

Wood Chip Bioreactors

**Bioreactors & NRCS:
Getting them in the ground**

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NRCS Practice Standards

- **Denitrifying Bioreactor**
 - (Practice Code 747)
 - **Drainage Water Management**
 - (Practice Code 554)
 - **Saturated Buffer**
 - (not yet a practice standard)

Denitrifying Bioreactor (747)

- Interim standard authorized in limited area for three years beginning September 2009
- Purpose: to improve water quality by reducing the nitrate-nitrogen content of subsurface drain flow

Bioreactors (continued)

- Approximately 30 field scale denitrifying bioreactors have been installed in Illinois, Iowa, and Minnesota from 2001-2011
- Most installations are being monitored for nitrate-N concentrations

- The first two bioreactors Iowa NRCS designed with the interim standard used around 12 cu. yd. per acre.
- Designs are usually based on the capacity of the tile main that is being intercepted, not on acres served
- Experience shows that 8 cu. yd. per acre may be appropriate for IOWA

Drainage Water Management (554)

- Primary purpose: reduce nitrate loads to streams
- Outlet of drains are raised (not blocked)

Drainage Water Management (554)

- Field drains are submerged and outflows are reduced
- Reduction in nitrate load is proportional to reduction in outflow

Saturated Buffers

- Not an NRCS Practice Standard
- USDA-ARS in Ames, Iowa is developing monitoring criteria

Cost-Share Incentives

- Up to 50% level under EQIP
- Higher rates available under the Mississippi River Basin Healthy Watersheds Initiative (MRBI)

Cost-Share Incentives

- For rates in each state, consult the “Programs” tab of your NRCS State Office

Example: for IOWA State Office:

www.ia.nrcs.usda.gov







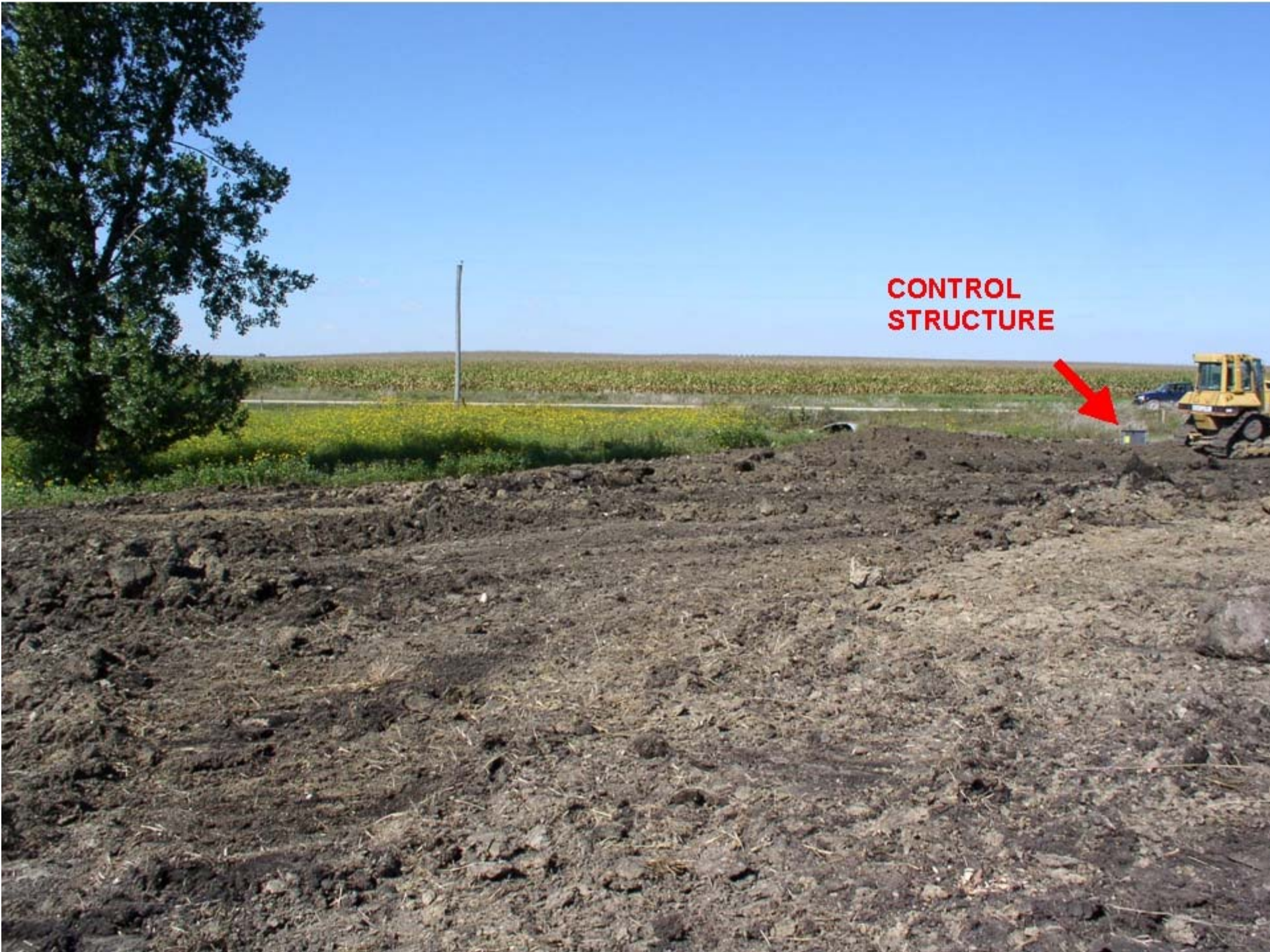












**CONTROL
STRUCTURE**





Thank You