



SUMMARY OF RULES AND REGULATIONS FOR BULK STORAGE FACILITIES AND MIXING AND LOADING AREAS FOR PESTICIDES & FERTILIZERS

This summary is meant to highlight the rules and regulations developed to fulfill requirements of the Agricultural Chemicals and Groundwater Protection Act, Senate Bill 90-126. This summary sheet covers key points of the rules and is meant to convey only a general overview. A checklist is also included on the last page of this document to assist in determining if these rules and regulations apply to your operation.

SCOPE OF RULES AND REGULATIONS

Senate Bill 90-126 addresses two key elements in agricultural chemical handling: secondary containment of storage containers, and mixing and loading areas. These two elements are further divided by the product handled (pesticide or fertilizer), and whether the product is in liquid or dry form.

Pesticides

Secondary Containment: Required for any bulk storage facility, liquid or dry. Bulk storage facilities are those handling containers with capacities greater than 55 gallons liquid or 100 pounds dry. However, facilities handling only DOT 57 or MACA 75 approved mini bulk containers up to 660 gallons, are exempt from secondary containment requirements.

Mixing and Loading Areas: Required where at least 500 gallons of liquid formulated product, 3,000 pounds of dry formulated product, or 1,500 pounds of active ingredient are handled in any one year period. Additionally, any pesticide storage facility required to have secondary containment must also have a mixing and loading area.

Fertilizers

Secondary Containment: Required for liquid storage facilities where any container or series of interconnected containers has a capacity greater than 5,000 gallons, and dry storage facilities where at least 55,000 pounds of bulk fertilizer are stored.

Mixing and Loading Areas: Fertilizer storage facilities required to have secondary containment must also have a mixing and loading pad.

Field mixing and loading of agricultural chemicals is exempt from these rules and regulations.

SECONDARY CONTAINMENT FOR THE STORAGE OF LIQUID AGRICULTURAL CHEMICALS

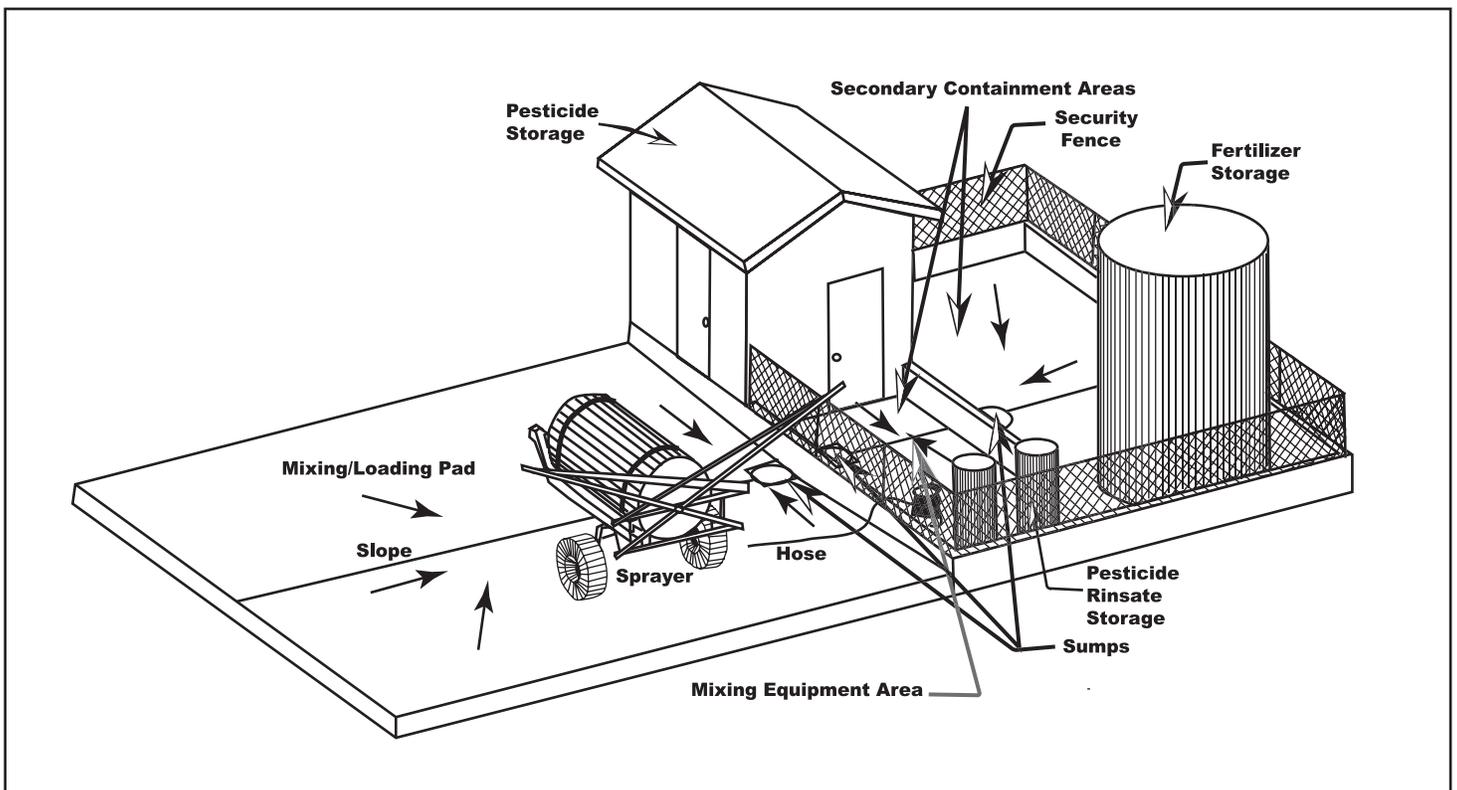
Bulk liquid agricultural chemical containers must be stored in an impervious secondary containment structure (SCS). The SCS must be capable of: supporting the weight of full tanks; resisting chemical corrosion; and containing a discharge. The capacity of the SCS must be up to 125 percent of the volume of the largest container in the structure. The walls shall be of such a height as to allow easy inspection and egress. The floor of the SCS shall be designed to drain to a shallow sump. Discharges or precipitation accumulations in an SCS shall be promptly recovered by a manually activated pump. However, automatic pumps may be used to remove precipitation during the inactive season provided all tanks in the SCS are empty. The SCS must be maintained as impervious over its service life.

MIXING AND LOADING AREAS FOR LIQUID AGRICULTURAL CHEMICALS

All mixing and loading operations must take place on an impervious mixing and loading pad (MLP). The MLP must be large enough so that the tank and appurtenances are over the pad, provided no flushing of the boom system occurs. Capacity of the MLP must be up to 125 percent of the volume of the largest container (up to 1,200 gallons) using the pad. A MLP serving containers holding more than 1,200 gallons need only be designed to hold a minimum of 1,500 gallons. If the primary use of the MLP is to service chemical application equipment and bulk transport vehicles only use the pad for occasional deliveries, then the pad size is determined by the container size of the application equipment. However, the bulk transport vehicle must conduct its operations with appurtenances over the MLP. The MLP shall be designed to drain to a shallow sump. Discharges or precipitation accumulations on a MLP shall be promptly recovered by a manually activated pump. Automatic pumps may be used to remove precipitation during the inactive season. The MLP must be maintained as impervious over its service life.

OPERATIONS OF LIQUID AGRICULTURAL CHEMICAL CONTAINMENT FACILITIES AND MIXING AND LOADING AREAS

Storage containers and appurtenances shall be designed and constructed of materials which are resistant to corrosion, puncture, or cracking, and can handle operating stress. Storage containers shall be secured to prevent flotation or instability. Storage container connections, except safety relief connections, shall be equipped with a shut-off valve. Plumbing shall be adequately supported, and a flexible connection is required between the plumbing and storage containers. Every storage container shall have a device or method for measuring the liquid level. Pesticide storage containers shall be properly labeled and equipped with a pressure regulated vent. Abandoned storage containers shall be thoroughly cleaned.



Example: Suggested design for a combination mixing and storage area for pesticide and fertilizer handling which would meet Colorado regulations.

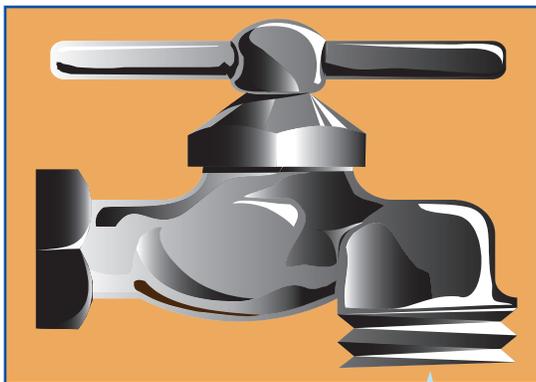
Source: Designing Facilities for Pesticide and Fertilizer Containment. (MWPS-37)
MidWest Plan Service, Agricultural Engineering, Iowa State University, Ames, IA. 1991

DRY BULK AGRICULTURAL CHEMICALS

Dry bulk agricultural chemicals (DBAC) shall be stored inside a sound structure to prevent contact with precipitation. The floor of the structure shall be constructed of a material resistant to chemical corrosion and be capable of preventing downward movement of DBAC or the upward movement of moisture through the floor. All handling of DBAC shall be done on a mixing and loading pad designed and constructed of material so as to: form a barrier between the DBAC handling area and the surrounding earth; facilitate easy cleanup of spills; and handle wheel loads of vehicles served. All spills shall be promptly recovered. The pad must be maintained as a barrier for the life of the structure.

OPERATIONS - ALL FACILITIES

All agricultural chemicals in the facilities shall be secured against access by unauthorized persons. Valves on storage containers shall be locked except when persons responsible for facility security are on the site. A device or method to prevent back flow in the water supply line shall be installed. Regular inspection and maintenance of the facility shall be performed. If operations at a facility are discontinued, the Colorado Department of Agriculture must be notified, all agricultural chemical product removed, and storage containers cleaned.



SITE PLAN DESIGN AND CONSTRUCTION

The design plan for bulk storage facilities and mixing and loading areas must be signed and sealed by a Colorado registered professional engineer, or be from a source approved by the Commissioner of Agriculture. Approved generic plans for small to medium-sized facilities are available through the Colorado State University Cooperative Extension Service, or the Colorado Department of Agriculture.

SUGGESTED MATERIALS SUITABLE FOR CONSTRUCTION TO SATISFY REQUIREMENTS OF SB 90-126

Materials used for secondary containment or mixing and loading structures must have a water permeability rate that does not exceed 1×10^{-7} centimeters per second.

Some materials which meet this requirement include:

- ◆ Good quality concrete
- ◆ ¼ inch coated steel
- ◆ Stainless steel
- ◆ Poly or fiberglass tanks (for secondary containment only)
- ◆ Synthetic liners (HDPE, PVC, Hypalon).

The following checklist will assist you in determining if the rules and regulations apply to your operation:

PESTICIDES

Secondary Containment:

- 1) Do you store pesticides in containers larger than 55 gallons for liquid pesticides or 100 pounds for dry pesticides? Yes No
If you answered no to question 1, secondary containment is not required, skip questions 2 and 3.
- 2) Do you store pesticides in containers larger than 55 gallons that are not DOT 57 or MACA 75 approved? Yes No
- 3) Do you store pesticides in containers larger than 660 gallons? Yes No
If you answered yes to either question 2 or 3, secondary containment of pesticides stored in this manner is required.

Mixing and Loading Areas:

- 4) Do you mix and load at one site (any site within 300 feet of another site is considered one site for these regulations) in any one year period, at least:
- a) 500 gallons of liquid formulated product (concentrate as it comes from the supplier) Yes No
 - b) 3,000 pounds of dry formulated product Yes No
 - c) 1,500 pounds of active ingredients of pesticides Yes No
- If you answered yes to any part of question 4, a mixing and loading area for pesticides is required.*

If secondary containment is required above, a mixing and loading area is also required.

Field mixing & loading of pesticides is exempt from these regulations.

FERTILIZERS

- 5) Do you store liquid fertilizer in a container or series of interconnected containers with a capacity greater than 5,000 gallons? Yes No
If yes, secondary containment is required.
- 6) Do you store bulk (containers larger than 100 pounds) dry fertilizer in quantities of 55,000 pounds or more? Yes No
If yes, secondary containment is required.

A mixing and loading area for fertilizer is required only if you answered yes to either question 5 or 6.

Complete copies of the regulations are available from the Colorado Department of Agriculture.

Any questions or comments should be directed to:

Robert P. Wawrzynski
Groundwater Protection Coordinator
Colorado Department of Agriculture
700 Kipling Street, Suite 4000
Lakewood, CO 80215-8000
rob.wawrzynski@ag.state.co.us
www.ag.state.co.us/dpi/GroundWater/home.html
303.239.4140