

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

WASTE MANAGEMENT SYSTEM

(No.)
CODE 312

DEFINITION

A planned system in which all necessary components are installed for managing liquid and solid waste, including runoff from concentrated waste areas, in a manner that does not degrade air, soil, or water resources.

SCOPE

This standard establishes the minimum acceptable requirements for planning and operating waste management systems. It does not apply to the design and installation of the system components.

PURPOSE

To manage waste in rural areas in a manner that prevents or minimizes degradation of air, soil, and water resources and protects public health and safety. Such systems are planned to preclude discharge of pollutants to surface or ground water and to recycle waste through soil and plants to the fullest extent practicable.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies where:

- (1) waste is generated by agricultural production or processing;
- (2) waste from municipal and industrial treatment plants is used in agricultural production;
- (3) all practice components necessary to make a complete system are specified; and
- (4) soil, water, and plant resources are adequate to properly manage the waste.

CRITERIA

General Planning. Waste, as used in this standard, includes both liquid and solid waste, waste water used in processing, and polluted runoff such as that from a feedlot.

A waste management system for a given enterprise shall include the components necessary to properly manage waste and prevent degradation of air, water, soil and plant resources. A system may consist of a single component, such as a diversion, or may consist of several components. Components shall not be installed until an overall waste management system has been planned.

<p>Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service.</p>
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Components. Components of complete waste management systems may include, but are not limited to, the following:

- Composters
- Debris basins
- Pond sealing or linings
- Dikes
- Subsurface drains
- Diversions
- Surface drains
- Fencing
- Waste storage ponds
- Grassed waterways or outlets
- Waste storage facilities
- Irrigation systems
- Waste treatment lagoons
- Irrigation water conveyance
- Waste utilization

Component Design

Design criteria for individual components shall be according to standards in the National Handbook of Conservation Practices. The criteria for the design of components not included in this handbook shall be consistent with sound engineering principles.

Sequence of installation. System components shall be planned and installed in a sequence that insures that each will function as intended without being hazardous to others or to the overall system.

Safety. Safety features and devices shall be included in waste management systems, as appropriate, to protect animals and humans from drowning, dangerous gases, and other hazards. Fencing shall be provided, as necessary, to prevent livestock and others from using facilities for other purposes.

CONSIDERATIONS

1. Waste should be used to the fullest extent possible by recycling it through soil and plants. If very little land is available, such practices as lagoons and oxidation ditches may be needed.
2. Clean water should be excluded from concentrated waste areas to the fullest extent practical.
3. Manure shall be collected and safely spread on land, treated, or stored until it can be safely spread. Adequate storage must be provided to allow spreading during favorable weather and at times compatible with crop management and available labor.
4. Polluted runoff and seepage from concentrated waste areas shall be intercepted and directed to storage or treatment facilities for future disposal or be directly applied to land in an acceptable manner.
5. Waste water from processing shall be collected and directly applied, stored, or treated before using it.
6. Adequate drainage, erosion, control, and other soil and water management practices shall be incorporated to prevent system-related problems.
7. The overall system shall include sufficient land for proper use or disposal of waste at locations, times, rates and volumes that maintain desirable water, soil, plant, and other environmental conditions. Appropriate waste-handling equipment shall be available for effective operation of the system.
8. The system should be outside major viewsheds to conserve visual resources. Vegetative screens and other methods should be provided, as appropriate, to improve visual conditions.
9. Mortality management should be considered as a part of the plan.

Water Quantity

1. Effects on the water budget, especially effects on volumes and rates of runoff, infiltration, evaporation, transpiration, deep percolation, on-farm uses and ground water recharge.
2. Effects of seasonal and weather variations.
3. Effects of vegetation on soil moisture.
4. Effects of snow catch and melt on water budget components.
5. Effects of increasing organic matter on water holding capacity of the soil.
6. Potential for a change in plant growth and transpiration because of changes in the volume of soil water.

Water Quality

1. Effects of both growing and decaying vegetation on nutrient balance in the root zone.
2. Effects on erosion and the movement of sediment, pathogens, organic material, and soluble and sediment-attached substances carried by runoff.
3. Effects of use and management of nutrients and pesticides on surface and ground water quality.
4. Effects on the visual quality onsite and of downstream water.
5. Sediment-attached and construction-related effects on the quality of onsite downstream water courses and impoundments.
6. Effects on the movement of dissolved substances below the root zone and toward ground water, especially for on-farm water supply for human and livestock.
7. Effects on wetlands and water-related wildlife habitats.

PLANS AND SPECIFICATIONS

Plans and specifications for waste management systems shall be in keeping with this standard and standards for individual system components.

OPERATION AND MAINTENANCE

The owner or operator shall be responsible for operating and maintaining the system. An operation plan shall be prepared for this use. It should provide specific details concerning the operation of each component and should include:

1. Timing, rates, volumes, and locations for application of waste and, if appropriate, approximate number of trips for hauling equipment and estimate of the time required.
2. Minimum and maximum operation levels for storage and treatment practices and other operations specific to the practice, such as estimated frequency of solids removal.
3. Safety warnings, particularly where there is danger of drowning or exposure to poisonous or explosive gases.
4. Maintenance requirements for each of the practices.