

15A NCAC 02H .1052 MDC FOR BIORETENTION CELLS

The purpose of this Rule is to set forth the design requirements for bioretention cells that are constructed to meet the requirements of this Section.

- (1) **SEPARATION FROM THE SHWT.** The lowest point of the bioretention cell shall be a minimum of two feet above the SHWT. However, the separation may be reduced to no less than one foot if the applicant provides a hydrogeologic evaluation.
- (2) **MAXIMUM PONDING DEPTH FOR DESIGN VOLUME.** The maximum ponding depth for the design volume shall be 12 inches above the planting surface.
- (3) **PEAK ATTENUATION VOLUME.** Bioretention cells may store peak attenuation volume at a depth of up to 24 inches above the planting surface. The peak attenuation outlet shall be a maximum of 18 inches above the planting surface.
- (4) **UNDERDRAIN.** An underdrain with internal water storage shall be installed unless a soils report is provided showing that the in-situ soil infiltration rate is two inches per hour or greater prior to the initial placement of the media. The top of the internal water storage zone shall be set at a minimum of 18 inches below the planting surface.
- (5) **MEDIA DEPTH.** The minimum depth of the media depends on the design of the cell as follows:
 - (a) all cells with trees and shrubs: 36 inches;
 - (b) cells without trees and shrubs:
 - (i) with no internal water storage: 24 inches; or
 - (iii) with internal water storage: 30 inches.
- (6) **MEDIA MIX.** The media shall be a homogeneous engineered media blend with approximate volumes of:
 - (a) 75 to 85 percent medium to coarse washed sand (ASTM C33, AASHTO M 6/M 80, ASTM C330, AASHTO M195, or the equivalent);
 - (b) 8 to 10 percent fines (silt and clay); and
 - (c) 5 to 10 percent organic matter (such as pine bark fines).
- (7) **MEDIA P-INDEX.** The phosphorus index (P-index) for the media shall not exceed 30 in Nutrient Sensitive Waters (NSW) as defined in 15A NCAC 02B .0202 and shall not exceed 50 elsewhere.
- (8) **NO MECHANICAL COMPACTION.** The media shall not be mechanically compacted. It is recommended to either water it or walk on it as it is placed.
- (9) **MAINTENANCE OF MEDIA.** The bioretention cell shall be maintained in a manner that results in a drawdown of at least one inch per hour at the planting surface.
- (10) **PLANTING PLAN.** For bioretention cells with vegetation other than sod, the planting plan shall be designed to achieve a minimum of 75 percent plant coverage at five years after planting. The maximum coverage with tree or shrub canopy shall be 50 percent at five years after planting. If sod is used, then it shall be a non-clumping, deep-rooted species.
- (11) **MULCH.** For bioretention cells with vegetation other than sod, triple shredded hardwood mulch shall be used for the portion of the cell that will be inundated. Mulch shall be uniformly placed two to four inches deep.
- (12) **CLEAN-OUT PIPES.** A minimum of one clean-out pipe shall be provided on each underdrain line. Clean out pipes shall be capped.

History Note: Authority G.S. 143-214.7B; 143-215.1; 143-215.3(a); Eff. January 1, 2017.