

UNITED STATES DEPARTMENT OF AGRICULTURE  
NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

INTERIM STANDARD  
**WASTE FIELD STORAGE**

(Ea.)

**CODE 749**  
(Formerly Code 193)

**DEFINITION**

Waste field storage is the temporary outside storage of solid or semi-solid animal manures under a non-structural cover in such a manner that the soil, water, air, plant, and animal resources are adequately protected.

**PURPOSES**

Waste field storage is used to temporarily store manure/litter in an environmentally safe and cost-effective manner while allowing improved nutrient utilization and conservation, and greater convenience and efficiency in the overall farm operation.

**CONDITIONS WHERE PRACTICE APPLIES**

This practice applies where a waste management system has been planned in accordance with NRCS Conservation Practice Standard, Waste Management System – Code 312, and where temporary storage of manure/litter is required by the plan because (1) land area is limited and split applications of manure/litter are required for proper nutrient management and water quality protection, (2) quality of poultry litter for cattle feeding requires covered storage, or (3) clean-out of animal housing units must be accomplished at a time when wastes cannot be readily land-applied due to weather, soil conditions, or farm management requirements. This practice does not apply to NRCS Conservation Practice Standards, Waste Storage Facility – Code 313, Waste Storage Pond – Code 425, or Waste Treatment Lagoon – Code 359.

**CRITERIA**

**General**

This practice shall be included as part of the Agricultural Waste Management System (AWMS) component of the conservation plan. The plan map shall show the location of all storage areas, access roads to these areas, slopes, surfaces to be graded,

necessary cuts and fills, and location of sites subject to pollution such as wells, springs, streams, and floodplains. Auxiliary practices such as access roads, diversions, waterways, subsurface drains, and vegetation shall be used and shown on the plan maps as required.

**Location**

Waste field storage shall be located:

1. no farther than 150 feet from the top of a slope unless a diversion is installed.
2. at least 1 ft. vertically above the floodplain of the 25-year, 24-hour storm.
3. where year-round access to the manure storage will be practical during periods of wet weather.
4. outside natural drainage ways.
5. at least 150 feet from wells, springs, streams, and ponds or 300 feet from a well when the well is located down gradient from the storage area.
6. at least 300 feet from neighboring residences or public areas.
7. near natural windbreaks, where possible, to protect the covering from blowing winds.
8. Where the seasonal high water table will be no closer than 3 feet below the bottom of the stored manure, unless a concrete pad or synthetic liner is used.
9. Within limits as required by state laws and regulations.

**Covering**

Field stored manure/litter shall be covered with opaque plastic sheeting having a minimum thickness of 6 mil. The sheeting must be placed over the pile with care to prevent tearing. Weighted

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objects which will not damage the plastic shall be placed over the sheeting to anchor it and prevent tearing during high winds. A trench 12-in. deep shall be constructed around the waste and the edges of the sheeting buried in and through the trench.

### **Size**

Waste field storage shall be designed to store the waste required for proper nutrient management as identified in the plan. Long-term storage for periods of time greater than 180 days can be accommodated using a permanent structure (Conservation Practice Standard, Waste Storage Structure – Code 313) or through a combination of permanent and temporary storage practices and/or better scheduling of manure/litter removal from livestock confinement facilities.

The size of the pad on which the solid manure/litter will be stored shall be determined on the basis of manure volume produced and the anticipated height of the stack. Sufficient horizontal freeboard shall be allowed around the edges of the stack to properly anchor the covering. The pad shall have positive drainage from the stack in all directions.

Semi-solid manures, which stack at a lower profile than solid manures, may require the construction of small earthen berms to contain the waste. Where berms are used to contain the waste, provisions shall be made for drainage of the pad when manure only partially fills the pad or is not stored on the pad. Waste within the containment berms shall also be covered with the protective sheeting.

### **Soils and Foundation**

Field storage of litter and other dry manures shall not be placed on soils with rapid or very rapid permeability class (> 6 in./hr.) unless (1) the pad is made of concrete, or (2) a synthetic liner with minimum thickness of 20 mil is installed, or (3) a one-foot layer of compacted clayey material (sc, cl) is used as the pad. If a synthetic liner is used, the pad should be over-excavated one foot and all sharp stones and other sharp material removed to prevent puncturing the liner. The liner should then be covered with one foot of the best fine-grained soil locally available.

Soil pads for storage of litter and other dry manures shall be installed under optimum moisture conditions and compacted in 6 to 8-in. lifts. The pad

shall be essentially level with only enough gradient away from the center of the pad to allow drainage of water. All excavated side slopes shall not be steeper than three (3) horizontal to one (1) vertical.

Pads and berms for storage of semi-solid manures with seepage potential shall meet the liner requirements in NRCS Conservation Practice Standard, Waste Treatment Lagoon – Code 359.

All disturbed areas beyond the edges of the stored manure/litter shall be seeded to an approved vegetative cover as shown in the plan.

### **CONSIDERATIONS**

Waste field storage may include land shaping, access roads, diversions, and such other practices as needed to protect the resource base.

Proper construction of the pad/berm and maintenance of the covering should prevent contaminated leachate or percolation water from passing into the groundwater. Additional runoff from the covering should be considered in water management planning around the storage site.

### **PLANS AND SPECIFICATIONS**

Plans and specifications are to be prepared in accordance with this standard for specific field sites and will normally be part of the overall Conservation Plan. Plans and specifications include construction plans, photographs, drawings, job sheets, construction specifications, narrative statements in conservation plans, and other similar documents.

### **OPERATION AND MAINTENANCE**

Soil pads may require reconstructing if soil materials are inadvertently removed during the waste removal process. The plastic covering will be subject to damage from weather, animals, equipment, etc. Frequent inspections and prompt repairs or replacement should be made, as needed, to assure the protection of natural resources and to provide a suitable product for land application.

Internal drainage from a bermed storage area should only occur when accumulated rainfall poses no pollution hazard.

At least 20 feet of grass shall be maintained around the storage area.

**CONSTRUCTION SPECIFICATION  
FOR  
INTERIM STANDARD  
WASTE FIELD STORAGE**

**CODE 749  
(Formerly Code 193)**

**SCOPE**

This item shall consist of the clearing, excavation, backfill, and other appurtenances required for the installation of an earthen, concrete, or synthetic lined pad/berm for animal waste field storage and for the disposal of all cleared and excavated materials. Construction shall be carried out in such a manner that erosion and water, air, and noise pollution will be minimized and held within legal limits as established by regulations and laws of Alabama.

**CLEARING AND GRUBBING**

All trees, brush, and stumps shall be removed from the site before excavation is performed. All cleared material shall be disposed of by burning, removing from the site and stacking in a suitable disposal area, or burying at an approved site. All burning shall conform to regulations and laws of Alabama.

**EARTHWORK**

The completed excavation of soil for the pad and the placement of spoil material excavated from the site shall conform to the lines, dimensions, grades, and slopes shown on the plans or staked on the site. Soils containing excessive clumps of organic debris (large roots, limbs, etc.) and large rocks (> 4 in.) shall be removed from the area designated for the pad. Runoff from outside drainage areas will be diverted away from the field storage pad.

All spoil material resulting from site preparation will be disposed of in designated waste disposal areas. These disposal areas will be shaped to blend with the surroundings or be uniformly stacked to a depth of not more than 3 feet with minimum side slopes of 4:1.

Soil borrowed to create the pad/berm will be free of large rocks (> 4 in.), limbs, and other debris. Unless otherwise specified, soil will be placed in loose layers no more than 8 in. thick. Each layer

will be compacted by completely traversing each layer by at least four passes of the wheels or tracks of the hauling or spreading equipment. Adequate moisture will be maintained in the fill material during placement to facilitate compaction. Where different compaction methods are required, they will be shown on the plans and specifications.

If a synthetic liner is required, all bedding and backfill shall be free of sharp stones and other sharp objects to prevent damaging the liner. Detailed specifications for liner construction will be specified in the plan by the design engineer.

**MATERIALS**

The opaque plastic cover for the stored manure/litter must be new, free of tears or punctures, and be at least 6 mil. thick.

Synthetic liners, when specified beneath the pad, must be at least 20 mils thick, new, and completely free of tears or punctures in order to prevent any seepage passing through it to the groundwater. The liner must satisfy the requirements of the standard or otherwise be approved by the engineer. Installation of the liner must conform to manufacturer's recommendations.

**CONCRETE AND STEEL REINFORCEMENT**

Requirements for concrete and steel reinforcement for concrete pads shall be as stated in Construction Specification for NRCS Conservation Practice Standard, Waste Storage Facility – Code 313.

**VEGETATION**

Permanent vegetation shall be established on all disturbed areas. Seedbed preparation, seeding, fertilization, and mulching shall comply with NRCS Conservation Practice Standard, Critical Area Planting – Code 342.