



MINNESOTA POLLUTION CONTROL AGENCY
Clarification of Minn. R. 7035.2815, subp. 6(C)(9)

Title: Landfill Slope Guidance

Effective Date: May 28, 2002

STATEMENT

On December 12, 2000, the Minnesota Pollution Control Agency (MPCA) issued Environmental Policy No. 003, Landfill Slope Guidance. The policy was intended to provide guidance in the interpretation of Minn. R. 7035.2815, subp. 6(C)(9), which reads as follows:

The owner or operator must grade the final cover system to achieve a minimum three percent and a maximum 20 percent slope, unless the commissioner approves otherwise. The commissioner's approval must consider the ability of the proposal to minimize infiltration and prevent erosion, the design and operational specifications, and the ultimate use for the site. The final cover system must maximize surface water run-off and prevent ponding of surface water.

The guidance applied to facilities receiving new permits or major modifications of existing permits, and outlined four criteria that had to be met in order to gain MPCA approval for landfill slopes greater than 20 percent. It has become apparent that there remains some confusion regarding some of the criteria. Therefore, the MPCA hereby issues this statement to clarify the criteria.

Landfills subject to Minn. R. 7035,2815, subp. 6(C)(9) that choose to construct final slopes greater than 20 percent (5H:1V) must comply with the following.

- The final cover system must include a terrace design to manage storm water run-off on the steeper slope. Any side slope with a greater than 40 foot height on a slope steeper than 5H:1V must have at least one terrace.
- Surface water diversion berms will not be allowed on slopes steeper than 5H:1V. Surface water diversion berms constructed on steeper slopes create unreasonably steep slopes on the outside face of the berm that hamper overall post-closure care and maintenance of the final cover system.
- The terraces must not exceed 40 feet in vertical separation unless an engineering design criteria can substantiate a greater height. The analysis must include a discussion of how storm water will be managed on the steeper slopes without leading to excessive erosion.

- Facility final cover design slope must not exceed 3H:1V.
- The drainage layer may either be: (a) a geonet encased in geotextiles on both sides; or (b) consist of twelve inches of material that has a minimum hydraulic conductivity of 1×10^{-2} centimeters per second. If a geonet is used, a minimum of two feet of cover soils must be placed over the geonet with the top six inches being topsoil. The final cover barrier layer shall be a synthetic membrane textured on both sides. The quality of all soils proposed for use in final cover construction must be demonstrated to be consistent with MPCA's Soil Construction Standards and Testing Requirements (latest version dated 2/3/98).
- The design of the final cover system must include analysis of the critical slope resulting in a factor of safety of 1.5 or greater.
- Financial assurance shall reflect increased costs for MSW post-closure care (erosion repair, seeding, etc.) for at least two growing seasons following closure until final cover vegetation has been established.

PURPOSE AND RATIONALE

The guidance helps staff and the regulated community understand the reasonable limit of the Commissioner's discretion regarding the approval of landfill final cover systems under Minn. R. 7035.2815, subp. 6 (C)(9).

IMPLEMENTATION

Upon approval, the policy will be immediately distributed to the appropriate service delivery staff and catalogued as an approved policy in Policy and Planning Division records.

STATUTORY BASIS

N/A

Signed:

/s/ Larry Landherr
Regional Manager
Solid Waste Program Lead