



Controlled Drainage



The Mower SWCD is involved with a collaborative effort of the MN Department of Ag, the University of MN, MN agencies, farmers and agricultural organizations in developing a [controlled drainage site](#) with a [woodchip bioreactor](#). This site is located on the Ray & Donna Cerise farm in Bennington Township, Section 8. The project was funded primarily from a Conservation Innovation Grant through the NRCS.

In the above picture, water management structures are installed to allow farmers to adjust the water table in their fields based on the time of year and weather conditions. An observation well was also installed to monitor the progress of the structures.

With direction from the Department of Ag and the University of MN Extension, Ellingson Drainage, West Concord, MN, installed three different sections of drainage for this project. One section is tile placed 4 feet deep as a normal drainage system. The next section is a shallow drainage with tile at a 3 feet depth and the third section is the controlled drainage. This is where the tile is at a normal depth and there are structures attached to control the flow of the subsurface water. This system was then replicated in another part of the field. Controlled drainage has shown to reduce drainage water volume and nitrate losses by 25 to 40% and also make more water available to crops during the stress season.

In connection with this controlled drainage site, a woodchip bioreactor was installed before the subsurface water emptied into the drainage ditch. The function of the bioreactor is to remove nitrates from the drainage water and consists of a trench filled with woodchips that the water flows through. Ten feet of bioreactor per acre of drained land may be able to remove 30 to 100% of the nitrates from drainage water.

We are also looking into installing Infiltration Treatment Basins, which will help remove nutrients from drainage water. This project is through the cooperation of the MN Department of Ag, the Nature Conservancy and other agricultural agencies. More information on this project will be available as it develops.

9/30/2009

Controlled Drainage

For more information on Conservation Drainage, go to the following link at the MN Department of Ag web site.

<http://www.mda.state.mn.us/protecting/conservation/drainage-designs.htm>

Mower SWCD | 1408 21st. Ave, NW | Austin, MN 55912 | 507-434-2603 | Fax: 507-434-2680