NATURAL RESOURCE 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.

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.

PLANNING

General. 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. The Agricultural Waste Management Field Handbook may be used as a guide in planning and designing a waste management system.

A waste management system for a given site shall include the components necessary to properly manage waste and prevent the degradation of air, water, soil and plant resources. Such systems must comply with all national, state, and local laws, rules, and regulations. State and national laws, rules, and regulations shall be as interpreted by the Minnesota Pollution Control Agency (MPCA).

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**,** including utilization.

Components. Components of complete waste management systems may include, but are not limited to, the following:

Animal management	Manure management
Debris basins	Pond sealings or linings
Dikes	Roof runoff management
Diversions	Subsurface drains
Fencing	Surface drains
Grassed waterways or outlets	Waste storage facility
Irrigation systems lagoons	Waste transfer
Irrigation water conveyance	Waste treatment
	Waste utilization

Design criteria for individual components shall be according to standards in the Field Office Technical Guide. The criteria for the design of components not included in this guide shall be consistent with sound engineering and ecological principles.

Buffer areas may be used as a component when the resulting pollutant discharge levels are considered acceptable for the given receiving waters. As a minimum, these levels shall be quantified by a zero rating on the Feedlot Evaluation System[1] (FLEVAL) model used to evaluate the system. Other factors to

consider in determining acceptable buffer area discharge include:

- Distance from buffer area to receiving water body.
- Ability for additional treatment between buffer area and receiving water body.
- Receiving water body sensitivity to expected pollutants.
- Nature of flow through buffer area.
- Amount of solids separation prior to buffer area.

Animal Management deals with items such as bedding, feed, rotation and grazing. Manure management deals with items such as stall and lot cleaning.

Waste Transfer includes conduits, pumps, valves, and other structures or devices to transfer animal waste from buildings and yards to a storage and/or loading area for final disposal. Transfer systems may consist of gravity or pumped systems.

PLANNING CONSIDERATIONS

1. Waste should be used to the fullest extent possible by recycling it through soil and plants. If needed as part of the waste utilization plan, written agreements with neighboring landowners should be obtained for field application of manure. 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 stored, treated, or directly applied to land in an acceptable manner.

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. These items shall be reflected in a waste utilization plan which shall address all wastes from the site, not just those causing a pollution problem.

8. Minnesota Department of Health (MDH) rules require a setback distance from wells of 50 feet to manure transfer pipelines, 20 feet to watertight sumps, and 100 ft. to manure storage facilities. These distances are doubled for wells without a watertight casing penetrating at least 10 feet of confining layer or without 50 feet of watertight casing.

9. The system should be outside of major viewsheds to conserve visual resources. Vegetative screens and other methods should be provided, as appropriate, to improve visual conditions.

10. The need for odor control should be considered in selecting system components and location.

Wetlands. In some cases waste management systems can affect wetlands. Minnesota NRCS policy regarding work affecting wetlands is found in the General Manual, Title 190, Part 410. Other federal, state or local permits or restrictions may apply to activities impacting wetlands. The Army Corps of Engineers administers Clean Water Act permits, the Local Government Unit administers State Wetland Conservation Act permits and the Minnesota Department of Natural Resources administers protected water permits.

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 discourage human entry and to prevent livestock from using facilities for

other purposes. Warning signs are required for storage ponds, storage structures, confined spaces and other facilities that may present a hazard to humans.

OPERATION AND MAINTENANCE

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

1. The waste utilization plan.
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.

PLANS AND SPECIFICATIONS

Plans and specifications for waste management systems shall be in keeping with this standard and standards for individual system components. Plans and specifications shall also meet the requirements of the Minnesota Pollution Control Agency if applicable.

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[1]" An Evaluation System To Rate Feedlot Pollution Potential", Robert A. Young, Michael A. Otterby, and Amos Roos; ARM-NC-17, April 1982)