

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
WATER DIVISION - INDUSTRIAL SECTION

SECONDARY CONTAINMENT GUIDELINES

(Updated 03/00)

1. APPLICABILITY

- a. This part applies to facilities that store or use potential pollutants, which due to their location, could reasonably be expected to discharge pollutants into waters of the state. This determination shall be based solely upon a consideration of the geographical aspects of the facility (such as proximity to state waters, drainage, land contour, etc.) and should exclude consideration of man-made features such as dikes, equipment, or other structures which may serve to restrain, hinder, contain, or otherwise prevent a discharge of pollutants from reaching state waters.
- b. This part does not preempt the Oil Pollutant Act (OPA), the Federal Regulations 40 CFR Part 112 (Oil Pollution Prevention), ADEM Administrative Rule 335-14-17 (Standards for the Management of Used Oil), nor ADEM Administrative Rule 335-6-15 (Underground Storage Tank (UST)).

2. REGULATORY REQUIREMENTS

- a. For all containment areas which will contain hazardous liquids, or other wastes as defined by the regulations associated with the Resource Conservation and Recovery Act and/or those of the Department, the containment area should be constructed so as to meet the criteria of these regulations.
- b. For all containment areas which will contain used oil as defined by ADEM Administrative Rule 335-14-17, the containment area should be constructed so as to meet these rules.
- c. Containment areas should be constructed of concrete or other suitable and relatively impervious material.
- d. Storm water discharges from secondary containment areas should be permitted in accordance with the Department Rules.
- e. Federal Regulations (40 CFR 112) applies to facilities that store petroleum and its derivatives. Facilities having a single storage tank with a storage capacity in excess of 660 gallons or an aggregate storage capacity in excess of 1,320 gallons are required to prepare and implement a Spill Prevention Control and Countermeasures (SPCC) Plan that complies with the regulation. One requirement of the regulations is that the plan be certified by a Registered Professional Engineer.
- f. Spill containment dikes at facilities holding an NPDES or SID permit are required by Department Rules to be of sufficient volume/size to contain 110 percent of the capacity of the largest tank located within the dike. This requirement applies to tanks storing any substance that could escape and pollute a water of the state. The Rules recognize that at times a method other than dikes may work as well as dikes, but require a method capable of preventing pollution of a water of the state. This Rule applies to any pollutant and is not related to storage capacity. As permits are reissued this requirement will be a permit condition.
- g. Spill containment dikes at facilities holding an NPDES or SID permit are required to be impermeable to the stored substance. This requirement applies to tanks storing any substance that could escape and pollute a water of the state. As permits are reissued this requirement will be a permit condition.
- h. Air pollution control rules and permit requirements apply to many tanks which store petroleum products and other volatile substances. These rules may also apply to the treatment of wastewater, groundwater, etc. using air stripping. If you have questions concerning these requirements, please contact ADEM's Air Division.

3. SUGGESTED ENGINEERING PRACTICES

The following guidelines should be used as a minimum criteria in design and construction of an industrial secondary containment area and associated transfer operations, unless alternate methods have been approved.

- a. The elevation of the containment wall should be greater than the elevation of the 100 year floodplain.
- b. Areas determined to be prone to sinkhole development should be avoided in locating containment areas.
- c. No tank should be used for storage unless its material and construction are compatible with the material stored and conditions of storage such as pressure and temperature, etc.
- d. All bulk storage tank installations should be constructed so that a secondary means of containment is provided for the entire contents of the largest tank plus sufficient freeboard to allow for precipitation. This is usually met by designing the containment area to contain 110 percent of the volume of the largest tank.
- e. Drainage from diked storage areas should be restrained by valves or other positive means to prevent a spill or other excessive leakage of product or waste material into the drainage system or in plant effluent treatment system, except where plant systems are designed to handle such leakage. Diked areas may be emptied by pumps or ejectors; however, these should be manually activated and the condition of the accumulation should be examined before starting to be sure no product or waste material will discharged into the water.
- f. Tank installations should, as far as practical, be fail-safe engineered or updated into a fail-safe engineered installation to avoid spills. Consideration should be given to providing one or more of the following devices:
 - (1) High liquid level alarms with an audible or visual signal at a constantly manned operation or surveillance station: in smaller plants an audible air vent may suffice.
 - (2) Considering size and complexity of the facility, high liquid level pump cutoff devices to stop flow at a predetermined tank content level.
 - (3) Direct audible or code signal communication between the tank gauger and the pumping station.
 - (4) A fast response system for determining the liquid level of each bulk storage tank such as digital computers, telepulse, or direct vision gauges or their equivalent. In all cases, liquid level sensing devices should be regularly tested to ensure proper operation.
- g. A containment system for rack drainage should be provided to handle spills. This system should be designed to hold at least the maximum capacity of any single compartment of a tank car or tank truck loaded or unloaded in the plant.
- h. The containment area bottom should be constructed at an elevation two (2) feet above the seasonal high groundwater table.
- i. The containment bottom should be sloped or the containment system otherwise designed, constructed and operated to drain and remove liquids resulting from leaks, spills, or precipitation, unless the containers are elevated or otherwise protected from contact with accumulated liquids.
- j. In certain cases, secondary containment requirements may be achieved by use of double walled tanks. The volume of the outer tank should be sufficient to contain 100 percent of the capacity of the inner tank.

4. SUGGESTED BEST MANAGEMENT PRACTICES

- a. All aboveground valves and pipelines should be subjected to regular examinations by operating personnel at which time the general conditions of items, such as flange joints, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces should be assessed. In addition, periodic pressure testing may be warranted for piping in areas where facility drainage is such that a failure might lead to a spill event.
- b. Prior to filling and departure of any tank car or tank truck, the lower most drain and all outlets of such vehicles should be closely examined for leakage, and if necessary, tightened, adjusted, or replaced to prevent liquid leakage while in transit.
- c. Drainage from tank car and tank truck loading/unloading areas should be collected and returned to storage or disposed of in accordance with approved methods.
- d. The master flow and drain valves and any other valves that will permit direct outward flow of the tank's content to the surface should be securely locked in the closed position when in non-operating or non-standby status.
- e. The starter control on all pumps should be locked in the "off" position or located at a site accessible only to authorized personnel when the pumps are in a non-operating or non-standby status.
- f. The loading/unloading connections of all pipelines should be securely capped or blank-flanged when not in service or standby service for an extended time. This security practice should also apply to pipelines that are emptied of liquid content either by draining or by inert gas pressure.
- g. The facility should have a designated person who is accountable for spill prevention and who reports to line management.
- h. Containers and aboveground tanks used to store products or waste materials should be maintained in good condition (no severe rusting, apparent structural defects or deterioration).
- i. Spilled or leaked products or waste materials and accumulated precipitation should be removed from the containment area in as timely manner as is necessary to prevent overflow of the containment system and to ensure sufficient available capacity to hold 110 percent of the volume of the largest tank in the event of a release.
- j. Valves on secondary containment drainage lines should be maintained in a closed locked position except when draining accumulated precipitation.