

To: BMP CHALLENGE Project Team and Advisors  
From: Matt Anderson BMP CHALLENGE Program Assistant, Agflex, Inc.  
Re: Thirteenth 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 CA, DE, IA, ID, IL, IN, MD, MI, MN, MO, NC, NE, NY, OH, PA, SD, 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 June 2009. A draft template was distributed in August 2008. The document was used to document credits created by BMP CHALLENGE participants during the 2009 season.

Since our December 2009 quarterly report, we have:

- Continued expansion of the CHALLENGE in California
- Collected 2009 BMP CHALLENGE results
- Updated all forms for the 2010 growing season
- Expanded the BMP CHALLENGE to also include sweet corn crops
- Circulated a brochure mailing to approximately 11,000 agricultural contacts.
- Completed 7 biweekly conference calls and transitioned away from monthly team calls
- Set the next quarterly advisory committee call date as June 10th, 2010

Over the next quarter we will:

- Revise and reprint the MN Water Quality Credit Trading brochure
- Complete a second mailing to MN point sources
- Begin planning workshop for point sources in Minnesota for summer 2010.
- Plan/hold annual advisory meeting
- Complete enrollment for the 2010 growing season
- 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
- Develop forms for alternate crops and cropping systems in California

The one year no-cost extension will allow us to collect, analyze and report results from the 2009 growing season, including harvest and net returns assessments from the 2009 harvest, and recruit additional participants for the 2010 season.

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

Summary status, key deliverables to date:

- | a) Proposed  | b) Achieved to date  |
|--|--|
| 1. 24 full-day seminars w/75 participants each, attendance lists, agendas. 1800 participants total.  | 1. 39 meetings and conferences held with 1,541 participants to date.   |
| 2. Offer BMP CHALLENGE for nutrient management and conservation tillage in 13 states.  | 2. With approval of NRCS, added three new states to the project (MO, ID, CA) bringing the total to 18 states.  |
| 3. Training plan, six trained individuals (three in PA, three in MN) to deliver seminars.  | 3. Training plan created, 4 individuals in Minnesota have qualified as trainers, one still active.   |
| 4. 150,000 brochures produced and distributed; 2-3000 farmer inquiries generated to state agencies, crop advisors, and watershed groups.   | 4. 67,000 BMP CHALLENGE brochures were printed with approx. 66,000 distributed to date.  |
| 5. 20 point-sources prepared to trade, list of trades completed, guarantees implemented, acres, practices, estimated resource improvements.  | 5. Keiser & Associates have identified and contacted ethanol plants in the MN River watershed, which are willing to use the point-point trading permit system, but are not committed to using the more desirable point-nonpoint trading system. The 2008 CIG was funded for work in the Minnesota River Basin. Protocols and estimation tools awaiting TMDL approvals. (2010-2011) |
| 6. 12 quarterly and one final progress reports; three annual advisory meetings by conference call and three in person.   | 6. 13 quarterly reports and two annual conference calls completed. Two in person meetings completed in March 2007 at Owatonna, MN, and March 2008 at St. Paul, MN.   |
| 7. Reductions of 760,000 lbs. of N use, 40,000 lbs. of P loading; 30,000 tons of sediment loading, 25,000 lbs. NO <sub>2</sub> and 5000 tons CO <sub>2</sub> greenhouse gases from nutrient management, conservation tillage, ditch management and other practices on approx. 34,000 acres in the Minnesota, Susquehanna and Potomac River Watersheds. | 7. Reductions of 311,916 lbs N use, 3,401 lbs. P loading; 2,550 tons sediment loading and 850 tons CO <sub>2</sub> greenhouse gases over approximately 10,876 acres.   |

Key reasons for variance from proposed deliverables:

1. Proposed work in Pennsylvania was not fully funded, reducing activities and acres in that state.
2. Continued delays in promulgation of trading rules in Minnesota have delayed related objectives in Minnesota.
3. Increase in corn prices from \$2.20 per bushel in 2006 to \$4.75 in 2008 and \$4.00 in 2009 resulted in higher costs per acre, reducing total number of acres accordingly.
4. We did not dedicate funding in our original budget to support/obligate trainers, making it difficult to retain trainers.

**I. Deliverables Update - Detail**

<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>	<p>a. Calendar of industry and extension meetings has been created and continually modified with contact information for meeting organizers.</p> <p>b. BMP CHALLENGE and WQCT meetings and conferences, 1,541 participants to date:            -March 21, 2009, New Ulm, MN, 60 participants;            -September 2008-March 2009, MN River and Cannon River Basin, MN, 40 participants;            -March 5, 2009, Columbus, NE, 38 participants;            -March 4, 2009, Wisner, NE, 48 participants;            -February 23, 2009, New Lenox, IL, 38 participants;            - February 18, 2009, Harrisburg, PA, 16 participants;            -February 16, 2009, Harrisburg PA, 10 participants;            -February 11, 2009, Saint Louis, MO, 48 participants;            -January 2009, Albuquerque, NM, 40 participants;            -December 9, 2008, Duluth, MN, 30 participants;            -December 8, 2008, St. Paul, MN, 98 participants;            - August 5, 2008, Saint Cloud, MN, 23 participants;            - July 29, 2008, Tucson, AZ, 50 participants;            -April 16, 2008, Redwing MN, 148 participants;            - April 1, 2008, Sauk Center, MN, 15 participants;            -March 31, 2008, Faribault, MN, 28 participants;            -March 28, 2008, Emmetsburg, IA, 48 participants;            -March 24, 2008, Fairmont, MN, 30 participants            -March 14, 2008, Marion, IA, 40 participants;            -March 3, 2008, Napoleon, OH, 23 participants;            -February 27, 2008, St. Paul, MN, 78 participants;            -January 14, 2008, Sidney, OH, 60 participants;            -January 10, 2008, Redwood Falls, MN, 35 participants;            -January 7, 2008, Cannon Falls, MN, 28 participants;            -December 18, 2007, Alexandria, MN, 26 participants;            -November 26, 2007, Owatonna, MN, 16 participants;            - August 30, 2007, New Haven, IN, 30 participants;            -August 17, 2007, Huron County, OH, 48 participants;            -August 10, 2007, Crawford County, OH, 48 participants;            -July 27, 2007, Toledo, OH, 28 participants;            -March 29, 2007, Shelbyville, MI, 7 participants;            -January 11, 2007, New Ulm, MN, 42 participants;            -2007, Rochester, MN, 38 participants;            -December 7, 2006, Harrisburg, PA, 18 participants;            -December 2006, Madison WI, 50 participants;            -September 27, 2006, Lancaster County, PA, 28 participants;            -September 15, 2006, Stark County, OH, 20 participants;            -September 11, 2006, Cross Plains WI, 50 participants;            -August 24, 2006, Champaign County, OH, 20 participants</p> <p>c. Tom Green, Brian Brandt and Maggie Westaby updated the BMP CHALLENGE brochure and composed a cover letter directed towards agricultural professionals. Brochures were circulated to 10,499 contacts between December 2008 and January 2009.</p>
<p>2. Support package of existing tools for trainers, subset to be used as handout for seminars and available online.</p>	<p>a. Trainer curriculum and support materials package currently includes 2009 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.</p> <p>b. Website updated regularly, with current documents and information. Recent updates include the addition of a webpage dedicated to the</p>

	<p>California BMP CHALLENGE and the addition of the 2009 forms for the Nutrient, Reduced Tillage and the California Reduced Tillage CHALLENGE.</p>
<p>3. Preparing three MN public agency/NGO trainers to train others on BMP CHALLENGE and WQ credit trading.</p>	<p>a. Three trainers have been identified for Minnesota:  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.</p> <p>b. Upcoming summer Minnesota meetings:  - Work is being done to obtain invitations to present at existing meetings.  - One or two dedicated workshops may be planned for the summer of 2009.</p>
<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.</p>
<p>5. 95,000 brochures, 1,000-1,500 farmer inquiries generated to state agencies, crop advisors, watershed groups on BMP CHALLENGE and WQ credit trading. Approximately 50 inquiries have been made from agricultural professionals since the Dec 08/Jan 09 mailing.</p>	<p>a. 67,000 BMP CHALLENGE brochures were printed with approx. 66,000 distributed to date.</p> <p>b. Mailing of 1,650 brochures to 22 agricultural professionals regarding their request to promote the CHALLENGE since recruitment mailing of December 2008 and January 2009.</p> <p>c. Mailing of 150 brochures to Chippewa Valley Technical College in Eau Claire, WI regarding their request to use the brochure as part of their curriculum in a Land Management Course starting fall of 2009.</p> <p>d. Per the 2008 Outreach plan, a brochure and electronic newsletter schedule with designated dates of dispersal and topic outlines has been developed. Potential future E-newsletter topics include: Update on the Farm Bill, EPA Non-point Source Outreach Toolbox, implications of the EPA CO<sub>2</sub> 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>e. Electronic newsletter mailing: March E-news, April 15, 2008 to 5240 contacts; Iowa BMP CHALLENGE workshop, February 28, 2008 to 1702 contacts; Redwood Falls Workshop Announcement, January 3, 2008 to 814 contacts; BMP CHALLENGE- Owatonna Workshop, November 13, 2007 to 975 contacts; MN BMP CHALLENGE/WQT Workshops-Owatonna, October 10, 2007 to 817 contacts; Owatonna Workshop "Save the Date" September 26, 2007 to 820 contacts; BMP CHALLENGE July 27, 2007, August 7, 2007 to 2451 contacts and August 27, 2007 to an additional 1670 contacts; April BMP CHALLENGE Update, April 20, 2007 to 2438 contacts; November BMP CHALLENGE Update, November 15, 2006 to 943 contacts; August BMP Performance Guarantee Update, August 8, 2006 to 832 contacts; Resend of August BMP Performance Guarantee Update, August 9, 2006 to 11 contacts; BMP Performance Guarantee Update, November 29, 2005 to 340 contacts.</p>

<p>6. Ten point sources in MN prepared to trade, list of trades completed, acres, practices, credits, estimated resource improvements.</p>	<ul style="list-style-type: none"> <li>a. Keiser &amp; 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. One identified gap from these contacts is the lack of time necessary for managers of facilities to undertake trading. A method to facilitate trading for individuals with limited time resources to complete the buyer and seller connections and the bureaucratic permit complexities is desired.</li> <li>b. The new 2008 CIG was funded to work with several watersheds to implement trades in the Sauk River watershed and throughout the Minnesota River Basin when the Lake Pepin and Sauk River Chain of Lakes TMDLs are issued. Establishment of protocols and estimation tools for six eight digit HUC watersheds is underway and awaiting TMDL approvals delayed until 2010-2011</li> <li>c. 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. The white paper was released in May 2008.</li> <li>d. Educational efforts have initiated conversations with numerous water quality trading participants. The project provided representation on the Citizens Advisory Committee for the MPCA draft of the Water Quality Trading Rules. .</li> </ul>
<p>7. Inventory of BMP CHALLENGE guarantees implemented, acres, practices, improvements.</p>	<ul style="list-style-type: none"> <li>a. Nutrient BMP guarantees have been implemented on approximately 100 farmer fields, resulting in an average 22.5% reduction in nitrogen fertilizer use.</li> <li>b. Reduced tillage was implemented in 2006 and since then 39 fields have been enrolled.</li> <li>c. With the goal of expanding the Planned Nitrogen Reduction option, which, refers to an additional 15% reduction in BMP rates for nitrogen fertilizer use. In 2008 960 acres were enrolled and approximately 2500 acres in 2009.</li> <li>d. All results are recorded in a database.</li> <li>e. From 2000-2008, 4517.94 acres, 1700.50 acres and 4659.95 acres were enrolled in the Nutrient BMP, Reduced Tillage BMP and Planned Nitrogen Reduction BMP respectively.</li> </ul>
<p>8. Reductions of 760K lbs of N use, 40K lbs. P loading; 30K tons sediment loading; 25 K lbs. NO<sub>2</sub>; 5K tons CO<sub>2</sub> from nutrient and tillage reduction on approximately 34K acres in MN and PA.</p>	<ul style="list-style-type: none"> <li>a. See tracking, attached.</li> </ul>
<p>9. Funding development</p>	<ul style="list-style-type: none"> <li>a. Funding obtained during performance period, total \$1,998,000:</li> </ul>

<p>including \$759,464 in matching non-federal funding, \$170,500 in program income and \$944,400 in-kind. Additional funding for program expansion.</p>	<ul style="list-style-type: none"> <li>a. 2006 Conservation Innovation Grant to Agflex, NRCS, \$683,000</li> <li>b. 2007 Bush Foundation Grant to AFT, \$75,000</li> <li>c. 2007 Pennsylvania Dept. of Environmental Protection (to IPM Institute, \$225,000</li> <li>d. 2007 Pennsylvania State Conservation Commission to IPM Institute, \$20,000</li> <li>e. 2007 Chesapeake Bay Commission to IPM Institute, \$25,000</li> <li>f. 2008 Pennsylvania Dept. of Environmental Protection to IPM Institute, \$50,000</li> <li>g. 2008 Bush Foundation Grant to AFT, \$270,000</li> <li>h. 2008 Conservation Innovation Grant to AFT, \$650,000</li> <li>i. 2008 Conservation Innovation Grant to Minnesota River Board, \$999,993.60.</li> <li>j. 2009 Conservation Innovation Grant to Agflex, \$930,703</li> </ul>
<p>10. Quarterly and final progress reports including conference call and advisory meeting minutes.</p>	<ul style="list-style-type: none"> <li>a. Advisory conference calls and meetings scheduled for Dec, Jan and Mar through Aug 2009, including one in-person meeting per year.</li> <li>b. BMP CHALLENGE Project team (Brandt, Green, Anderson, and contractors) meets at least twice monthly by conference call to manage BMP CHALLENGE acreage recruitment and implementation.</li> <li>c. MN BMP CHALLENGE and WQ Credit Trading team (Fisher, Green, Kieser &amp; Associates, and Anderson) 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.</li> </ul>
<p>11. Other</p>	<ul style="list-style-type: none"> <li>a. California expansion is in progress. Eligibility has been officially approved. Enrollment for 2009 is 7 farmers with over 540 acres.</li> </ul>

## II. Results Table

2000-2009 RESULTS	Nutrient BMP	Reduced Tillage	Planned Nitrogen Reduction
Total acres, 2000-2009	4,818.94 acres	2,051 acres	7,023.65 acres
BMP yield, average and range	160.3 bu/acre 59 - 220	156.13bu/acre 32-237	153.5 bu/acre 55-229
Check-strip yield, average and range	166.9 bu/acre 49-230	165.86 bu/acre 26-242	163.9 bu/acre 63-238
Farmer net returns after fertilizer or tillage savings	(\$4.86) (\$89) - \$109	(\$13.49) (\$156) - \$130	(\$33.75) (\$284) - \$105
Total N use reduction	198,324.75 lbs	-	188,660.95 lbs
Estimated sediment reduction	-	3,077.7 lbs	-
Estimated P load reduction	-	4,103.6 lbs	-
Estimated N <sub>2</sub> O reduction (lbs)	3,739.84 lbs	-	3,557.47 lbs
Estimated CO <sub>2</sub> reduction		1,025.9 lbs	

## II. Project Team, Advisors and Trainers – As of 09/09/2009

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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 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.

### **Current Trainers**

#### **Dr. Shannon Fisher**

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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, agricultural 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.

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| 8. 24 full-day seminars w/75 participants each, attendance lists, agendas. 1800 participants total.   | 8. 39 meetings and conferences held with 1,541 participants to date.  |
| 9. Offer BMP CHALLENGE for nutrient management and conservation tillage in 13 states.   | 9. With approval of NRCS, added three new states to the project (MO, ID, CA) bringing the total to 18 states.   |
| 10. Training plan, six trained individuals (three in PA, three in MN) to deliver seminars.  | 10. Training plan created, 4 individuals in Minnesota have qualified as trainers, one still active.   |
| 11. 150,000 brochures produced and distributed; 2-3000 farmer inquiries generated to state agencies, crop advisors, and watershed groups.   | 11. 60,000 BMP CHALLENGE brochures were printed with approx. 50,100 distributed to date.  |
| 12. 20 point-sources prepared to trade, list of trades completed, guarantees implemented, acres, practices, estimated resource improvements.  | 12. Keiser & Associates have identified and contacted ethanol plants in the MN River watershed, which are willing to use the point-point trading permit system, but are not committed to using the more desirable point-nonpoint trading system. The 2008 CIG was funded for work in the Minnesota River Basin. Protocols and estimation tools awaiting TMDL approvals. (2010-2011) |
| 13. 12 quarterly and one final progress reports; three annual advisory meetings by conference call and three in person.   | 13. 12 quarterly reports and two annual conference calls completed. Two in person meetings completed in March 2007 at Owatonna, MN, and March 2008 at St. Paul, MN.   |
| 14. Reductions of 760,000 lbs. of N use, 40,000 lbs. of P loading; 30,000 tons of sediment loading, 25,000 lbs. NO <sub>2</sub> and 5000 tons CO <sub>2</sub> greenhouse gases from nutrient management, conservation tillage, ditch management and other practices on approx. 34,000 acres in the Minnesota, Susquehanna and Potomac River Watersheds. | 14. Reductions of 311,916 lbs N use, 3,401 lbs. P loading; 2,550 tons sediment loading and 850 tons CO <sub>2</sub> greenhouse gases over approximately 10,876 acres.   |

Key reasons for variance from proposed deliverables:

5. Proposed work in Pennsylvania was not fully funded, reducing activities and acres in that state.
6. Continued delays in promulgation of trading rules in Minnesota have delayed related objectives in Minnesota.
7. Increase in corn prices from \$2.20 per bushel in 2006 to \$4.75 in 2008 and \$4.00 in 2009 resulted in higher costs per acre, reducing total number of acres accordingly.

8. We did not dedicate funding in our original budget to support/obligate trainers, making it difficult to retain trainers.

## I. Deliverables Update - Detail

<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>	<p>d. Calendar of industry and extension meetings has been created and continually modified with contact information for meeting organizers.</p> <p>e. BMP CHALLENGE and WQCT meetings and conferences, 1,541 participants to date:            -March 21, 2009, New Ulm, MN, 60 participants;            -September 2008-March 2009, MN River and Cannon River Basin, MN, 40 participants;            -March 5, 2009, Columbus, NE, 38 participants;            -March 4, 2009, Wisner, NE, 48 participants;            -February 23, 2009, New Lenox, IL, 38 participants;            - February 18, 2009, Harrisburg, PA, 16 participants;            -February 16, 2009, Harrisburg PA, 10 participants;            -February 11, 2009, Saint Louis, MO, 48 participants;            -January 2009, Albuquerque, NM, 40 participants;            -December 9, 2008, Duluth, MN, 30 participants;            -December 8, 2008, St. Paul, MN, 98 participants;            - August 5, 2008, Saint Cloud, MN, 23 participants;            - July 29, 2008, Tucson, AZ, 50 participants;            -April 16, 2008, Redwing MN, 148 participants;            - April 1, 2008, Sauk Center, MN, 15 participants;            -March 31, 2008, Faribault, MN, 28 participants;            -March 28, 2008, Emmetsburg, IA, 48 participants;            -March 24, 2008, Fairmont, MN, 30 participants;            -March 14, 2008, Marion, IA, 40 participants;            -March 3, 2008, Napoleon, OH, 23 participants;            -February 27, 2008, St. Paul, MN, 78 participants;            -January 14, 2008, Sidney, OH, 60 participants;            -January 10, 2008, Redwood Falls, MN, 35 participants;            -January 7, 2008, Cannon Falls, MN, 28 participants;            -December 18, 2007, Alexandria, MN, 26 participants;            -November 26, 2007, Owatonna, MN, 16 participants;            - August 30, 2007, New Haven, IN, 30 participants;            -August 17, 2007, Huron County, OH, 48 participants;            -August 10, 2007, Crawford County, OH, 48 participants;            -July 27, 2007, Toledo, OH, 28 participants;            -March 29, 2007, Shelbyville, MI, 7 participants;            -January 11, 2007, New Ulm, MN, 42 participants;            -2007, Rochester, MN, 38 participants;            -December 7, 2006, Harrisburg, PA, 18 participants;            -December 2006, Madison WI, 50 participants;            -September 27, 2006, Lancaster County, PA, 28 participants;            -September 15, 2006, Stark County, OH, 20 participants;            -September 11, 2006, Cross Plains WI, 50 participants;            -August 24, 2006, Champaign County, OH, 20 participants</p> <p>f. Tom Green, Brian Brandt and Maggie Westaby updated the BMP CHALLENGE brochure and composed a cover letter directed towards agricultural professionals. Brochures were circulated to 10,499 contacts between December 2008 and January 2009.</p>
<p>2. Support package of existing tools for trainers, subset to be used as handout for seminars and available online.</p>	<p>c. Trainer curriculum and support materials package currently includes 2009 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.</p> <p>d. Website updated regularly, with current documents and information.</p>



	<p>Recent updates include the addition of a webpage dedicated to the California BMP CHALLENGE and the addition of the 2009 forms for the Nutrient, Reduced Tillage and the California Reduced Tillage CHALLENGE.</p>
<p>3. Preparing three MN public agency/NGO trainers to train others on BMP CHALLENGE and WQ credit trading.</p>	<p>c. Three trainers have been identified for Minnesota:  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.</p> <p>d. Upcoming summer Minnesota meetings:  - Work is being done to obtain invitations to present at existing meetings.  - One or two dedicated workshops may be planned for the summer of 2009.</p>
<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.</p>
<p>5. 95,000 brochures, 1,000-1,500 farmer inquiries generated to state agencies, crop advisors, watershed groups on BMP CHALLENGE and WQ credit trading. Approximately 50 inquiries have been made from agricultural professionals since the Dec 08/Jan 09 mailing.</p>	<p>f. 60,000 BMP CHALLENGE brochures were printed with approx. 50,100 distributed to date.</p> <p>g. Mailing of 1,650 brochures to 22 agricultural professionals regarding their request to promote the CHALLENGE since recruitment mailing of December 2008 and January 2009.</p> <p>h. Mailing of 150 brochures to Chippewa Valley Technical College in Eau Claire, WI regarding their request to use the brochure as part of their curriculum in a Land Management Course starting fall of 2009.</p> <p>i. Per the 2008 Outreach plan, a brochure and electronic newsletter schedule with designated dates of dispersal and topic outlines has been developed. Potential future E-newsletter topics include: Update on the Farm Bill, EPA Non-point Source Outreach Toolbox, implications of the EPA CO<sub>2</sub> 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>j. Electronic newsletter mailing: March E-news, April 15, 2008 to 5240 contacts; Iowa BMP CHALLENGE workshop, February 28, 2008 to 1702 contacts; Redwood Falls Workshop Announcement, January 3, 2008 to 814 contacts; BMP CHALLENGE- Owatonna Workshop, November 13, 2007 to 975 contacts; MN BMP CHALLENGE/WQT Workshops-Owatonna, October 10, 2007 to 817 contacts; Owatonna Workshop "Save the Date" September 26, 2007 to 820 contacts; BMP CHALLENGE July 27, 2007, August 7, 2007 to 2451 contacts and August 27, 2007 to an additional 1670 contacts; April BMP CHALLENGE Update, April 20, 2007 to 2438 contacts; November BMP CHALLENGE Update, November 15, 2006 to 943 contacts; August BMP Performance Guarantee Update, August 8, 2006 to 832 contacts; Resend of August BMP Performance Guarantee Update, August 9, 2006 to 11 contacts; BMP Performance</p>

	Guarantee Update, November 29, 2005 to 340 contacts.
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<p>6. Ten point sources in MN prepared to trade, list of trades completed, acres, practices, credits, estimated resource improvements.</p>	<ul style="list-style-type: none"> <li>e. Keiser &amp; 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. One identified gap from these contacts is the lack of time necessary for managers of facilities to undertake trading. A method to facilitate trading for individuals with limited time resources to complete the buyer and seller connections and the bureaucratic permit complexities is desired.</li> <li>f. The new 2008 CIG was funded to work with several watersheds to implement trades in the Sauk River watershed and throughout the Minnesota River Basin when the Lake Pepin and Sauk River Chain of Lakes TMDLs are issued. Establishment of protocols and estimation tools for six eight digit HUC watersheds is underway and awaiting TMDL approvals delayed until 2010-2011</li> <li>g. 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. The white paper was released in May 2008.</li> <li>h. Educational efforts have initiated conversations with numerous water quality trading participants. The project provided representation on the Citizens Advisory Committee for the MPCA draft of the Water Quality Trading Rules.</li> </ul>
<p>7. Inventory of BMP CHALLENGE guarantees implemented, acres, practices, improvements.</p>	<ul style="list-style-type: none"> <li>f. Nutrient BMP guarantees have been implemented on approximately 100 farmer fields, resulting in an average 22.5% reduction in nitrogen fertilizer use.</li> <li>g. Reduced tillage was implemented in 2006 and since then 39 fields have been enrolled.</li> <li>h. With the goal of expanding the Planned Nitrogen Reduction option, which, refers to an additional 15% reduction in BMP rates for nitrogen fertilizer use. In 2008 960 acres were enrolled and approximately 2500 acres in 2009.</li> <li>i. All results are recorded in a database.</li> <li>j. From 2000-2008, 4517.94 acres, 1700.50 acres and 4659.95 acres were enrolled in the Nutrient BMP, Reduced Tillage BMP and Planned Nitrogen Reduction BMP respectively.</li> </ul>
<p>8. Reductions of 760K lbs of N use, 40K lbs. P loading; 30K tons sediment loading; 25 K lbs. NO<sub>2</sub>; 5K tons CO<sub>2</sub> from nutrient and tillage reduction on approximately 34K acres in MN and PA.</p>	<ul style="list-style-type: none"> <li>a. See tracking, attached.</li> </ul>

<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>	<p>a. Funding obtained during performance period, total \$1,998,000:</p> <ul style="list-style-type: none"> <li>k. 2006 Conservation Innovation Grant to Agflex, NRCS, \$683,000</li> <li>l. 2007 Bush Foundation Grant to AFT, \$75,000</li> <li>m. 2007 Pennsylvania Dept. of Environmental Protection (to IPM Institute, \$225,000</li> <li>n. 2007 Pennsylvania State Conservation Commission to IPM Institute, \$20,000</li> <li>o. 2007 Chesapeake Bay Commission to IPM Institute, \$25,000</li> <li>p. 2008 Pennsylvania Dept. of Environmental Protection to IPM Institute, \$50,000</li> <li>q. 2008 Bush Foundation Grant to AFT, \$270,000</li> <li>r. 2008 Conservation Innovation Grant to AFT, \$650,000</li> <li>s. 2008 Conservation Innovation Grant to Minnesota River Board, \$999,993.60.</li> <li>t. 2009 Conservation Innovation Grant to Agflex, \$930,703</li> </ul>
<p>10. Quarterly and final progress reports including conference call and advisory meeting minutes.</p>	<ul style="list-style-type: none"> <li>d. Advisory conference calls and meetings scheduled for Dec, Jan and Mar through Aug 2009, including one in-person meeting per year.</li> <li>e. BMP CHALLENGE Project team (Brandt, Green, Anderson, and contractors) meets at least twice monthly by conference call to manage BMP CHALLENGE acreage recruitment and implementation.</li> <li>f. MN BMP CHALLENGE and WQ Credit Trading team (Fisher, Green, Kieser &amp; Associates, and Anderson) 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.</li> </ul>
<p>11. Other</p>	<p>a. California expansion is in progress. Eligibility has been officially approved. Enrollment for 2009 is 7 farmers with over 540 acres for 2009.</p>

## II. Results Table

2000-2008 RESULTS	Nutrient BMP	Reduced Tillage	Planned Nitrogen Reduction
Total acres, 2000-2008	4,517 acres	1,700 acres	4,659 acres
BMP yield, average and range	159.2 bu/acre 59 - 220	156.78bu/acre 72-233	148.58 bu/acre 55-217
Check-strip yield, average and range	166.3 bu/acre 49-230	166.93 bu/acre 110-227	158.7 bu/acre 63-238
Farmer net returns after fertilizer or tillage savings	(\$6.43) (\$89) - \$81	(15.34) (\$156) - \$130	(\$22.90) (\$141) - \$105
Total N use reduction	187,677.4 lbs N	-	124,239 lbs N
Estimated sediment reduction	-	2,550.75 tons	-
Estimated P load reduction	-	3,401 lbs	-
Estimated N <sub>2</sub> O reduction	3539.06 lbs	-	2342.80 lbs
Estimated CO <sub>2</sub> reduction		850.25 tons	

## II. Project Team, Advisors and Trainers – As of 09/09/2009

### **Kelly Adams**

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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.

### **George Boody**

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### **Jeremy Geske**

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### **Marco Graziani**

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### **Jeff St. Ores**

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### **Scott Thaden**

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320 -235-1970  
Fax: 320-235-1986

## **Trainers**

Three Minnesota 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.

### **Current Trainers**

#### **Dr. Shannon Fisher**

Executive Director  
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### **Previous Trainers**

#### **Russ Derickson**

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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, agricultural 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.

To: BMP CHALLENGE Project Team and Advisors  
From: Matt Anderson BMP CHALLENGE Program Assistant, Agflex, Inc.  
Re: Eleventh Quarterly Report: BMP CHALLENGE and Water Quality Trading

**Contents:** Executive Summary  
I. Deliverables Update

II. Project Team and Advisors	8
III. Project Summary from NRCS Proposal	10

## **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 CA, 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 June 2009. A draft template was distributed in August 2008. The document will be used to document credits created by BMP CHALLENGE participants during the 2009 season.

Since our June 2009 quarterly report, we have:

- Requested and received a one-year no cost extension on our 2006 CIG to August 2010.
- Received permission to expand BMP CHALLENGE to California.
- Received CIG grant starting in October of 2009.
- Hired Matt Anderson as new CIG Project Assistant.
- Enrolled acres for 2009.
- Completed one monthly project team conference call as well as bi-weekly BMP CHALLENGE team conference calls.
- Met with NRCS national staff in person to present results, relationship to foregone income, conducted follow up conference call.
- Presented results to date at the CIG Showcase, Soil and Water Conservation Society meeting.
- Set the next quarterly advisory committee call date as September 10th, 2009.

Over the next quarter we will:

- Revise and reprint the MN Water Quality Credit Trading brochure.
- Complete a second mailing to MN point sources.
- Plan workshop for point sources in Minnesota for Fall 2009.
- Plan/hold annual advisory meeting.
- Publish BMP CHALLENGE email newsletter edition, circulate to approximately 8400 contacts.
- 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.
- Present webinar to NRCS staff on foregone income.

The one year no-cost extension will allow us to collect, analyze and report results from the 2009 growing season, including harvest and net returns assessments from the 2009 harvest, and recruit additional participants for the 2010 season.

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

Summary status, key deliverables to date:

- | a) Proposed   | b) Achieved to date   |
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9. Proposed work in Pennsylvania was not fully funded, reducing activities and acres in that state.
10. Continued delays in promulgation of trading rules in Minnesota have delayed related objectives in Minnesota.
11. Increase in corn prices from \$2.20 per bushel in 2006 to \$4.75 in 2008 and \$4.00 in 2009 resulted in higher costs per acre, reducing total number of acres accordingly.

12. We did not dedicate funding in our original budget to support/obligate trainers, making it difficult to retain trainers.

## I. Deliverables Update - Detail

<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>	<p>g. Calendar of industry and extension meetings has been created and continually modified with contact information for meeting organizers.</p> <p>h. BMP CHALLENGE and WQCT meetings and conferences, 1,541 participants to date:            -March 21, 2009, New Ulm, MN, 60 participants;            -September 2008-March 2009, MN River and Cannon River Basin, MN, 40 participants;            -March 5, 2009, Columbus, NE, 38 participants;            -March 4, 2009, Wisner, NE, 48 participants;            -February 23, 2009, New Lenox, IL, 38 participants;            - February 18, 2009, Harrisburg, PA, 16 participants;            -February 16, 2009, Harrisburg PA, 10 participants;            -February 11, 2009, Saint Louis, MO, 48 participants;            -January 2009, Albuquerque, NM, 40 participants;            -December 9, 2008, Duluth, MN, 30 participants;            -December 8, 2008, St. Paul, MN, 98 participants;            - August 5, 2008, Saint Cloud, MN, 23 participants;            - July 29, 2008, Tucson, AZ, 50 participants;            -April 16, 2008, Redwing MN, 148 participants;            - April 1, 2008, Sauk Center, MN, 15 participants;            -March 31, 2008, Faribault, MN, 28 participants;            -March 28, 2008, Emmetsburg, IA, 48 participants;            -March 24, 2008, Fairmont, MN, 30 participants;            -March 14, 2008, Marion, IA, 40 participants;            -March 3, 2008, Napoleon, OH, 23 participants;            -February 27, 2008, St. Paul, MN, 78 participants;            -January 14, 2008, Sidney, OH, 60 participants;            -January 10, 2008, Redwood Falls, MN, 35 participants;            -January 7, 2008, Cannon Falls, MN, 28 participants;            -December 18, 2007, Alexandria, MN, 26 participants;            -November 26, 2007, Owatonna, MN, 16 participants;            - August 30, 2007, New Haven, IN, 30 participants;            -August 17, 2007, Huron County, OH, 48 participants;            -August 10, 2007, Crawford County, OH, 48 participants;            -July 27, 2007, Toledo, OH, 28 participants;            -March 29, 2007, Shelbyville, MI, 7 participants;            -January 11, 2007, New Ulm, MN, 42 participants;            -2007, Rochester, MN, 38 participants;            -December 7, 2006, Harrisburg, PA, 18 participants;            -December 2006, Madison WI, 50 participants;            -September 27, 2006, Lancaster County, PA, 28 participants;            -September 15, 2006, Stark County, OH, 20 participants;            -September 11, 2006, Cross Plains WI, 50 participants;            -August 24, 2006, Champaign County, OH, 20 participants</p> <p>i. Tom Green, Brian Brandt and Maggie Westaby updated the BMP CHALLENGE brochure and composed a cover letter directed towards agricultural professionals. Brochures were circulated to 10,499 contacts between December 2008 and January 2009.</p>
<p>2. Support package of existing tools for trainers, subset to be used as handout for seminars and available online.</p>	<p>e. Trainer curriculum and support materials package currently includes 2009 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.</p> <p>f. Website updated regularly, with current documents and information.</p>

	Recent updates include the addition of a webpage dedicated to the California BMP CHALLENGE and the addition of the 2009 forms for the Nutrient, Reduced Tillage and the California Reduced Tillage CHALLENGE.
3. Preparing three MN public agency/NGO trainers to train others on BMP CHALLENGE and WQ credit trading.	<p>e. Three trainers have been identified for Minnesota: 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.</p> <p>f. Upcoming summer Minnesota meetings: - Work is being done to obtain invitations to present at existing meetings. - One or two dedicated workshops may be planned for the summer of 2009.</p>
4. Inventory of potential point and non-point source traders, trades, values, credits, rates, forms, implementation and verification procedures.	The draft MN State rules for water quality trading are now available.
5. 95,000 brochures, 1,000-1,500 farmer inquiries generated to state agencies, crop advisors, watershed groups on BMP CHALLENGE and WQ credit trading. Approximately 50 inquiries have been made from agricultural professionals since the Dec 08/Jan 09 mailing.	<p>k. 60,000 BMP CHALLENGE brochures were printed with approx. 49,500 distributed to date.</p> <p>l. Mailing of 1,150 brochures to 21 agricultural professionals regarding their request to promote the CHALLENGE since recruitment mailing of December 2008 and January 2009.</p> <p>m. Mailing of 150 brochures to Chippewa Valley Technical College in Eau Claire, WI regarding their request to use the brochure as part of their curriculum in a Land Management Course starting fall of 2009.</p> <p>n. Per the 2008 Outreach plan, a brochure and electronic newsletter schedule with designated dates of dispersal and topic outlines has been developed. Potential future E-newsletter topics include: Update on the Farm Bill, EPA Non-point Source Outreach Toolbox, implications of the EPA CO<sub>2</sub> 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>o. Electronic newsletter mailing: March E-news, April 15, 2008 to 5240 contacts; Iowa BMP CHALLENGE workshop, February 28, 2008 to 1702 contacts; Redwood Falls Workshop Announcement, January 3, 2008 to 814 contacts; BMP CHALLENGE- Owatonna Workshop, November 13, 2007 to 975 contacts; MN BMP CHALLENGE/WQT Workshops-Owatonna, October 10, 2007 to 817 contacts; Owatonna Workshop "Save the Date" September 26, 2007 to 820 contacts; BMP CHALLENGE July 27, 2007, August 7, 2007 to 2451 contacts and August 27, 2007 to an additional 1670 contacts; April BMP CHALLENGE Update, April 20, 2007 to 2438 contacts; November BMP CHALLENGE Update, November 15, 2006 to 943 contacts; August BMP Performance Guarantee Update, August 8, 2006 to 832 contacts; Resend of August BMP Performance Guarantee Update, August 9, 2006 to 11 contacts; BMP Performance</p>

	Guarantee Update, November 29, 2005 to 340 contacts.
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<p>6. Ten point sources in MN prepared to trade, list of trades completed, acres, practices, credits, estimated resource improvements.</p>	<ul style="list-style-type: none"> <li>i. Keiser &amp; 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. One identified gap from these contacts is the lack of time necessary for managers of facilities to undertake trading. A method to facilitate trading for individuals with limited time resources to complete the buyer and seller connections and the bureaucratic permit complexities is desired.</li> <li>j. The new 2008 CIG was funded to work with several watersheds to implement trades in the Sauk River watershed and throughout the Minnesota River Basin when the Lake Pepin and Sauk River Chain of Lakes TMDLs are issued. Establishment of protocols and estimation tools for six eight digit HUC watersheds is underway and awaiting TMDL approvals delayed until 2010-2011</li> <li>k. 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. The white paper was released in May 2008.</li> <li>l. Educational efforts have initiated conversations with numerous water quality trading participants. The project provided representation on the Citizens Advisory Committee for the MPCA draft of the Water Quality Trading Rules.</li> </ul>
<p>7. Inventory of BMP CHALLENGE guarantees implemented, acres, practices, improvements.</p>	<ul style="list-style-type: none"> <li>k. Nutrient BMP guarantees have been implemented on approximately 100 farmer fields, resulting in an average 22.5% reduction in nitrogen fertilizer use.</li> <li>l. Reduced tillage was implemented in 2006 and since then 39 fields have been enrolled.</li> <li>m. With the goal of expanding the Planned Nitrogen Reduction option, which, refers to an additional 15% reduction in BMP rates for nitrogen fertilizer use. In 2008 960 acres were enrolled and approximately 2500 acres in 2009.</li> <li>n. All results are recorded in a database.</li> <li>o. From 2000-2008, 4517.94 acres, 1700.50 acres and 4659.95 acres were enrolled in the Nutrient BMP, Reduced Tillage BMP and Planned Nitrogen Reduction BMP respectively.</li> </ul>
<p>8. Reductions of 760K lbs of N use, 40K lbs. P loading; 30K tons sediment loading; 25 K lbs. NO<sub>2</sub>; 5K tons CO<sub>2</sub> from nutrient and tillage reduction on approximately 34K acres in MN and PA.</p>	<ul style="list-style-type: none"> <li>a. See tracking, attached.</li> </ul>

<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>	<p>a. Funding obtained during performance period, total \$1,998,000:</p> <ul style="list-style-type: none"> <li>u. 2006 Conservation Innovation Grant to Agflex, NRCS, \$683,000</li> <li>v. 2007 Bush Foundation Grant to AFT, \$75,000</li> <li>w. 2007 Pennsylvania Dept. of Environmental Protection (to IPM Institute, \$225,000</li> <li>x. 2007 Pennsylvania State Conservation Commission to IPM Institute, \$20,000</li> <li>y. 2007 Chesapeake Bay Commission to IPM Institute, \$25,000</li> <li>z. 2008 Pennsylvania Dept. of Environmental Protection to IPM Institute, \$50,000</li> <li>aa. 2008 Bush Foundation Grant to AFT, \$270,000</li> <li>bb. 2008 Conservation Innovation Grant to AFT, \$650,000</li> <li>cc. 2008 Conservation Innovation Grant to Minnesota River Board, \$999,993.60.</li> <li>dd. 2009 Conservation Innovation Grant to Agflex, \$930,703</li> </ul>
<p>10. Quarterly and final progress reports including conference call and advisory meeting minutes.</p>	<ul style="list-style-type: none"> <li>g. Advisory conference calls and meetings scheduled for Dec, Jan and Mar through Aug 2009, including one in-person meeting per year.</li> <li>h. BMP CHALLENGE Project team (Brandt, Green, Anderson, and contractors) meets at least twice monthly by conference call to manage BMP CHALLENGE acreage recruitment and implementation.</li> <li>i. MN BMP CHALLENGE and WQ Credit Trading team (Fisher, Green, Kieser &amp; Associates, and Anderson) 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.</li> </ul>
<p>11. Other</p>	<p>a. California expansion is in progress. Eligibility has been officially approved. Enrollment for 2009 is 7 farmers with over 540 acres for 2009.</p>

## II. Results Table

2000-2008 RESULTS	Nutrient BMP	Reduced Tillage	Planned Nitrogen Reduction
Total acres, 2000-2008	4,517 acres	1,700 acres	4,659 acres
BMP yield, average and range	159.2 bu/acre 59 - 220	156.78bu/acre 72-233	148.58 bu/acre 55-217
Check-strip yield, average and range	166.3 bu/acre 49-230	166.93 bu/acre 110-227	158.7 bu/acre 63-238
Farmer net returns after fertilizer or tillage savings	(\$6.43) (\$89) - \$81	(15.34) (\$156) - \$130	(\$22.90) (\$141) - \$105
Total N use reduction	187,677.4 lbs N	-	124,239 lbs N
Estimated sediment reduction	-	2,550.75 tons	-
Estimated P load reduction	-	3,401 lbs	-
Estimated N <sub>2</sub> O reduction	3539.06 lbs	-	2342.80 lbs
Estimated CO <sub>2</sub> reduction		850.25 tons	

## II. Project Team, Advisors and Trainers – As of 09/09/2009

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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 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.

### **Current Trainers**

#### **Dr. Shannon Fisher**

Executive Director  
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### **Previous 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, agricultural 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.



June 30, 2009

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

<b>Contents:</b>	Executive Summary	
	I. Deliverables Update	2
	II. Project Team and Advisors	6
	III. Project Summary from NRCS Proposal	9

### **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 CA, 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 June 2009. A draft template was distributed in August 2008. The document will be used to document credits created by BMP CHALLENGE participants.

Since our March 2009 quarterly report, we have:

- Collected payment from growers who accumulated a surplus on their BMP acres during the 2008 season.
- Requested a one-year no cost extension on our 2006 CIG.
- Collected and analyzed 2008 BMP CHALLENGE results.
- Continued expansion of BMP CHALLENGE to California.
- Recruited and enrolled acres for 2009.
- Completed one monthly project team conference call as well as bi-weekly BMP CHALLENGE team conference calls.
- Set the next quarterly advisory committee call date as September 10, 2009.

Over the next quarter we will:

- Continue to collect payment from growers who accumulated a surplus on their BMP acres during the 2008 season.
- Revise and reprint the MN Water Quality Credit Trading brochure.
- Complete a second mailing to MN point sources.
- Plan workshop for point sources in Minnesota for July 2009.
- Plan/hold annual advisory meeting.
- Publish BMP CHALLENGE email newsletter edition, circulate to approximately 8400 contacts.
- 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 and Kieser & Associates 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>	<p>j. Calendar of industry and extension meetings has been created and continually modified with contact information for meeting organizers.</p> <p>k. BMP CHALLENGE and WQCT meetings and conferences, 1,541 participants to date:          -March 21, 2009, New Ulm, MN, 60 participants;          -September 2008-March 2009, MN River and Cannon River Basin, MN, 40 participants;          -March 5, 2009, Columbus, NE, 38 participants;          -March 4, 2009, Wisner, NE, 48 participants;          -February 23, 2009, New Lenox, IL, 38 participants;          - February 18, 2009, Harrisburg, PA, 16 participants;          -February 16, 2009, Harrisburg PA, 10 participants;          -February 11, 2009, Saint Louis, MO, 48 participants;          -January 2009, Albuquerque, NM, 40 participants;          -December 9, 2008, Duluth, MN, 30 participants;          -December 8, 2008, St. Paul, MN, 98 participants;          - August 5, 2008, Saint Cloud, MN, 23 participants;          - July 29, 2008, Tucson, AZ, 50 participants;          -April 16, 2008, Redwing MN, 148 participants;          - April 1, 2008, Sauk Center, MN, 15 participants;          -March 31, 2008, Faribault, MN, 28 participants;          -March 28, 2008, Emmetsburg, IA, 48 participants;          -March 24, 2008, Fairmont, MN, 30 participants;          -March 14, 2008, Marion, IA, 40 participants;          -March 3, 2008, Napoleon, OH, 23 participants;          -February 27, 2008, St. Paul, MN, 78 participants;          -January 14, 2008, Sidney, OH, 60 participants;          -January 10, 2008, Redwood Falls, MN, 35 participants;          -January 7, 2008, Cannon Falls, MN, 28 participants;          -December 18, 2007, Alexandria, MN, 26 participants;          -November 26, 2007, Owatonna, MN, 16 participants;          - August 30, 2007, New Haven, IN, 30 participants;          -August 17, 2007, Huron County, OH, 48 participants;          -August 10, 2007, Crawford County, OH, 48 participants;          -July 27, 2007, Toledo, OH, 28 participants;          -March 29, 2007, Shelbyville, MI, 7 participants;          -January 11, 2007, New Ulm, MN, 42 participants;          -2007, Rochester, MN, 38 participants;          -December 7, 2006, Harrisburg, PA, 18 participants;          -December 2006, Madison WI, 50 participants;          -September 27, 2006, Lancaster County, PA, 28 participants;          -September 15, 2006, Stark County, OH, 20 participants;          -September 11, 2006, Cross Plains WI, 50 participants;          -August 24, 2006, Champaign County, OH, 20 participants</p> <p>l. Tom Green, Brian Brandt and Maggie Westaby updated the BMP CHALLENGE brochure and composed a cover letter directed towards agricultural professionals. Brochures were circulated to 10,499 contacts between December 2008 and January 2009.</p>
<p>2. Support package of existing tools for trainers, subset to be used as handout for seminars and available online.</p>	<p>g. Trainer curriculum and support materials package currently includes 2009 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.</p> <p>h. Website updated regularly, with current documents and information.</p>

	<p>Recent updates include the addition of a webpage dedicated to the California BMP CHALLENGE and the addition of the 2009 forms for the Nutrient, Reduced Tillage and the California Reduced Tillage CHALLENGE.</p>
<p>3. Preparing three MN public agency/NGO trainers to train others on BMP CHALLENGE and WQ credit trading.</p>	<p>g. Three trainers have been identified for Minnesota:  - 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.</p> <p>h. Upcoming summer Minnesota meetings:  - Work is being done to obtain invitations to present at existing meetings.  - One or two dedicated workshops may be planned for the summer of 2009.</p>
<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.</p>
<p>5. 95,000 brochures, 1,000-1,500 farmer inquiries generated to state agencies, crop advisors, watershed groups on BMP CHALLENGE and WQ credit trading. Approximately 50 inquiries have been made from agricultural professionals since the Dec 08/Jan 09 mailing.</p>	<p>p. 60,000 BMP CHALLENGE brochures were printed with approx. 49,500 distributed to date.</p> <p>q. Mailing of 1,150 brochures to 21 agricultural professionals regarding their request to promote the CHALLENGE since recruitment mailing of December 2008 and January 2009.</p> <p>r. Mailing of 150 brochures to Chippewa Valley Technical College in Eau Claire, WI regarding their request to use the brochure as part of their curriculum in a Land Management Course starting fall of 2009.</p> <p>s. Per the 2008 Outreach plan, a brochure and electronic newsletter schedule with designated dates of dispersal and topic outlines has been developed. Potential future E-newsletter topics include: Update on the Farm Bill, EPA Non-point Source Outreach Toolbox, implications of the EPA CO<sub>2</sub> 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>t. Electronic newsletter mailing: March E-news, April 15, 2008 to 5240 contacts; Iowa BMP CHALLENGE workshop, February 28, 2008 to 1702 contacts; Redwood Falls Workshop Announcement, January 3, 2008 to 814 contacts; BMP CHALLENGE- Owatonna Workshop, November 13, 2007 to 975 contacts; MN BMP CHALLENGE/WQT Workshops-Owatonna, October 10, 2007 to 817 contacts; Owatonna Workshop "Save the Date" September 26, 2007 to 820 contacts; BMP CHALLENGE July 27, 2007, August 7, 2007 to 2451 contacts and August 27, 2007 to an additional 1670 contacts; April BMP CHALLENGE Update, April 20, 2007 to 2438 contacts; November BMP CHALLENGE Update, November 15, 2006 to 943 contacts; August BMP Performance Guarantee Update, August 8, 2006 to 832 contacts; Resend of August BMP Performance Guarantee Update, August 9, 2006 to 11 contacts; BMP Performance</p>

	Guarantee Update, November 29, 2005 to 340 contacts.
6. Ten point sources in MN prepared to trade, list of trades completed, acres, practices, credits, estimated resource improvements.	<p>b. Keiser &amp; 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. The new 2008 CIG was funded to work with several watersheds to implement trades.</p> <p>c. 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. The white paper was released in May 2008.</p> <p>d. Educational efforts have initiated conversations with numerous water quality trading participants. Possible work within two watersheds is waiting for TMDL approval for 2009.</p>
7. Inventory of BMP CHALLENGE guarantees implemented, acres, practices, improvements.	<p>p. Nutrient BMP guarantees have been implemented on approximately 100 farmer fields, resulting in an average 22.5% reduction in nitrogen fertilizer use.</p> <p>q. Reduced tillage was implemented in 2006 and since then 39 fields have been enrolled.</p> <p>r. With the goal of expanding the Planned Nitrogen Reduction option, which, refers to an additional 15% reduction in BMP rates for nitrogen fertilizer use. In 2008 960 acres were enrolled and approximately 2500 acres in 2009.</p> <p>s. All results are recorded in a database.</p> <p>t. From 2000-2008, 4517.94 acres, 1700.50 acres and 4659.95 acres were enrolled in the Nutrient BMP, Reduced Tillage BMP and Planned Nitrogen Reduction BMP respectively.</p>
8. Reductions of 760K lbs of N use, 40K lbs. P loading; 30K tons sediment loading; 25 K lbs. NO <sub>2</sub> ; 5K tons CO <sub>2</sub> from nutrient and tillage reduction on approximately 34K acres in MN and PA.	a. See tracking, attached.
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>a. Current grants amounting to \$1,998,000:</p> <p>a. 2006 Conservation Innovation Grant to Agflex, NRCS, \$683,000</p> <p>b. 2007 Bush Foundation Grant to AFT, \$75,000</p> <p>c. 2007 Pennsylvania Dept. of Environmental Protection (to IPM Institute, \$225,000</p> <p>d. 2007 Pennsylvania State Conservation Commission to IPM Institute, \$20,000</p> <p>e. 2007 Chesapeake Bay Commission to IPM Institute, \$25,000</p> <p>f. 2008 Pennsylvania Dept. of Environmental Protection to IPM Institute, \$50,000</p> <p>g. 2008 Bush Foundation Grant to AFT, \$270,000</p> <p>h. 2008 Conservation Innovation Grant to AFT, \$650,000</p> <p>i. 2008 Conservation Innovation Grant to Minnesota River Board, 999,993.60. Accomplished 1,000,006.21 match funds (accommodation of in kind and match).</p>
10. Quarterly and final	j. Advisory conference calls and meetings scheduled for Dec, Jan and

<p>progress reports including conference call and advisory meeting minutes.</p>	<p>Mar through Aug 2009, including one in-person meeting per year.</p> <p>k. BMP CHALLENGE Project team (Brandt, Green, Westaby, and contractors) meets at least twice monthly by conference call to manage BMP CHALLENGE acreage recruitment and implementation.</p> <p>l. MN BMP CHALLENGE and WQ Credit Trading team (Fisher, Green, Kieser &amp; Associates, and Westaby) 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. CA expansion is in progress. Alan Forkey with NRCS will be sending a letter of review to make it eligible. Planning on having up to 10 farmers and 1,000 acres using conservation tillage for 2009.</p>

## II. Results Table

2000-2008 RESULTS	Nutrient BMP	Reduced Tillage	Planned Nitrogen Reduction
Total acres, 2000-2008	4,517 acres	1,700 acres	4,659 acres
BMP yield, average and range	159.2 bu/acre 59 - 220	156.78bu/acre 72-233	148.58 bu/acre 55-217
Check-strip yield, average and range	166.3 bu/acre 49-230	166.93 bu/acre 110-227	158.7 bu/acre 63-238
Farmer net returns after fertilizer or tillage savings	(\$6.43) (\$89) - \$81	(15.34) (\$156) - \$130	(\$22.90) (\$141) - \$105
Total N use reduction	187,677.4 lbs N	-	124,239 lbs N
Estimated sediment reduction	-	2,550.75 lbs	-
Estimated P load reduction	-	3,401 lbs	-
Estimated N <sub>2</sub> O reduction (lbs)	3539.06	-	2342.80
Estimated CO <sub>2</sub> reduction		850.25 lbs	

## II. Project Team, Advisors and Trainers – As of 03/11/2009

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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**

#### **Russ Derickson**

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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, agricultural 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.

May 8, 2009

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

<b>Contents:</b>	Executive Summary	
	I. Deliverables Update	2
	II. Project Team and Advisors	6
	III. Project Summary from NRCS Proposal	9

### **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 CA, 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. A draft template was distributed in August 2008. The document will be used to document credits created by BMP CHALLENGE participants.

Since our December 2008 quarterly report, we have:

- Circulated the updated BMP CHALLENGE brochure to remaining 2,083 of the contacts. All contacts received a cover letter directed towards agricultural professionals.
- Collected and analyzed 2008 BMP CHALLENGE results.
- Sent out compensation to growers in the 2008 CHALLENGE who lost yield in their BMP acres.
- Continued expansion of BMP CHALLENGE to California.
- Created 2009 BMP forms for California and a web page on the BMP CHALLENGE website.
- Updated all BMP forms for 2009.
- Recruited acres for 2009.
- Completed one monthly project team conference call as well as bi-weekly BMP CHALLENGE team conference calls.
- Set the next quarterly advisory committee call date as March 12 2009.
- Sent out compensation to certified crop advisors who worked for growers during the 2008 season.

Over the next quarter we will:

- Collect payment from growers who accumulated a surplus on their BMP acres during the 2008 season.
- Revise and reprint the MN Water Quality Credit Trading brochure.
- Complete a second mailing to MN point sources.
- Continue recruiting 2009 acres including follow up with previous participants and new leads generated by mailing.
- Plan workshop for point sources in Minnesota for July 2009.
- Plan/hold annual advisory meeting.
- Publish BMP CHALLENGE email newsletter edition, circulate to approximately 8400 contacts.
- 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 and Kieser & Associates 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>	<p>m. Calendar of industry and extension meetings has been created and continually modified with contact information for meeting organizers.</p> <p>n. BMP CHALLENGE and WQCT meetings and conferences, 1,541 participants to date:            -March 21, 2009, New Ulm, MN, 60 participants;            -September 2008-March 2009, MN River and Cannon River Basin, MN, 40 participants;            -March 5, 2009, Columbus, NE, 38 participants;            -March 4, 2009, Wisner, NE, 48 participants;            -February 23, 2009, New Lenox, IL, 38 participants;            - February 18, 2009, Harrisburg, PA, 16 participants;            -February 16, 2009, Harrisburg PA, 10 participants;            -February 11, 2009, Saint Louis, MO, 48 participants;            -January 2009, Albuquerque, NM, 40 participants;            -December 9, 2008, Duluth, MN, 30 participants;            -December 8, 2008, St. Paul, MN, 98 participants;            - August 5, 2008, Saint Cloud, MN, 23 participants;            - July 29, 2008, Tucson, AZ, 50 participants;            -April 16, 2008, Redwing MN, 148 participants;            - April 1, 2008, Sauk Center, MN, 15 participants;            -March 31, 2008, Faribault, MN, 28 participants;            -March 28, 2008, Emmetsburg, IA, 48 participants;            -March 24, 2008, Fairmont, MN, 30 participants;            -March 14, 2008, Marion, IA, 40 participants;            -March 3, 2008, Napoleon, OH, 23 participants;            -February 27, 2008, St. Paul, MN, 78 participants;            -January 14, 2008, Sidney, OH, 60 participants;            -January 10, 2008, Redwood Falls, MN, 35 participants;            -January 7, 2008, Cannon Falls, MN, 28 participants;            -December 18, 2007, Alexandria, MN, 26 participants;            -November 26, 2007, Owatonna, MN, 16 participants;            - August 30, 2007, New Haven, IN, 30 participants;            -August 17, 2007, Huron County, OH, 48 participants;            -August 10, 2007, Crawford County, OH, 48 participants;            -July 27, 2007, Toledo, OH, 28 participants;            -March 29, 2007, Shelbyville, MI, 7 participants;            -January 11, 2007, New Ulm, MN, 42 participants;            -2007, Rochester, MN, 38 participants;            -December 7, 2006, Harrisburg, PA, 18 participants;            -December 2006, Madison WI, 50 participants;            -September 27, 2006, Lancaster County, PA, 28 participants;            -September 15, 2006, Stark County, OH, 20 participants;            -September 11, 2006, Cross Plains WI, 50 participants;            -August 24, 2006, Champaign County, OH, 20 participants</p> <p>o. Tom Green, Brian Brandt and Maggie Westaby updated the BMP CHALLENGE brochure and composed a cover letter directed towards agricultural professionals. Brochures were circulated to 10,499 contacts between December 2008 and January 2009.</p>
<p>2. Support package of existing tools for trainers, subset to be used as handout for seminars and available online.</p>	<p>i. Trainer curriculum and support materials package currently includes 2009 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.</p> <p>j. Website updated regularly, with current documents and information.</p>

	<p>Recent updates include the addition of a webpage dedicated to the California BMP CHALLENGE and the addition of the 2009 forms for the Nutrient, Reduced Tillage and the California Reduced Tillage CHALLENGE.</p>
<p>3. Preparing three MN public agency/NGO trainers to train others on BMP CHALLENGE and WQ credit trading.</p>	<p>i. Three trainers have been identified for Minnesota:          -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.</p> <p>j. Upcoming summer Minnesota meetings:          - Work is being done to obtain invitations to present at existing meetings.          - One or two dedicated workshops may be planned for the summer of 2009.</p>
<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.</p>
<p>5. 95,000 brochures, 1,000-1,500 farmer inquiries generated to state agencies, crop advisors, watershed groups on BMP CHALLENGE and WQ credit trading. Approximately 50 inquiries have been made from agricultural professionals since the Dec 08/Jan 09 mailing.</p>	<p>u. 60,000 BMP CHALLENGE brochures were printed with approx. 49,500 distributed to date.</p> <p>v. Mailing of 1,150 brochures to 21 agricultural professionals regarding their request to promote the CHALLENGE since recruitment mailing of December 2008 and January 2009.</p> <p>w. Per the 2008 Outreach plan, a brochure and electronic newsletter schedule with designated dates of dispersal and topic outlines has been developed. Potential future E-newsletter topics include: Update on the Farm Bill, EPA Non-point Source Outreach Toolbox, implications of the EPA CO<sub>2</sub> 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>x. Electronic newsletter mailing: March E-news, April 15, 2008 to 5240 contacts; Iowa BMP CHALLENGE workshop, February 28, 2008 to 1702 contacts; Redwood Falls Workshop Announcement, January 3, 2008 to 814 contacts; BMP CHALLENGE- Owatonna Workshop, November 13, 2007 to 975 contacts; MN BMP CHALLENGE/WQT Workshops-Owatonna, October 10, 2007 to 817 contacts; Owatonna Workshop "Save the Date" September 26, 2007 to 820 contacts; BMP CHALLENGE July 27, 2007, August 7, 2007 to 2451 contacts and August 27, 2007 to an additional 1670 contacts; April BMP CHALLENGE Update, April 20, 2007 to 2438 contacts; November BMP CHALLENGE Update, November 15, 2006 to 943 contacts; August BMP Performance Guarantee Update, August 8, 2006 to 832 contacts; Resend of August BMP Performance Guarantee Update, August 9, 2006 to 11 contacts; BMP Performance Guarantee Update, November 29, 2005 to 340 contacts.</p>
<p>6. Ten point sources in MN prepared to trade, list of trades completed, acres, practices,</p>	<p>e. Keiser &amp; 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</p>

<p>credits, estimated resource improvements.</p>	<p>using the more desirable point-nonpoint trading system. The new 2008 CIG was funded to work with several watersheds to implement trades.</p> <p>f. 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. The white paper was released in May 2008.</p> <p>g. Educational efforts have initiated conversations with numerous water quality trading participants. Possible work within two watersheds is waiting for TMDL approval for 2009.</p>
<p>7. Inventory of BMP CHALLENGE guarantees implemented, acres, practices, improvements.</p>	<p>u. Nutrient BMP guarantees have been implemented on approximately 100 farmer fields, resulting in an average 22.5% reduction in nitrogen fertilizer use.</p> <p>v. Reduced tillage was implemented in 2006 and since then 36 fields have been enrolled.</p> <p>w. With the goal of expanding the Enhanced Nutrient option, which, refers to an additional 15% reduction in BMP rates for nitrogen fertilizer use. In 2008 approximately 960 acres were enrolled with the hopes of expanding to over 1,000 acres in 2009.</p> <p>x. All results are recorded in a database.</p> <p>y. From 2000-2008, 4626.28 acres, 1905.8 acres and 4660.6 acres were enrolled in the Nutrient BMP, Reduced Tillage BMP and Enhanced Nutrient BMP respectively.</p>
<p>8. Reductions of 760K lbs of N use, 40K lbs. P loading; 30K tons sediment loading; 25 K lbs. NO<sub>2</sub>; 5K tons CO<sub>2</sub> from nutrient and tillage reduction on approximately 34K acres in MN and PA.</p>	<p>a. See tracking, attached.</p>
<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>	<p>a. Current grants amounting to \$1,998,000:</p> <ul style="list-style-type: none"> <li>a. 2006 Conservation Innovation Grant to Agflex, NRCS, \$683,000</li> <li>b. 2007 Bush Foundation Grant to AFT, \$75,000</li> <li>c. 2007 Pennsylvania Dept. of Environmental Protection (to IPM Institute, \$225,000</li> <li>d. 2007 Pennsylvania State Conservation Commission to IPM Institute, \$20,000</li> <li>e. 2007 Chesapeake Bay Commission to IPM Institute, \$25,000</li> <li>f. 2008 Pennsylvania Dept. of Environmental Protection to IPM Institute, \$50,000</li> <li>g. 2008 Bush Foundation Grant to AFT, \$270,000</li> <li>h. 2008 Conservation Innovation Grant to AFT, \$650,000</li> <li>i. 2008 Conservation Innovation Grant to Minnesota River Board, 999,993.60. Accomplished 1,000,006.21 match funds (accommodation of in kind and match).</li> </ul>
<p>10. Quarterly and final progress reports including conference call and advisory meeting minutes.</p>	<p>m. Advisory conference calls and meetings scheduled for Dec, Jan and Mar through Aug 2009, including one in-person meeting per year.</p> <p>n. BMP CHALLENGE Project team (Brandt, Green, Westaby, and contractors) meets at least twice monthly by conference call to</p>

	<p>manage BMP CHALLENGE acreage recruitment and implementation.</p> <p>o. MN BMP CHALLENGE and WQ Credit Trading team (Fisher, Green, Kieser &amp; Associates, and Westaby) 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>
11. Other	<p>a. CA expansion is in progress. Alan Forkey with NRCS will be sending a letter of review to make it eligible. Planning on having up to 10 farmers and 1,000 acres using conservation tillage for 2009.</p>

## II. Results Table

2000-2008 RESULTS	Nutrient BMP	Reduced Tillage	Enhanced Nutrient Management
Total acres, 2000-2008	4,332 acres	1,700 acres	4,659 acres
BMP yield, average and range	158.16 bu/acre 59 - 220	156.78 bu/acre 72-233	129.38 bu/acre 55-217
Check-strip yield, average and range	164.94 bu/acre 49-230	166.93 bu/acre 110-227	137.79 bu/acre 63-238
Farmer net returns after fertilizer or tillage savings	(\$4.94) (\$89) - \$81	(15.34) (\$156) - \$130	(\$22.90) (\$141) - \$105
Total N use reduction	146,272.30 lbs N	-	124,239 lbs N
Estimated sediment reduction	-	2,550.75 tons	-
Estimated P load reduction	-	3,401 tons	-
Estimated N <sub>2</sub> O reduction (lbs)	2758.28	-	2342.80
Estimated CO <sub>2</sub> reduction		850.25 tons	



## II. Project Team, Advisors and Trainers – As of 03/11/2009

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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.***

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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, agricultural 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.

December 08, 2008

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

<b>Contents:</b>	Executive Summary	
	I. Deliverables Update	2
	II. Project Team and Advisors	5
	III. Project Summary from NRCS Proposal	8

### **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 September 2008 quarterly report, we have:

- Completed an up-to-date contact list including CCA, individuals from USDA-NRCS and SWCD for a total of 10,498 contacts.
- Updated and circulated the BMP CHALLENGE brochure to 8,416 of the contacts. With 4,209 receiving a cover letter directed towards agricultural professionals.
- Collected 2008 BMP CHALLENGE results.
- Initiated expansion of BMP CHALLENGE to California.
- 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 December 11, 2008.

Over the next quarter we will:

- Circulate updated BMP CHALLENGE brochure to remaining 2,083 contacts with cover letter.
- Analyze 2008 BMP CHALLENGE results.
- Update BMP forms for 2009 application, check strip form and net returns assessment.
- Revise and reprint the MN Water Quality Credit Trading brochure.
- Complete a second mailing to MN point sources.
- Continue recruiting 2009 acres including follow up with previous participants, new leads generated by mailing and email newsletter.
- Plan workshop for point sources in Minnesota for July 2009.
- Plan/hold annual advisory meeting.
- Publish BMP CHALLENGE email newsletter edition, circulate to approximately 8400 contacts.
- 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>	<p>p. Calendar of industry and extension meetings has been created and continually modified with contact information for meeting organizers.</p> <p>q. Tom Green, Brian Brandt and Maggie Westaby updated the BMP CHALLENGE brochure and composed a cover letter directed towards agricultural professionals. Brochures were circulated to 8,416 contacts.</p>
<p>2. Support package of existing tools for trainers, subset to be used as handout for seminars and available online.</p>	<p>k. 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.</p> <p>i. Website updated regularly, with current documents and information. Recent updates include the addition of the brochure on Water Quality Credit Trading in Minnesota.</p>
<p>3. Preparing three MN public agency/NGO trainers to train others on BMP CHALLENGE and WQ credit trading.</p>	<p>k. Three trainers have been identified for Minnesota:          -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.</p> <p>i. Upcoming winter/spring Minnesota meetings:          - Work is being done to obtain invitations to present at existing meetings.          - One or two dedicated workshops may be planned for the winter, spring of 2009.</p>
<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.</p>
<p>5. 95,000 brochures, 1,000-1,500 farmer inquiries generated to state agencies, crop advisors, watershed groups on BMP CHALLENGE and WQ credit trading.</p>	<p>y. 60,000 BMP CHALLENGE brochures were printed with approx. 47,500 distributed to date.</p> <p>z. Per the 2008 Outreach plan, a brochure and electronic newsletter schedule with designated dates of dispersal and topic outlines has been developed. Potential future E-newsletter topics include: Update on the Farm Bill, EPA Non-point Source Outreach Toolbox, implications of the EPA CO<sub>2</sub> 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>	<p>h. Keiser &amp; 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. The new 2008 CIG was funded to work with several watersheds to implement trades.</p> <p>i. 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. The white paper was released in May 2008.</p> <p>j. Educational efforts have initiated conversations with numerous water quality trading participants. Possible work with ADM in Redwood falls and entities within the Sauk River that are waiting for TMDL approval for 2009.</p>
<p>7. Inventory of BMP CHALLENGE guarantees implemented, acres, practices, improvements.</p>	<p>z. Nutrient BMP guarantees have been implemented on approximately 100 farmer fields, resulting in an average 22.5% reduction in nitrogen fertilizer use.</p> <p>aa. Reduced tillage was implemented in 2006 and since then 36 fields have been enrolled.</p> <p>bb. With the goal of expanding the Enhanced Nutrient option, which refers to an additional 15% reduction in BMP rates for nitrogen fertilizer use. In 2008 approximately 960 acres were enrolled with the hopes of expanding to over 1,000 acres in 2009.</p> <p>cc. All results are recorded in a database.</p> <p>dd. From 2000-2008, 4626.28 acres, 1905.8 acres and 4660.6 acres were enrolled in the Nutrient BMP, Reduced Tillage BMP and Enhanced Nutrient BMP respectively.</p>
<p>8. Reductions of 760K lbs of N use, 40K lbs. P loading; 30K tons sediment loading; 25 K lbs. NO<sub>2</sub>; 5K tons CO<sub>2</sub> from nutrient and tillage reduction on approximately 34K acres in MN and PA.</p>	<p>a. See tracking, attached.</p>
<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>	<p>a. Current grants amounting to \$1,998,000:</p> <ul style="list-style-type: none"> <li>a. 2006 Conservation Innovation Grant to Agflex, NRCS, \$683,000</li> <li>b. 2007 Bush Foundation Grant to AFT, \$75,000</li> <li>c. 2007 Pennsylvania Dept. of Environmental Protection (to IPM Institute, \$225,000</li> <li>d. 2007 Pennsylvania State Conservation Commission to IPM Institute, \$20,000</li> <li>e. 2007 Chesapeake Bay Commission to IPM Institute, \$25,000</li> <li>f. 2008 Pennsylvania Dept. of Environmental Protection to IPM Institute, \$50,000</li> <li>g. 2008 Bush Foundation Grant to AFT, \$270,000</li> <li>h. 2008 Conservation Innovation Grant to AFT, \$650,000</li> <li>i. 2008 Conservation Innovation Grant to Minnesota River Board, 999,993.60. Accomplished 1,000,006.21 match funds (accommodation of in kind and match).</li> </ul>

10. Quarterly and final progress reports including conference call and advisory meeting minutes.	<p>p. Advisory conference calls and meetings scheduled for Dec, Jan and Mar through Aug 2009, including one in-person meeting per year.</p> <p>q. BMP CHALLENGE Project team (Brandt, Green, Westaby, and contractors) meets at least twice monthly by conference call to manage BMP CHALLENGE acreage recruitment and implementation.</p> <p>r. MN BMP CHALLENGE and WQ Credit Trading team (Fisher, Green, Kieser &amp; Associates, and Westaby) 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>
11. Other	a. CA expansion is in progress. Alan Forkey with NRCS will be sending a letter of review to make it eligible. Planning on having up to 10 farmers and 1,000 acres using conservation tillage for 2009.

## 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
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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 <sub>2</sub> O reduction	4,793 lbs	-	3,272 lbs
Estimated CO <sub>2</sub> reduction	1,791 tons	570 tons	1,850

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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**

#### **Russ Derickson**

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#### **Dr. Shannon Fisher**

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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.

September 15, 2008

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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	IV. Minnesota Workshop Evaluation	9

### **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>	<p>r. Calendar of industry and extension meetings has been created and continually modified with contact information for meeting organizers.</p> <p>s. 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>
<p>2. Support package of existing tools for trainers, subset to be used as handout for seminars and available online.</p>	<p>m. 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.</p> <p>n. Website updated regularly, with current documents and information. Recent updates include the addition of the brochure on Water Quality Credit Trading in Minnesota.</p>
<p>3. Preparing three MN public agency/NGO trainers to train others on BMP CHALLENGE and WQ credit trading.</p>	<p>m. Three trainers have been identified for Minnesota:          -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.</p> <p>n. Upcoming fall/winter Minnesota meetings:          - 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>
<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>	<p>aa. 35,000 BMP CHALLENGE brochures were printed with approx. 32,250 distributed to date.</p> <p>bb. WQT informational brochures have been developed and were distributed to over 1,400 point source contacts.</p> <p>cc. The 7<sup>th</sup> 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.</p> <p>dd. Per the 2008 Outreach plan, a brochure and electronic newsletter</p>

	<p>schedule with designated dates of dispersal and topic outlines has 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 CO<sub>2</sub> 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>	<p>k. Keiser &amp; 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.</p> <p>l. 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.</p> <p>m. 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>
<p>7. Inventory of BMP CHALLENGE guarantees implemented, acres, practices, improvements.</p>	<p>ee. Nutrient BMP guarantees have been implemented on approximately 90 farmer fields, resulting in an average 22.5% reduction in nitrogen fertilizer use.</p> <p>ff. Reduced tillage was implemented on the first 14 fields in 2006.</p> <p>gg. 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.</p> <p>hh. All results are recorded in a database.</p> <p>ii. 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>
<p>8. Reductions of 760K lbs of N use, 40K lbs. P loading; 30K tons sediment loading; 25 K lbs. NO<sub>2</sub>; 5K tons CO<sub>2</sub> from nutrient and tillage reduction on approximately 34K acres in MN and PA.</p>	<p>a. See tracking, attached.</p>
<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>	<p>a. Current grants amounting to \$983,000:</p> <ul style="list-style-type: none"> <li>a. 2006 Conservation Innovation Grant to Agflex, NRCS, \$683,000</li> <li>b. 2007 Bush Foundation Grant to AFT, \$75,000</li> <li>c. 2007 Pennsylvania Dept. of Environmental Protection (to IPM Institute, \$225,000</li> <li>d. 2007 Pennsylvania State Conservation Commission to IPM Institute, \$20,000</li> <li>e. 2007 Chesapeake Bay Commission to IPM Institute, \$25,000</li> <li>f. 2008 Pennsylvania Dept. of Environmental Protection to IPM Institute, \$50,000</li> <li>g. 2008 Bush Foundation Grant to AFT, \$270,000</li> <li>h. 2008 Conservation Innovation Grant to AFT, \$650,000.</li> </ul>

10. Quarterly and final progress reports including conference call and advisory meeting minutes.	<p>s. Advisory conference calls and meetings scheduled for Dec, Jan and Mar through Aug 2009, including one in-person meeting per year.</p> <p>t. 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>u. MN BMP CHALLENGE and WQ Credit Trading team (Fisher, Green, Kieser &amp; 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>
11. Other	<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 <sub>2</sub> O reduction	4,793 lbs	-	3,272 lbs
Estimated CO <sub>2</sub> reduction	1,791 tons	570 tons	1,850

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

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### **Dr. Shannon Fisher**

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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.

### **George Boody**

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### **Scott Thaden**

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Fax: 320-235-1986

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To: BMP CHALLENGE Project Team and Advisors  
From: Megan Corrado (formerly Havelka) BMP CHALLENGE Program Assistant, Agflex, Inc.  
Re: Seventh Quarterly Report: BMP CHALLENGE and Water Quality Trading

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Since our March 2008 quarterly report, we have:

- Hired Maggie Westaby as a part-time BMP CHALLENGE project assistant to aid the project coordinator in the daily administration of the project including completion of the contact database for all project states.
- Compiled a contact list of 1500 point sources in Minnesota including a media/association list to circulate WQT information to, including our August 5 workshop announcement.
- Released a white paper on water quality credit trading in Minnesota.
- Completed a BMP CHALLENGE brochure mailing to 5000 contacts.
- Completed and circulated an issue of BMP CHALLENGE News electronic newsletter to 4400 contacts.
- Finished compiling and reported the 2007 BMP CHALLENGE results including upgrading our results database and implementing tracking for estimated reductions in nutrients, sediment and GHG (see page 05).
- Enrolled 2008 BMP CHALLENGE participants including: 2,298 acres in the Nutrient Management program, 1.078 acres in the Reduced Tillage program, and 1,000 acres in the Enhanced Nutrient Management program.
- Recruited additional advisory members from credit purchasing sectors.
- Secured additional cash match funding from the Bush Foundation and from Pennsylvania Department of Environmental Protection.
- Submitted new proposals for funding to the Pennsylvania Department of Environmental Protection, the Pennsylvania Department of Agriculture, the Chesapeake Bay Conservation Innovation Grant Program, and the National Conservation Innovation Grant Program
- Completed two monthly project team conference calls, bi-weekly BMP CHALLENGE team conference calls and a planning call for the August 5 workshop and WQT brochure.
- Set the next quarterly advisory committee call date as June 12, 2008.

Over the next quarter we will complete a revision of the training curriculum based on comments from trainers and project team and advisory group members; complete our contact database for all project states; recruit 2008 BMP CHALLENGE participants; recruit additional advisory members from credit purchasing sectors; create a WQT brochure to mail out to point source

representatives; present results to date at the annual Soil and Water Conservation Society meeting; and hold a workshop which focuses on WQT rules and concepts in St. Cloud, MN.

We will 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, .

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<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>	<p>t. Calendar of industry and extension meetings has been created and continually modified with contact information for meeting organizers.</p> <p>u. Jim Klang presented on March 18, 2008 on “Emerging Conservation Tools: Market Based Incentives and the BMP CHALLENGE” at the Sauk River Watershed District District Board Meeting in Sauk Center, MN.</p> <p>Jim also presented on March 31, 2008 in Faribault, MN on WQT and the BMP CHALLENGE at a Rural Advantage sponsored informational meeting.</p> <p>Next, Jim presented in St. James, MN at the Lake Pepin TMDL Policy Forum on April 10,2008.</p> <p>Tom Green presented information on the BMP CHALLENGE in Emmetsburg, IA at the Iowa Lakes Community College for growers and crop advisors.</p>
<p>2. Support package of existing tools for trainers, subset to be used as handout for seminars and available online.</p>	<p>o. 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</p> <p>p. Website updated regularly, with current documents and information. Recent updates include new trainer information, updated BMP CHALLENGE forms for the 2008 growing season, newly revised FAQ page.</p>
<p>3. Preparing three MN public agency/NGO trainers to train others on BMP CHALLENGE and WQ credit trading.</p>	<p>o. Three trainers have been identified for Minnesota:          -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.</p> <p>p. Upcoming fall/winter Minnesota meetings:          - Aug. 5, 2008 – WQT Workshop in St. Cloud          - 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>
<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 scheduled for July 2008. Jim Klang is attending the larger advisory meetings and speaks with Marco Graziani and the MPCA team regularly. Until the early framework choices are made regarding how the program will be set up, the forms and definition of a credit and verification procedures are on hold. 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-</p>	

<p>1,500 farmer inquiries generated to state agencies, crop advisors, watershed groups on BMP CHALLENGE and WQ credit trading.</p>	<p>ee. 35,000 BMP CHALLENGE brochures were printed with approx. 32,000 distributed to date.</p> <p>ff. WQT informational brochures will be developed and distributed once trading rules have been finalized.</p> <p>gg. The 6<sup>th</sup> 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 March.</p> <p>hh. Per the 2008 Outreach plan, a brochure and electronic newsletter schedule with designated dates of dispersal and topic outlines has 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 CO<sub>2</sub> 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>	<p>n. Keiser &amp; 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.</p> <p>o. James Klang, PE, and Brian Brandt are have released a white-paper to help clarify how point and non-point perspectives view trading by interviewing potential buyers and sellers.</p> <p>p. 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>
<p>7. Inventory of BMP CHALLENGE guarantees implemented, acres, practices, improvements.</p>	<p>jj. Nutrient BMP guarantees have been implemented on approximately 90 farmer fields, resulting in an average 25% reduction in nitrogen fertilizer use (pre-2007 data).</p> <p>kk. Reduced tillage was implemented on the first 14 fields in 2006.</p> <p>ll. 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.</p> <p>mm. All results are recorded in a database.</p> <p>nn. From 2000-2007, 3885 acres, 1139 acres and 3554 acres were enrolled in the Nutrient BMP, Reduced Tillage BMP and Enhanced Nutrient BMP respectively.</p>
<p>8. Reductions of 760K lbs of N use, 40K lbs. P loading; 30K tons sediment loading; 25 K lbs. NO<sub>2</sub>; 5K tons CO<sub>2</sub> from nutrient and tillage reduction on approximately 34K acres in MN and PA.</p>	<p>a. See tracking, attached.</p>

<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>	<p>a. Current grants amounting to \$983,000:  - Conservation Innovation Grant (CIG) – NRCS - \$683,000  - Bush Foundation Grant (to AFT) - \$75,000  - Pennsylvania Dept. of Environmental Protection (to IPM Institute) - \$225,000  - Pennsylvania State Conservation Commission (to IPM Institute) - \$20,000  - Chesapeake Bay Commission (to IPM Institute) - \$25,000  - Pennsylvania Dept. of Environmental Protection (to IPM Institute) - \$50,000  - Bush Foundation Grant (to AFT) - \$270,000</p>
<p>10. Quarterly and final progress reports including conference call and advisory meeting minutes.</p>	<p>v. Advisory conference calls and meetings scheduled for Dec, Jan and Mar through Aug 2009, including one in-person meeting per year.</p> <p>w. BMP CHALLENGE Project team (Brandt, Green, Havelka, and contractors) meets at least twice monthly by conference call to manage BMP CHALLENGE acreage recruitment and implementation.</p> <p>x. MN BMP CHALLENGE and WQ Credit Trading team (Fisher, Green, Kieser &amp; Associates, and Havelka) 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>

2000-2007 RESULTS	Nutrient BMP	Reduced Tillage	Enhanced Nutrient Management
Total acres, 2004-2007	3885 acres	1139 acres	3554 acres
BMP yield, average and range	158.9 bu./acre 15.4 - 220	159.9 bu./acre 72 - 192	121.6 bu./acre 9 - 217
Check-strip yield, average and range	165.4 bu./acre 16.7 - 230	172.2 bu./acre 110 - 210	129.6 bu./acre 10 - 238
Farmer net returns after fertilizer or tillage savings, average and range	(\$3.90) (\$53.03) - \$81.25	(\$18.98) (\$157) - \$130	(\$19.95) (\$111) - \$105
Total N use reduction	155,712 lbs. N	-	96,237 lbs. N
Estimated sediment reduction	-	1709 tons	-
Estimated P load reduction	-	2278 lbs.	-
Estimated N <sub>2</sub> O reduction	5,122 lbs.	-	3,166 lbs.
Estimated CO <sub>2</sub> reduction	-	570 tons	-

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

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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.

To: BMP CHALLENGE Project Team and Advisors  
From: Lori Steckervetz, BMP CHALLENGE Program Coordinator, Agflex, Inc.  
Re: Fourth 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, IL, IN, MD, MI, MN, NC, NE, OH, PA, VA, WI. Water quality credit trading objectives will focus on MN and PA. BMP CHALLENGE received less than half the amount anticipated from the Pennsylvania Department of Environmental Protection, limiting projects to the preparation of a trading template by James Klang, PE. The document will be used to document credits created by BMP CHALLENGE participants.

To date we have:

- Successfully passed a proposal review in Idaho and Missouri for expansion of the project for the 2008 growing season with final approval pending, and are investigating a possible expansion into New York state.
- Hired a part-time BMP CHALLENGE Project Assistant to aid the Project Coordinator in the daily administration of the project
- Filled a vacated Trainer position for MN and held a meeting with the Project Team and the Trainers to discuss the Trainer role, review the BMP CHALLENGE and WQT curriculum and have begun revisions to the materials;
- Successfully held the first of three BMP CHALLENGE and WQT workshops in Minnesota
- Attended/presented a total of 3 meetings;
- Held an in-person advisory board meeting and two monthly calls with the project team
- Set the next quarterly call date as March 13, 2008.

Over the next quarter we will continue to build awareness of the project, with particular attention to promoting and expanding the enhanced nutrient option that was initiated in PA. We will continue to recruit additional advisory members from trading sectors.

We will continue monitoring factors such as Minnesota trading rules, corn prices, growth in corn acreage and corn-on-corn acres, and corn-belt wide changes in nitrogen rate recommendations for corn. We will 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, with additional funders.

**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"> <li>v. The latest version of the WQT presentations and materials, which are designed to provide a fuller explanation of water quality credit trading were further reviewed and discussed at a Minnesota Trainer Meeting with the trainers and project team.</li> <li>w. Held the first of 3 MN BMP CHALLENGE and WQT workshops for state agency, SWCD, crop advisors, NRCS, watershed groups and other professionals who work with producers in Owatonna, MN on November 26, 2007. Nineteen participants attended the workshop with seven presenters providing information on the BMP CHALLENGE, an introduction to WQT, rule development for trading in MN, and local perspectives on water quality issues and experience with the BMP CHALLENGE and WQT. Planning continues for the remaining two workshops scheduled for December 18, 2007 in Alexandria and January 10, 2008 in Redwood Falls.</li> <li>x. Calendar of industry and extension meetings has been created and continually modified with contact information.</li> <li>y. Tom Green presented information on the BMP CHALLENGE and WQT at the MN Association of SWCD Annual Meeting and the 2007 Crop Management Conference.</li> </ul>
<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"> <li>q. 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</li> <li>r. Website updated regularly, with current documents and information. Recent updates include new trainer information, updated BMP CHALLENGE forms for the 2008 growing season, newly revised FAQ page.</li> </ul>
<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"> <li>q. Three trainers have been identified for Minnesota: <ul style="list-style-type: none"> <li>-Shannon Fisher, MN River Board and Water Resources Center</li> <li>-Ed Hohenstein, Seven Mile Creek Watershed Project</li> <li>- Russ Derickson, MN Dept of Agriculture</li> </ul> </li> <li>r. Held an in-person trainer/project team meeting to cover both BMP CHALLENGE and WQT materials in detail. Revisions of the materials are to follow with an emphasis on linking the BMP CHALLENGE with WQT, as well as providing materials that are focused on the priority questions of producers and ag professionals.</li> <li>s. Current fall/winter Minnesota meeting possibilities: <ul style="list-style-type: none"> <li>Nov. 17-19, 2008 - MN Farm Bureau State Convention</li> <li>Jan. 13-15, 2008 – MCIA Annual Meeting</li> <li>Jan. 15, 2008 - MSGA Annual Meeting</li> <li>Feb 26-28, 2008- MN Air, Water, Waste Environmental Conf</li> <li>Mar. 5-7, 2008 - MN Erosion Control Assoc Annual Conference</li> </ul> </li> </ul>
<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 scheduled for July 2008. Jim Klang is attending the larger advisory meetings and speaks with Marco Graziani and the MPCA team regularly. Until the early framework choices are made regarding how the program will be set up, the forms and definition of a credit and verification procedures are on hold. The advisory group is currently looking at other state rules from</p>

	Ohio and Michigan to explore how to proceed in MN.
<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"> <li>ii. 35,000 BMP CHALLENGE brochures were printed with approx. 10,000 distributed to date.</li> <li>jj. WQT informational brochures will be developed and distributed once trading rules have been finalized.</li> <li>kk. The 6<sup>th</sup> edition of an electronic newsletter containing both BMP CHALLENGE program information and recent agricultural and conservation news was distributed to 4121 contacts over the course of two separate mailings in August.</li> <li>ll. Per the 2008 Outreach plan, a brochure and electronic newsletter schedule with designated dates of dispersal and topic outlines has 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 CO<sub>2</sub> 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.</li> </ul>
<p>6. Ten point sources in MN prepared to trade, list of trades completed, acres, practices, credits, estimated resource improvements.</p>	<ul style="list-style-type: none"> <li>q. Keiser &amp; 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.</li> <li>r. James Klang, PE, and Brian Brandt are have completed a draft white-paper to help clarify how point and non-point perspectives view trading by interviewing potential buyers and sellers which is now under review by project team members.</li> <li>s. 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.</li> </ul>
<p>7. Inventory of BMP CHALLENGE guarantees implemented, acres, practices, improvements.</p>	<ul style="list-style-type: none"> <li>oo. Nutrient BMP guarantees have been implemented on approximately 90 farmer fields, resulting in an average 25% reduction in nitrogen fertilizer use (pre-2007 data).</li> <li>pp. Reduced tillage was implemented on the first 14 fields in 2006. Conservation equivalents not yet quantified.</li> <li>qq. 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.</li> <li>rr. All results are recorded in a database.</li> <li>ss. Approx. 50 fields are expected for 2007; 16 for nutrient guarantees, 16 for tillage guarantees, 20 enhanced nutrient guarantees. Total acreage is estimated at approx. 4,000 acres.</li> </ul>
<p>8. Reductions of 760K lbs of N use, 40K lbs. P loading; 30K tons sediment loading; 25 K lbs. NO<sub>2</sub>; 5K tons CO<sub>2</sub> from nutrient and tillage reduction on approximately 34K acres in</p>	<ul style="list-style-type: none"> <li>a. Tacking in place for nutrient use.</li> <li>b. Tracking for other reductions to be developed.</li> </ul>

<p>MN and PA.</p>	
<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>	<p>a. Current grants amounting to \$983,000:          - Conservation Innovation Grant (CIG) – NRCS - \$683,000          - Bush Foundation Grant (to AFT) - \$75,000          - Pennsylvania Dept. of Environmental Protection - \$225,000</p>
<p>10. Quarterly and final progress reports including conference call and advisory meeting minutes.</p>	<p>y. Advisory conference calls and meetings scheduled for Dec, Jan and Mar through Aug 2009, including on in-person meeting per year.</p> <p>z. BMP CHALLENGE Project team (Brandt, Green, Steckervetz, and contractors) meets at least twice monthly by conference call to manage BMP CHALLENGE acreage recruitment and implementation.</p> <p>aa. MN BMP CHALLENGE and WQ Credit Trading team (Fisher, Green, Kieser &amp; Associates, and Steckervetz) 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>12. Other</p>	

## II. Project Team, Advisors and Trainers – As of 09/07/07

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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.

September 7, 2007

To: BMP CHALLENGE Project Team and Advisors  
From: Lori Steckervetz, BMP CHALLENGE Program Coordinator, Agflex, Inc.  
Re: Fourth Quarterly Report: BMP CHALLENGE and Water Quality Trading

<b>Contents:</b>	Executive Summary	
	I. Deliverables Update	2
	II. Project Team and Advisors	5
	III. Project Summary from NRCS Proposal	8

### **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, IL, IN, MD, MI, MN, NC, NE, OH, PA, VA, WI. Water quality credit trading objectives will focus on MN and PA. BMP CHALLENGE received less than half the amount anticipated from the Pennsylvania Department of Environmental Protection, limiting projects to the preparation of a trading template by James Klang, PE. The document will be used to document credits created by BMP CHALLENGE participants.

To date we have:

- Initiated the process of expanding the BMP CHALLENGE program into 3 additional States beyond the original 13 participating states
- Created and reviewed updates in the WQT curriculum and trainer materials;
- Started preparations for 3 BMP CHALLENGE and WQT workshops in Minnesota between the 2007 harvest and 2008 planting season;
- Distributed an electronic newsletter and a hardcopy brochure mailing in August and September respectively;
- Attended/presented a total of 5 meetings/field days;
- Held two monthly calls with the project team and advisors;
- Set the next quarterly call date as December 13, 2007.

Over the next quarter we will continue to build awareness of the project, with particular attention to promoting and expanding the enhanced nutrient option that was initiated in PA. We will continue to recruit additional advisory members from trading sectors, and seek to expand the BMP CHALLENGE beyond the initial 13 states into three new states (FL, ID,MO), allowing for an opportunity to recruit BMP CHALLENGE participants in a total of 16 states.

We will continue monitoring factors such as MN trading rules, corn prices, growth in corn acreage and corn-on-corn acres, and corn-belt wide changes in nitrogen rate recommendations for corn. We will continue to interact with MN state agencies and others on trading rule development and pursue additional funding to meet our match requirement.

The 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, with additional funders.

## 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>	<p>z. Updated WQT presentations were submitted by Jim Klang for comments to Project Team and Trainers. The team has commented on them and the edits (except for how to handle Idaho's program are complete). These training materials will provide a fuller explanation trading.</p> <p>aa. Planning is underway for 3 dedicated MN BMP CHALLENGE and WQT workshops for state agency, SWCD, crop advisors, NRCS, watershed groups and other professionals who work with producers</p> <p>bb. Calendar of industry and extension meetings has been created and continually modified with contact information.</p>
<p>2. Support package of existing tools for trainers, subset to be used as handout for seminars and available online.</p>	<p>s. Support package currently includes 2007 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).</p> <p>t. Website updated regularly, with current documents and information. Changes to be made during summer 2007, including style update, user profile setups, online forms and additional information pages.</p>
<p>3. Preparing three MN public agency/NGO trainers to train others on BMP CHALLENGE and WQ credit trading.</p>	<p>t. Three trainers have been identified for Minnesota:          -Adam Birr, MN Dept of Agriculture          -Shannon Fisher, MN River Board and Water Resources Center          -Ed Hohenstein, Seven Mile Creek Watershed Project</p> <p>u. Preparations are in progress for an in-person workshop with the trainers for the end of November to cover both BMP CHALLENGE and WQT materials in detail</p> <p>v. Current fall/winter Minnesota meeting possibilities:          Nov. 17-19, 2008 - MN Farm Bureau State Convention          Dec. 2-4, 2007 - MN Association of SWCD convention          Jan. 2008 - Minnesota Ag EXPO          Jan. 13-15, 2008 – MCIA Annual Meeting          Jan. 15, 2008 - MSGA Annual Meeting          Feb 26-28, 2008- MN Air, Water, Waste Environmental Conf          Mar. 5-7, 2008 - MN Erosion Control Assoc Annual Conference          Mar. 13-15, 2008 – Farm and Power Show</p>
<p>4. Inventory of potential point and non-point source traders, trades, values, credits, rates, forms, implementation and verification procedures.</p>	<p>The draft for the MN State rules for water quality trading is scheduled for July 2008. Klang is attending the larger advisory meetings and speaks with Marco Graziani and the MPCA team regularly. Until the early framework choices are made regarding how the program will be set up, the forms and definition of a credit and verification procedures are on hold. 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</p>	<p>mm. Mailing consisting of a BMP CHALLENGE brochure, 2007 corn price update insert and an informational cover letter distributed in early September. The next mailing is scheduled for November 2007.</p>

<p>and WQ credit trading.</p>	<p>nn. 35,000 BMP CHALLENGE brochures were printed with approx. 10,000 distributed to date.</p> <p>oo. Trading brochures to be developed and distributed once trading rules have been finalized.</p> <p>pp. The 6<sup>th</sup> edition of an electronic newsletter containing both BMP CHALLENGE program information and recent agricultural and conservation news was distributed to 4121 contacts over the course of two separate mailings in August.</p> <p>qq. Per the 2008 Outreach plan, a brochure and electronic newsletter schedule with designated dates of dispersal and topic outlines has 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 CO<sub>2</sub> 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>	<p>t. Keiser &amp; 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.</p> <p>u. James Klang, PE, and Brian Brandt are continuing to work on a white-paper to help clarify how point and non-point perspectives view trading by interviewing potential buyers and sellers.</p> <p>v. 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>
<p>7. Inventory of BMP CHALLENGE guarantees implemented, acres, practices, improvements.</p>	<p>tt. Nutrient BMP guarantees have been implemented on approximately 90 farmer fields, resulting in an average 25% reduction in nitrogen fertilizer use (pre-2007 data).</p> <p>uu. Reduced tillage was implemented on the first 14 fields in 2006. Conservation equivalents not yet quantified.</p> <p>vv. 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.</p> <p>ww. All results are recorded in a database.</p> <p>xx. Approx. 50 fields are expected for 2007; 16 for nutrient guarantees, 16 for tillage guarantees, 20 enhanced nutrient guarantees. Total acreage is estimated at approx. 4,000 acres.</p>
<p>8. Reductions of 760K lbs of N use, 40K lbs. P loading; 30K tons sediment loading; 25 K lbs. NO<sub>2</sub>; 5K tons CO<sub>2</sub> from nutrient and tillage reduction on approximately 34K acres in</p>	<p>a. Tacking in place for nutrient use.</p> <p>b. Tracking for other reductions to be developed.</p>

MN and PA.	
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>a. Current grants amounting to \$983,000:</p> <ul style="list-style-type: none"> <li>- Conservation Innovation Grant (CIG) – NRCS - \$683,000</li> <li>- Bush Foundation Grant (to AFT) - \$75,000</li> <li>- Pennsylvania Dept. of Environmental Protection - \$225,000</li> </ul>
10. Quarterly and final progress reports including conference call and advisory meeting minutes.	<p>bb. Advisory conference calls and meetings scheduled for Dec, Jan and Mar through Aug 2009, including on in-person meeting per year.</p> <p>cc. BMP CHALLENGE Project team (Brandt, Green, Steckervetz, and contractors) meets at least twice monthly by conference call to manage BMP CHALLENGE acreage recruitment and implementation.</p> <p>dd. MN BMP CHALLENGE and WQ Credit Trading team (Fisher, Green, Kieser &amp; Associates, and Steckervetz) 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>
12. Other	

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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.

June 8, 2007

To: Project Team and Advisors  
From: Tom Green, Agflex and IPM Institute  
Re: Third 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, IL, IN, MD, MI, MN, NC, NE, OH, PA, VA, WI. Water quality credit trading objectives will focus on MN and PA. BMP CHALLENGE received less than half the amount anticipated from the Pennsylvania Department of Environmental Protection, limiting projects to the preparation of a trading template by James Klang, PE. The document will be used to document credits created by BMP CHALLENGE participants.

To date we have:

- Finalized three Minnesota trainers;
- Composed a curriculum and support materials for trainer use, to be continually improved over the life of the project;
- Held a BMP CHALLENGE and WQT workshop in Michigan;
- Expanded our advisory group with producer contacts and others;
- Initiated a white paper on WQT through interviews with potential buyers and sellers of credits;
- Held two monthly calls with the project team and advisors;
- Filed six-month progress report to CIG head office; and
- Set next quarterly call date as September 14, 2007.

Over the next quarter we will continue to build awareness of the project, recruit additional advisory members from trading sectors and recruit BMP CHALLENGE participants in 13 states. We will continue monitoring factors such as MN trading rules, corn prices, growth in corn acreage and con-on-corn acres, and corn-belt wide changes in nitrogen rate recommendations for corn. We will continue to interact with MN state agencies and others on trading rule development and pursue additional funding to meet our match requirement.

The 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, with additional funders.

## I. Deliverables Update

<p>1. Diverse advisory panel for quarterly review of plans and progress.</p>	<p><b>Confirmed:</b>  Adam Birr, Minnesota Department of Agriculture  George Boody, Land Stewardship Project  Paul Burns, Minnesota Department of Agriculture  Dennis Fuchs, Stearns County SWCD  Marco Graziani, Minnesota Pollution Control Agency  David Mulla, University of Minnesota  Mark Scharf, AgStar Financial Services  Jeff St. Ores, USDA-NRCS  Jason Portner, United Farmers Cooperative  Doug Thomas, Board of Water and Soil Resources  Scott Thaden, Anez Consulting, Ltd.  Mark Bredehoeft, Southern Minnesota Beet Sugar Cooperative  Jeremy Geske, Minnesota Farm Bureau  Judy and Fred Hanson, Producers  John Schueller, Minnesota River Board and Producer</p> <p><b>Pending identification of candidates:</b>  Wastewater treatment plants</p>
<p>2. WQ trading and BMP CHALLENGE curriculum delivered 12 to MN state agency, conservation districts, crop advisors and others to equip them to offer these opportunities to their producer clientele.</p>	<p>a. Initial syllabus and curriculum (PowerPoint presentations) presented on January 11, 2007, in New Ulm, MN and March 29, 2007 in Shelbyville, MI.</p> <p>b. Curriculum to be offered during the remainder of the three-year project period at existing programs and events held by trainers.</p> <p>c. Calendar of industry and extension meetings has been created and continually modified with contact information.</p>
<p>3. Training plan, three MN public agency/NGO trainees to train others on BMP CHALLENGE and WQ credit trading.</p>	<p>a. Three trainers have been identified for Minnesota:  Adam Birr, Minnesota Department of Agriculture  Shannon Fisher, Minnesota River Board and Water Resources Center  Ed Hohenstein, Seven Mile Creek Watershed Project</p> <p>b. Schedules to be worked out with trainers during June/early July, with presentations to be placed with existing events throughout the year.</p> <p>c. Current fall/winter Minnesota meeting possibilities:  Jan. 15, 2008 - MSGA Annual Meeting  Jan. 2008 - Minnesota Ag EXPO 2007  Mar. 13-15, 2008 – Farm and Power Show</p>
<p>4. Support package of existing tools for trainers, subset to be used as handout for seminars and available online.</p>	<p>a. Support package currently includes 2007 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).</p> <p>b. Website updated regularly, with current documents and information. Changes to be made during summer 2007, including style update, user profile setups, online forms and additional information pages.</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>	<p>a. 35,000 BMP CHALLENGE brochures were printed with approx. 6,900 distributed to date.</p> <p>b. Trading brochures to be developed and distributed once trading rules have been finalized.</p> <p>c. Minnesota currently has 587 mailing addresses along with 192 email addresses, containing roughly 200 extension agents, 190 crop advisors, 50 agricultural professionals, 70 environmental professionals and 85 conservation organization professionals.</p> <p>d. The next mailing is scheduled to go out in late July and early August. Mailings consist of a BMP CHALLENGE brochure, 2007 corn price update insert and informational cover letter. Another mailing is not scheduled until November 2007.</p> <p>e. A tri-monthly online newsletter is scheduled to be sent in late June, followed by an additional newsletter in September. Newsletters contain BMP CHALLENGE program information as well as recent agricultural and conservation focused news. Topics for the upcoming newsletter are still pending.</p>
<p>6. Ten point sources in MN prepared to trade, list of trades completed, acres, practices, credits, estimated resource improvements.</p>	<p>a. Keiser &amp; Associates have begun identification of potential wastewater treatment and ethanol plants in Minnesota for participation.</p> <p>b. James Klang, PE, is preparing a white-paper to help clarify how point and non-point perspectives view trading by interviewing potential buyers and sellers. Klang will work with Brian Brandt to include written testimonials from agricultural professionals on the need of trading for agriculture. Klang is nearly finished with GIS work with David Legvold (Cannon River Partnership) and Kevin Kuehner (Seven-Mile Creek Watershed) to establish trading potential maps for these areas.</p>
<p>7. Inventory of BMP CHALLENGE guarantees implemented, acres, practices, improvements.</p>	<p>a. Nutrient BMP guarantees have been implemented on approximately 90 farmer fields, resulting in an average 25% reduction in nitrogen fertilizer use (pre-2007 data).</p> <p>b. Reduced tillage was implemented on the first 14 fields in 2006. Conservation equivalents not yet quantified.</p> <p>c. An Enhanced Nutrient BMP guarantee program was piloted on 18 fields. Enhanced refers to an additional 15% reduction in BMP rates for nitrogen fertilizer use. This program is currently only available in Pennsylvania.</p> <p>d. All results are recorded in a database.</p> <p>e. Approx. 50 fields are expected for 2007; 16 for nutrient guarantees, 16 for tillage guarantees, 20 enhanced nutrient guarantees. Total acreage is estimated at approx. 4,000 acres.</p>
<p>8. Inventory of potential point and non-point source traders, trades, values, credits, rates, forms, implementation and</p>	<p>a. Being developed by James Klang, PE (Keiser &amp; Associates), working with Marco Graziani (MPCA). Graziani is heading the Minnesota rules coordination.</p>

verification procedures.	
9. 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>a. Tacking in place for nutrient use.</p> <p>b. Tracking for other reductions to be developed.</p>
10. 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>a. Current grants amounting to \$983,000:</p> <p>Conservation Innovation Grant (CIG) – NRCS - \$683,000  Bush Foundation Grant (to AFT) - \$75,000  Pennsylvania Dept. of Environmental Protection - \$225,000</p>
11. Quarterly and final progress reports including conference call and advisory meeting minutes.	<p>a. Advisory conference calls and meetings scheduled for Sept, Dec, Jan and Mar through Aug 2009, including on in-person meeting per year.</p> <p>b. BMP CHALLENGE team (Arlt, Brandt, Green, 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 (Arlt, Fisher, Green, Kieser &amp; Associates) 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>
12. Other	



## II. Project Team, Advisors and Trainers – As of 06/07/07

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**Gus Jordan**

Branch Chief  
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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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**Jeremy Geske**

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**Trainers**

Three Minnesota and three Pennsylvania public agency 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.

**Minnesota Trainers**

**Adam Birr**

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**Ed Hohenstein**

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### **III. Project Summary from Original Proposal to NRCS CIG**

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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.

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December 11, 2006

To: Project Team and Advisors

From: Tom Green, Agflex and IPM Institute

Re: First Quarterly Progress 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, IL, IN, MD, MI, MN, NC, NE, OH, PA, VA, WI. Water quality credit trading objectives will focus on MN and PA.

To date we have:

- Formed a Minnesota advisor group;
- Held a project planning meeting and two monthly conference calls with project team members and several advisors;
- Held informational meetings with (1) Minnesota River Board; and (2) representatives of MPCA, Minnesota Dept. of Agriculture, Board of Soil and Water Resources and Land Stewardship Project; and (3) Gyles Randall, U MN.
- Adjusted timing of water quality credit trading objectives in MN to match expected roll out of trading rules in 2008;
- Produced 35,000 BMP CHALLENGE brochures and distributed 2000;
- Developed a syllabus and scheduled an initial training workshop for ag professionals for January 11 in New Ulm;
- Developed portions of the curriculum for the January 11 workshop;
- Secured \$390,000 in cash match towards our budgeted \$930,000 in match; and
- Added Jim Klang, formerly of the Minnesota Pollution Control Agency (MPCA) to our project team as a employee of Kieser and Associates.

Over the next quarter we will continue to build awareness of the project, complete our advisory group, identify in-state trainer candidates for MN, recruit for the January 11 workshop, recruit BMP CHALLENGE participants in 13 states and finalize a revised budget and project plan with the PA Dept of Environmental Protection (PA DEP). We will monitor factors that may impact our project including MN trading rules, corn prices, growth in corn acreage and corn-on-corn acres, and corn-belt wide changes in nitrogen rate recs for corn. We will continue to interact with MN state agencies and others on trading rule development and pursue additional funding to meet our match requirement.

The 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, with additional funders pending.

## I. Deliverables Update:

<p>1. Diverse advisory panel for quarterly review of plans and progress. <i>PA advisors pending final plan and budget with PA DEP. Our proposal to DEP was funded at 47% of our initial request. We're awaiting assignment of a project office and further information on how they would prefer our plan and budget to be revised to reflect the reduced funding.</i></p>	<p><b>Confirmed:</b>  George Boody, Land Stewardship Project  Paul Burns, MN Dept of Ag  Dennis Fuchs, Stearns County SWCD  Tim Gieseke, MN Project  Marco Graziani, MPCA  Dave Mulla, University of Minnesota  Jeff St. Ores, USDA-NRCS  Mark Scharf, AgStar Financial Services</p> <p><b>Pending invitations:</b>  Minnesota Board of Water and Soil Resources (representative invited)</p> <p><b>Pending identification of candidates:</b>  Minnesota Cooperatives (re ethanol production, Kevin Edberg investigating)  Independent crop advisors (call to Lyn Lagerstadt, reply pending)  Leading progressive producers (Shannon Fisher pursuing)  Wastewater treatment plants</p>
<p>2. WQ trading and BMP CHALLENGE curriculum delivered 12 times to MN state agency, conservation districts, crop advisors and others to equip them to offer these opportunities to their producer clientele. <i>PA activities pending.</i></p>	<p>a. Syllabus and curriculum (powerpoint presentations) to be finalized by January 1 and delivered at January 11 workshop in New Ulm (workshop agenda below). An initial mailing of 250 pieces to MN ag professionals with workshop flier and registration form was completed in November generating four responses. A second mailing to an expanded list of 500 MN professionals will be completed by December 18, along with press releases circulated by the MN River Board and UMN Extension.</p> <p>b. Trading component to be further developed as trading rules are finalized. Interim measure to include meetings with policy makers on issues related the project, i.e., how BMP CHALLENGE processes might support trading by providing a farmer income guarantee and verification process. An initial meeting with MPCA, BOWSR and MDA held on Nov. 21 in St. Paul.</p> <p>c. Curriculum to be offered over the three-year project period in dedicated seminars and as part of other scheduled events.</p> <p>d. Calendar of other potential events is being developed including contact person for program content.</p> <p>e. Extension and Minnesota River Board PR contacts have agreed to circulate press releases for scheduled events.</p> <p>f. An in-house list contact list of potential workshop attendees is being developed including Extension, crop advisors, watershed program managers, soil and water conservation districts, and Dept of Agriculture, Pollution Control Agency and Board of Water and Soil Resources staff. Current count is 276.</p> <p>g. A second mail list of media contacts is under development.</p> <p>h. Mail plan includes direct mail to the in-house list, quarterly email newsletter and press releases.</p>
<p>3. Training plan, three MN public agency/NGO trainees to</p>	<p>a. Candidates being identified whose current responsibilities would be enhanced by developing this capability.</p>

train others on BMP CHALLENGE and WQ credit trading. <i>PA trainers pending.</i>	b. Training plan to include participation in training events, e.g., January 11 workshop, offered by the project team.
4. Support package of existing tools for trainers, subset to be used as handout for seminars and available at <a href="http://www.bmpchallenge.org">www.bmpchallenge.org</a> . <i>PA package pending.</i>	a. Handout package for Jan 11 workshop to include copies of presentations, BMP CHALLENGE brochure; BMP CHALLENGE enrollment, check strip and net returns assessment forms; list of trading resources. b. Additional items for support package under development. c. Website established, materials to be added as they become available.
5. 75,000 brochures, 1000-1500 farmer inquiries generated to state agencies, crop advisors, watershed groups on BMP CHALLENGE and WQ credit trading.	a. 35,000 BMP CHALLENGE brochures have been printed with approx. 2000 distributed to date (PDF and print copies available on request). b. Trading brochures to be developed and distributed once trading rules finalized.
6. Ten point sources in MN prepared to trade, list of trades completed, acres, practices, credits, estimated resource improvements. <i>PA activities pending.</i>	Deferred until trading rules are further developed and PA DEP grant finalized.
7. Inventory of BMP CHALLENGE guarantees implemented, acres, practices, estimated resource improvements.	a. To date, nutrient BMP guarantees have been implemented on approximately 90 farmer fields, resulting in an average 24% reduction in nitrogen fertilizer use. b. The first reduced tillage fields were enrolled in 2006, results pending. c. All results are recorded in a database.
8. Inventory of potential point and non-point source traders, trades, values, credits, rates, forms, implementation and verification procedures. <i>PA activities pending.</i>	To be developed.
9. Reductions of 760K lbs. of N use, 40K lbs. P loading; 30K tons sediment loading; 25K lbs. NO <sub>2</sub> ; 5K tons CO <sub>2</sub> from nutrient and tillage reduction on approx. 34K acres in MN and PA	a. Tracking in place for nutrient use. b. Tracking for other reductions to be developed.
10. Funding development including \$759,464 in matching non-federal funding, \$170,500 in program income and	a. Non-federal match, \$390,000 to date including Bush Foundation, \$75,000; Pennsylvania Department of Environmental Protection, \$225,000; Minnesota River Board, \$90,000; Kieser and Associates match pending. b. Program income, \$29 to date including workshop enrollment fees, farmer

<p>\$944,400 in-kind. Additional funding for program expansion.</p>	<p>contributions (1/3 of net income gain, to a maximum of \$6 per acre), \$0 (pending final 2006 results).</p> <p>c. In kind, will track advisor, workshop participant, collaborator and producer time; tracking database in development.</p> <p>d. Proposal in development for nutrient management work in Pennsylvania, to be submitted December 18 to Pennsylvania Department of Agriculture, Chesapeake Bay Commission and others.</p> <p>e. Verification of farmer participant eligibility for EQIP ongoing.</p>
<p>11. Quarterly and final progress reports including conf call and advisory meeting minutes.</p>	<p>a. Advisory conference calls and meetings scheduled for Mar, Jun, Sep and Dec through Aug 2009, including one in-person meeting per year.</p> <p>b. BMP CHALLENGE team (Arlt, Brandt, Bumans, Green, 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 (Arlt, Fisher, Green, Kieser &amp; Associates) meets monthly by conference call, second Thursday of each month at 8:30 AM Central. Advisors welcome to participate. Call agenda and post-call notes circulated to project team and advisors.</p>
<p>12. Other</p>	<p>Meeting to be organized with Chicago Climate Exchange to discuss trading issues, roles, possible collaboration.</p>



## II Project Team and Advisors – As of 12/12/06

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### **Advisory Group - Confirmed**

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 – To be named**

Three Minnesota and three Pennsylvania public agency 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.

### **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.