7080.2220 MOUNDS.

Subpart 1. **Mound system requirements.** To qualify as a mound system, the system must meet or exceed the following requirements:

A. employ flow values in parts 7080.1850 to 7080.1885;

B. meet or exceed applicable technical requirements of parts 7080.1900 to 7080.2030, 7080.2050, and 7080.2100;

C. meet or exceed the requirements of part 7080.2150, subparts 2 and 3;

D. employ flow measurement; and

E. meet the requirements of subparts 2 and 3.

Subp. 2. **Location of mounds.**

A. The upper 12 inches of the original soil mound absorption area must have a mound absorption ratio of greater than zero under part 7080.2150, subpart 3, item E, Table IX or IXa. The upper 12 inches of the absorption area must also be above the periodically saturated soil or bedrock.

B. Setbacks must be according to Table VII in part 7080.2150, subpart 2, item F. Setbacks must be measured from the original soil absorption area.

C. On slopes of one percent or greater and where the original soil mound absorption ratio is 5.0 or greater in Table IX or IXa in part 7080.2150, subpart 3, item E, mounds must not be located where the ground surface contour lines that lie directly below the long axis of the distribution media bed represent a swale or draw, unless the contour lines have a radius of curvature greater than 100 feet. Mounds must never be located in swales or draws where the radius of curvature of the contour lines is less than 50 feet.

Subp. 3. **Mound design and construction.**

A. The mound distribution media bed area consists of bottom area only and must be calculated by dividing the design flow by 1.2 gallons per square foot per day.

B. Mound distribution media beds must be determined according to part 7080.2150, subpart 3, item M, and must be no wider than ten feet.

C. Clean sand must be used to elevate the mound distribution media bed and must consist of sound, durable material that conforms to the following requirements:

Sieve Size	**Percent Passing**
No. 4	95-100
No. 8	80-100
No. 10	0-100

No. 40	0-100
No. 60	0-40
No. 200	0-5

Clean sand must also contain less than three percent deleterious substances and be free of organic impurities.

D. The original soil mound absorption area is determined by multiplying the original soil mound absorption length by the original soil mound absorption width. The original soil mound absorption width is calculated by multiplying the mound distribution media bed width by the mound absorption ratio. The mound absorption ratio of the upper 12 inches of soil in the proposed original soil mound absorption area shall be determined according to Table IX or IXa in part 7080.2150, subpart 3, item E.

E. The required original soil absorption width for mounds constructed on slopes from zero to one percent must be centered under the mound distribution media bed width. The required original mound soil absorption width constructed on slopes greater than one percent must be measured downslope from the upslope edge of the mound distribution media bed width and measured in the direction of the original land slope and perpendicular to the original contours.

F. The side slopes on the mound must not be steeper than three horizontal units to one vertical unit and shall extend beyond the required original soil absorption area, if necessary.

G. Distribution of effluent over the mound distribution media bed must be by level perforated pipe under pressure according to parts 7080.2050 and 7080.2100.

H. The supply pipe from the pump to the original soil absorption area must be installed before surface preparation of the original mound soil absorption area. The trench excavated for the supply pipe must be carefully backfilled and compacted to prevent seepage of effluent.

I. Vegetation in excess of two inches in length and dead organic debris including leaf mats must be removed from the original soil mound absorption area. Trees must be cut nearly flush with the ground and stumps must not be removed.

J. The original soil mound absorption area must be roughened by backhoe teeth, moldboard, or chisel plow. The soil must be roughened to a depth of eight inches. Discing is allowed if the upper eight inches of soil has a texture of sandy loam or coarser. If plowed, furrows must be thrown uphill and there must not be a dead furrow in the original soil mound absorption area. A rubber-tired tractor is allowed for plowing or discing. Rototilling or pulverizing the soil is not allowed. The original soil must not be excavated or moved more than one foot from its original location during soil surface preparation.

K. Prior to placement of six inches of clean sand, vehicles must not be driven on the original soil mound absorption area before or after the surface preparation is completed. The clean sand must immediately be placed on the prepared surface.

L. The clean sand must be placed by using a construction technique that minimizes compaction. If the clean sand is driven on for construction, a crawler or track-type tractor must be used. At least six inches of sand must be kept beneath equipment to minimize compaction of the prepared surface.

M. A minimum of 12 inches of clean sand must be placed in contact with the bottom area of the mound distribution media bed and must be uniformly tapered to cover the entire original soil absorption area. Other sandy materials are allowed to be used outside of this area to complete construction of the mound.

N. The top of the clean sand layer upon which the mound distribution media bed is placed must be level in all directions.

O. A vertical inspection pipe at least four inches in diameter must be installed and secured at the distribution medium and sand interface. The inspection pipe must have three-eighths inch or larger perforations spaced vertically no more than six inches apart. At least two perforations must be located in the distribution medium. Perforations must not be located above the permeable synthetic fabric, if used. The inspection pipe must extend to the bottom of the distribution medium, be secured, and be capped, flush with or above finished grade.

P. On slopes of one percent or greater, the upslope edge of the mound absorption bed must be placed on the contour.

Q. The sidewalls of the mound absorption bed must be as vertical as practical and not intentionally sloped.

R. The top of the mound distribution media bed must be level in all directions.

S. A minimum of six inches of sandy to loamy soil material must be placed on the top of the mound absorption bed and sloped upwards toward the center of the mound a minimum of ten horizontal units to one vertical unit.

T. Construction vehicles must not be allowed on the distribution media until backfill is placed as described in item S.

U. A minimum of six inches of topsoil borrow must be placed over the entire mound.

Statutory Authority: *MS s 115.03; 115.55*

History: *32 SR 1347; 35 SR 1353*

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