	West Virginia Department of Health and Human Resources					
	MANUAL OF ENVIRONMENTAL HEALTH PROCEDURES					
Section	Waste Water	Date	May 31, 2000	Procedure #	WW-16	
Subject	Interim Design Criteria for Constructed Wetlands for Sewage Disposal Treatment			Page	1 of 1	

The attached interim design criteria have been developed for constructed wetlands for sewage disposal treatment.

Representatives of the Public Health Sanitation Division, Office of Environmental Health Services, should be contacted to review any proposed site for a 600 G.P.D. or less constructed wetlands, prior to actual design, to determine if the site is acceptable.

Representatives of the Environmental Engineering Division, Office of Environmental Health Services, district offices should be contacted to review any proposed site for a larger than 600 G.P.D. constructed wetlands, prior to actual design, to determine if the site is acceptable.

References

History Replaces WW-16 dated July 16, 1990

Attachments Interim Design Criteria for Constructed Wetlands for Sewage Disposal Treatment

West Virginia Department of Health & Human Resources
Office of Environmental Health Services

Interim Design Criteria for Constructed Wetlands for Sewage Disposal Treatment

A. All systems with a design flow of greater than 600 G.P.D. will follow the standard permit procedure through the Environmental Engineering Division of the WV Department of Health and Human Resources and the Office of Water Resources, of the WV Division of Environmental Protection. All systems of 600 G.P.D. or less will be submitted to Public Health Sanitation Division for review and approval.

B. Design flows shall be based upon the criteria in the West Virginia Legislative Rule 64 CSR 47, Sewage Treatment and Collection System Design Standards.

C. All constructed wetland systems, as a minimum, must be preceded by a septic tank(s). The septic tank(s) is to be sized based upon the average daily design flow as required in the design standards referenced in item B above. The septic tank(s) must be constructed as per the requirements of the design standards listed in item B above.

D. Constructed wetlands shall be designed in accordance with the Tennessee Valley Authority, or the US Environmental Protection Agency, or the National Aeronautical and Space Administration or any other generally recognized national design standards or guidelines for constructed wetlands for sewage treatment. The design of the wetlands must be based upon the hydraulic (G.P.D.) loading, and the organic (BOD_5/day) loading. The design must include the number, type and location of aquatic plants to be used in the wetlands.

E. For constructed wetlands with a surface water discharge, disinfection will be required, such as ultraviolet or chlorination. If chlorination is used, a minimum 40 minute chlorine contact time will be required before discharge. Depending on the Waste Load Allocation, post aeration and/or de-chlorination may be required following disinfection.

F. All constructed wetlands shall have a minimum 20 mils thick, watertight, manmade liners. The sub-base material supporting this liner is to be constructed in such a manner that the liner integrity is not compromised during installation of the liner and wetlands media and plants.

G. All constructed wetlands with a design flow exceeding 600 G.P.D. shall be enclosed by a minimum six feet high stock tight fence with a locking gate and warning signs. Fencing shall also enclose any additional treatment units such as chlorine/de-chlorination units or post aeration units. Constructed wetlands with a design flow of 600 G.P.D. or less serving a single residence or building are not required to be fenced. However, a fence or some type of barrier is strongly recommended around the constructed wetlands.

H. All constructed wetlands will require a minimum 100 feet buffer zone from the constructed wetlands to any occupied structure(s), except for the occupied structure(s) being served by the constructed wetlands.