

ACWA | 2007 specific accomplishments

- Ongoing coordination and analysis of samples collected via the certified sampler monitoring network. Eight samplers collect 488 samples, which are analyzed by Des Moines Water Works for the following attributes: turbidity, nitrate-N, nitrite-N, phosphorous, E.coli, and coliform bacteria
- Provided funding to establish and operate a remote monitoring station that senses and records real-time nitrate data to be continuously posted on the World Wide Web. http://water-data.usgs.gov/ia/nwis/uv/?site_no=05484500&PARAMeter_cd=00065,00060
- Established and operated four automated ISCO flow meters and water sampling units to measure stream stage continuously and collect water samples during rain events. Eleven significant rain events occurred in 2007 and 67 samples were analyzed by Des Moines Water Works
- Continued coordination with the Raccoon River water-monitoring Technical Advisory Committee (TAC). The TAC was assembled in 2005 and members include: the National Soil Tilth Laboratory (NSTL), DMWW, IDNR White Rock Conservancy and the Iowa Soybean Association (ISA). The purpose of the TAC

is to review, coordinate and evaluate proposed and performed monitoring activities and to act on the needs and opportunities to use the data that can be collected. For example, the TAC has identified priority sampling locations for the monitoring program, the ISCO automated sampling and flow units, and the site of the Van Meter real-time monitoring station.

- Reaffirmed commitment for implementing ACWA Code of Practice for Fall N Application
- Provided funding support for installing and demonstrating 3-5 bioreactors in tiled farm fields within the North Raccoon River watershed spring of 2008. With the goal to reduce nitrate from the soil to surface water via subsurface tile drains
- Provided funding support for the Governors High School Water Summit
- Engaged in several efforts to communicate the investments agriculture has made in environmental efforts, including news releases about ACWA's sponsorship of the Governor's High School Water Summit, the Fall N Code of Practice, and annual progress reports and newsletters.

Supporting 2008 Bio-reactor evaluation

In collaboration with area farmers and an emerging partnership with USDA, SWCD's, National Soil Tilth Laboratory, AgriDrain and the Ag Drainage Management Coalition, ACWA is supporting a tile line bio-reactor pilot project in the North Raccoon River watershed in 2008. The bio-reactors are designed to reduce nitrate in soil-to-surface water coming from subsurface tile drains.

The bio-reactor structures are underground trenches filled with woodchips (or other organic carbon sources) in the last few hundred feet of a tile drain before the line discharges into a stream or main line. The bio-reactor evaluation is an opportunity to see if the sort of nitrate filtering produced by wetlands can be replicated within the tile line itself.

Early research has found nitrate removal efficiency averaging between 25 to 35 percent. ACWA will observe nitrate levels in its water monitoring network above and below each bio-reactor site to evaluate the performance bio-reactor in several different locations.

If the bio-reactors are proven effective in the North Raccoon River watershed, they could become one of several integrated solutions for improved water quality.

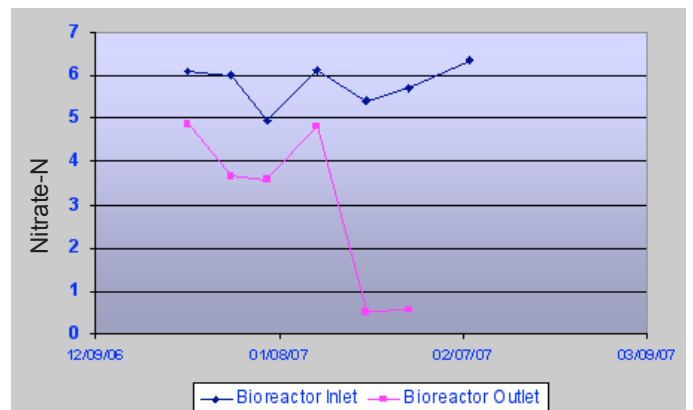


Photo and graph courtesy of Leonard Binstock, Executive Director, Agricultural Drainage Management Coalition.