



C-BMP

Illinois Council on Best Management Practices

14171 Carole Drive, Bloomington IL 61705

December 31, 2013

Illinois Nutrient Research & Education Council
14171 Carole Drive
Bloomington, IL 61705



Illinois
Discovery
Farms

RE: Annual Final Project Report to NREC on Discovery Farms

Dear Council Members:

The following is an activity/budget report on the Illinois Discovery Farms Project.

McLean County Project in Lexington: CBMP is working in partnership with Dr. Shalamar Armstrong from Illinois State University on a Discovery Farms site in McLean County in an area near the Lake Bloomington/Lake Evergreen/Mackinaw River watershed. Funding for this project has resulted in the establishment of a tile drained system on 80 acres which will be used to study the effectiveness of various BMP practices on improving water quality. The tile drainage is being installed and the monitoring equipment has been purchased. At NREC's recommendation, Dr. Armstrong met with Dr. Robert Hoelt and with Dan Schaefer to improve the project adding three replications for nitrogen rate studies. Dr. Armstrong and Dan Schaefer visited the Minnesota Discovery Farm sites in August 2013 to learn more about the installation of systems and management of the site and are incorporating lessons learned from their visit into this project. This site will provide the opportunity to measure water quality at 15 different field locations, and the farmer-cooperator has signed an 8 year lease to assure access to the site and cooperation in the work on the site. CBMP will be an instrumental partner in the project to help incorporate nitrogen source, rate, time and place practices, nitrate sampling, phosphorus placement and cover crops. An MOU has been signed between CBMP and ISU to ensure cooperation and collaboration as the Discovery Farms program is developed.

■ 1189.52
■ 1189.52 to 1188.43
■ 1188.43 to 1187.34
■ 1187.34 to 1186.25
■ 1185

Agriculture Water Management By AGREM LLC

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 Farm 2 New Name
 Fid Testplot Revised Plans

3 inch = 267.07 Feet
 -88434265 40385586
 -88429801 40383421
 North



The location of this site also makes it very attractive for CBMP/Discovery Farm demonstration days and several events are planned for the spring of 2014.

Kleiss Farm, Champaign County: Dr. Richard Cooke was previously studying subsurface water quality at this site in a 3 year project. His funding has since lapsed and the monitors are not being used. Dan Schaefer met with Lowell Gentry at the University of Illinois and with Lowell’s assistance we have updated the equipment to make this a new Discovery Farm site in 2014.

Dan Schaefer will work with the farmers to enact agronomic practices at the site, and CBMP entered into a two year contract with Dr. Mark David and Lowell Gentry at UI to conduct the water sampling and analysis at this site, which is in the Embarras River watershed. The first year funding (in 2013) was \$36,619.00 (transferred with NREC’s approval from the Salt Fork project) and the 2nd year is \$32,552.00.

With this funding, Lowell Gentry supervised the installation of two new AgriDrain structures on each of the tile systems at the Kleiss farm. Each are fitted with a pressure transducer, data logger, and automatic ISCO sampler. Flow will be monitored continuously, and water samples collected weekly during low flow periods. During higher tile flow periods, samples will be collected daily to as often as every 3hours for analysis. Each sample will be analyzed for nitrate, ammonium, dissolved reactive P, and total P.

During the first year of the study we will compare the two fields so that when a cover crop is seeded in the fall of 2014, we will know how the tiles nitrate concentrations compare to each other. In year two we will add soil and plant sampling to assess cover crop biomass, above-ground N update at two dates (fall and spring), and exchangeable soil nitrate and ammonium. A cover crop (to be determined) will be seeded in during the early fall of 2014. Work will continued through June of 2015.



Budget

NREC provided funding of \$200,000 to CBMP for the Discovery Farms projects. We have allocated these funds as follows:

Installation/Sampling Costs on Kleiss Farm	\$ 5,000.00 (estimated; still waiting for invoices)
Administrative Costs	3,500.00
ISU Site – Engineering/Tile/Monitors	<u>\$ 195,633.00</u>
 Total to date	 \$204,133.00

Project report submitted by Jean Payne, CBMP Treasurer