After September 30, 1994, new ASTs may only be installed at service stations if they meet all the general requirements for ASTs, and the service station requirements of this section. After December 22, 1996, tanks designed and built for underground use shall not be used as ASTs. All of the provisions in this section also apply to marine service stations and airport service stations.

- (a) For ASTs installed after September 30, 1994, tanks storing Class I and Class II liquids at an individual site shall be limited to a maximum individual capacity of 12,000 gallons and an aggregate capacity of 48,000 gallons unless such tanks are installed in vaults complying with 3-3-9, in which case the maximum individual capacity shall be permitted to be 15,000 gallons.
- (b) For ASTs installed after September 30, 1994, and before April 14, 2011, tanks shall be located in accordance with Table 1 in this section, except that for secondary containment tanks, "fire tested" tanks, "fire resistant" tanks or tanks installed in a vault, the distance requirement from tank to dispenser is waived, provided that all tanks, pipes and dispensers are satisfactorily protected from vehicular traffic.
- (c) For ASTs installed on or after April 14, 2011, ASTs shall be located in accordance with Table 1 below.

TABLE 1		AST Separation at Motor Fuel Dispensing Facilities and Repair Garages				
		Minimum Distance (ft)				
Type of Tank	Individual Tank Capacity (gal)	From Nearest Important Building on the Same Property	From Nearest Fuel Dispensing Device	From Property Line That Is or Can Be Built Upon Including Opposite Side of Public Way	From Nearest Side of Any Public Way	Between Tanks
Tanks in vaults (measured from vault perimeter)	0 – 15,000	0	0	0	0	Separate vault compartments for each AST
Protected ASTs (UL 2085)	≤ 6,000	5	0	15	5	3
	6,001 – 12,000	15	0	25	15	3
Fire-resistant ASTs (UL 2080)	0 – 12,000	25	25	50	25	3
Other ASTs meeting NFPA 30 requirements	0 – 12,000	50	50	100	50	3

- (d) Bulk Plants with Motor Fuel Dispensing.

This section does not include facilities that meet the requirements of 3-3-7.

- (1) For facilities existing before April 14, 2011:

- (A) ASTs shall meet the location and installation requirements of 3-3-8.
- (B) Where the 50 ft distance requirement from tank to dispenser is met, the following shall apply to the ASTs used for both motor fuel dispensing **and** bulk operations:
- (i) ASTs storing Class I liquids shall be limited to a maximum individual capacity of 12,000 gallons, ASTs storing Class II liquids shall be limited to a maximum individual capacity of 20,000 gallons, and the aggregate capacity for all tanks shall be 80,000 gallons.

Note: There are no individual or aggregate capacity limits for ASTs used **solely** for bulk operations.

- (C) Where the 50 ft distance requirement from tank to dispenser is not met, the following shall apply to the ASTs used for both motor fuel dispensing **and** bulk operations:
- (i) ASTs storing Class I and Class II liquids shall be limited to a maximum individual capacity of 12,000 gallons, and an aggregate capacity of 48,000 gallons.

Note: There are no individual or aggregate capacity limits for ASTs used **solely** for bulk operations.

- (2) For new facilities installed on or after April 14, 2011:

- (A) ASTs used for motor fuel dispensing shall meet the capacity and location requirements of 3-3-5, except that the maximum individual tank capacity of 12,000 gal, indicated in Table 1, shall be permitted to be increased to 20,000 gal for Class II liquids, and the aggregate capacity for all tanks shall be 80,000 gallons.

Note: ASTs that are used for motor fuel dispensing shall not be used for bulk operations.

- (B) ASTs used for bulk operations shall meet the location and installation requirements of 3-3-8.

Note: ASTs that are used for bulk operations shall not be used for motor fuel dispensing.

- (3) ASTs used solely for bulk operations shall not be connected by piping to ASTs or USTs used for motor fuel dispensing, and shall not supply dispensing devices used for motor vehicle fueling.

Exception: Where the total capacity of all ASTs used for motor fuel dispensing and all ASTs used solely for bulk operations is within the aggregate capacities allowed by 3-3-5(d)(1)(B) or (C), changes to connected piping are not required.

- (4) The motor fuel dispensing operations shall be separated from areas in which bulk plant operations are conducted by a fence or an approved structure (building, retaining wall, etc.), preventing direct access from one area to the other.

3-3-6 Location and Installation of Governmental, Industrial and Commercial AST Facilities.

(Fleet Vehicle Motor Fuel Dispensing)

AST installations are permitted at commercial, industrial, governmental, and manufacturing facilities where motor fuels are dispensed into vehicles used in connection with their business by employees, but only under one of the following conditions:

- (a) For ASTs installed before April 14, 2011, existing **restricted-capacity** fleet vehicle motor fuel dispensing operations that meet the following requirements are allowed:
 - (1) The facility has been inspected and approved by the Director; and
 - (2) No more than two (2) ASTs are in service at the facility; and
 - (3) No AST at the facility has a capacity greater than 6,000 U.S. gallons; and
 - (4) There is not more than one (1) tank at the facility containing Class I liquids; and
 - (5) The spacing requirements of table 2 below are met.

TABLE 2 AST Separation at Restricted-Capacity Fleet Motor Fuel Dispensing Facilities (Before April 14, 2011)					
<i>Tank Capacity (gal)</i>	<i>Minimum Distance (ft)</i>				
	<i>From Nearest Important Building on the Same Property</i>	<i>From Nearest Fuel Dispensing Device</i>	<i>From Property Line That Is or Can Be Built Upon, Including the Opposite Side of a Public Way</i>	<i>From Nearest Side of Any Public Way</i>	<i>Between Tanks</i>
660 - 750	5	0	10	5	3
751 - 6,000	5	0	15	5	3

- (b) For ASTs installed before April 14, 2011, if the AST system meets the requirements of 3-3-5(b) it can operate under the service station gallonage allowances.
- (c) On or after April 14, 2011, fleet vehicle motor fuel dispensing operations shall be allowed where the following requirements are met:
 - (1) The spacing requirements of table 4 below are met.
 - (A) The maximum individual tank capacity of 12,000 gallons, indicated in Table 4 below, shall be permitted to be increased to 20,000 gallons for Class II and Class III liquids, and the aggregate capacity for all tanks shall be 80,000 gallons; and
 - (B) No minimum separation shall be required between the dispensing device and a tank in a vault, a protected aboveground tank, or a fire-resistant tank.

TABLE 4		AST Separation at Fleet Motor Fuel Dispensing Facilities				
		Minimum Distance (ft)				
Type of Tank	Individual Tank Capacity (gal)	From Nearest Important Building on the Same Property	From Nearest Fuel Dispensing Device	From Property Line That Is or Can Be Built Upon Including Opposite Side of Public Way	From Nearest Side of Any Public Way	Between Tanks
Tanks in vaults (measured from vault perimeter)	0 – 15,000	0	0	0	0	Separate vault compartments for each AST
Protected ASTs (UL 2085)	≤ 6,000	5	0	15	5	3
	6,001 – 12,000	15	0	25	15	3
Fire-resistant ASTs (UL 2080)	0 – 12,000	25	0	50	25	3
Other ASTs meeting NFPA 30 requirements	0 – 12,000	50	50	100	50	3

3-3-7 Location and Installation of Unattended Cardlock Systems.

(a) On or after April 14, 2011, unattended cardlock systems are those motor fuel dispensing facilities already in existence which are located at bulk plants, governmental, industrial, and commercial facilities where only proprietary cards (or keys) issued by the facility, and that are specific to the facility's fuel management or point of sale system, can be used to dispense fuel. Proprietary cards do not include cards that are available for regional or national fleet fueling.

- (1) Cardlock systems installed before October 1, 1994 shall meet the AST separation distances of 3-3-8(a).
- (2) Cardlock systems installed on October 1, 1994 or thereafter shall meet the AST separation distances of 3-3-8(a), and the tank-to-dispenser separation distances of 3-3-5(b).
- (3) Persons that are issued proprietary cards (or keys) must be knowledgeable in site-specific operating and emergency procedures for dispensing operations.

3-3-8 Location and Installation of ASTs at Bulk Plants.

(And Other Facilities Without Motor Fuel Dispensing)

This section applies to ASTs storing regulated substances, including emergency generator tanks, outdoors at bulk plants and other facilities (except motor fuel dispensing facilities and repair garages as defined by NFPA 30A) where there is no motor fuel dispensing.

The following requirements and tables showing required minimum separation distances apply to facilities in this section that store stable liquids in atmospheric ASTs where internal operating pressures do not exceed 2.5 psi. Requirements for the storage of other liquids in other types of ASTs at greater operating pressures are found in NFPA 30, and must be followed.

- (a) Every AST which is installed after September 30, 1994 and used for the storage of Class I, Class II, or Class IIIA stable liquids and operating at pressures not in excess of 2.5 psig (17.2 kPa) and designed with a weak roof-to-shell seam, or equipped with emergency venting devices that will not permit pressures to exceed 2.5 psig (17.2 kPa), shall be located in accordance with Table 5 in this section. Where tank spacing is contingent on a weak roof-to-shell seam design, the user shall present evidence certifying such construction to the Director, upon request.

Exception: Vertical tanks with weak roof-to-shell seams that store Class IIIA liquids shall be permitted to be located at one-half the distances specified in Table 5, provided the tanks are not within the same diked area as, or within the drainage path of, a tank storing a Class I or Class II liquid.

- (b) Every AST which is installed after September 30, 1994 and used for the storage of Class I, Class II, or Class IIIA stable liquids and operating at pressures exceeding 2.5 psig (17.2 kPa) or equipped with emergency venting that will permit pressures to exceed 2.5 psig (17.2 kPa), shall be located in accordance with, and meet the requirements of NFPA 30.
- (c) Every AST which is installed after September 30, 1994 and used for the storage of liquids with boil-over characteristics shall be located in accordance with, and meet the requirements of NFPA 30.
- (d) Every AST which is installed after September 30, 1994 and used for the storage of unstable liquids shall be located in accordance with, and meet the requirements of NFPA 30.
- (e) For ASTs installed before April 14, 2011, spacing (Shell-to-Shell) between any two adjacent ASTs, where one AST is installed after September 30, 1994, with tanks storing Class I, II, or IIIA stable liquids shall be separated in accordance with Table 5 in this section.
- (f) On or after April 14, 2011, tanks used only for storing Class IIIB liquids shall not be required to be separated by more than 3 ft provided they are not within the same diked area as, or within the drainage path of, a tank storing a Class I or II liquid. If located within the same diked area as, or within the drainage path of, a tank storing a Class I or II liquid, the tank storing Class IIIB liquid shall be spaced in accordance with the requirements for Class IIIA liquids in Table 5.
- (g) Every AST which is installed after September 30, 1994 and used for the storage of Class IIIB stable liquids shall be located in accordance with Table 7 in this section.

Exception: If located within the same diked area as, or within the drainage path of, a tank storing a Class I or Class II liquid, the tank storing Class IIIB liquid shall be located in accordance with 3-3-8(a).

TABLE 5		Location of Atmospheric ASTs Storing Stable Liquids (Class I, II, IIIA) Internal Pressure Not to Exceed a Gauge Pressure of 2.5 psi		
		Minimum Distance (ft)		
Type of Tank	Protection	From Property Line That Is or Can Be Built Upon, Including the Opposite Side of a Public Way	From Nearest Side of Any Public Way or from Nearest Important Building on the Same Property	Minimum Tank Shell-to-Shell Spacing
Floating Roof	Protection for exposures	1/2 x tank diameter	1/6 x tank diameter	Greater of 1/6 x sum of adjacent tank diameters or 3 ft
	None	Tank diameter	1/6 x tank diameter	
Vertical with weak roof-to-shell seam	Approved foam or inerting system	1/2 x tank diameter	1/6 x tank diameter	Greater of 1/6 x sum of adjacent tank diameters or 3 ft
	Protection for exposures	Tank diameter	1/3 x tank diameter	
	None	2 x tank diameter	1/3 x tank diameter	
Horizontal and vertical tanks with emergency relief venting to limit pressures to 2.5 psi	Approved foam or inerting system	1/2 x value in table 6	1/2 x value in table 6	Greater of 1/6 x sum of adjacent tank diameters or 3 ft
	Protection for exposures	Value in table 6	Value in table 6	
	None	2 x value in table 6	Value in table 6	
Protected aboveground tank	None	1/2 x value in table 6	1/2 x value in table 6	Greater of 1/6 x sum of adjacent tank diameters or 3 ft
<i>In most cases "protection for exposures" will apply.</i>		<i>Greater of values shown above or 5 ft</i>		<i>3 ft min. where sum of adjacent tank diameters is ≤ 18 ft</i>
<i>PROTECTION FOR EXPOSURES - Fire protection for structures on property adjacent to liquid storage that is provided by (1) a public fire department or (2) a private fire brigade maintained on the property adjacent to the liquid storage, either of which is capable of providing cooling water streams to protect the property adjacent to the liquid storage.</i>				

TABLE 6		Distances for Use with Table 5 (Above)	
		Minimum Distance (ft)	
Tank Capacity (gal)		From Property Line That Is or Can Be Built Upon, Including the Opposite Side of a Public Way	From Nearest Side of Any Public Way or from Nearest Important Building on the Same Property
660 - 750		10	5
751 - 12,000		15	5
12,001 - 30,000		20	5
30,001 - 39,999		30	10

TABLE 7		Location of ASTs Storing Class IIIB Liquids	
		Minimum Distance (ft)	
Tank Capacity (gal)		From Property Line That Is or Can Be Built Upon, Including the Opposite Side of a Public Way	From Nearest Side of Any Public Way or from Nearest Important Building on the Same Property
12,000 or less		5	5
12,000 - 30,000		10	5
30,001 - 39,999		10	10

3-3-9 Location and Installation of ASTs in Vaults.

The provisions in this section apply only to ASTs installed after September 30, 1994.

- (a) There shall be no openings in the vault enclosure except those necessary for access to, inspection of,

and filling, emptying, and venting of the tank. The walls and floor of the vault shall be constructed of reinforced concrete at least 6 inches (15 cm) thick. The top shall be constructed of non-combustible material constructed to be weaker than the walls. The top, floor, and tank foundation shall be designed to withstand the anticipated loading. The vault shall be substantially liquid tight (able to contain the product for enough time until any release therein can be cleaned up) and there shall be no backfill material around the tank. There shall be sufficient space between the tank and vault to allow for inspection of the tank and its appurtenances.

- (b) Each vault and its tank shall be suitably anchored to withstand uplifting by groundwater or flooding, including when the tank is empty.
- (c) A vault shall be designed to be wind and earthquake resistant, in accordance with good engineering practice. The vault shall be resistant to damage from the impact of a motor vehicle, or suitable collision barriers shall be provided.
- (d) Each tank shall be in its own vault. Adjacent vaults may share a common wall.
- (e) Connections shall be provided to permit venting of each vault to dilute, disperse, and remove any vapors prior to personnel entering the vault.
- (f) Vaults that contain tanks of Class I liquids shall be provided with continuous ventilation at a rate of not less than 1 cubic foot per minute per square foot of floor area ($.3\text{m}^3 / \text{min-m}^2$), but not less than 150 cfm ($4\text{m}^3 / \text{min}$). Failure of the exhaust air flow shall automatically shut down the dispensing system. The exhaust system shall be designed to provide air movement across all parts of the vault floor. Supply and exhaust ducts shall extend to within 3 in. (7.6 cm), but not more than 12 in. (30.5 cm), of the floor. The exhaust system shall be installed in accordance with the provisions of NFPA 91, *Standard for Exhaust Systems for Air Conveying of Materials*. Means shall be provided to automatically detect any flammable vapors and to automatically shut down the dispensing system upon detection of such flammable vapors in the exhaust duct at a concentration of 25 percent of the lower flammable limit.
- (g) Each vault shall be equipped with a detection system capable of detecting liquids, including water, and of activating an alarm.
- (h) Means shall be provided to recover liquid from the vault. If a pump is used to meet this requirement, the pump shall not be permanently installed in the vault. Electric powered portable pumps shall be suitable for use in Class I, Division 1 locations, as defined in NFPA 70, *National Electrical Code*.
- (i) Vent pipes that are provided for normal tank venting shall terminate at least 12 feet (3.6m) above ground level.
- (j) Emergency vents shall be vapor tight and shall be permitted to discharge inside the vault. Long-bolt manhole covers shall not be permitted for this purpose.
- (k) Each vault shall be provided with a means for personnel entry. At each entry point, a warning sign indicating the need for procedures for safe entry into confined spaces shall be posted. Each entry point shall be secured against unauthorized entry and vandalism.
- (l) Each vault shall be provided with a suitable means to admit a fire suppression agent.
- (m) The interior of any vault containing a tank that stores a Class I liquid shall be designated a Class I, Division 1 location, as defined in NFPA 70, *National Electrical Code*.

3-3-10 Normal Venting.

- (a) Atmospheric tanks shall be adequately vented to prevent the development of vacuum or pressure that can distort or damage the tank or that exceeds the design pressure, as a result of filling or emptying the tank or atmospheric temperature changes.
- (b) For ASTs installed after September 30, 1994, normal vents shall be sized in accordance with either:
 - (1) American Petroleum Institute Standard No. 2000, Venting Atmospheric and Low-Pressure Storage Tanks, or another accepted standard; or
 - (2) shall be at least as large as the filling or withdrawal connection, whichever is larger, but in no case less than 1 1/4 in. (3 cm) nominal inside diameter.
- (c) If any AST installed after September 30, 1994 has more than one fill or withdrawal connection and simultaneous filling or withdrawal can be made, the vent size shall be based on the maximum anticipated simultaneous flow.
- (d) Except for tanks containing Class III liquids, vents shall be equipped with venting devices.
 - (1) Tanks containing Class IA liquids shall be equipped with venting devices that are closed, except when venting under pressure or vacuum conditions.
 - (2) Tanks containing Class IB and IC liquids shall be equipped with venting devices that are closed, except when venting under pressure or vacuum conditions, or with listed flame arresters.
 - (3) Tanks containing Class II liquids shall be equipped with venting devices that will protect the tank against the intrusion of water, debris, or insects.
- (e) Adequate ventilation either natural or forced must exist to guarantee that flammable liquid vapors cannot build up to 25% of the lower flammable limit anywhere, because of the presence of the tank facility in question.

3-3-11 Emergency Relief Venting.

- (a) Every AST shall have some form of construction or device that will relieve excessive internal pressure caused by exposure fires.
 - (1) This requirement shall also apply to each compartment of a compartmented tank, the interstitial space of secondary containment-type tanks, and the enclosed space of closed-top dike tanks, except where the tank was constructed prior to the publication of the 1996 edition of NFPA 30.

Exception: Tanks larger than 12,000 gallons capacity storing Class IIIB liquids do not require emergency relief venting unless they are within the diked area or the drainage path of Class I or Class II liquids.
- (b) In a vertical tank, the construction referred to in section 3-3-10(a) may take the form of a floating roof, lifter roof, a weak roof-to-shell seam, or other approved pressure-relieving construction. The weak roof-to-shell seam shall be constructed to fail preferential to any other seam. Design methods that will provide a weak roof-to-shell seam construction are contained in API 650, Welded Steel Tanks for Oil Storage, and U.L. 142, Standard for Steel Aboveground Tanks for Flammable and Combustible Liquids.
- (c) Where entire dependence for emergency relief is placed upon pressure-relieving devices, the total venting capacity of both normal and emergency vents shall be enough to prevent rupture of the

shell or bottom of the tank if vertical, or of the shell or heads if horizontal.

- (d) The total capacity of both normal and emergency venting devices shall be not less than the requirements of NFPA 30.
- (e) Emergency relief vent devices shall be vaportight and shall be permitted to be a self-closing manway cover, a manway cover provided with long bolts that permit the cover to lift under internal pressure, or additional or larger relief valve or valves.
- (f) Each commercial tank venting device shall be stamped with the operational pressures and capacities required by NFPA 30.
- (g) For the extension of emergency vent piping, piping to or from approved emergency vent devices shall be sized to provide emergency vent flows that limit the back pressure to less than the maximum pressure permitted by the design of the tank.
- (h) The required emergency relief venting capacities for tanks and devices, requirements for tanks storing unstable liquids, additional requirements for tanks other than atmospheric, and other requirements for emergency relief venting design are found in NFPA 30.

3-3-12 Vent Piping.

The design, fabrication, assembly, test, and inspection of all piping systems for flammable and combustible liquids shall be in conformance with the applicable sections of ANSI B31, *American National Standard Code for Pressure Piping* and installed in conformance with the following requirements:

- (a) Where vent pipe outlets for tanks storing Class I liquids are adjacent to buildings or public ways, they shall be located so that the vapors are released at a safe point outside of buildings and not less than 12 ft (3.6 m) above the adjacent ground level. In order to aid their dispersion, vapors shall be discharged upward or horizontally away from closely adjacent walls. Vent outlets shall be located so that flammable vapors will not be trapped by eaves or other obstructions and shall be at least 5 ft (1.5 m) from building openings.
 - (1) Vent piping that it is attached to or within a canopy or its supporting structure must extend a minimum of 5 ft (1.5 m) above the highest projection of the canopy, including the canopy fascia. When modifications to the canopy are made, this distance must be maintained.

Exception: Where the canopy or canopy modifications were installed before January 1, 2004, changes to existing vent piping are not required.
- (b) The manifolding of tank vent piping shall be avoided except where required for special purposes such as vapor recovery, vapor conservation, or air pollution control. When tank vent piping is manifolded, pipe sizes shall be such as to discharge, within the pressure limitations of the system, the vapors they may be required to handle when manifolded tanks are subject to the same fire exposure.
- (c) Vent piping for tanks storing Class I liquids shall not be manifolded with vent piping for tanks storing Class II or Class III liquids unless means are provided to prevent the vapors from Class I liquids from entering tanks storing Class II or Class III liquids, to prevent contamination and possible change in classification of the less volatile liquid.

3-3-13 Tank Openings Other than Vents

- (a) Each connection to an AST through which liquid can normally flow shall be provided with an internal or an external valve located as close as practical to the shell of the tank.

- (b) Each connection below the liquid level through which liquid does not normally flow shall be provided with a liquid tight closure. This may be a valve, plug, or blind, or a combination of these.
- (c) Openings for gauging on tanks storing Class I liquids shall be provided with a vapor tight cap or cover. Such covers shall be closed when not gauging.
- (d) Fill pipes that enter the top of a tank shall terminate within 6 in (15 cm) of the bottom of the tank. Fill pipes shall be installed or arranged so that vibration is minimized.

Exception: Fill pipes in tanks whose vapor space, under normal operating conditions, is not in the flammable range need not meet this requirement.

- (e) Filling and emptying connections for Class I, Class II, and Class IIIA liquids that are made and broken shall be located outside of buildings at a location free from any source of ignition and not less than 5 ft. (1.5 m) away from any building opening. Such connections for any liquid shall be closed and liquid tight when not in use and shall be properly identified.

3-3-14 Installation of Tanks Inside Buildings.

Exception: Tanks storing Class IIIB liquids need not comply with these provisions.

Tanks shall not be permitted inside of buildings unless the storage of liquids in outside aboveground or underground tanks is not practical because of government regulations, temperature considerations or production considerations. Tanks may be permitted inside of buildings or structures only when permitted by the Director and only under the following conditions:

- (a) ASTs installed after September 30, 1994 inside buildings shall be permitted only in areas at or above grade that have adequate drainage and are separated from other parts of the building by construction having a fire resistance rating of at least 2 hours. Day tanks, running tanks, and surge tanks are permitted in process areas. Class I, Class II and Class IIIA liquids that may be heated above their flash points shall not be stored in basements. Openings to other rooms or buildings shall be provided with noncombustible liquid tight raised sills or ramps at least 4 in. (10 cm) in height, or the floor in the storage area shall be at least 4 in. (10 cm) below the surrounding floor. As a minimum, each opening shall be provided with a listed, self-closing 1 1/2-hr (B) fire door installed in accordance with the current versions of NFPA 80, *Standard for Fire Doors and Fire Windows* ; NFPA 90A *Standard for the Installation of Air Conditioning and Ventilating Systems* , or NFPA 91, *Standard for the Installation of Blower and Exhaust Systems for Dust, Stock, and Vapor Removal or Conveying* . The room shall be constructed without floor drains and with seals between walls and floor of the room in order to contain the product in case of leakage or spillage from the tank.
 - (1) Secondary containment tanks do not remove the requirement for the raised sills or ramps at openings to other rooms or buildings, or lowered floor requirements described in (a) above. An open-grated trench across the width of the opening inside of the room that drains to a safe location shall be permitted to be used as an alternative to a sill or ramp.
 - (2) The room shall be liquid tight where the walls join the floor and for at least 4 in. above the floor.
 - (3) Access aisles of at least 3 ft shall be maintained for movement of firefighting personnel and fire protection equipment.
- (b) Each connection to a tank inside buildings through which liquid can normally flow shall be provided with an internal or an external valve located as close as practicable to the shell of the tank; and connections for all tank openings shall be liquid tight.

- (c) Tanks for storage of Class I or Class II liquids inside buildings shall be provided with either:
- (1) A normally closed remotely activated valve,
 - (2) An automatic-closing heat-activated valve, or
 - (3) Another approved device on each liquid transfer connection below the liquid level, except for connections used for emergency disposal, to provide for quick cutoff of flow in the event of fire in the vicinity of the tank. This function can be incorporated in the valve required in subsection (b) above and, if a separate valve, shall be located adjacent to the valve required in subsection (b).
- (d) Vents for tanks inside of buildings shall be as required in sections 3-3-9, 3-3-10, 3-3-11, except that emergency venting by the use of weak roof seams on tanks shall not be permitted. Vents shall terminate outside the buildings.
- (1) Section 3-3-10(e) requires that adequate ventilation exist to guarantee that flammable liquid vapors cannot build up to 25% of the lower flammable limit, including inside buildings.
- (e) Vent piping shall be constructed and equipped as in sections 3-3-10 and 3-3-12.
- (f) Openings for manual gauging of Class I or Class II liquids, if independent of the fill pipe, shall be provided with a vapor tight cap or cover. Openings shall be kept closed when not gauging. Each such opening for any liquid shall be protected against liquid overflow and possible vapor release by means of a spring-loaded check valve or other approved device. Substitutes for manual gauging include, but are not limited to, heavy-duty flat gauge glasses, magnetic, hydraulic, or hydrostatic remote reading devices, and sealed float gauges.
- (g) The inlet of the fill pipe and the outlet of a vapor recovery line for which connections are made and broken shall be located outside of buildings at a location free from any source of ignition and not less than 5 ft (1.5 m) away from any building opening. Such connections shall be closed and tight when not in use and shall be properly identified.
- (h) Tanks storing Class I, Class II, and Class IIIA liquids inside buildings shall be equipped with a device, or other means shall be provided to prevent overflow into the building. Suitable devices include, but are not limited to, a float valve, a preset meter on the fill line, a valve actuated by the weight of the tank contents, a low head pump incapable of producing overflow, or a liquid tight overflow pipe at least one pipe size larger than the fill pipe, discharging by gravity back to the outside source of liquid or to an approved location.
- (i) Tank openings provided for purposes of vapor recovery shall be protected against possible vapor release by means of a spring-loaded check valve or dry-break connections, or other approved device, unless the opening is pipe-connected to a vapor processing system. Openings designed for combined fill and vapor recovery shall also be protected against vapor release unless connection of the liquid delivery line to the fill pipe simultaneously connects the vapor recovery line. All connections shall be vapor tight.

3-3-15 Standards for Piping, Valves & Fittings.

(a) General and Suction Systems.

- (1) For the purpose these regulations, piping connected to an AST is considered to be suction piping when the entire length of piping is at a higher elevation than the AST it is connected to, and where there is no pump installed between the tank and piping. All other piping connected to an AST is pressurized piping.

- (A) ASTs with underground piping must meet **all** of the requirements for underground pressurized piping contained in Article 2 of these regulations, including the construction, corrosion protection, and installation requirements of 2-2-8, the secondary containment requirements of 2-2-8 for piping installed after April 14, 2011, and release detection requirements of 2-4-2 and 2-4-5.
- (2) Liquid shall not be dispensed from a tank by pressurization of the tank. Means shall be provided to prevent the release of liquid by siphon flow.
- (3) On or after October 14, 2012, where an AST is at an elevation that produces a gravity head on a motor fuel dispensing device, the tank outlet shall be equipped with a device (such as a normally closed solenoid valve) that will prevent gravity flow from the tank to the dispenser. This device shall be located adjacent to and downstream of the main valve specified by section 3-3-13(a) of these regulations. The device shall be installed and adjusted so that liquid cannot flow by gravity from the tank to the dispenser in the event of failure of the piping or hose when the dispenser is not in use.
- (4) Where a suction-type dispensing system includes a booster pump or where a suction-type dispensing system is supplied by a tank in a manner that produces a gravity head on the dispensing device, a listed, vacuum-actuated shutoff valve with a shear section or equivalent type valve shall be installed directly under the dispensing device.
 - (A) Suction-type dispensing systems installed before April 14, 2011 that include a solenoid valve at the tank outlet, and a listed, rigidly anchored emergency shutoff valve incorporating a fusible link or other thermally actuated device, designed to close automatically in event of severe impact or fire exposure are deemed to be meeting this requirement.
- (5) For ASTs installed after September 30, 1994, shutoff and check valves shall be equipped with a pressure-relieving device that will relieve the pressure generated by thermal expansion back to the tank.
- (6) Piping shall be routed so that exposure to physical damage is minimized.

(b) Remote Pumping Systems.

This section shall apply to systems for dispensing Class I liquids and Class II liquids where such liquids are transferred from storage to individual or multiple dispensing devices by pumps located other than at the dispensing devices.

- (1) Pumps shall be listed and designed or equipped so that no part of the system will be subjected to pressures above its allowable working pressure.
- (2) Each pump shall have installed on the discharge side a listed leak detection device that will provide an indication if the piping and dispensers are not essentially liquid tight. Each leak-detecting device shall be checked and tested at least annually according to the manufacturer's specifications.
- (3) Pumps installed above grade, outside buildings, shall be located not less than 10 ft. (3 m) from lines of adjoining property that can be built upon and not less than 5 ft. (1.5 m) from any building opening. Pumps shall be substantially anchored and protected against physical damage.
- (4) A listed rigidly anchored emergency shutoff valve, incorporating a fusible link or other thermally actuated device, designed to close automatically in event of severe impact or

fire exposure shall be installed in accordance with the manufacturer's instructions, in the supply line at the base of each individual island-type dispenser or at the inlet of each overhead dispensing device. An emergency shutoff valve incorporating a slip-joint feature shall not be used. The automatic closing feature of this valve shall be checked at the time of initial installation and at least once a year thereafter by manually tripping the hold-open linkage.

- (5) Any vapor return pipe inside the dispenser housing shall have a shear section or flexible connector so that the liquid emergency shutoff valve will function as described above.

(c) Breakaway devices.

A listed emergency breakaway device designed to retain liquid on both sides of the breakaway point shall be installed on each hose dispensing Class I and II liquids. Such devices are not required at marine service stations.

3-3-16 Upgrading of AST Systems.

The deadlines for the upgrading of AST systems that existed prior to AST regulations being promulgated have expired. This section remains in this revision for historical reference.

- (a) On or before December 22, 1996, AST systems must meet the requirements of these regulations or permanently close the tanks in accordance with these regulations. The following requirements take effect December 22, 1996:
 - (1) Each AST must be sound and have an emergency relief venting device which is equivalent to those described in these regulations. The owner/operator is required to provide proof that the tank meets this requirement.
 - (2) Secondary containment methods or devices must be provided and in regular use at the facility as described in section 3-4-2.
 - (3) The facility must meet the security requirements of section 3-3-3.
- (b) By December 22, 1998 certain AST systems must be equipped with a solenoid valve or a vacuum-actuated shutoff valve, with a shear section as described in section 3-3-15.

[Note: In applying these requirements, the following quotation will be carefully considered by the Director - "Existing plants, equipment, buildings, structures, and installations for the storage, handling or use of flammable or combustible liquids that are not in strict compliance with the terms of this code may be continued in use at the discretion of the Director provided they do not constitute a recognized hazard to life or adjoining property. The existence of a situation that might result in an explosion or sudden escalation of a fire, such as inadequate ventilation of confined spaces, lack of adequate emergency venting of a tank, failure to fireproof the supports of elevated tanks, or lack of drainage or dikes to control spills, may constitute such a hazard."]

3-3-17 Testing, Inspection, and Maintenance of ASTs.

(a) Initial Testing.

- (1) All new ASTs shall be tested before they are placed in service in accordance with the requirements of the standard or code under which they were built.
 - (A) An AST marked with an approved listing is considered to be in compliance with this requirement, as the testing is part of the standard to which it was constructed.

Tanks not marked with an approved listing shall be tested before they are placed in service in accordance with recognized engineering standards.

(b) Tightness Testing.

(1) In addition to the initial testing of 3-3-17(a)(1), all new and used tanks and connections shall be tested for tightness after installation/reinstallation and before being placed in service in accordance with manufacturer instructions, or NFPA 30 where no manufacturer instructions exist. This test shall be made at operating pressure with air, inert gas, or water.

(A) Air pressure shall not be used to test tanks that contain flammable or combustible liquids or vapors.

(B) Where the vertical length of the fill and vent pipes is such that, when filled with liquid, the static head imposed on the bottom of the AST exceeds a gauge pressure of 10 psi, the tank and its related piping shall be tested hydrostatically to a pressure equal to the static head, using recognized engineering standards. Under no circumstances should the test pressure exceed the design pressure of the AST.

(c) Periodic Inspection and Testing.

(1) In addition to the monthly visual inspections required by 3-5-1(a), all steel ASTs shall be inspected and maintained in accordance with STI SP001, *Standard for the Inspection of Aboveground Storage Tanks*, or API Standard 653, *Tank Inspection, Repair, Alteration, and Reconstruction*, whichever is applicable.

(A) Annual inspections of all steel ASTs shall be performed, documented, and retained according to the requirements of STI SP001.

(i) This inspection does not include ultrasonic testing (UT), and can be performed by an individual knowledgeable of storage facility operations, the type of AST and its associated components, and characteristics of the liquid stored.

(ii) Annual inspections shall be performed within 12 months after April 14, 2011, and during the same month in each year thereafter.

(B) External and internal inspections, and leak testing, shall be performed and documented according to the requirements of the standard being followed.

(i) These inspections shall be performed by inspectors meeting the qualifications required by the standard being followed.

(ii) The applicability and frequency of these inspections is determined by the AST type, capacity, type of installation, corrosion rate, inspection history, and standard being followed.

(iii) For any new or used AST being installed, and all existing ASTs, the first inspections and testing required by this subsection are due as indicated in Table 8 below.

Note: For Table 8, inspection frequency shall be determined based on the requirements in the selected inspection standard listed in Section 3-3-17 (c)(1).

TABLE 8		First External and Internal Inspections, and Leak Testing Due			
Type of AST	Age of AST	Previous inspections conducted?	Re-inspection due date is exceeded ?	The inspection is due	
AST Installations	New	at the time of installation is new	No	N/A	when the age of the AST = the inspection frequency
	Used	at the time of installation is \leq the inspection frequency	Yes	Yes	before installation**
	Used	at the time of installation is \leq the inspection frequency	Yes **	No	re-inspect per subsection (iv) below
	Used	at the time of installation is \leq the inspection frequency	No	N/A	when the age of the AST = the inspection frequency
	Used	at the time of installation is $>$ the inspection frequency	Yes	Yes	before installation**
	Used	at the time of installation is $>$ the inspection frequency	Yes **	No	re-inspect per subsection (iv) below
	Used	at the time of installation is $>$ the inspection frequency	No	N/A	before installation**
Existing	on 10/14/2012 is \leq the inspection frequency	Yes	Yes	before 10/14/2012	
Existing	on 10/14/2012 is \leq the inspection frequency	Yes	No	re-inspect per subsection (iv) below	
Existing	on 10/14/2012 is \leq the inspection frequency	No	N/A	when the age of the AST = the inspection frequency	
Existing	on 10/14/2012 is $>$ the inspection frequency	Yes	Yes	before 10/14/2012	
Existing	on 10/14/2012 is $>$ the inspection frequency	Yes	No	re-inspect per subsection (iv) below	
Existing	on 10/14/2012 is $>$ the inspection frequency	No	N/A	before 10/14/2012	

****A copy of the inspection report must be included with the installation application required by section 3-2-1.**

(iv) Re-inspection of all ASTs shall occur in the same month as the previous inspection, during the next inspection year established by the applicable inspection frequency.

(v) Inspection reports and supporting documents shall be retained for the life of the tank.

Section 3-4 General Operating Requirements

3-4-1 Fire and Safety Standards.

(a) Any recognized real hazard to life or to adjoining property must be prevented;

(b) Fire Safety - All Facilities

(1) Warning signs incorporating the following or equivalent wording shall be conspicuously posted in the dispenser area:

WARNING

It is unlawful and dangerous to dispense gasoline into unapproved containers.

No smoking.

Stop motor.

No filling of portable containers in or on a motor vehicle.

Place container on ground before filling.

Discharge your static electricity before fueling by touching a metal surface away from the nozzle.

Do not re-enter your vehicle while gasoline is pumping.

If a fire starts, **do not** remove nozzle — back away immediately.

- (2) Additional fire protection may be required by the Director, or by the local authority having jurisdiction in special cases.
- (3) Smoking materials, including matches and lighters, shall not be used within 20 ft (6 m) of areas used for fueling, servicing fuel systems, or receiving or dispensing of Class I liquids. The motors of all equipment being fueled shall be shut off during the fueling operation except for emergency situations.
- (4) Each motor fuel dispensing facility shall be provided with one or more listed fire extinguishers having a minimum classification of 40B:C located so that an extinguisher will be within 30 ft (9 m) of motor fuel dispensing areas. Such extinguisher shall be accessible for use by the persons dispensing product during all hours fuel products are dispensed from the facility.

(c) Fire Safety - Unattended Facilities.

The Fire Safety requirements for unattended operation include all of the measures listed in this section as well as those in subsection (b) above. These requirements apply to any vehicle fueling facility that uses any type of unattended self service operation including but not limited to service stations, bulk plants, governmental facilities, and commercial facilities.

- (1) Fuel dispensing systems must be provided with one or more clearly identified emergency shutoff devices or electrical disconnects that are readily accessible to patrons. These devices or disconnects must be installed in approved locations not less than 20 ft (6 m) or more than 100 ft (30 m) from the dispensing devices they serve. The devices or disconnects must disconnect power to all dispensing devices, to all remote pumps serving the devices, to all associated power, control, and signal circuits, and to all other electrical equipment in the hazardous location surrounding the dispensing devices. Where more than one shutoff device or disconnect is provided, they all must be interconnected. A manual reset of the emergency shutoff condition is required.
- (2) A fire extinguisher with a minimum rating of 40-B:C, and located no more than a 30 ft (9 m) travel distance from the dispensing devices, must be accessible to patrons.
- (3) Operating instructions must be conspicuously posted in the dispensing area and shall include the location of the emergency controls and a requirement that the user must stay outside of his/her vehicle, in view of the fueling nozzle during the entire dispensing time period.
- (4) Emergency instructions incorporating the following or equivalent wording shall be conspicuously posted in the dispenser area:

(A) EMERGENCY INSTRUCTIONS - In case of fire or spill:

- (i) Use emergency stop button.
 - (ii) Report accident by calling (specify local fire department number) on the telephone to report location;
- (5) A listed automatic-closing type hose nozzle valve with latch-open device shall be provided. The system shall include listed equipment with a feature that causes or requires the closing of the hose nozzle valve before the product flow can be resumed or before the hose nozzle valve can be replaced in its normal position in the dispenser.
- (6) A telephone or other approved, clearly identified means to notify the fire department shall be provided on the site in a location subject to approval by the Director.

3-4-2 Spill and Overfill Control.

(a) General Requirements.

- (1) After December 22, 1996, facilities shall be provided so that any accidental discharge of any Class I, II or IIIA liquids will be prevented from endangering important facilities, and adjoining property, or reaching waterways, as provided for in subsections (b) or (c) except that tanks storing Class IIIB liquids do not require special drainage or diking provisions for fire protection purposes.
- (2) Owners/operators of ASTs must ensure that releases due to spilling or overfilling do not occur. The owner/operator must ensure that the volume available in the tank is greater than the volume of product to be transferred to the tank before the transfer is made; and that the transfer operation is monitored constantly to prevent overfilling and spilling.
 - (A) Where electronic or mechanical gauges are used for determining tank volume (ground-level tape gauges, clock face gauges, etc.), the gauge shall be calibrated annually, per manufacturer instructions. These calibrations shall be documented and maintained.
- (3) Spill and overfill prevention equipment is required for all ASTs installed after September 30, 1994. Means shall be provided for determining the liquid level in each tank, and this means shall be accessible to the delivery operator. Specifically, for all ASTs installed after September 30, 1994 at service stations, and for all secondary containment type tanks without diking or impounding protection, the equipment shall automatically stop the delivery of liquid to the tank when the liquid level in the tank reaches 95 percent of capacity or sound an audible alarm when the liquid level in the tank reaches 90 percent of capacity.
- (4) Delivery operations shall comply with the following requirements:
 - (A) The delivery vehicle shall be separated from any AST by at least 25 ft. (7.6 m) for class I liquids and by at least 15 ft. for class II and class III liquids, measured from the nearest fill spout or transfer connection.
 - (B) Tank filling shall not begin until the delivery operator has determined tank ullage (available capacity) based on direct liquid level measurement converted to gallons or some equivalent method.
 - (i) Where spill and overfill prevention equipment that will automatically stop the delivery of liquid to the tank or sound an audible alarm that can be heard by the delivery operator described in 3-4-2(a)(3) does not exist, tank

ullage and the amount of product delivered must be documented and maintained.

(C) For ASTs installed after September 30, 1994, a check valve and a shutoff valve with a quick-connect coupling or a dry-break valve shall be installed in the piping at a point where connection and disconnection is made for delivery from the vehicle to the AST. This device shall be protected from tampering and physical damage.

(5) The owner/operator must report, investigate, and clean up any spills and overfills in accordance with Articles 4 and 5 of these Regulations.

(b) Remote Impounding.

Where protection of adjoining property or waterways is by means of drainage to a remote impounding area, so that impounded liquid will not be held against tanks, such systems shall comply with the following:

- (1) A slope of not less than 1 percent away from the tank shall be provided for at least 50 ft (15 m) toward the impounding area.
- (2) The impounding area shall have a net capacity not less than that of the largest tank that can drain into it plus an allowance for precipitation.
- (3) The route of the drainage system shall be so located that, if the liquids in the drainage system are ignited, the fire will not seriously expose tanks or adjoining property.
- (4) The confines of the impounding area shall be located so that, when filled to capacity, the liquid level will not be closer than 50 ft. (15 m) from any property line that can be built upon, or from any tank.

(c) Impounding Around Tanks by Diking.

Exception: Size and spacing requirements for dikes enclosing existing ASTs may be reduced or waived by the Director if he determines that there are equivalent safety measures at the facility.

When protection of adjoining property or waterways is by means of impounding by diking around the tanks, such system shall comply with the following:

- (1) For ASTs installed after September 30, 1994, a slope of not less than 1 percent away from the tank shall be provided for at least 50 ft (15 m) or to the dike base, whichever is less.
- (2) After December 22, 1996, the volumetric capacity of the diked area shall not be less than the greatest amount of liquid that can be released from the largest tank within the diked area, assuming a full tank. To allow for volume occupied by tanks, the capacity of the diked area enclosing more than one tank shall be calculated after deducting the volume of the tanks, other than the largest tank, below the height of the dike.
- (3) For ASTs installed after September 30, 1994, to permit access, the outside base of the dike at ground level shall be no closer than 10 ft (3 m) to any property line that is, or can be built upon.
- (4) After December 22, 1996, walls of the diked area shall be of non-permeable earth, steel, concrete, or solid masonry designed to be liquid tight and to withstand a full hydrostatic head for enough time until any release therein can be cleaned up. For all AST dikes installed after September 30, 1994, the floor of the diked area must be impervious

enough to contain the product for enough time until any release therein can be cleaned up. Earthen walls 3 ft (0.09 m) or more in height shall have a flat section at the top not less than 2 ft (0.06 m) wide. The slope of an earthen wall shall be consistent with the angle of repose of the material of which the wall is constructed. Diked areas for tanks containing Class I liquids located in extremely porous soils may require special treatment to prevent seepage of hazardous quantities of liquids to low-lying areas or waterways in case of spills.

- (5) Except as provided in subsection (6) below, the walls of the diked area shall be restricted to an average interior height of 6 ft (1.8 m) above interior grade.
- (6) Dikes may be higher than an average of 6 ft (1.8 m) above interior grade where provisions are made for normal access and necessary emergency access to tanks, valves, and other equipment, and safe egress from the diked enclosure.
 - (A) Where the average height of the dike containing Class I liquids is over 12 ft high, measured from interior grade, or where the distance between any tank and the top inside edge of the dike wall is less than the height of the dike, provisions shall be made for normal operation of valves and access to tank roof without entering below the top of the dike. These provisions may be met through the use of remote-operated valves, elevated walkways, etc..
 - (B) Piping passing through dike walls shall be designed to prevent excessive stresses as a result of settlement or fire exposure.
 - (C) For ASTs installed after September 30, 1994, the minimum distance between tanks and toe of interior dike walls shall be 5 ft (1.5 m).
- (7) Where provision is made for draining water from diked areas, such drains shall be controlled in a manner so as to prevent flammable or combustible liquids from entering natural water courses, public sewers, or public drains, if their presence would constitute a hazard. Control of drainage shall be accessible under fire conditions from outside the dike.
- (8) Storage of combustible materials, empty or full drums, or barrels, shall not be permitted within the diked area.

3-4-3 Operation and Maintenance of Corrosion Protection.

- (a) Internal Corrosion Protection For ASTs Installed After September 30, 1994.

When ASTs installed after September 30, 1994 are not designed in accordance with the American Petroleum Institute, American Society of Mechanical Engineers, or the Underwriters Laboratories Inc. Standards, or if corrosion is anticipated beyond that provided for in the design formulas used, additional metal thickness or suitable protective coatings or linings shall be provided to compensate for the corrosion loss expected during the design life of the tank.

- (b) External Corrosion Protection for ASTs installed after September 30, 1994.

For those portions of an AST system installed after September 30, 1994 including the product pipelines that normally contain regulated substances and are in contact with the soil or with an electrolyte that may cause corrosion of the AST system, tanks and piping must be protected by either:

- (1) A properly engineered, installed and maintained cathodic protection system in accordance

with recognized standards of design, such as:

(A) National Association of Corrosion Engineers Standard RP-01-69, *"Control of External Corrosion of Underground or Submerged Metallic Piping Systems"* ;

(B) National Association of Corrosion Engineers Standard RP-02-85, *"Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems"* ; or;

(2) Approved or listed corrosion-resistant materials or systems, which may include special alloys, fiberglass reinforced plastic, or fiberglass reinforced plastic coatings.

(c) External Coating of all Elevated Tanks.

For installations where tanks and piping are not in contact with soil or with an electrolyte, corrosion protection may consist of an appropriate external coating.

(d) Cathodic Protection Requirements.

Owners/operators must comply with the following requirements to ensure that releases due to corrosion are prevented for as long as a cathodically protected AST system is used to store regulated substances:

(1) All corrosion protection systems must be operated and maintained to continuously provide corrosion protection to the metal components of that portion of the tank and piping that routinely contain regulated substances and are in contact with the ground.

(2) Performance criteria - The criteria that are used to determine that cathodic protection is adequate as required by this section must be in accordance with a code of practice developed by a nationally recognized association.

(3) Periodic Inspections - AST systems with impressed current cathodic protection systems must be inspected every 60 days to ensure that the equipment is running properly.

(4) Record Keeping - For AST systems using cathodic protection, records of the operation of the cathodic protection must be maintained to demonstrate compliance with the performance standards in this section.

For ASTs installed September 30, 1994 or earlier, if an AST system is not cathodically protected, the AST system must meet the requirements of section 3-5-1(b).

3-4-4 Compatibility Requirements for All Tanks.

Owners/operators must use an AST system made of or lined with materials that are compatible with the substance stored in the AST.

[Note: Owners/operators storing alcohol blends may use the following codes to comply with the requirements of this section: (a) American Petroleum Institute Publication 1626, "Storing and Handling Ethanol and Gasoline-Ethanol Blends at Distribution Terminals and Service Stations"; and (b) American Petroleum Institute Publication 1627, "Storage and Handling of Gasoline-Methanol/Co-solvent Blends at Distribution Terminals and Service Stations."]

3-4-5 Static Protection for All ASTs.

(a) Grounding Required.

All equipment such as tanks, machinery and piping, where an ignitable mixture may be present shall be bonded or connected to a ground.

(b) Bonding Facilities Required.

The bond or ground or both shall be physically applied or shall be inherently present by the nature of the installation; and

(1) Bonding facilities for protection against static sparks during the loading of tank vehicles through open domes shall be provided:

(A) Where Class I liquids are loaded, or

(B) Where Class II or Class III liquids are loaded into vehicles that may contain vapors from previous cargoes of Class I liquids; and

(2) Bonding facilities shall consist of a metallic bond wire permanently electrically connected to the fill stem, or to some part of the rack structure in electrical contact with the fill stem. The free end of such wire shall be provided with a clamp or equivalent device for convenient attachment to some metallic part in electrical contact with the cargo tank of the tank vehicle. (This can be a simple ground clamp used while loading).

3-4-6 Repairs Allowed.

(a) If an AST system is damaged, it must be repaired to meet applicable requirements, or be properly closed. Owners/operators of AST systems must ensure that repairs will prevent releases due to structural failure or corrosion as long as the AST system is used to store regulated substances.

(b) The repairs must meet the following requirements:

(1) Repairs to AST systems must be properly conducted in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory. [Note: The following codes and standards may be used to comply with paragraph (b) of this section: National Fire Protection Association Standard 30, "Flammable and Combustible Liquids Code"; American Petroleum Institute Publication 2200, "Repairing Crude Oil, Liquefied Petroleum Gas, and Product Pipelines";]

(2) Aboveground metal pipe that has released product must be immediately repaired or replaced and appropriately tested. [Note: repaired piping that has previously contained flammable liquid must not be subjected to an air pressure test unless the piping has been completely cleaned and rendered vapor free]

(3) Underground metal pipe sections and fittings connected to an AST that have released product as a result of corrosion or other damage must be replaced immediately and protected from future corrosion. Fiberglass pipes and fittings may be repaired in accordance with the equipment manufacturer's specifications.

(4) Repaired AST underground piping must be tightness tested in accordance with section 2-4-5(b) within 30 days following the date of the completion of the repair. New replacement piping runs that have never contained product may be tested by an air pressure/soap bubble test at 1.5 times operating pressure if inspected and approved by the Director.

3-4-7 Out of Service, Closure or Change-In-Service.

(a) Out of Service. An AST may be taken out of service without notice for a period of not more than 6

months. During this period, all of the requirements of these regulations, including the performance and documentation of release detection and corrosion protection if the tank is not emptied to 1 in. or less, still apply. If the tank is emptied to 1 in. or less, release detection is not required. After 6 months, the tank must be returned to service or placed into temporary closure as required by 3-4-7(b).

(b) Temporary Closure.

- (1) Owners/operators shall notify the Director in writing at least 10 days prior to placing an AST system in temporary closure, and at that same time submit records documenting the prior 12 months of monthly visual inspections, inventory control, ullage records, piping release detection records, and corrosion protection testing (if applicable) for tanks and piping. In lieu of submitting these records, the owner/operator may conduct a tightness test of the tanks and underground piping, and complete a site assessment in accordance with 3-4-7(f), and submit these results with the temporary closure notification.
- (2) Temporarily closed tanks must be emptied of liquid, rendered vapor free and safeguarded against trespassing by means of locked gates, fences etc. ASTs may continue in a temporary closed status for not more than 12 calendar months. When an AST system is temporarily closed, owners/operators must continue the operation, maintenance, inspection, and testing of corrosion protection in accordance with these regulations. Articles 4 and 5 must be complied with if a release is suspected or confirmed. Because the tanks must be emptied, release detection is not required.
- (3) When an AST system is temporarily closed for 3 months or more, owners/operators must also comply with the following requirements:
 - (A) Leave vent lines open and functioning; and
 - (B) Cap and secure all other lines, pumps, manways, and ancillary equipment.
- (4) When an AST system is temporarily closed for more than 12 months, owners/operators must permanently close the AST system in accordance with 3-4-7(c), unless the Director provides a written extension of the 12-month temporary closure period. Owners/operators must complete a site assessment in accordance with 3-4-7(f) before such an extension can be applied for.
- (5) Owner/operators shall notify the Director in writing no more than 30 days prior to placing an AST back in service, and at that same time submit corrosion protection records (if applicable) for the period of temporary closure, and documentation of passing tightness tests for the AST and any underground piping conducted within the past 30 days.

(c) Permanent Closure.

- (1) Owners/operators shall notify the Director in writing at least 10 days prior to placing an AST system in permanent closure, and at that same time submit records documenting the prior 12 months of monthly visual inspections, inventory control, ullage records, piping release detection records, and corrosion protection testing (if applicable) for tanks and piping.

Exception: Records do not need to be submitted where they have already been submitted as part of placing the tank into temporary closure as required by 3-4-7(b)(1).
- (2) Empty and clean the tank by removing all liquids and accumulated sludges as described in subsection (e) below; and

- (3) Clean out and plug both ends of all connected piping; and
 - (4) Remove all dispensers; and
 - (5) Render all connected loading facilities completely inoperative; and
 - (6) Safeguard the AST system from trespassing as described in subsection (b) above, or remove the tanks from the facility; and
- (d) Change-In-Service. Continued use of an AST system to store a substance other than a regulated substance is considered a change-in-service. Before a change-in-service, owners/operators must empty and clean the tank, connected piping, and any other equipment that previously contained a regulated substance as described in subsection (e) below; then notify the Director in writing of the change of service.
- (e) All liquids and accumulated sludges must be removed and disposed of according to the rules adopted pursuant to the Solid Waste Disposal Regulations and the Colorado Hazardous Waste Regulations adopted by the Colorado Department of Public Health and Environment.
- (f) Assessing the site at closure or change-in-service.
- (1) Before permanent closure or a change-in-service is completed, or upon request by the Director for previously closed sites, owners/operators must measure for the presence of a release where contamination is most likely to be present at the site. In selecting sample types, sample locations, and measurement methods, owners/operators must consider the method of closure, the nature of the stored substance, the depth to groundwater, and other factors appropriate for identifying the presence of a release.
 - (2) If contaminated soils, contaminated groundwater, or free product as a liquid or vapor is discovered under subsection (1), or by any other manner, owners/operators must begin corrective action in accordance with these regulations.

[Note 1: Permanently closed or non-regulated ASTs may be returned to active regulated substance service only after meeting the reinstallation rules described in section 3-4-8 below.]

[Note 2: These closure rules are the minimum required in Colorado; they do not preempt local fire district rules, local building codes, or local zoning rules. In fire districts where the Uniform Fire Code is in effect, the fire district may require that out of service ASTs be removed or demolished.]

[Note 3: The following procedures may be used to comply with this section 3-4-7:

- (A) American Petroleum Institute Publication 2015, *"Cleaning Petroleum Storage Tanks"* ;
- (B) American Petroleum Institute Publ. 2015A, *"Lead Hazard Associated with Tank Entry"* ;
- (C) American Petroleum Institute 2015B, *"Cleaning Open Top and Floating Roof Tanks"* ;
- (D) National Institute for Occupational Safety and Health *"Criteria for a Recommended Standard...Working in Confined Space"* may be used as guidance for conducting safe closures.]

3-4-8 Reinstallation of ASTs.

Used ASTs being installed to store a regulated substance must meet the following requirements:

- (a) The AST itself must meet all of the fabrication, construction and performance requirements, and be equipped with all of the required equipment listed in section 3-3 of these regulations.
- (b) The tank must be inspected per 3-3-17(c)(1)(A) and 3-3-17(c)(1)(B)(i) - (v), and manufacturer reinstallation/relocation requirements.
- (c) The AST installation and registration requirements of section 3-2 must be followed.
- (d) Emergency relief vent devices must be tested and certified to be in good working order.

3-4-9 Record Keeping.

- (a) Owners/operators must maintain the following records for an AST site as applicable:
 - (1) Installation permits for newly installed tanks, reinstalled used tanks or permits for upgrading existing tanks must be maintained for 5 years.
 - (2) Tank registration records or record of facility ID number retained until closure.
 - (3) Records of repairs that have been performed within the last 5 years.
 - (4) Monthly visual inspection records of the AST system must be kept for one year.
 - (5) Most recent underground piping precision test records must be maintained.
 - (6) Records showing the history of each AST in terms of which Class and type of product has been stored in that tank, shall be maintained for at least one year.
 - (7) Electronic/mechanical tank gauge calibration documentation required by 3-4-2(a)(2)(i) must be kept for one year.
 - (8) Tank ullage documentation required by 3-4-2(a)(4)(B)(i) must be kept for one year.
 - (9) Inventory control records required by 3-5-1(e) must be kept for one year.
 - (10) Free product removal records must be maintained to document proper operation following any release of product within the last five years.
 - (11) Records showing the changes in status of tanks that have been taken out of service or temporarily closed at times then returned to service, should be maintained for at least two (2) years. Records need not be kept for tanks that have been permanently closed.
- (b) Records must be maintained at the AST site and immediately available for inspection by the Director; or at a readily available alternative site and be provided for inspection within 24 hours to the Director upon request.
- (c) Notwithstanding the above, to be eligible for the Fund, persons may be required to maintain the above or other records in accordance with Fund requirements.

Section 3-5 Release Detection

3-5-1 General Requirements for all AST Systems.

- (a) ASTs that are not in contact with the ground or any electrolyte that might cause corrosion of the tank must be visually inspected, at least once per month by operating personnel to detect any leakage from tank seams, connections, and fittings, including piping. Any such leakage must be repaired immediately and reported under the repair and reporting requirements of these regulations.
- (b) ASTs including metal supporting structures that are in contact with the soil or that are in contact with an electrolyte that may promote corrosion of the tank must be inspected as in subsection (a) above and be protected from corrosion or tested periodically to prove that they are not seriously corroded, as described in this section. Tanks that are not cathodically protected must be tested within 5 years after October 1, 1994; and once every two years thereafter by either:
 - (1) An external visual inspection, that includes the bottom of the tank, for corrosion or other visible damage; or
 - (2) A leakage test of any type approved by the Director; or
 - (3) An internal inspection for corrosion or other visible damage; or
 - (4) Comply with some other alternative test for corrosion or leakage as specified by and approved by the Director in the future.
- (c) AST system piping that is not in contact with the soil or with an electrolyte that might cause corrosion of the piping, must be inspected at least once each month to detect leakage from pipe seams, connections, and fittings. Any such leakage that may exceed the reportable quantity (25 gallons) must be repaired immediately and reported as in Article 4.
- (d) Underground AST piping shall meet the release detection requirements in section 2-4-2(b).
 - (1) Pressurized piping described in section 3-3-15(a)(1) shall meet the release detection requirements in section 2-4-2(b)(1), except that where there is no pump installed between the tank and underground piping, the requirement for an automatic line leak detector in section 2-4-2(b)(1)(i) does not apply.
 - (2) Suction piping described in section 3-3-15(a)(1) shall meet the release detection requirements in section 2-4-2(b)(2).
- (e) Inventory control shall be performed and documented for all ASTs used for motor fuel dispensing, all ASTs installed on earthen materials, and all ASTs connected to underground pressurized piping that is not being monitored for releases in accordance with 2-4-5(c). Accurate daily inventory records shall be maintained and reconciled for all applicable storage tanks.

3-5-2 Leak Detection for Secondary Containment Tanks.

Secondary Containment tanks that are installed without special drainage or diking according to section 3-4-2(b) or (c) must be visually inspected at least once each month to ensure that there has been no failure of the outer wall of the secondary containment tank. An interstitial liquid detector or some other positive means of leak detection must be installed to detect leaks from the inner wall of the tank; and operation of that leak detector must be verified at least monthly. A record of the inspection must be maintained [See § 3-4-9].

3-5-3 AST Facility Housekeeping Required.

- (a) All AST system tank and piping fittings, connections, valves, auxiliary equipment that contains product, secondary containment areas, etc. must be maintained free of obstructions that would interfere with visual detection of leaks and spills.
- (b) Secondary containment areas must be maintained free of accumulations of water, leaves, weeds, flammable material, non U.L. listed tanks or drums; and anything else that might interfere with the containment purpose of such areas.

Section 3-6 Oil Pollution Prevention - SPCC Plan

The US EPA's SPCC rule regulates non-transportation-related onshore and offshore facilities that could reasonably be expected to discharge oil into navigable waters of the United States or adjoining shorelines. It is the responsibility of the facility owner/operator to make the determination whether the facility is subject to the requirements of the SPCC rule. This determination is subject to review by the EPA's Regional Administrator. All requests for information regarding SPCC should be directed to the US EPA.

Compliance with the US EPA's SPCC rule is required. Documentation used to demonstrate compliance with the US EPA's SPCC rule may be used to demonstrate compliance with this section.

ARTICLE 4 RELEASE REPORTING, INVESTIGATION, AND CONFIRMATION

4-1 Reporting of suspected releases.

Owners/operators of regulated substance systems must report a release or suspected release to the Director within 24 hours by telephone or facsimile. (If outside normal working hours or on a weekend and emergency assistance is needed, call the emergency response number (303) 756-4455 at the Colorado Department of Public Health and Environment). Any suspected release or release of unknown quantity(ies) is a reportable quantity unless an owner/operator can conclusively show the release was less than the reportable quantity. Owners/operators must follow the procedures in section 4-3 for any of the following conditions:

- (a) The discovery by owners/operators or others of released regulated substances at the site or in the surrounding area (such as the presence of contamination, free product or vapors in soils, basements, sewer and utility lines, and surface, ground, or drinking water);
- (b) Unusual operating conditions observed by owners/operators (such as the erratic behavior of product dispensing equipment, the sudden loss of product from the system, failed tightness tests, inconclusive statistical inventory reconciliation, or an unexplained presence of water in the tank), unless system equipment is found to be defective but not leaking, and is immediately repaired or replaced; and
- (c) Monitoring results from a release detection method required under these regulations indicate a release may have occurred unless:
 - (1) The monitoring device is found to be defective, and is immediately repaired, recalibrated or replaced, and additional monitoring does not confirm the initial result; or
 - (2) In the case of inventory control, a second month of data does not confirm the initial result.

4-2 Investigation due to off-site impacts.

When required by the Director, owners/operators of regulated substance systems must follow the procedures in section 4-3 to determine if the system is the source of off-site impacts. These impacts include the discovery of regulated substances, such as the presence of contamination, free product or

vapors in soils, basements, sewer and utility lines, and surface, ground, and drinking waters.

4-3 Release investigation and confirmation steps.

Unless corrective action is initiated in accordance with Article 5 of these regulations, owners/operators must immediately investigate and confirm all suspected releases of regulated substances requiring reporting under section 4-1 within 7 days, or another reasonable time period specified by the Director, using either the following steps or another procedure approved by the Director:

- (a) System test. Owners/operators must conduct tests (according to the requirements for tightness testing) that determine whether a leak exists in that portion of the tank that routinely contains product, or the attached delivery piping, or both.
 - (1) Owners/operators must repair, replace or upgrade the regulated substance system, and begin corrective action in accordance with Article 5 of these regulations, if the test results for the system, tank, or delivery piping indicate that a leak exists.
 - (2) Further investigation is not required if the test results for the system, tank, and delivery piping do not indicate that a leak exists and if environmental contamination is not the basis for suspecting a release.
 - (3) Owners/operators must conduct a site check as described in paragraph (b) of this section if the test results for the system, tank, and delivery piping do not indicate that a leak exists but environmental contamination is the basis for suspecting a release.
- (b) Site check. Owners/operators must measure for the presence of a release where contamination is most likely to be present at the site, as specified in Article 5 of these regulations.
 - (1) If the test results for the excavation zone or the site indicate that a release has occurred, owners/operators must begin corrective action in accordance with Article 5 of these regulations;
 - (2) If the test results for the excavation zone or the site do not indicate that a release has occurred, further investigation is not required.

4-4 Reporting and cleanup of spills and overfills.

- (a) Owners/operators of regulated substance systems must contain and immediately clean up a spill or overfill and report the spill or overfill to the Director within 24 hours, and begin corrective action in accordance with Article 5 in the following cases:
 - (1) A spill or overfill of petroleum that results in a release to the environment that may exceed 25 gallons, or that causes a sheen on nearby surface water; and
 - (2) A spill or overfill of a hazardous substance that results in a release to the environment that equals or exceeds its reportable quantity under CERCLA (40 CFR 302).
- (b) Owners/operators of regulated substance systems must contain and immediately clean up a spill or overfill of petroleum that is less than 25 gallons, and a spill or overfill of a hazardous substance that is less than the reportable quantity. If cleanup cannot be accomplished within 24 hours, owners/operators must immediately notify the Director.

[Note: All persons must in any event comply with reporting requirements of other agencies including the Colorado Department of Public Health and Environment.]

[Note: A release of a hazardous substance equal to or in excess of its reportable quantity must also be reported immediately (rather than within 24 hours) to the National Response Center under sections 102 and 103 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (40 CFR 302.6) and to appropriate state and local authorities under Title III of the Superfund Amendments and Reauthorization Act of 1986 (40 CFR 355.40).]

ARTICLE 5 RELEASE RESPONSE AND CORRECTIVE ACTION

5-1 General. [Eff. 01/01/2009]

- (a) Effective February 1, 1999, the owner/operator of a regulated substance system must, in response to a confirmed release, comply with the requirements of these regulations, which incorporate a risk-based corrective action (RBCA) approach.
- (b) Any and all reports required to be submitted by the owner/operator to the Director under these regulations must be submitted in duplicate and in the format specified by the Director unless otherwise determined by the Director. Guidance documents and required report formats are available on the OPS website.
- (c) Any work performed or required under these regulations does not automatically qualify for reimbursement from the State Fund. Fund reimbursement requirements are located in Article 8 of these regulations.

5-2 Initial Response [Eff. 01/01/2009]

- (a) Upon confirmation and reporting of a release in accordance with Article 4 of these regulations, or after a release from a regulated substance system is identified in any other manner, the owner/operator must perform the following initial response actions within 24 hours:
 - (1) Take immediate action to prevent any further release of the regulated substance into the environment; and
 - (2) Identify and mitigate fire, explosion, vapor hazards, and acute health hazards; and
 - (3) Initiate containment and removal of any free product observed on the ground or water surface; and
 - (4) Report the release to the Director by telephone or facsimile.
- (b) Unless directed to do otherwise by the Director, the owner/operator must perform the following abatement measures as soon as possible after a release:
 - (1) Prevent further migration of the released substance into surrounding soils and groundwater; and
 - (2) Monitor and mitigate any additional fire, safety hazards, and acute health hazards posed by vapors or free product that have entered into subsurface structures (such as sewers or basements); and
 - (3) Remedy hazards posed by contaminated media that are excavated or exposed as a result of release confirmation, site investigation, abatement, or corrective action activities. If these remedies include treatment or disposal of media, the owner/operator must comply with applicable state and local requirements.
- (c) Investigate to determine the possible presence of subsurface free product. At sites where there is

subsurface free product, the owner/operator must report the presence of free product to the Director within 24 hours of detection by telephone or facsimile; and remove the free product to the maximum extent practicable as determined by the Director, while continuing as necessary any actions required under this Article. In meeting the requirements of free product removal, the owner/operator must:

- (1) Conduct subsurface free product removal in a manner that minimizes the spread of contamination into previously uncontaminated zones by using recovery and disposal techniques appropriate to the hydrogeologic conditions at the site; and
 - (2) Properly treat, discharge or dispose of recovered byproducts in compliance with applicable local, state and federal regulations, and handle any flammable products in a safe and competent manner to prevent fires or explosions.
- (d) Soil samples must be collected to identify the presence and source of a release. If groundwater is encountered during the investigation it must also be sampled. Information regarding soil and groundwater sample collection procedures is presented in the Petroleum Storage Tank Owner/Operator Guidance Document. The document also provides owners/operators with factors that must be considered in sample location selection. Although these factors may vary widely among sites, the following scenarios have been identified as common, and required sampling locations have been defined:
- (1) If site investigation activities are being performed in conjunction with the removal or permanent closure in place of a petroleum storage system, the owner/operator must collect samples from beneath each tank, beneath each dispenser island, beneath areas of piping, and beneath any loading racks. Soil samples must also be collected from any other location where contamination is suspected based on either visual or olfactory evidence. The results from the tank closure investigation must be submitted to the Director within 30 days of the tank closure whether contamination is encountered or not. Tank owner/operators must still comply with the requirements stated in section 4-4(a) and (b).
 - (2) If site investigation activities are being performed due to the failure of any approved method of leak detection (including tank and/or product piping testing), the owner/operator must collect samples from any areas the tests indicate may have been impacted by a release of a regulated product.
- (e) Samples collected at all sites must be analyzed for each individual chemical of concern (COC) including: benzene, toluene, ethylbenzene, xylenes, and methyl-tertiary butyl ether (MTBE); and for total petroleum hydrocarbons (TPH). The nature of the product must be considered when selecting the analyses to be performed for TPH. The Petroleum Storage Tank Owner/Operator Guidance Document contains additional information regarding COCs, the required sampling protocols, and procedures for the sampling and analysis of certain poly-nuclear aromatic hydrocarbons (PAHs) in the event that TPH exceeds the Tier 1 screening level (500 mg/Kg)..

5-3 Site Classification and the Site Summary Form (SSF) [Eff. 01/01/2009]

- (a) A limited site assessment must be conducted onsite to establish an acceptable site classification and determine the potential for impacts to receptors. The site classification proposed in the Site Summary Form (SSF) must receive the Director's approval. The assessment activities, described below, must be conducted within 60 days of release discovery and the results must be included with the SSF.
- (1) Collect and analyze soil samples in an effort to identify the source of the release. If the soil contamination is vertically defined (based on the analytical data) before encountering

groundwater, an accurate site classification may be established for the site without conducting further assessment.

- (2) If soil contamination is not vertically defined as described above, owner/operators will be required to conduct additional assessment activities to establish an accurate site classification. The following information concerning plume concentration, location and migration must be acquired and submitted to the Director within 60 days of the release discovery date.
 - (A) Collect soil and groundwater samples from a minimum of three (3) groundwater monitoring wells installed in a non-linear pattern. At least two of the wells must be installed in the following locations: the presumed source area; and at the (topographically) downgradient property boundary. The third well should be located to facilitate obtaining a groundwater flow direction.
 - (B) Following well completion and surveying of the groundwater monitoring wells, calculate groundwater elevations to determine the general groundwater flow direction and establish a hydraulic gradient for the site.
 - (C) Estimate a site specific hydraulic conductivity by one of the following methods: performing a slug test or pumping test, using a reference value based on site lithology, or using data from another site in close proximity with similar lithology.
 - (D) Conduct preliminary modeling of groundwater contaminants to estimate the length of the contaminant plume and the potential for the plume to impact potential points of exposure (POEs). Where modeling input values are unknown, use Colorado default values provided in the Petroleum Storage Tank Owner/Operator Guidance Document.
 - (E) Based on the modeling results, identify offsite properties including rights of way that may need to be assessed to complete the site characterization and remediation activities. Access request efforts shall be initiated immediately and copies of the access request letters sent shall be included as an attachment to the SSF.
 - (F) Identify POEs on the POE Location figure in the SSF. This figure must identify each property in the vicinity of the site which could potentially be affected by the release. Determine the distance and direction from the source to the nearest POE. For each property provide the address, the property use (e.g., single family residential, vacant land, retail, gas station, etc.), and current occupancy status. POEs for benzene, toluene, ethylbenzene and xylenes are: property boundaries, surficial soils, subsurface utilities, structures, groundwater wells, surface water, and sensitive environments.
 - (G) Based on the site data collected and completion of the Site Classification Checklist, a site classification for the site can be proposed. The proposed site classification must receive approval from the Director.
- (b) The owner/operator must submit all information collected about the site, as required under section 5-2 and section 5-3(a) of these regulations, and as specified on the SSF, within 60 days of the release date. The SSF must include a brief outline of the site conditions, the required limited assessment data and a complete Site Classification Checklist, to aid in determining a date for submittal of a Site Characterization Report (SCR).
 - (1) The due date for submission of the SCR will be based on threats to human health and the environment identified in the Site Classification Checklist. Risk-based due dates will

require that high risk sites submit an SCR on a shorter timeframe. High risk sites may be assigned interim deadlines for securing access, obtaining permits, and evaluating multiple receptors.

- (2) In lieu of the SSF, the owner/operator may submit a complete SCR, or a No Further Action Request Report (NFAR), as defined in Section 5-4, as appropriate for the site, within 60 days of the release date.
- (3) A quarterly groundwater monitoring program must be established and remain ongoing throughout the investigation and remediation phases of the project, unless an alternate schedule is approved by the Director. Monitoring data must be submitted on a quarterly basis, unless an alternate schedule is approved by the Director, in the Monitoring and Remediation Report (MRR) format.

5-4 Site Characterization [Eff. 01/01/2009]

- (a) During the site characterization activities, the owner/operator must determine the full extent of contamination in soil and groundwater resulting from the release of a regulated substance as described below:
 - (1) At all sites, the extent of soil contamination must be defined to the Tier 1 Risk-Based Screening Levels (RBSLs) for the Soil Leaching to Groundwater Exposure Pathway, as presented in Table 5-1, and to 500 mg/Kg for total petroleum hydrocarbons;
 - (2) At all sites where groundwater contamination is suspected, groundwater contamination must be defined to the Tier 1 RBSLs for the Groundwater Ingestion Exposure pathway. These levels are presented in Table 5-1;
- (b) The owner/operator must determine the hydrogeologic and geologic characteristics of the site and the surrounding area, as appropriate for the site conditions. See the Petroleum Storage Tank Owner/Operator Guidance Document for more information regarding the list of site parameters to be collected;
- (c) During site characterization activities, the owner/operator must note any POEs not previously identified, including the distance from the source area to each POE. The owner/operator must also indicate which POEs have been impacted by the release;
- (d) The owner/operator must evaluate each exposure pathway, listed in Table 5-1, and determine if each pathway is completed between the source of contamination and any POE, or if any pathway may potentially be eliminated from further consideration. Refer to the Petroleum Storage Tank Owner/Operator Guidance Document for further information on evaluating exposure pathways;
- (e) The owner/operator may evaluate land use criteria, and provide a recommendation of land use classification (residential or industrial). Unless all properties impacted by the release are currently zoned industrial, the Director shall consider all land use to be classified as residential. See the Owner/Operator Guidance document for further information regarding the industrial land use classification;
- (f) The owner/operator must determine the appropriate RBSLs for every site by using the Tier 1 RBSL Table (Table 5-1). Compare the highest levels of contamination remaining on the site with the Tier 1 RBSLs. Each completed exposure pathway must be evaluated. The completed exposure pathway with the lowest RBSLs will determine the cleanup goals for the site. If the Director determines that the Tier 1 RBSLs are not sufficiently protective of human health and/or the environment due to site specific conditions, the owner/operator may be required to perform a Tier 1A or Tier 2 evaluation, incorporating site specific data.

Table 5-1 - Tier 1 Risk-Based Screening Levels (RBSLs)

Media	Complete Exposure Pathway	Land Use	Benzene
Surficial Soil [mg/kg]	Ingestion/ Dermal/ Inhalation	Residential	2.8
.	.	Industrial	6.8
Subsurface Soil [mg/kg]	Leachate to Groundwater Ingestion	Residential and Industrial	0.26
Soil Vapor [µg/m³]	Indoor Air Inhalation	Residential	2,900
.	.	Industrial	37,000
Groundwater [mg/l]	Indoor Air Inhalation	Residential	0.016
.	.	Industrial	0.41

Groundwater [mg/l]	Groundwater Ingestion [MCLs]	Residential and Industrial	0.005
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> VP Denotes that even at a concentration equal to the vapor pressure of the chemical, a hazard quotient of 1 is not exceeded.

> Sol Denotes that even at a concentration equal to the solubility of the chemical, a hazard quotient of 1 is not exceeded.

> Sat Denotes that even at a concentration equal to the saturation of the chemical, a hazard quotient of 1 is not exceeded.

N/A Not applicable. No established RBSL.

* This RBSL will be in effect for releases that occurred prior to September 14, 2004.

** This RBSL will be in effect for releases that occurred on or after September 14, 2004.

(g) If concentrations of COCs remaining in soils exceed the site Tier 1 RBSLs, and if the site-specific conditions differ from the assumptions used to create the Tier 1 RBSLs, the owner/operator may consider the preparation of a Tier 1A analysis. A Tier 1A analysis allows the owner/operator to:

(1) Substitute actual site-specific data into the ASTM E 1739 equations and the Domenico model (used to create the Tier 1 RBSL Table) to create a Tier 1A Site-specific Risk-Based Screening Level (SS-RBSL) table. This table must be included with the SCR. The substitution of site-specific data is subject to the following restrictions:

(A) Collect site-specific data (as appropriate to the site) for the input parameters listed in Table 5-2 below. Only data actually collected from the site may be substituted. Consult the Owner/Operator guidance document if you would like further assistance regarding site data collection procedures and applications.

(2) Utilize the SS-RBSLs in the Tier 1A Table to determine site-specific cleanup goals, subject to the approval of the Director.

Table 5-2 - Tier 1A Input Parameters

Depth to subsurface soil source	Total porosity of the unsaturated zone
Depth to groundwater	Unsaturated zone water content
Thickness of the capillary fringe	Unsaturated zone air content
Thickness of the unsaturated zone	Infiltration rate
Width of source	Soil bulk density
Groundwater Darcy velocity	Distance to point of exposure in groundwater
Fraction of organic carbon	Effective porosity of the saturated zone

(h) Based on the comparison of the highest contaminant concentrations remaining on the site with the Tier 1 RBSLs or the Tier 1A SS-RBSLs the owner/operator may recommend the following options:

- (1) No Further Action Status based upon Tier 1 or Tier 1A screening levels; or,
- (2) A method to remediate to Tier 1 or Tier 1A screening levels; or,
- (3) Preparation of a Tier 2 evaluation.

[Note: If option 2 and/or 3 above are recommended, the owner/operator must refer to Section 5-5 for the requirements for preparing a CAP and performing Tier 2 analyses.]

(i) The owner/operator must assemble and submit information about the site and the nature of the release, by the due date established in the SSF, in accordance with 5-3(b), and approved by the Director (see Table 5-3). This information must be submitted on the SCR form which must include all information collected under Article 4, Sections 4-2 through 4-4; and Article 5, Sections 5-2, 5-3, and 5-4 plus an updated Site Classification Checklist.

(j) If MTBE concentrations in groundwater greater than the RBSL exist beyond the limits of the other COCs, time frames for completing the additional assessment activities and reporting to the Director will be extended in accordance with the MTBE Guidance Document.

(k) The owner/operator may submit a NFAR instead of the SCR if no COCs have ever been detected as a result of the release at levels in excess of the Tier 1 RBSLs, and TPH has not been detected above 500 mg/Kg in soils. The NFAR must be submitted in the approved format.

Table 5-3 SCR Due Dates

Site Classification	High Risk, 1.1-1.6	High to Moderate Risk , 2.1-2.5, 2a1-2a.2	Moderate Risk, 2.6-2.9, 3.1-3.4
SCR Due Date*	≤ 120 days from release date	≤ 150 days from release date	≤ 180 days from release date

* SCR due dates will be based upon the Maximum Site Classification (i.e. lowest classification number) since the release was discovered. For example a site that mitigates explosive vapors will retain a "High

Risk” classification for SCR reporting purposes.

5-5 Corrective Actions. [Eff. 01/01/2009]

- (a) After reviewing SCR information or at any other time when deemed necessary by the Director, an owner/operator may be required to develop and submit a CAP. If a CAP is required, the owner/operator must submit the CAP, in the format approved by the Director, within 60 days of the request unless an extension is granted by the Director in writing.
- (b) The owner/operator must submit to the Director the names and addresses of any parties or properties known to be impacted by the release, or who may have the potential to be impacted by the release or by the selected remediation method prior to the expected attainment of the site cleanup goals.
- (c) In preparing for corrective action, the owner/operator must evaluate three applicable methods, for the site lithology and contaminant distribution, which will protect human health, safety, and the environment and which will be economically feasible. This evaluation will consider:
 - (1) Three methods of remediation; or
 - (2) Two methods of remediation, and a Tier 2 evaluation. To perform a Tier 2 evaluation:
 - (A) Collect site-specific data (as appropriate to the site) for the input parameters listed in Table 5-4 below (which are specific to the soil leaching to groundwater exposure pathway). Only data actually collected from the site may be substituted. Consult the Owner/Operator guidance document if you would like further assistance regarding site data collection procedures and applications.
 - (B) Input the parameters collected into an acceptable model such as API DSS VADSAT or BP RISC to create a Tier 2 Site Specific Target Level (SSTL) Table. Acceptable models for the unsaturated zone will be analytical, transient, capable of modeling one dimensional dispersion and degradation, and calculating effective solubility for individual constituents in a mixture. Acceptable models for the saturated zone will be analytical or semi analytical, transient, and simulate retardation, degradation, one dimensional flow and three dimensional dispersion. This table must be included with the CAP. Utilize the SSTLs in the Tier 2 Table to determine site specific cleanup goals, subject to the approval of the Director.

[Note: For further information on the Tier 2 evaluation and models, consult the Owner/Operator Guidance Document.]

Table 5-4 Tier 2 Input Parameters

Source Parameters	.
Depth to top of contamination	Width of source
Length of source	Thickness of contamination
Unsaturated Zone Properties	.
Soil bulk density	Saturated conductivity
Total porosity of the unsaturated zone	Infiltration rate
Residual water content	Van Genuchten’s N

Fraction of organic carbon	Thickness of unsaturated zone
Gradient	Degradation rate (for each chemical)
Aquifer Properties	.
Effective porosity of saturated zone	Soil bulk density
Hydraulic conductivity	Hydraulic gradient
Fraction of organic carbon	Degradation rate (for each chemical)
Point of Exposure Location	.
Distance downgradient	Well screen interval
Distance crossgradient	.
Lens parameters (if applicable)	.
Total porosity	Van Genuchten's N
Residual water content	Thickness
Saturated conductivity	.
Source Concentration Parameters	.
Source concentration(s)	TPH Mixture

- (d) The owner/operator must conduct an economic evaluation which examines the alternative remediation methods. This study will include the expected total cost of each method, including the cost of remediation to Tier 2 SSTLs, if Tier 2 evaluation is a selected alternative, and the expected length of active operation and monitoring for each method.
- (e) The owner/operator must select the most technologically and economically feasible method of the three evaluated and:
- (1) Prepare a remedial design, which must include, pilot testing results, the remedial system design, a monitoring plan including the location of point of compliance (POC) wells, and a plan to confirm the attainment of site cleanup goals
 - (2) Prepare a schedule for the implementation of the CAP.
- (f) The Director will approve the CAP only after ensuring that implementation of the CAP will adequately protect human health, safety, and the environment.
- (g) Upon approval of the CAP or as directed by the Director, the owner/operator must implement the CAP. The owner/operator must monitor, evaluate, and report the results of implementing the CAP in accordance with a schedule and in a format approved by the Director. Any deviation from the approved CAP, including schedule revisions, must be approved by the Director.
- (h) The owner/operator may, in the interest of minimizing environmental contamination and promoting more effective cleanup, begin cleanup of soil and groundwater before the corrective action plan is

approved provided the owner/operator:

- (1) Notifies the Director of an intention to begin cleanup;
- (2) Complies with any conditions imposed by the Director, including halting cleanup or mitigating adverse consequences from cleanup activities; and
- (3) Incorporates these self-initiated cleanup measures in the CAP that is submitted to the Director for approval.

5-6 Public Participation. [Eff. 01/01/2009]

- (a) For each confirmed release that requires a CAP, the Director has the responsibility to provide notice to the public by means designed to reach those members of the public directly affected by the release and the planned corrective action. This notice may include, but is not limited to, public notice in local newspapers, block advertisements, public service announcements, publication in a state register, letters to individual households, or personal contacts by field staff, or announcements on the OPS website. [Eff. 01/01/2009]
- (b) The Director shall ensure that site release information and decisions concerning the CAP are made available to the public for inspection upon request.
- (c) Before approving a CAP, the Director may hold a public meeting to consider comments on the proposed CAP if there is sufficient public interest, or for any other reason.
- (d) The Director shall give public notice that complies with subsection (a) of this section if implementation of an approved CAP does not achieve the established cleanup levels in the CAP or termination of the CAP is under consideration by the Director.

ARTICLE 6 FINANCIAL RESPONSIBILITY REQUIREMENTS FOR OWNERS/OPERATORS OF PETROLEUM UNDERGROUND STORAGE TANKS

<p>80-205-206. Financial responsibility for petroleum underground storage tanks.</p> <p>(1)(a) Moneys in the Petroleum Storage Tank Fund, created pursuant to section 8-205-103, and referred to in this section as the "Fund," may be used by certain owners and operators of petroleum storage tanks to demonstrate their compliance with the financial responsibility requirements in federal regulations. Owners and operators not eligible for access to the Fund shall be solely responsible for securing independent financial assistance, but may use any federally approved financial assurance mechanism identified in 40 C.F.R. 280.94 through 280.103 to help fund the cost of complying with such requirements.</p> <p>(b) After payment is made from the Fund for remediation expenses, the owner or operator on whose behalf the payment was made shall pay to the Fund the remediation amount or ten thousand dollars, whichever is less.</p> <p>(c) After payment is made from the Fund for personal injury or property damage settlement expenses, or a combination of both, the owner or operator on whose behalf the payment was made shall pay to the Fund the aggregate settlement payment amount or twenty-five thousand dollars, whichever is less.</p> <p>(d) Moneys in the Fund shall not be used for any remediation activity at a location that is within a site identified by the national priorities list, or where a response action by this state has begun pursuant to the federal "Comprehensive Environmental Response, Compensation, and Liability Act of 1980".</p> <p>(e) If an owner or operator cannot meet the financial requirements of paragraphs (b) and (c) of this subsection (1), another approved financial assurance mechanism must be identified for such owner or operator to remain in compliance with this section and to be allowed to continue operation of an underground petroleum storage tank.</p>

<p>8-205-207. Financial responsibility for regulated substances other than petroleum. Owners and operators of underground storage tanks containing regulated substances other than petroleum may demonstrate financial responsibility for taking corrective action and for compensating third parties for bodily injury and property damages by using any one or more of the mechanisms allowable under 40 C.F.R. sections 280.95, 280.96, 280.97, 280.98, 280.99, 280.100, and 280.103. Owners and operators of underground storage tanks containing regulated substances other than petroleum shall not be eligible to participate in the Petroleum Storage Tank Fund, but shall be subject to federal financial responsibility regulations.</p>
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- (a) The owner/operator subject to this article (a person not eligible for the Fund) shall establish financial responsibility according to the following rules:

- (1) Applicability.

- (A) This financial responsibility requirement applies to owners/operators of all petroleum UST systems except as otherwise provided in this section.

- (B) State and federal government entities whose debts and liabilities are the debts and

liabilities of a state or the United States are exempt from the requirements of Article 6.

- (C) The requirements of this Article 6 do not apply to owners/operators of any UST system described in section 2-1-1(b) or (c).
- (D) If the owner and operator of a petroleum UST are separate persons, only one person is required to demonstrate financial responsibility; however, both parties are liable jointly, if neither party complies with this Article 6.

(2) Definition of Terms. When used in this Article 6, the following terms shall have the meanings given below:

- (A) "Accidental release" means any release of petroleum from an UST that results in a need for corrective action and/or compensation for bodily injury or property damage neither expected nor intended by the tank owner/operator.
- (B) "Bodily injury" shall have the meaning given to this term by applicable Colorado state law; however, this term shall not include those liabilities which, consistent with standard insurance industry practices, are excluded from coverage in liability insurance policies for bodily injury.
- (C) "Financial reporting year" means the latest consecutive twelve-month period for which any report used to support a financial test is prepared. "Financial reporting year" may thus comprise a fiscal or a calendar year period.
- (D) "Net worth" means the assets that remain after deducting liabilities; such assets do not include intangibles such as goodwill and rights to patents or royalties. For purposes of this definition, "assets" means all existing economic benefits obtained or controlled by an owner/operator.
- (E) "Owner/Operator," when the owner and operator are separate parties, refers to the party that has obtained financial responsibility for the purpose of complying with this Article 6.
- (F) "Property damage" shall have the meaning given this term by applicable Colorado laws. This term shall not include those liabilities, which, consistent with standard insurance industry practices, are excluded from coverage in liability insurance policies for property damage. However, such exclusions for property damage shall not include corrective action associated with releases from tanks, which are covered by the policy.
- (G) "Provider of financial assurance" means an entity that provides financial assurance to an owner/operator of an UST through one of the mechanisms listed below, including but not limited to an insurer, issuer of a letter of credit, or the trustee of a trust fund.

(3) Allowable Mechanisms and Combinations of Mechanisms.

An owner/operator may use any one of the mechanisms listed in the following subsections to demonstrate financial responsibility for the USTs owned or operated.

(4) Financial Test of Self Insurance.

- (A) An owner/operator may satisfy the requirements of § 8-20.5-206 by passing a

financial test as specified in this section. To pass the financial test of self-insurance, the owner/operator's worth must be based on year-end financial statements for the latest completed fiscal year.

- (B) The fiscal year end financial statements of the owner/operator must be examined by an independent certified public accountant and be accompanied by the accountant's report of the examination.
- (C) The owner/operator's year end financial statements cannot include an adverse auditor's opinion, a disclaimer of opinion, or a "going concern" qualification.
- (D) To demonstrate that it meets the financial test under this subsection the chief financial officer of the owner/operator must sign, within 120 days of the close of each financial reporting year a letter stating that the owner/operator has met the financial test for self-insurance covering USTs at the facilities listed. The letter must contain a list of the facilities covered, and for each facility: the name and address of the facility, the number of tanks at the facility, the size of each tank and the regulated substance contained in each tank.
- (E) If an owner/operator using the test to provide financial responsibility finds that he or she no longer meets the requirements of the financial test based on the year-end financial statements, the owner/operator must obtain alternative coverage within 150 days of the end of the year for which financial statements have been prepared or within 30 days of the date of the financial statement, whichever is earlier.
- (F) The Director may require reports of financial condition at any time from the owner/operator. If the Director finds, on the basis of such reports or other information, that the owner/operator no longer meets the financial test requirements of this subsection, the owner/operator must obtain alternate coverage within 30 days after notification of such a finding.
- (G) If the owner/operator fails to obtain alternate financial responsibility within 60 days of finding that he or she no longer meets the requirements of the financial test based on the year-end financial statements, or within 30 days of notification by the Director that he or she no longer meets the requirements of the financial test, the owner/operator must notify the Director of such failure within 10 days.

(5) Insurance Coverage.

- (A) An owner/operator may satisfy the requirements of § 8-20.5-206 by obtaining liability insurance, that conforms to the requirements of this section, from a qualified insurer.
- (B) If the policy contains any type of deductible, the policy must state that the insurer will be liable for such deductible amount in the event of a default by the owner/operator .
- (C) Each insurance policy must be issued by an insurer or risk retention group that is authorized to transact the business of insurance or authorized to provide insurance as an excess or surplus lines insurer in Colorado. The insurer must be in compliance with all regulations, procedures, and policies of the Colorado Division of Insurance.
- (D) Each owner/operator must obtain a certificate of insurance from the insurer showing

the name and address of each covered location, the policy number, period of coverage, name and address of the insurer, and the name and address of the insured for each facility covered by insurance. The insurer must certify the following with respect to the insurance described herein:

- (i) Bankruptcy or insolvency of the insured shall not relieve the insurer of its obligations under the policy to which this certificate applies.
- (ii) When requested by the Director, the insurer agrees to furnish a signed duplicate original of the policy.
- (iii) Notice of cancellation of the insurance by the insurer must be sent to the Director and to the insured at least 60 days prior to the effective date of the cancellation of the insurance. However, if the cancellation is based on one or more of the following reasons, then such notice may be sent less than 60 days prior to the effective date of the cancellation of the insurance: Fraud; material misrepresentation; nonpayment of premium; or any other reason approved by the Commissioner of Insurance.
- (iv) The insurance covers claims for any occurrence that commenced during the term of the policy that is discovered and reported to the insurer within six months of the effective date of the cancellation or other termination of the policy.

(6) Letter of Credit.

- (A) An owner/operator may satisfy the requirements of 8-20.5-206 by obtaining an irrevocable letter of credit that conforms to the requirements of this section. The issuing institution must be an entity that has the authority to issue letters of credit in Colorado and whose letter of credit operations are regulated and examined by the Colorado Department of Regulatory Agencies.
- (B) The letter of credit must be irrevocable with a term specified by the issuing institution. The letter of credit must provide that credit be automatically renewed for the same term as the original term, unless, at least 90 days before the current expiration date, the issuing institution notifies the Director by certified mail of its decision not to renew the letter of credit. Under the terms of the letter of credit, the 90 days will begin on the date when the Director receives the notice, as evidenced by the return receipt.
- (C) The letter of credit must be payable to the Director and may be drawn on to cover corrective action and/or compensating third parties for bodily injury and property damage caused by accidental releases arising from operating the UST(s) identified in the letter of credit.
- (D) The letter of credit must list the name(s) and address(es) of the covered facility(ies) where the tanks are located, the number of tanks at each facility; and the regulated substances contained by the tanks at each facility.

(7) Trust Fund.

- (A) An owner/operator may satisfy the requirements of § 8-20.5-206 by establishing a trust fund that conforms to the requirements of this section. The trustee must be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by the Colorado Department of Regulatory Agencies.

- (B) The trust fund, when established, must be funded for the full required amount of coverage.
- (C) The trustee of the trust fund must be instructed to disburse funds from the trust fund to pay the costs of corrective action and third party bodily injury and property damage only as directed or approved by the Director.

(8) Certificate of Deposit or Other Secured Financial Instrument.

A certificate of deposit or another financial instrument secured by an agency of Colorado or the U.S. Government may be used to satisfy the requirements of § 8-20.5-206 provided that such financial instrument is made payable to the Director. Any interest or dividends payable by such instrument may be made payable to the owner/operator using this method of assuring financial responsibility. This financial instrument will be returned to the owner/operator by the Director only after the instrument has been replaced by an alternate financial responsibility mechanism or the owner/operator is released from the financial responsibility requirement under subsection (14) below.

(9) Substitution of Financial Responsibility Mechanisms.

- (A) An owner/operator may use any alternate financial responsibility mechanisms specified above provided that at all times he maintains an effective financial responsibility mechanism that satisfies the requirements of § 8-20.5-206.
- (B) After obtaining alternate financial responsibility as specified in this Article 6, an owner/operator may cancel a prior financial responsibility mechanism by providing notice to the provider of financial responsibility.

(10) Cancellation by a Provider of Financial Responsibility.

If a provider of financial responsibility cancels or fails to renew for reasons other than incapacity of the provider as specified in subsection (11) below, the owner/operator must obtain alternate coverage within 60 days after receipt of the notice of termination. If the owner/operator fails to obtain alternate coverage within 60 days after receipt of the notice of termination, the owner/operator must notify the Director of such failure and submit:

- (A) The name and address of the provider of financial responsibility;
- (B) The effective date of termination; and
- (C) The evidence of the financial responsibility mechanism subject to termination, maintained in accordance with subsection (12).

(11) Reporting by Owner/Operator.

- (A) An owner/operator must submit current evidence of financial responsibility to the Director:
 - (i) Within 30 days after the owner/operator identifies a release from an UST, it is required to be reported under Articles 4 or 5;
 - (ii) If the owner/operator fails to obtain alternate coverage as required by this Article 6, within 30 days after the owner/operator receives notice of:
 - (aa) Commencement of a voluntary or involuntary proceeding under Title

11 (Bankruptcy), U.S. Code, naming a provider of financial responsibility as a debtor,

(bb) Suspension or revocation of the authority of a provider of financial responsibility to issue a financial responsibility mechanism,

(cc) Other incapacity of a provider of financial responsibility; or

(iii) As required by subsections (4)(G) and (10).

(B) An owner/operator must certify compliance with the financial responsibility requirements of this Article 6 as specified in the new tank registration form when notifying the Director of the installation of a new UST under section 2-2-10.

(C) The Director may require an owner/operator to submit evidence of financial responsibility as described in subsection (12)(B) or other information relevant to compliance with this Article at any time.

(12) Record keeping.

(A) Owners/operators must maintain evidence of all financial responsibility mechanisms used to demonstrate financial responsibility for an UST until released under subsection (14). An owner/operator must maintain such evidence at the site or the owner's or operator's place of business. Records maintained off-site must be made available upon request by the Director.

(B) An owner/operator must maintain the following types of evidence of financial responsibility:

(i) An owner/operator using a financial test of self-insurance must maintain a copy of the chief financial officer's letter based on year end financial statements for the most recent financial reporting year. Such evidence must be on file no later than 120 days after the close of the financial reporting year or 30 days from the date of the financial statement, whichever is earlier.

(ii) An owner/operator using a letter of credit must maintain a copy of the signed agreement and copies of any amendments to the agreement.

(iii) An owner/operator using an insurance policy must maintain a copy of the signed insurance policy, the certificate of insurance specified in subsection (5)(D) and any amendments to the policy.

(13) Drawing on Financial Responsibility Mechanisms.

(A) The Director shall require the insurer, trustee, or institution issuing a letter of credit or certificate of deposit to make available the amount of funds stipulated by the Director, up to the limit of funds provided by the financial responsibility mechanism if:

(i) The owner/operator fails to establish alternate financial responsibility within 60 days after receiving notice of cancellation of insurance, letter of credit, or other financial responsibility mechanism; and

(ii) The Director determines or suspects that a release from an UST covered by

the mechanism has occurred and so notifies the owner/operator or the owner/operator has notified the Director of a release from an UST covered by the mechanism.

(B) The Director may draw on these available funds when:

- (i) The Director makes a final determination that a release has occurred and immediate or long term corrective action for the release is needed, and the owner/operator, after appropriate notice and opportunity to comply, has not conducted corrective action as required; or
- (ii) The Director has received either:
 - (aa) Certification from the owner/operator and the third party liability claimant(s) and from attorneys representing the owner/operator and the third party liability claimant(s) that a third party liability claim should be paid; or
 - (bb) A valid final court order establishing a judgment against the owner/operator for bodily injury or property damage caused by an accidental release from an UST covered by financial responsibility under this Article 6; and the Director determines that the owner/operator has not satisfied the judgment.

(14) Release from the Requirements.

An owner/operator is no longer required to maintain financial responsibility under this Article for an UST after any necessary corrective action has been completed and the tank has been properly closed as required by these regulations.

(15) Bankruptcy or Other Incapacity of Owner/Operator or Provider of Financial Responsibility.

- (A) Within 10 days after commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming an owner/operator as debtor, the owner/operator must notify the Director by certified mail of such commencement and submit a list of all affected UST facilities.
- (B) An owner/operator will be deemed to be without the required financial responsibility in the event of a bankruptcy or incapacity of its provider of financial responsibility, or a suspension or revocation of the authority of the provider of financial responsibility to issue an insurance policy, letter of credit, or other financial responsibility mechanism. The owner/operator must obtain alternate financial responsibility as specified in this Article within 30 days after receiving notice of such an event. If the owner/operator does not obtain alternate coverage within 30 days after such notification, he must notify the Director immediately.

(b) Reestablishment of Financial Responsibility.

- (1) Whenever the required amount of financial responsibility has been reduced by payment of claims due to a leak or spill at any facility; and the owner/operator is responsible for another facility or other facilities then the owner/operator must immediately reestablish the ability to pay the required amounts for any leak or spill occurrence at the additional facility or facilities.
- (2) Whenever the required amount of financial responsibility for the owner/operator of a single

facility has been reduced by payment of claims due to a leak or spill occurrence at a facility and the period of corrective action for that occurrence has been completed, the owner/operator must then immediately reestablish the required amount of financial responsibility.

- (c) Petroleum UST owners/operators who do not qualify for participation in the Petroleum Storage Tank Fund must establish and maintain evidence of financial responsibility for taking corrective action and for compensating third parties for bodily injury and property damages according to one or more of the mechanisms allowable under 40 C.F.R. sections 280.95, 280.96, 280.97, 280.98, 280.99, 280.102, and 280.103. The required dollar amounts and deadlines are the same as those in sections 280.90, 280.91, 280.92 and 280.93 of volume 40 of the Federal Register.

ARTICLE 7 EMISSION INSPECTION

7-1 Statement of Basis and Purpose.

This regulation is promulgated to establish a fee to offset the cost of the Director to conduct emission inspection of USTs, which are required to have installed pollution equipment.

7-2 Fee Schedule.

The Director shall conduct an emission inspection of all USTs that are located in the geographical area designated by Regulation #7 of the Department of Health 5 C.C.R. 1001-9 and which contain petroleum distillate such as gasoline, to insure pollution control equipment is installed and is in operating condition. The fee for this inspection of such tanks shall be twelve dollars, payable by the tank owner/operator. The fee shall be payable to the Air Pollution Control Division, Colorado Department of Public Health and Environment.

7-3 Statutory Authority.

Section 8-20-223.5.

ARTICLE 8 PETROLEUM STORAGE TANK FUND

8-1 Eligibility.

- (a) Only the following persons are potentially eligible for reimbursement from the Fund, provided they meet the other criteria:
- (1) The current owner/operator; or
 - (2) Any past owner/operator; or
 - (3) Other persons set forth in applicable statutes.
- (b) An applicant making any claim against the Fund shall be held accountable for compliance with the following requirements:
- (1) Each applicant must meet the owner/operator criteria for corrective action as established by the Director; and
 - (2) When required by the Director, an owner/operator must demonstrate that accurate and complete records are maintained that confirm a release occurrence detected on or after July 1, 1989, except for those occurrences contained in section 8-1(f); and

- (3) Each owner/operator must have registered the tank(s) and paid the current and past annual tank registration fees on a timely basis for each petroleum storage tank owned; and
 - (4) Each owner/operator must have paid the environmental surcharge applied to petroleum products in Colorado; and must not be in default on any obligation caused by the environmental surcharge; and
 - (5) Each owner/operator must be in substantial compliance (as determined by the Committee) with all Colorado laws and regulations that address the handling, storage, record keeping, and dispensing of combustible and flammable liquids; including but not limited to Sections 230 and 231 of Title 8 Article 20 and Title 8 Article 20.5 of the Colorado Revised Statutes, 1986 Replacement Volume as amended; and the current versions of Code 30 and Code 30A of the National Fire Protection Association, to be eligible for participation in the Petroleum Storage Tank Fund; and
 - (6) Each owner/operator must demonstrate evidence of financial responsibility of \$10,000 dollars for corrective action and \$25,000 dollars for compensation of personal injury and property damage through the mechanisms or combination of the mechanisms contained in the financial eligibility regulations established by the Director; and
 - (7) Each owner/operator must demonstrate that deductible allowable costs (the amount of financial responsibility as defined in C.R.S. § 8-20.5-206 and 303, more commonly known as leak cleanup costs of ten thousand dollars and third party liability costs of twenty-five thousand dollars per leak occurrence) for corrective action as per C.R.S. § 8 20.5-208, 209, and 304 have been exceeded; and
 - (8) Each owner/operator must comply with criteria for reporting of a release to the Director, including but not limited to C.R.S. § 8 20.5 208.
- (c) A mortgagee making any claim against the Fund shall comply with the following requirements.
- (1) A mortgagee whose mortgage or deed of trust is dated before September 30, 1995 is eligible to participate in the Fund if the mortgagee has acquired, by foreclosure or receipt of a deed in lieu of foreclosure, the property on which the petroleum tank system is located and each of the following conditions has been met:
 - (A) The mortgagee has not actively managed the property during the period that it held a security interest; and,
 - (B) The mortgagee has notified the Director of its acquisition of the property by certified mail (return receipt requested) or other documented delivery within 20 business days of the acquisition, if acquired after September 30, 1995; and,
 - (C) The mortgagee has complied with all applicable corrective action requirements; and
 - (D) The mortgagee is not affiliated or related to the mortgagor.
 - (2) A mortgagee whose mortgage or deed of trust is dated on or after September 30, 1995, is eligible to participate in the Fund if the mortgagee meets all provisions of subsection (1) above and has a Certificate of Eligibility issued pursuant to subsection (3) below. There must be an operating petroleum storage tank system, which is not orphaned or abandoned, on the property at the time a Certificate of Eligibility is issued. A Certificate of Eligibility may be issued at any time before foreclosure or receipt of a deed in lieu of foreclosure; however, if the certificate is issued prior to the loan closing, the certificate will only be effective upon closing. A Certificate of Eligibility will not cover contamination

detected on a property before the Certificate of Eligibility is issued.

(3) A Certificate of Eligibility may be issued to a mortgagee if the site is in compliance with all applicable laws, and a Petroleum Storage Tank Status Sheet has been properly completed, and one of the following subparts has been satisfied:

(A) For a petroleum UST system:

- (i) Documentation has been provided to the Director showing that all petroleum storage tanks and tank lines at the site passed a tightness test no more than 60 days preceding completion of the Petroleum Storage Tank Status Sheet; or
- (ii) Documentation has been provided to the Director showing tanks and lines at the site are monitored by a properly installed and operating third-party certified monthly monitoring device; or
- (iii) Documentation has been provided to the Director showing that an environmental site assessment performed no more than 60 days preceding completion of the Petroleum Storage Tank Status Sheet indicates the site does not require initial site characterization or corrective action.

(B) For a petroleum AST system, documentation has been provided to the Director showing that all underground lines at the site passed a tightness test no more than 60 days preceding completion of the Petroleum Storage Tank Status Sheet and:

- (i) The AST system meets the standards in section 3-3-16 if installed before October 1, 1994; or
- (ii) The AST system meets the standards for ASTs installed after September 30, 1994; or
- (iii) Documentation has been provided to the Director showing that an environmental site assessment performed no more than 60 days preceding completion of the Petroleum Storage Tank Status Sheet indicates the site does not require initial site characterization or corrective action.

(4) A mortgagee who is eligible to participate in the Fund pursuant to these regulations may sell the property and transfer the Certificate of Eligibility to the buyer. The buyer may participate in the Fund pursuant to § 8-20.5-206(3) and 303(3) C.R.S., provided:

(A) The buyer is not a former tank owner/operator of the site, or an affiliate or relation to such a former tank owner/operator; and,

(B) The buyer, within three months of acquiring the property from the mortgagee, completes and submits to the Director sufficient documentation to show that the site is in compliance with applicable regulations; or, within three months of acquiring the property, the Director approves a plan, submitted by the buyer, showing how and when the site will be brought into compliance; and,

(C) Within six months of acquiring the property, the buyer either provides documentation to the Director showing that an environmental site assessment indicates the site

does not require initial site characterization or corrective action, in which case the transferred Certificate of Eligibility is no longer an operative document; or, provides to the Director documentation that petroleum contamination is present on the property, in which case the transferred Certificate of Eligibility remains valid for the balance of the remediation, provided such remediation is conducted pursuant to Colorado statutes and regulations.

(d) Only releases satisfying all of the following criteria shall be considered eligible:

- (1) The release must be accidental in nature; and
- (2) The storage tanks and related piping are regulated under these regulations and contain petroleum product regulated by these regulations; and
- (3) Subject to any Committee policies on reimbursement, the Director has approved the design for corrective action at the site; and
- (4) Subject to any Committee policies on reimbursement, the Director has determined that the corrective action has, or when completed will have, adequately addressed the release in terms of public health, welfare and the environment.

(e) Insurance companies or their agents are ineligible to make claims against the fund.

(f)

- (1) Only expenses incurred on or after July 1, 1989 are potentially eligible for reimbursement. All expenses incurred before July 1, 1989 are ineligible for reimbursement.
- (2) For releases detected on or after December 22, 1988 but before July 1, 1989, expenses incurred on or after July 1, 1989, are potentially eligible for reimbursement only if the original application was submitted before January 1, 1992. This January 1, 1992 deadline does not apply to applicants determined to bear no responsibility for the release pursuant to statute.
- (3) Expenses related to releases detected before December 22, 1988 are ineligible for reimbursement.
- (4) Expenses related to tanks closed in place or pulled before December 22, 1988 are ineligible for the fund. This December 22, 1988 deadline does not apply to applicants determined to bear no responsibility for the release pursuant to statute.

(g) In addition to the above, the following subsections apply to all AST's:

- (1) AST's used to store petroleum products intended for aviation purposes, and AST's used to store petroleum products intended for use by railroad locomotives, as well as ASTs not regulated by these regulations, are not eligible for participation in the Fund.
- (2) The Director will make positive eligibility recommendations to the Committee for facilities that were in operation prior to October 1, 1994 provided that:
 - (A) Existing petroleum ASTs were installed and operated in substantial compliance with the applicable Colorado laws and standards that were in effect at the time the tanks were installed; and
 - (B) Existing petroleum ASTs that were required to prepare and implement a "Spill

Prevention, Control and Countermeasures" Plan as specified in the Federal Code of Regulations 40 C.F.R. Part 112 were in substantial compliance with that requirement.

[Note: Installation and operating rules will usually be found in a version of the National Fire Protection Codes 30 and 30A that was in effect at the time of installation]

- (3) The Director will also make positive eligibility recommendations to the Committee for facilities that were in operation prior to October 1, 1994, that are not able to demonstrate 100% compliance with the rules in effect at the time they were installed, provided:
- (A) There are no serious safety violations, and the safety concerns listed here are satisfied:
- (i) Adequate ventilation either natural or forced must exist to guarantee that flammable liquid vapors cannot build up to 25% of the lower flammable limit anywhere, because of the presence of the tank facility in question.
 - (ii) Normal vent lines must be of sufficient capacity to ensure that no fuel drop will cause the pressure inside the tank to exceed the test pressure. A spark arrester cap is required at the end of the vent line and it must be located "in the clear" and at least 12 feet above ground level.
 - (iii) A label such as U.L. 142, U.L. ABOVEGROUND TANK, or equivalent must be attached to the tank to verify that it meets the emergency relief venting requirement of NFPA 30 Section 2-3.5 and that the construction methods used will result in a safe and sound tank.
 - (iv) Adequate spill control, overfill prevention control, and secondary containment methods or devices must be provided and in regular use at the facility; and
- (B) A Federal SPCC spill prevention control and counter measures plan for the facility has been developed and followed if such a plan is required.
- (4) The Director will consider closure of a facility and/or removal of non-compliant tanks to be a mitigating factor in making his recommendation to the Committee.
- (5) Nothing herein shall be construed to prevent the Committee from imposing percentage reductions upon applicants who are in substantial compliance with regulations but not in total compliance.

8-2 Reimbursement.

- (a) The owner/operator of the petroleum storage tanks from which a release has occurred, or another person eligible pursuant to statute, and for which partial or completed corrective action has been performed, or his duly authorized agent; may file an application for reimbursement.
- (b) Claims for reimbursement shall be filed as follows:
- (1) Filing shall include an original application form.
 - (2) Documents shall be addressed to:

Petroleum Storage Tank Committee
Department of Labor and Employment
Division of Oil and Public Safety
633 17th Street, Floor 5
Denver, CO 80202

- (3) Documents shall be forwarded to the above address via one of the following:
 - (A) Regular mail;
 - (B) Certified mail, return receipt requested;
 - (C) Express mail or overnight delivery service, return receipt requested; or
 - (D) Hand delivery.
- (c) The date of filing of any document required to be filed with the Committee under these regulations shall be the date postmarked on the return receipt or the receipt date stamped on the document if there is no return receipt.
- (d) An application for reimbursement shall be on a form provided by the Director and shall contain any information required by the Committee or the Director, including the following:
 - (1) Legible copies of invoices, providing a description of:
 - (A) any work performed;
 - (B) who performed the work;
 - (C) where the work was performed;
 - (D) the dates the work was performed;
 - (E) the unit cost; and
 - (F) the total amount due or paid.
 - (2) Evidence that the amounts shown on the invoices, for which reimbursement is requested, have been paid in full by the claimant. The evidence must be either:
 - (A) Business receipts, indicating payments received;
 - (B) Fronts and backs of cancelled checks;
 - (C) The certification of a certified public accountant that the expenses for which reimbursement is requested have been paid in full; or
 - (D) Provided the parties are unaffiliated and unrelated, a notarized affidavit signed by the person who performed the corrective action, affirming that the amounts which the applicant represents as being paid to him were paid in full.
 - (3) An estimate of the costs, if any, of corrective action which has not yet been completed, but for which reimbursement ultimately may be claimed. This estimate may be used for planning purposes only and will not be binding for the purposes of payments from the fund.
 - (4) Any other information, which the Committee may reasonably require.
- (e) Subject to Committee policies regarding reimbursement, all applicants must comply with all corrective

action requirements and a corrective action plan (including a technical and economic feasibility study) must be approved before costs, which would be associated with the corrective action are eligible. The applicant can be required to provide proof that all corrective action requirements have been met.

- (f) The applicant may file the application at any phase of the corrective action subject to any policies adopted by the Committee.
- (g) Incomplete submittals shall suspend processing of applications.
- (h) The following technical information may be required by the Committee or the Director as part of any application for reimbursement:
 - (1) A detailed account of what corrective action has been taken, why specific actions were taken, when, by whom, and with what results.
 - (2) An estimate of other corrective action measures that may be required to remediate the facility and the estimated time required to complete such measures.
 - (3) The most recently required annual line and tank tightness test and release detection records covering the six month period prior to a release or detection of contamination.
 - (4) If the Director or the Committee has any information indicating a separate release may have occurred, documentation that a release being cleaned up is not a new release requiring payment of a separate deductible.

8-3 Allowable Costs.

- (a) Only those costs, which are allowable costs, pursuant to the terms of this section, shall be subject to reimbursement.
- (b) Allowable costs are those costs and expenses, which arise directly from the performance of necessary corrective action in accordance with the requirements of the Director subject to the limitations prescribed by this section.
- (c) Allowable costs shall include but not be limited to the following:
 - (1) Abatement of impacts and immediate threats of impact to human health, safety, and the environment;
 - (2) Temporary provision of a water supply utilized specifically for domestic consumption;
 - (3) Collection and analysis of surface and subsurface soil and water, free product, and vapor samples;
 - (4) Emplacement of soil borings and/or monitor wells for remediation purposes;
 - (5) Removal, storage, treatment, recycling, transport, and disposal of free product, sludges, vapors, contaminated soils, contaminated water and other wastes and contaminated articles, in accordance with applicable laws;
 - (6) Removal and disposal (including transport) of soils and pavement where removal is necessary to the performance of corrective action;
 - (7) Identification and testing of affected or potentially affected drinking water sources;

- (8) Design of plans for site assessment and remediation;
- (9) Acquisition, installation, startup, operation and maintenance of site assessment and remediation systems, including monitoring;
- (10) Temporary relocation of utility structures when necessary to the performance of corrective action;
- (11) Preparation of technical reports required pursuant to the requirements of these regulations;
- (12) The fair market value of access to property outside of the facility boundaries where such access is necessary for the performance of corrective action;
- (13) Performance of any corrective action measure, which is specifically required by a section of these regulations, or an order of the Director, or a written request or confirmation by the Committee;
- (14) Equipment costs which are related solely to remediation. If the equipment is purchased with fund money, the reimbursement amount shall be reduced by any salvage value of the equipment.
- (15) Any other costs determined by the Committee to be allowable in accordance with the provisions of these regulations.
- (16) Costs associated with preparing and filing an application for reimbursement not to exceed 1% of the net allowable reimbursement per application up to a maximum of \$2,000 per event.

8-4 Unallowable Costs

- (a) Even if an application is eligible for reimbursement, the following types of costs are not allowable costs:
 - (1) The cost of replacement, repair, and maintenance of affected tanks and associated piping.
 - (2) The cost of upgrading existing affected tanks and associated piping, including but not limited to the costs of corrosion protection, release detection, spill and overfill protection, or any other upgrading required.
 - (3) The loss of income or profits, including without limitation, the loss of business income arising out of the review, processing, or payment of an application or request for assistance under these regulations.
 - (4) Decreased property values.
 - (5) Bodily injury or property damage except for injuries or damages suffered by third parties.
 - (6) Fees for legal services.
 - (7) Any costs associated with prosecuting an application for reimbursement under these regulations.
 - (8) The costs of making improvements to the facility beyond those that are required for corrective action.

- (9) Costs, including those associated with contamination assessments performed, for any purpose, where no petroleum remediation or corrective action is required, by state law or procedures.
 - (10) Costs of compiling and storing records relating to costs of corrective action.
 - (11) Costs of corrective action taken in response to the release of a substance, which is not eligible as defined in these regulations relating to eligibility.
 - (12) Costs of system integrity testing.
 - (13) Any activities, including those required by these regulations, which are not conducted in compliance with applicable state and federal environmental laws, including laws relating to the transport and disposal of waste.
 - (14) Penalties or payment for damages assessed by the Committee, Director, the Department of Public Health and Environment, and/or the federal government.
 - (15) At the Committee's sole discretion, claims for reimbursement relating to a tank owned or operated by a person who has been convicted of a violation of any law or rule that relates to the installation, operation, or management of petroleum storage tanks.
 - (16) Costs in excess of those considered reasonable by the Committee.
 - (17) At the Committee's sole discretion, cleanup costs resulting from negligence or misconduct on the part of the owner/operator or applicant.
 - (18) Subject to Committee policy, costs incurred during the closure of a tank.
 - (19) Costs for the rental of equipment owned by the applicant if the equipment was purchased by the Fund.
 - (20) Interest paid on loans.
 - (21) Costs that are a part of normal business expenses (i.e. insurance charges).
- (b) Any attempt by an applicant to claim reimbursement under circumstances when the applicant knew or should have known (this includes knowledge held by the applicant's environmental consultant) that some or all costs would be unallowed authorizes the Committee to reduce otherwise allowable costs submitted by the applicant (whether on the same or a different application). Any reduction imposed under this section shall be equal to the amount of the unallowed costs. This subsection applies only to the unallowed costs in subsections 8-4(a)(7), (8), (9), (12), (14), (18), and (19) above and only to applications received after March 1, 1997.

8-5 Reasonable Costs.

- (a) For purposes of these regulations, "Reasonable Cost" means that amount or range which is commensurate with the level of corrective action necessary to assess and remediate a site. "Reasonable Cost" is determined by the Committee based on an evaluation of technical effectiveness and cost effectiveness as well as typical costs expected for the particular corrective action under review, with respect to the necessary or required scope and complexity of the action.
- (b) No cost is reasonable unless it is also an allowable cost pursuant to these regulations.
- (c) The applicant shall be responsible for diligently pursuing remediation/cleanup operations as befits the

site.

8-6 Determining the Number of Occurrences.

- (a) All releases at a facility, which are detected before the initial site characterization is complete, will be considered part of one release.
- (b) Notwithstanding any regulation to the contrary, releases at a facility may be considered by the Committee either as single or separate occurrences when doing either would:
 - (1) Make the most efficient use of the fund; or
 - (2) Provide the most effective protection to the environment or best provide for public health and safety.

8-7 Committee Review of Application.

- (a) The Committee shall review each eligible claim received and make a determination of reimbursement, inform the applicant of its determination and, as appropriate, reimburse the applicant from the fund.
- (b) Prior to approval of reimbursement, the Committee shall affirmatively determine that:
 - (1) Claimed reimbursement expenses are:
 - (i) Eligible costs; and
 - (ii) Actually, necessarily and reasonably incurred for the preparation or implementation of a corrective action plan approved by the Director or for eligible third party damage.
 - (2) The applicant is:
 - (i) Eligible for reimbursement; and
 - (ii) In substantial compliance with all applicable rules and regulations.
- (c) An application which does not contain all the information required, may be rejected by the Committee, without prejudice. Rejection of the application by the Committee does not prevent the applicant from filing another application for the same occurrence.
- (d) The Committee is not required to commence the substantive review of an application until receipt of all information required from the applicant and the Director determines the claim is properly and fully completed.
- (e) If, during the course of the substantive review, additional information of the type required by these regulations is needed to evaluate this application, the applicant may be required to provide such additional information. Further review of the application may be postponed until such information is received.
- (f) The Committee's approval of the proposed remediation program(s) shall not be considered a finding or guarantee of safety or effectiveness of the program(s). Nothing in these regulations shall be construed to abrogate or limit the immunity or exemption from civil liability of any agency, entity or person under any statute including the Colorado Governmental Immunity Act, Article 10 of Title 24 or Section 13 21 108.5 C.R.S.

- (g) The approval and disbursement of funds by the Fund and/or Committee does not constitute transfer of ownership of any contaminated soils, equipment, or related items relating to a remediation program. Ownership of any and all items relating to remediation programs will remain the property of the applicant.

8-8 Fund Payment Report.

- (a) Upon completion of the review of an application, the Committee shall prepare a Fund Payment Report, indicating which of the applicant's claims the Committee believes should be reimbursed and which claims should not be reimbursed. If the Committee finds that any claim should not be paid to the full amount claimed, it shall briefly state the reasons in its report. The Committee shall submit a copy of its report to the applicant.
- (b) The applicant shall review the Fund Payment Report and shall, if dissatisfied with any facts therein, file a written protest with the Committee within 60 days of the date of the report. If the applicant does not file a written protest within the 60 days, the applicant will have waived its right to object to anything covered by the report. After the 60 days, everything regarding the application, including the amount of reimbursement and percentage reductions (including any reductions applicable to future applications), will be deemed final.
- (c) The protest must be signed by the applicant and contain any information required by the Committee or the Director, including a clear statement of each item which the applicant disputes on the Committee's Fund Payment Report.
- (d) The protest shall be submitted on a form provided by the Committee or the Director.

8-9 Miscellaneous Regulations.

- (a) Nothing in these regulations precludes the Committee or the Director from issuing orders, assessing administrative penalties, or taking any other action permitted by law against any person for violation of any statute, rule or order.
- (b) Nothing in these regulations changes the responsibilities of an owner/operator of a storage tank to respond to a release of regulated substances or to comply with any other requirements, statutes, rules or orders, and state or federal laws.
- (c) No person shall knowingly submit false information to the Committee as part of any materials required to be submitted under these regulations.
- (d) If an applicant owes money to the Fund or to the Director, including but not limited to penalties or past registration fees, the amount owed will be deducted from any amount reimbursed to the applicant.

Editor's Notes

History

Articles 1, 2 eff. 08/01/2008.

Article 5 eff. 01/001/2009.

Articles 1, 3 eff. 04/14/2011.