

To: BMP CHALLENGE Project Team and Advisors
From: Maggie Westaby BMP CHALLENGE Program Assistant, Agflex, Inc.
Re: Seventh Quarterly Report: BMP CHALLENGE and Water Quality Trading

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Executive Summary

Our project is designed to meet water resource quality goals by promoting and supporting innovative strategies including the BMP CHALLENGE net returns guarantee and water quality credit trading. We will build broad awareness of these tools and competence in their use by developing and distributing a curriculum and support tools, and training in-state trainers to support conservation district, crop advisory professionals and others who work with farmers. We will manage the BMP CHALLENGE for corn farmers reducing nutrient use and tillage in DE, IA, ID, IL, IN, MD, MI, MN, MO, NC, NE, OH, PA, VA, WI. Water quality credit trading objectives will focus on MN and PA. Pennsylvania trading activities are limited to preparation of a trading template by Kieser and Associates, due by end of 2008. The document will be used to document credits created by BMP CHALLENGE participants.

Since our June 2008 quarterly report, we have:

- Completed and circulated a flier to advertise the Water Quality Credit Trading workshop in St. Cloud to over 1,400 contacts.
- Developed and circulated a brochure on Water Quality Credit Trading in Minnesota to over 1,400 point source representatives.
- Held a WQT workshop in St Cloud, MN (XX attendees, overall evaluation score of X.X on a scale of 1 to 5).
- Completed and circulated an issue of BMP CHALLENGE News electronic newsletter to 4400 contacts.
- Enrolled 2008 BMP CHALLENGE participants including: 1,044 acres in the Nutrient Management program, 676.8 acres in the Reduced Tillage program, and 960.6 acres in the Enhanced Nutrient Management program.
- Presented results to date at the annual Soil and Water Conservation Society meeting.
- Completed two monthly project team conference calls as well as bi-weekly BMP CHALLENGE team conference calls.
- Set the next quarterly advisory committee call date as September 11, 2008.

Over the next quarter we will:

- Collect and analyze 2008 BMP CHALLENGE results.
- Revise and reprint the MN Water Quality Credit Trading brochure.
- Complete a second mailing to MN point sources.
- Begin recruiting 2008 acres including a mailing to the 13-state contact list.
- Continue to interact with Minnesota state agencies and other interested parties on water quality credit trading rule development, and pursue additional funding to meet our match requirement.

This project is funded by USDA NRCS with matching funds from the Minnesota River Board for Minnesota activities, Bush Foundation for trading development in Minnesota and PA DEP for activities in Pennsylvania, .

I. Deliverables Update

<p>1. WQ trading and BMP CHALLENGE curriculum delivered to MN state agency, conservation districts, crop advisors and others to equip them to offer these opportunities to their producer clientele.</p>	<ul style="list-style-type: none"> a. Calendar of industry and extension meetings has been created and continually modified with contact information for meeting organizers. b. Tom Green, Brian Brandt, Mark Kieser, Jim Klang and Marco Graziani presented at a dedicated workshop on WQ trading in St. Cloud, MN entitled Water Quality Credit Trading: Cost Reduction Opportunities for Wastewater Treatment Operators.
<p>2. Support package of existing tools for trainers, subset to be used as handout for seminars and available online.</p>	<ul style="list-style-type: none"> a. Trainer curriculum and support materials package currently includes 2008 BMP CHALLENGE enrollment and implementation forms, presentation PowerPoint files and print-outs, curriculum outline with notes, water quality trading references, BMP CHALLENGE FAQ sheets and additional BMP information (i.e. alternative credit generating BMPs and management information). These materials were reviewed at a MN Trainer meeting in November 2007. b. Website updated regularly, with current documents and information. Recent updates include the addition of the brochure on Water Quality Credit Trading in Minnesota.
<p>3. Preparing three MN public agency/NGO trainers to train others on BMP CHALLENGE and WQ credit trading.</p>	<ul style="list-style-type: none"> a. Three trainers have been identified for Minnesota: <ul style="list-style-type: none"> -Shannon Fisher, MN River Board and Water Resources Center -Ed Hohenstein, Seven Mile Creek Watershed Project - Russ Derickson, MN Dept of Agriculture In addition to these three, a number of other collaborators including several professionals on our advisory committee are gaining competency in addressing water quality trading and the BMP CHALLENGE with others. b. Upcoming fall/winter Minnesota meetings: <ul style="list-style-type: none"> - Work is being done to obtain invitations to present at existing meetings. - One or two dedicated workshops may be planned for the fall, winter 2008-2009.
<p>4. Inventory of potential point and non-point source traders, trades, values, credits, rates, forms, implementation and verification procedures.</p>	<p>The draft MN State rules for water quality trading are now available. Jim Klang is attending the larger advisory meetings and speaks with Marco Graziani and the MPCA team regularly. The advisory group is currently looking at other state rules from Ohio and Michigan to explore how to proceed in MN.</p>
<p>5. 75,000 brochures, 1,000-1,500 farmer inquiries generated to state agencies, crop advisors, watershed groups on BMP CHALLENGE and WQ credit trading.</p>	<ul style="list-style-type: none"> a. 35,000 BMP CHALLENGE brochures were printed with approx. 32,250 distributed to date. b. WQT informational brochures have been developed and were distributed to over 1,400 point source contacts. c. The 7th edition of an electronic newsletter containing both BMP CHALLENGE program information and recent agricultural and conservation news was distributed to 4410 contacts over the course of two separate mailings in August. d. Per the 2008 Outreach plan, a brochure and electronic newsletter schedule with designated dates of dispersal and topic outlines has

	<p>been developed. Potential future E-newsletter topics include: MN Trading Court Ruling, Update on the Farm Bill, EPA Non-point Source Outreach Toolbox, implications of the EPA CO₂ regulation mandate for BMP CHALLENGE, a highlight on a main contact for a particular region, fall applications/tillage info, and updates on upcoming workshops, enrollment procedures, etc.</p>
<p>6. Ten point sources in MN prepared to trade, list of trades completed, acres, practices, credits, estimated resource improvements.</p>	<ol style="list-style-type: none"> a. Keiser & Associates have contacted and identified ethanol plants in the MN River watershed, which are currently willing to use the point-point trading permit system, but are not at this time committed to using the more desirable point-nonpoint trading system. b. James Klang, PE, and Brian Brandt have released a white-paper to help clarify how point and non-point perspectives view trading by interviewing potential buyers and sellers. c. The first draft calculations for the GIS analysis for the Cannon River and Seven-Mile Creek watersheds, prepared by Klang, David Legvold (Cannon River Partnership) and Kevin Kuehner (Seven-Mile Creek Watershed) are completed and currently under review.
<p>7. Inventory of BMP CHALLENGE guarantees implemented, acres, practices, improvements.</p>	<ol style="list-style-type: none"> a. Nutrient BMP guarantees have been implemented on approximately 90 farmer fields, resulting in an average 22.5% reduction in nitrogen fertilizer use. b. Reduced tillage was implemented on the first 14 fields in 2006. c. With the goal of expanding the Enhanced Nutrient option, which refers to an additional 15% reduction in BMP rates for nitrogen fertilizer use, beyond PA for the upcoming growing season, Brian Brandt is currently exploring a potential partnership with Environmental Defense in OH to add approximately 20 farmers. d. All results are recorded in a database. e. From 2000-2007, 3582 acres, 1139 acres and 3700 acres were enrolled in the Nutrient BMP, Reduced Tillage BMP and Enhanced Nutrient BMP respectively.
<p>8. Reductions of 760K lbs of N use, 40K lbs. P loading; 30K tons sediment loading; 25 K lbs. NO₂; 5K tons CO₂ from nutrient and tillage reduction on approximately 34K acres in MN and PA.</p>	<ol style="list-style-type: none"> a. See tracking, attached.
<p>9. Funding development including \$759,464 in matching non-federal funding, \$170,500 in program income and \$944,400 in-kind. Additional funding for program expansion.</p>	<ol style="list-style-type: none"> a. Current grants amounting to \$983,000: <ul style="list-style-type: none"> - 2006 Conservation Innovation Grant to Agflex, NRCS, \$683,000 - 2007 Bush Foundation Grant to AFT, \$75,000 - 2007 Pennsylvania Dept. of Environmental Protection (to IPM Institute, \$225,000 - 2007 Pennsylvania State Conservation Commission to IPM Institute, \$20,000 - 2007 Chesapeake Bay Commission to IPM Institute, \$25,000 - 2008 Pennsylvania Dept. of Environmental Protection to IPM Institute, \$50,000 - 2008 Bush Foundation Grant to AFT, \$270,000 - 2008 Conservation Innovation Grant to AFT, \$650,000.

<p>10. Quarterly and final progress reports including conference call and advisory meeting minutes.</p>	<p>a. Advisory conference calls and meetings scheduled for Dec, Jan and Mar through Aug 2009, including one in-person meeting per year.</p> <p>b. BMP CHALLENGE Project team (Brandt, Green, Corrado, Westaby, and contractors) meets at least twice monthly by conference call to manage BMP CHALLENGE acreage recruitment and implementation.</p> <p>c. MN BMP CHALLENGE and WQ Credit Trading team (Fisher, Green, Kieser & Associates, and Corrado) meets monthly by conference call, second Thursday of each month at 8:30am CST. Advisors welcome to participate. Call agenda and post-call notes circulated to project team and advisors.</p>
<p>11. Other</p>	<p>a. Possible NY and CA expansion. NY and CA request in progress. Tom Green has contacted an IPM colleague in CA who is helping identify the right NRCS contacts in CA to brief them on the project prior to making a formal request to expand the project into CA.</p>

II. Results Table

2000-2007 RESULTS	Nutrient BMP	Reduced Tillage	Enhanced Nutrient Management
Total acres, 2000-2007	3,582 acres	1,139 acres	3,700 acres
BMP yield, average and range	156.3 bu/acre 15.4 - 220	153.8 bu/acre 72-192	123.4 bu/acre 9-217
Check-strip yield, average and range	162.7 bu/acre 16.7-230	165.6 bu/acre 110-210	131.6 bu/acre 10-238
Farmer net returns after fertilizer or tillage savings	(\$3.15) (\$53.03) - \$81.25	(18.25) (\$157) - \$130	(\$20.75) (\$111) - \$105
Total N use reduction	145,712 lbs N	-	99,479 lbs N
Estimated sediment reduction	-	1709 tons	-
Estimated P load reduction	-	2,278 lbs	-
Estimated N ₂ O reduction	4,793 lbs	-	3,272 lbs
Estimated CO ₂ reduction	1,791 tons	570 tons	1,850

II. Project Team, Advisors and Trainers – As of 01/17/2008

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Advisory Group

Participation is invited on monthly conference calls and requested for quarterly conference calls and one in-person meetings per year. Role includes reviewing plans and progress, responding to requests for information/assistance from project team.

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Trainers

Three Minnesota and three Pennsylvania public agencies or NGO professionals who will be trained to offer the BMP CHALLENGE and WQ Credit Trading curriculum developed as part of this project. Goal is to identify individuals whose current role would be enhanced by this capacity. ***Pennsylvania Trainers yet to be determined.***

Minnesota Trainers

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III. Project Summary from Original Proposal to NRCS CIG

Our project will build capacity by creating broad awareness and teaching in-state personnel to support CD, crop advisory professionals and others who work with farmers to meet conservation goals using new, innovative strategies. We will highlight, teach and implement BMP performance guarantees for corn farmers reducing both nutrient use and tillage in DE, IA, IL, IN, MD, MI, MN, NC, NE, OH, PA, VA, WI and point-nonpoint water quality credit trading in MN and PA.

BMP performance guarantees will focus on 51 million acres of corn in these 13 states. Our *BMP Challenge* has delivered a 24% nutrient use reduction in seven states over the past four years. We provide a financial safety net for farmers who reduce nutrient and sediment pollution using practices developed and recommended by land-grant scientists and state agencies. These practices save farmers money over time, but in any one year may result in lower yields and income. The program uses a side-by-side comparison in the farmer's field of his or her conventional practice on a "check" strip vs. reduced nutrient or tillage practice on the balance of the field. We compensate the farmer if net income declines as a result. Our 2005 survey indicates that 42% of corn farmers would try these new practices if guarantees were available.

Water quality credit trading is a new opportunity in the Susquehanna and Potomac River Watersheds in PA and the Minnesota River Watershed in MN. Point sources such as wastewater treatment facilities have greatly reduced nutrient emissions over the past 30 years and face very high costs for incremental gains. These funds can be more efficiently invested in improvements by farmers. Adequate controls are needed to ensure water quality goals are met. Accurate and effective education, training and technical support are needed to implement trading effectively.

Our experienced and nationally recognized team will work with state agencies and others to develop and implement a training curriculum, support tools and outreach for these innovative approaches, and work with conservation districts, crop consultants and other key influencers to equip them to competently offer and manage these opportunities with their client farmers. Support tools will include both new and existing materials and trained in-state technical support to help these professionals efficiently identify the best opportunities, calculate economic benefits to farmers and estimate water quality improvements, and verify and report implementation of conservation practices. Outreach will focus on CDs, crop consultants, Extension, ag organizations and other key influencers to drive farmer interest and inquiries to trained CD staff and crop consultants.

We will ease farmer recruiting to trading using our proven model of enlisting crop consultants, Extension and CD staff as recruiters, on-site BMP overseers and/or third-party verifiers for our guarantee program; assure farmers with yield/income guarantees so that they can put a comfortable value on their participation in trades, e.g., farmers are reluctant to trade nutrient use reductions for cash because they can't predict the yield impacts; verify/document credit production by farmers and so provide point-sources/regulators with the assurance they need; discover and institutionalize locally-acceptable credit estimation tools to provide certainty for participants; track multiple environmental benefits/environmental services; aggregate credits from multiple farmers to create a reserve pool such that if any one farmer cannot deliver promised credits for any reason, other credits are available to fill in; and offer this model as a turn key service solution to trading projects in other states as they begin to get ready for trading.