Minnesota Agricultural Water Quality Certification Program

Certifying that Minnesota's farms and waters can prosper together

Brad Redlin

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MINNESOTA DEPARTMENT OF AGRICULTURE

CLEAN WATER LAND & LEGACY AMENDMENT

Memorandum of Understanding

Signed by Governor Dayton, Secretary Vilsack and Administrator Lisa Jackson on January 17, 2012.

MINNESOTA DEPARTMENT OF AGRICULTURE

USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

CLEAN WATER LAND & LEGACY AMENDMENT

Minnesota DEPARTMENT OF NATURAL RESOURCES

Minnesota Pollution Control Agency

Minnesota Board of Water & Soil Resources

What does the MOU say?

* Support for a **voluntary** program
* **Coordinate and prioritize funding**
* Provide **recognition and certainty** to producers and the public
* Establish a MAWQCP **Advisory Committee**

STATE OF MINNESOTA
U.S. DEPARTMENT OF AGRICULTURE
U.S. ENVIRONMENTAL PROTECTION AGENCY

ENGAGING IN A STATE AND FEDERAL PARTNERSHIP IN SUPPORT OF THE MINNESOTA AGRICULTURAL WATER QUALITY CERTIFICATION PROGRAM

We, Mark Dayton, Governor of the State of Minnesota; Thomas J. Vilsack, Secretary of the U.S. Department of Agriculture; and Lisa Jackson, Administrator of the U.S. Environmental Protection Agency, by virtue of the powers vested in us, do hereby issue this Memorandum of Understanding:

MAWQCP Advisory Committee

The committee submitted a series of recommendations presented in seven position papers:

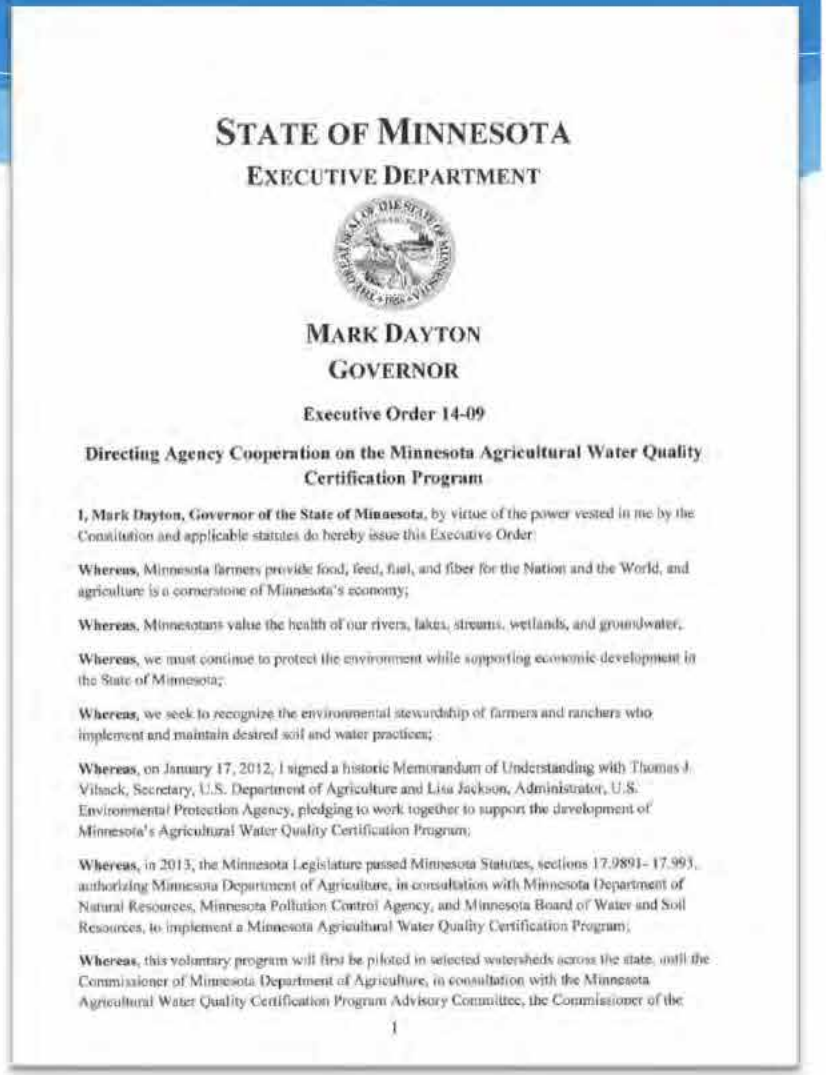
- Pilot projects
- Program operations
- Program measurement tool
- Program data management
- Program certainty
- Program incentives
- Program promotion

Legislative Actions

* Passed legislation placing the MAWQCP in statute
* Provided $3 million in Clean Water funding (biennium)
* Statute adopts Advisory Committee's recommendations
  * Pilot up to 3 years
  * Review progress with advisory committee; inter-agency team
  * Provides "certainty" via certification agreement contracts between state and producers

Executive Action

- Builds on interagency partnership
- Commissioner of Agriculture shall sign certification contracts on behalf of BWSR, DNR, and MPCA
- Agencies shall honor contracts when implementing new water quality laws or rules



STATE OF MINNESOTA

EXECUTIVE DEPARTMENT

MARK DAYTON

GOVERNOR

Executive Order 14-09

Directing Agency Cooperation on the Minnesota Agricultural Water Quality Certification Program

I, Mark Dayton, Governor of the State of Minnesota, by virtue of the power vested in me by the Constitution and applicable statutes do hereby issue this Executive Order:

Whereas, Minnesota farmers provide food, feed, fuel, and fiber for the Nation and the World, and agriculture is a cornerstone of Minnesota's economy;

Whereas, Minnesotans value the health of our rivers, lakes, streams, wetlands, and groundwater;

Whereas, we must continue to protect the environment while supporting economic development in the State of Minnesota;

Whereas, we seek to recognize the environmental stewardship of farmers and ranchers who implement and maintain desired soil and water practices;

Whereas, on January 17, 2012, I signed a historic Memorandum of Understanding with Thomas J. Vilsack, Secretary, U.S. Department of Agriculture and Lisa Jackson, Administrator, U.S. Environmental Protection Agency, pledging to work together to support the development of Minnesota's Agricultural Water Quality Certification Program;

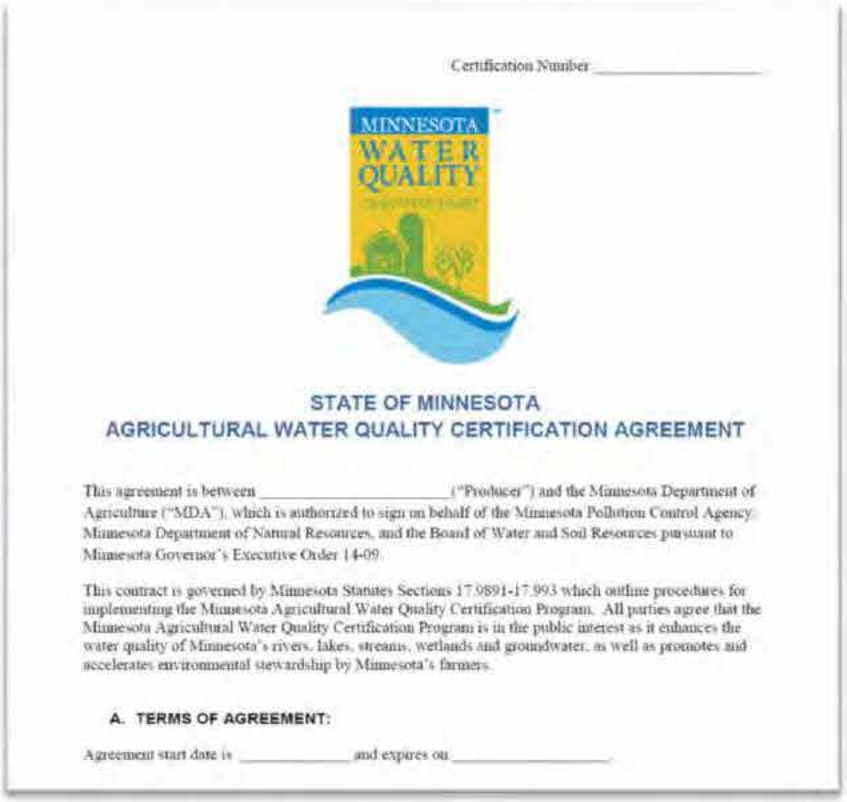
Whereas, in 2013, the Minnesota Legislature passed Minnesota Statutes, sections 17.9891- 17.993, authorizing Minnesota Department of Agriculture, in consultation with Minnesota Department of Natural Resources, Minnesota Pollution Control Agency, and Minnesota Board of Water and Soil Resources, to implement a Minnesota Agricultural Water Quality Certification Program;

Whereas, this voluntary program will first be piloted in selected watersheds across the state, until the Commissioner of Minnesota Department of Agriculture, in consultation with the Minnesota Agricultural Water Quality Certification Program Advisory Committee, the Commissioner of the

1

Certification Contract

- Contract between the state of Minnesota and the producer
- Outlines duties a producer must perform to retain certification for 10 year term
- Defines certainty and grants it to producer
- Field assessment records attached as appendix to contract



Certification Number _____

MINNESOTA WATER QUALITY

STATE OF MINNESOTA
AGRICULTURAL WATER QUALITY CERTIFICATION AGREEMENT

This agreement is between _____ ("Producer") and the Minnesota Department of Agriculture ("MDA"), which is authorized to sign on behalf of the Minnesota Pollution Control Agency, Minnesota Department of Natural Resources, and the Board of Water and Soil Resources pursuant to Minnesota Governor's Executive Order 14-09.

This contract is governed by Minnesota Statutes Sections 17.9891-17.993 which outline procedures for implementing the Minnesota Agricultural Water Quality Certification Program. All parties agree that the Minnesota Agricultural Water Quality Certification Program is in the public interest as it enhances the water quality of Minnesota's rivers, lakes, streams, wetlands and groundwater, as well as promotes and accelerates environmental stewardship by Minnesota's farmers.

A. TERMS OF AGREEMENT:

Agreement start date is _____ and expires on _____.

What is "Certainty?"

- Offered by Minnesota state government, via Certification contracts
- Not an exemption from existing rules and regulations
- Relevant to the land within an agricultural operation
- Conditional upon:
  - Implementation of recommended practices
  - Maintenance of practices during certification

In practice, "certainty" means:

Certified farms are deemed to be in compliance with any new water quality rules or laws and considered to be meeting their contributions to any targeted reductions of pollutants during the period of their certification.

Pilot Projects

* Whitewater Watershed
* Elm Creek Watershed
* Sauk River Watershed
* Whiskey Creek Watershed

Certification process

Technical/Financial assistance

One page form: self-certify currently compliant

Develop certification eligibility: assessment process

Third party certification: field verify

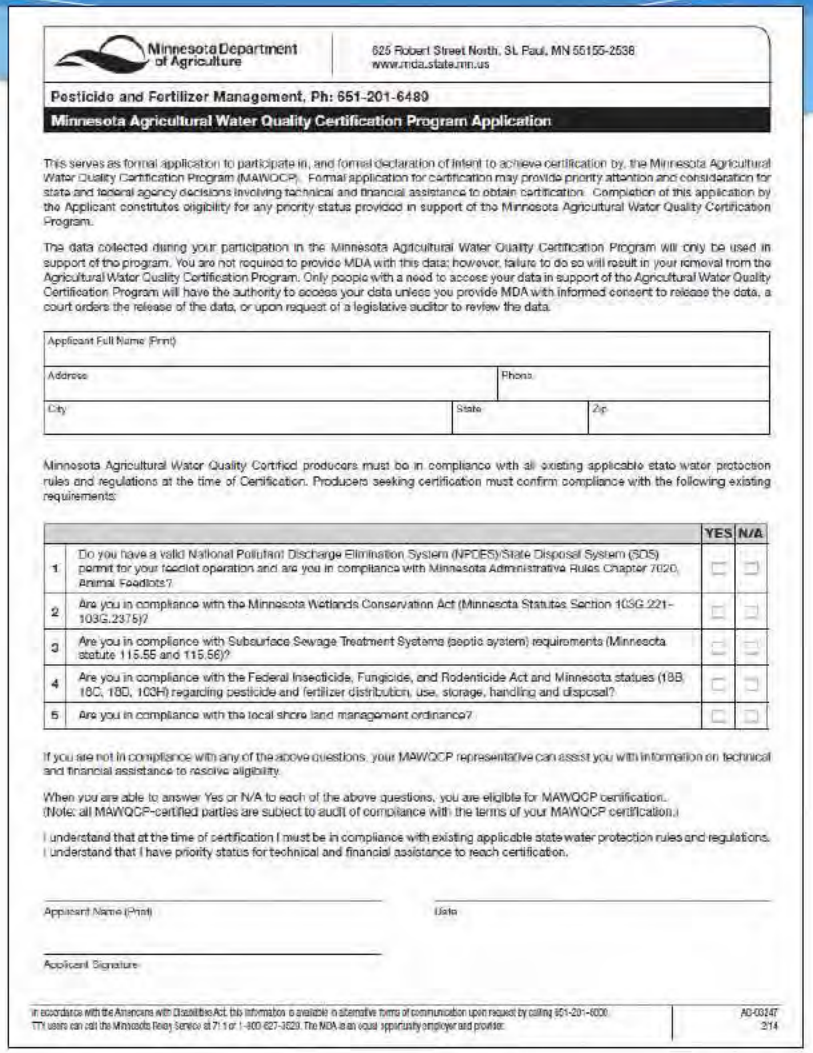
Four page contract

Certified!

Optional informed consent

Certification process

- NPDES
- Proper disposal of pesticide containers
- Water body setbacks
- Septic
- etc.



Minnesota Department of Agriculture

625 Robert Street North, St. Paul, MN 55155-2538
www.mda.state.mn.us

Pesticide and Fertilizer Management, Ph: 651-201-6480

Minnesota Agricultural Water Quality Certification Program Application

This serves as formal application to participate in, and formal declaration of intent to achieve certification by, the Minnesota Agricultural Water Quality Certification Program (MAWQCP). Formal application for certification may provide priority attention and consideration for state and federal agency decisions involving technical and financial assistance to obtain certification. Completion of this application by the Applicant constitutes eligibility for any priority status provided in support of the Minnesota Agricultural Water Quality Certification Program.

The data collected during your participation in the Minnesota Agricultural Water Quality Certification Program will only be used in support of the program. You are not required to provide MDA with this data; however, failure to do so will result in your removal from the Agricultural Water Quality Certification Program. Only people with a need to access your data in support of the Agricultural Water Quality Certification Program will have the authority to access your data unless you provide MDA with informed consent to release the data, a court orders the release of the data, or upon request of a legislative auditor to review the data.

Applicant Full Name (Print)		
Address		Phone
City	State	Zip

Minnesota Agricultural Water Quality Certified producers must be in compliance with all existing applicable state water protection rules and regulations at the time of Certification. Producers seeking certification must confirm compliance with the following existing requirements:

		YES	N/A
1	Do you have a valid National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) permit for your feedlot operation and are you in compliance with Minnesota Administrative Rules Chapter 7020, Animal Feedlots?	☐	☐
2	Are you in compliance with the Minnesota Wetlands Conservation Act (Minnesota Statutes Section 103G.221-103G.2375)?	☐	☐
3	Are you in compliance with Subsurface Sewage Treatment Systems (septic system) requirements (Minnesota statute 115.55 and 115.56)?	☐	☐
4	Are you in compliance with the Federal Insecticide, Fungicide, and Rodenticide Act and Minnesota statues (18B, 18C, 18D, 103H) regarding pesticide and fertilizer distribution, use, storage, handling and disposal?	☐	☐
5	Are you in compliance with the local shore land management ordinance?	☐	☐

If you are not in compliance with any of the above questions, your MAWQCP representative can assist you with information on technical and financial assistance to resolve eligibility.

When you are able to answer Yes or N/A to each of the above questions, you are eligible for MAWQCP certification.
(Note: all MAWQCP-certified parties are subject to audit of compliance with the terms of your MAWQCP certification.)

I understand that at the time of certification I must be in compliance with existing applicable state water protection rules and regulations.
I understand that I have priority status for technical and financial assistance to reach certification.

Applicant Name (Print) _____ Date _____

Applicant Signature _____

In accordance with the Americans with Disabilities Act, this information is available in alternative forms of communication upon request by calling 651-201-6000. TTY users can call the Minnesota Relay Service at 711 or 1-800-627-3529. The MDA is an equal opportunity employer and provider.

AG-03147
2/14

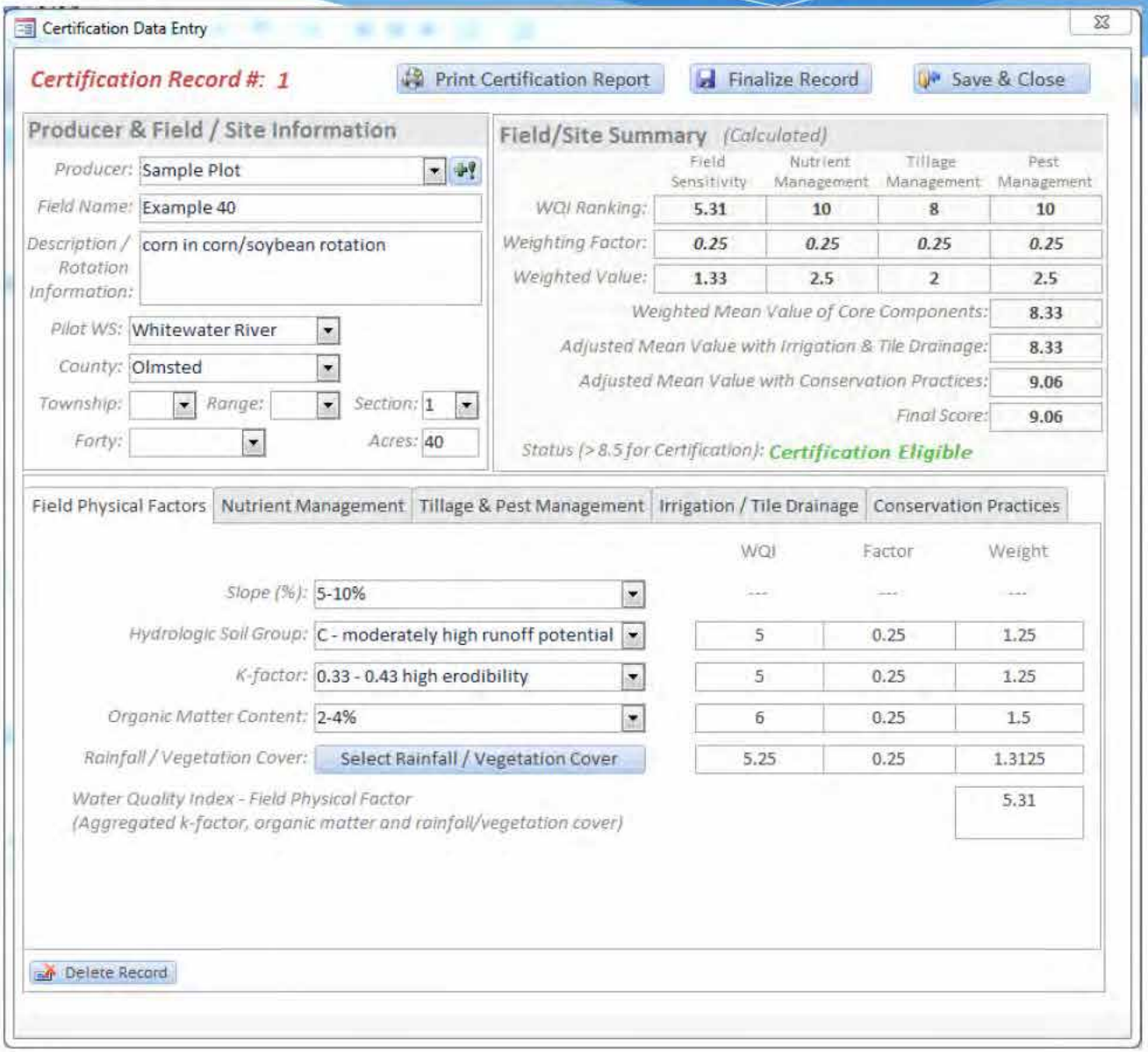
Assessment Tool

Unitless risk-assessment index scoring between 0 – 10 based on the following criteria with site inspection:

1) Field characteristics and soil physical/erosion factors,
2) Nutrient management factors,
3) Tillage management factors,
4) Pest management factors,
5) Irrigation and tile drainage management,
6) Additional conservation practices

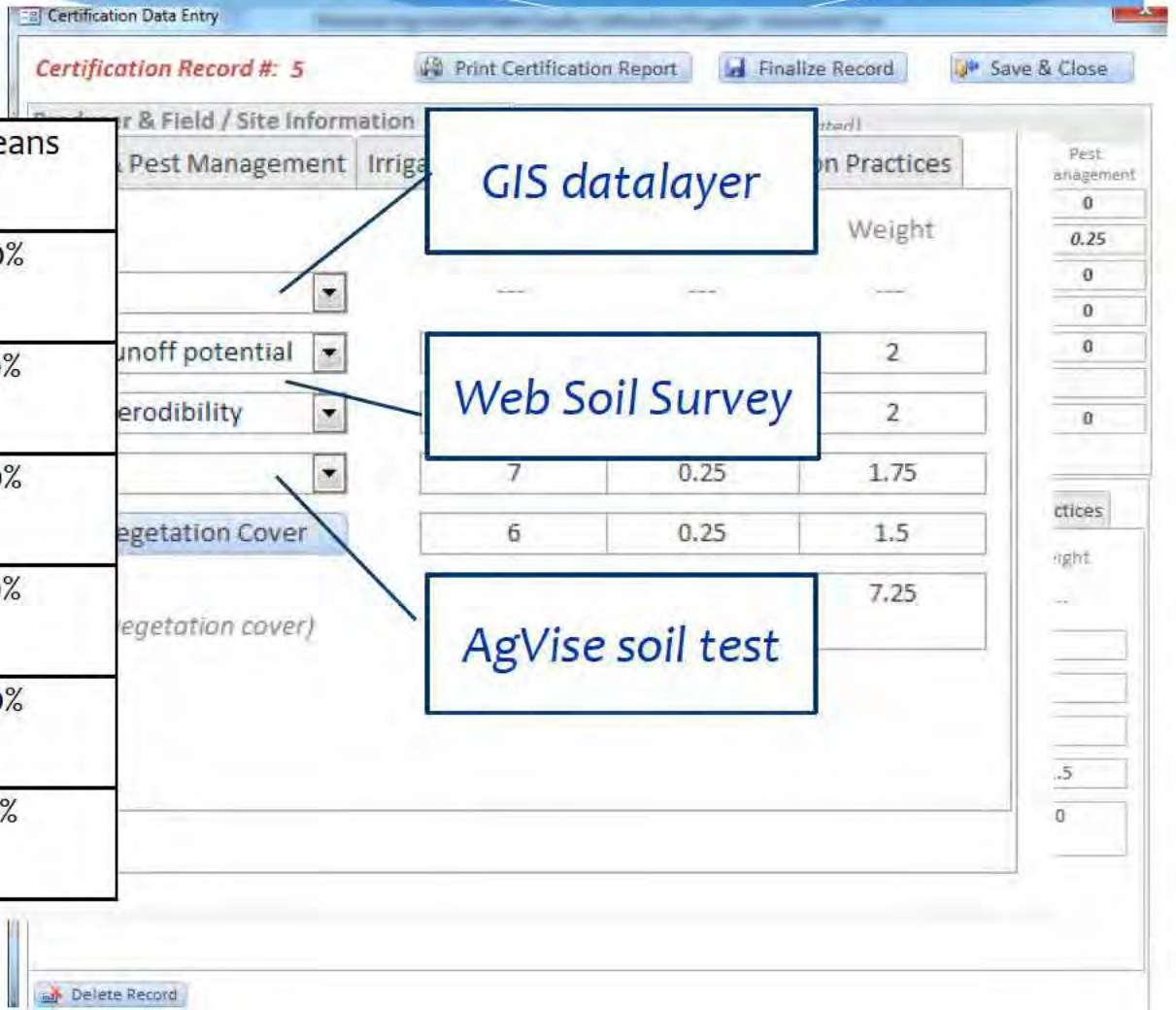
Assessment Tool

* Parcel specific by each crop
* A systems approach rather than one specific focus



Assessment Tool

Operation	Corn/small grain	soybeans
After harvest	90-95%	60-80%
Over-winter decomposition	80-95%	70-80%
Combination secondary tillage	50-75%	30-60%
Chisel- twisted	50-70%	30-40%
Chisel	60-80%	40-60%
Disk	40-70%	25-40%



Nutrient Management
Nitrogen Rate

Nitrogen application rate and associated score

Application Rate	MAWQCP Score
Legume / No Nitrogen Applied	10
UMN BMP Recommendation	10
10% over the BMP ranges	7
20% over the BMP ranges	5
30% over the BMP ranges	2
50% over the BMP ranges	1

Nutrient Management
Rate

Justification

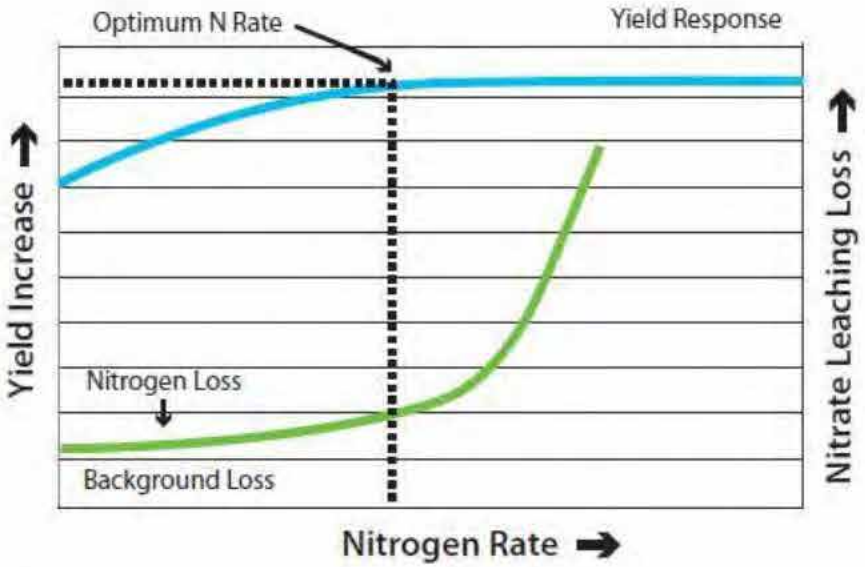
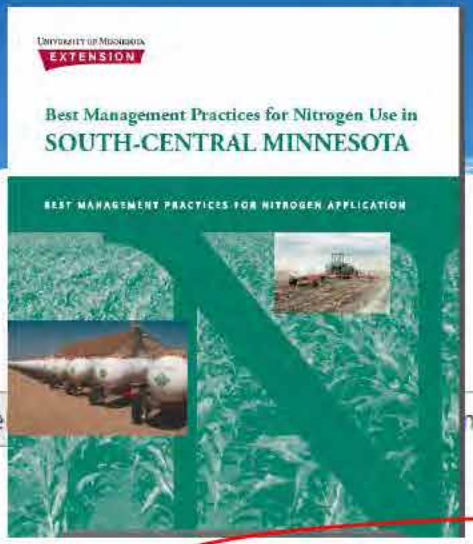


Figure 6. Importance of using optimum N rate for greatest profit and minimal nitrate-N loss.

- Our MN N rate BMP's were developed with environmental and agronomic concerns in mind, and many of our BMP regions have environmental N loss data to go along with the crop response data.
- While we acknowledge that the nutrient use efficiency declines as rate increase, incentivizing the "mining of native fertility" by encouraging under application of N and P creates more problems than it solves.

Assessment Tool



Certification Data Entry

Certification Record #: 11

Print Certification Report | Finalize Record | Save & Close

Producer & Field / Site Information

Producer: John Doe Farms

Field/Site Summary *(Calculated)*

Fie ment | Tillage & Pest Management | Irrigation / Tile D

Nitrogen Application Rate:	MN BMP recommendation			
Phosphorus Application Rate:	UMN recommendation	10	0.21	2.1
Synthetic Fertilizer Timing:	Recommended			
Synthetic Fertilizer Source:	Recommended			
Synthetic Fertilizer Placement:	Recommended			
Manure Application Timing & Placement:	Incorporated / Injected Fall ST < 50° F			

Water Quality Index - Nutrient Management Factors
(Aggregated value of Nutrient Management Factors)

Regional Nitrogen BMPs

Fertilizer Recommendations for Agronomic Crops in Minnesota

Delete Record

Delete Record

Soil Test P tables

Compare to regionally-based BMPs

Assessment Tool

Goal: Determine actual N rates

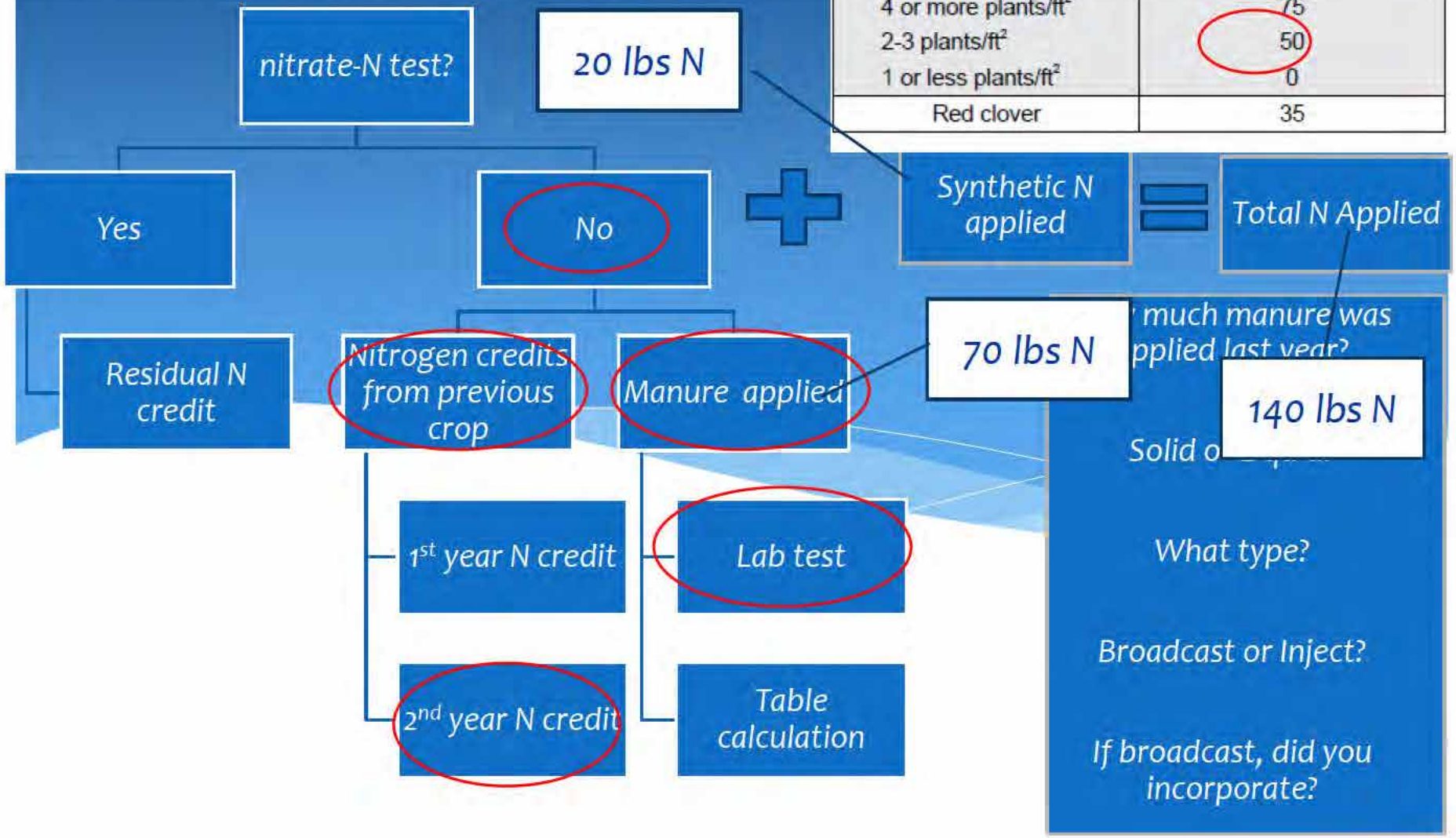


Table 6. Nitrogen credits for some forage legumes if corn is planted two years after the legume.

Legume crop	2nd year nitrogen credit
	lb N per acre
Harvested **alfalfa**	
4 or more plants/ft^2	75
2-3 plants/ft^2	50
1 or less plants/ft^2	0
Red clover	35

Nutrient Management
Timing, Source and Placement

Synthetic Fertilizer

Regional Synthetic N Recs	Source	Timing	Placement
Recommended	10	10	10
Acceptable with Risk	6	6	6
Not Acceptable	1	1	1

Manure Fertilizer

Manure Fertilizer Recs	Spring	Fall ST < 50°F	Fall ST > 50°F	Frozen Soil
Incorporated/Injected	10	8	4	N/A
Unincorporated	6	3	2	1

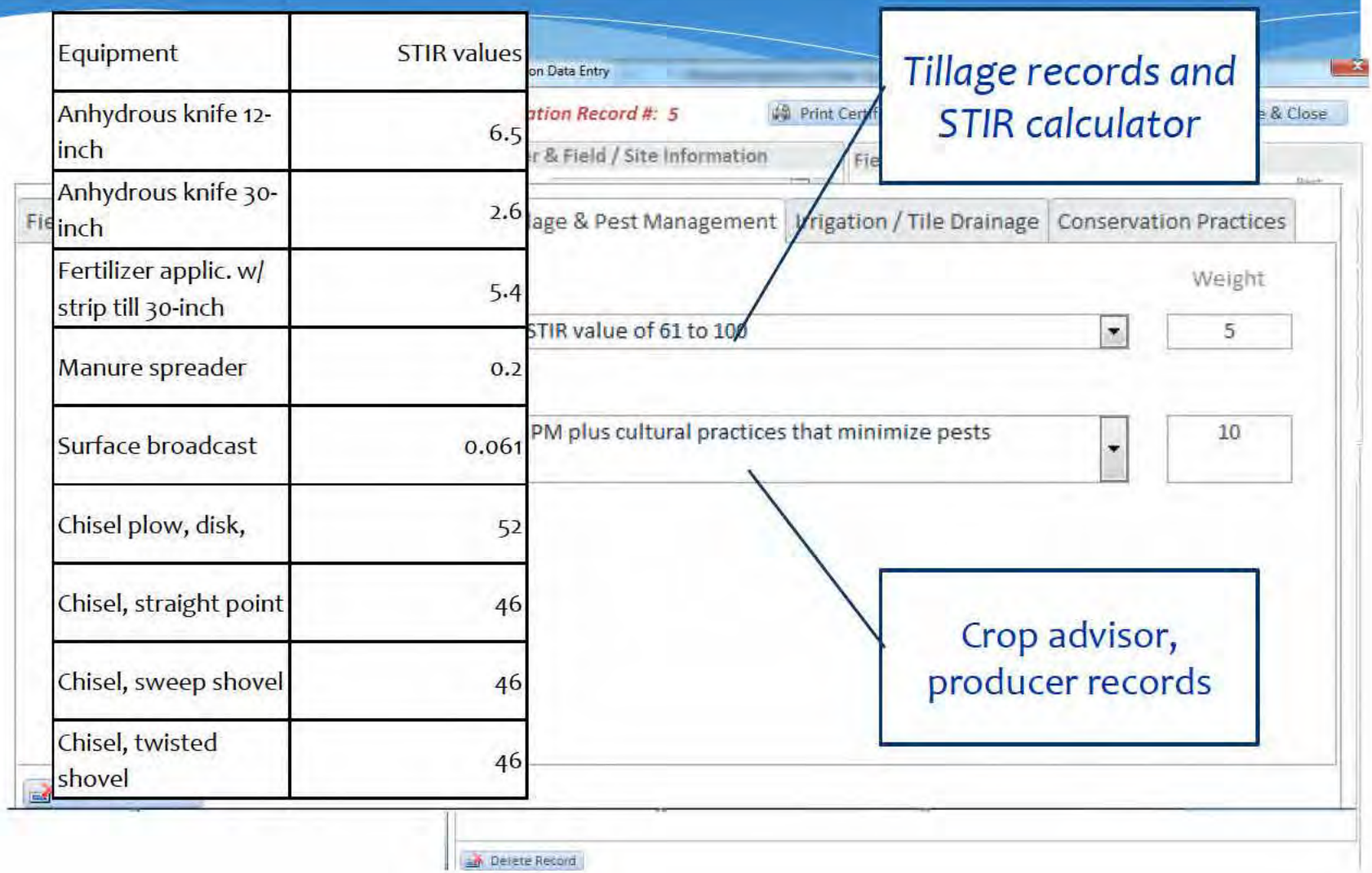
Fall ST= Soil Temperature

Tillage Management

Tillage Description	STIR Value	WQI-tm
No Till	< 30	10
Mulch Till	31 to 60	8
Conventional Till	60 to 100	5
Intensive Till	> 100	2

Assessment Tool

Equipment	STIR values
Anhydrous knife 12-inch	6.5
Anhydrous knife 30-inch	2.6
Fertilizer applic. w/ strip till 30-inch	5.4
Manure spreader	0.2
Surface broadcast	0.061
Chisel plow, disk,	52
Chisel, straight point	46
Chisel, sweep shovel	46
Chisel, twisted shovel	46



Pest Management

Description of Practice	MAWQCP Score
Advanced IPM: Low risk IPM plus cultural practices that minimize pests	10
Low Risk IPM: Basic IPM plus using alternatives with lower risk for runoff or rotation of pesticides	7.5
Basic IPM: Low risk control plus threshold-based suppression	7
Low Risk Pest Control: Basic control plus using < maximum label rates	5
Basic Pest Control: Suppression with only label-required mitigation (i.e. setbacks)	2

Pest Management

IPM Practice Level (from Table 12-A)	Pesticide BMP factors	
Advanced IPM: low risk IPM plus uses cultural practices that minimize pests	Adjusts planting rates, timing, crop rotations, irrigation schedules or field machinery cleaning to disrupt or otherwise minimize annual carryover of pests or field conditions for pest outbreaks.	
Low Risk IPM: basic IPM plus uses alternatives with lower risk for runoff and/or rotates pesticides	Works with professionals to select pesticides with low loss ratings for soil runoff and/or rotates among those with different modes of action.	
Basic IPM: low risk control plus uses threshold-based suppression	Scouts fields for pests, maps infestations each year. Determines if control results in crop yield benefits or longer term pest suppression.	
	Core BMP factors for farmer using any synthetic or organic pesticide	Pesticide-specific BMP factors for farmer using acetochlor, atrazine or chlorpyrifos
Low Risk Pest Control: basic control plus uses < maximum label rates and any pesticide-specific additional vegetative buffers or application setbacks	Reduces application rates based on a label "rate range" and/or precision application methods; scouts for weed escapes or pest outbreaks, with subsequent applications only when necessary.	Atrazine: • Uses ≤ 0.8 lbs a.i./yr in SE MN except on medium and fine textured soils where up to 1.0 lbs a.i. yr can be used. • Employs application setbacks or buffers around tile inlets. Acetochlor: • Uses lower, early-season post-emerge weed control in herbicide tolerant crop production. • Installs a 30-ft. or wider vegetative filter strip (66 ft. if in a watershed with acetochlor impairments) at points of field runoff.
Basic Pest Control: suppression with only label-required mitigation (e.g., vegetative buffers or application setbacks)	Reads labels and abides by legally required water quality protection restrictions.	Atrazine: Does not apply within 200 feet of lakes and reservoirs, and 66 feet from points where runoff enters streams and rivers. Acetochlor: If applied with atrazine, application setbacks for atrazine are followed. Chlorpyrifos: For soil- or foliar-applied liquid products, does not apply: • within 25 ft. of water bodies for ground applications; • within 150 ft. of water bodies for aerial applications. For soil applied granular products, does not apply: • within 150 ft. of water bodies for aerial applications.

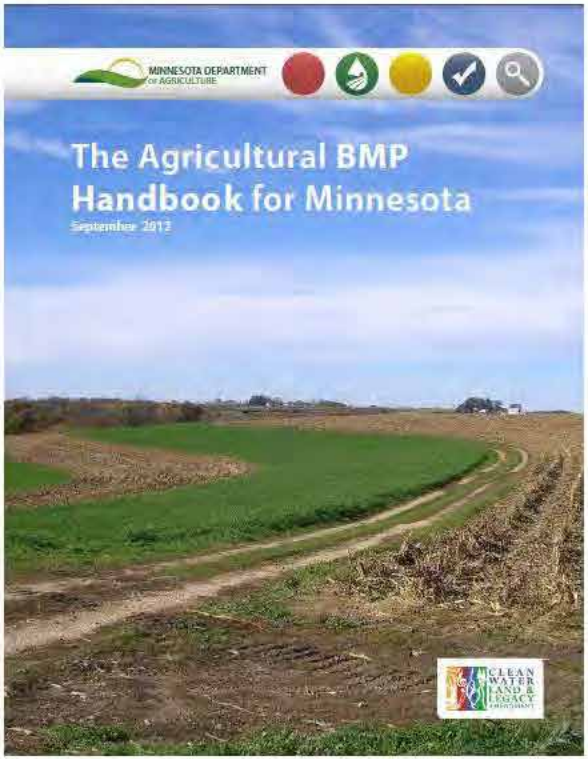
Irrigation

Irrigation Method	MAWQCP Adjustment
Center Pivot	-10.0%
Center Pivot with CP449	-1.5%
Trickle/Drip	0.0%
No Irrigation	0.0%
Sprinkler	-5.0%

Tile Drainage

Tile Drain System	MAWQCP Adjustment
No Tile Drain	0.0%
Tile Drain, open surface inlets	-20.0%
Tile Drain, no open surface inlets	-15.0%
Tile Drain with Drainage Water Management	10.0%
Tile Drain, no open surface inlets and average of NM and TM ≥ 9	0.0%

Conservation Practices



Conservation Practice		Sediment Effectiveness Range (mean) %	Total P Effectiveness Range (mean) %	Nitrogen Effectiveness Range (mean) %	Pesticide Effectiveness Range (mean) %
Name	Type				
Contour Strip- Cropping	Field	43-95 (77)	8-93 (44)	20-55 (37)	
Contour Buffer Strip	Field	83-91 (87)	49-80 (62)	27-50 (36)	53-77 (67)
Sediment Basins	External	60-90 (84)	34-73 (50)	30	
Field Borders	Field	76-91 (86)	38-96 (65)	27	57-75 (66)
Riparian Forest Buffer	External	41-93 (67.5)	53-98 (75.5)	67.5	
Filter Strip	External	76-91 (86)	38-96 (65)	27	57-75 (66)
Grass Waterway	External	77-97 (87)			47-83 (65)
Conservation Cover	Field	Up to 90			
Water & Sediment Control Basin	External	97-99 (98)	64-80 (73)		
Grade Stabilization Structure	Field	99			

Field Verification

- Existing conservation practices are reviewed, setbacks and buffers paced, tile inlets examined, areas susceptible to gullies visited, tillage and crop rotation confirmed among other checks.

Sample Farm A

Renville County, MN

- CROP: Corn
- Slope is < 2%
- Synthetic nitrogen and phosphorous fertilizer within state BMP ranges for rate, placement & timing (this includes Fall application for this region)
- Tillage:
  - Mulch Till
- Advanced Integrated Pest Management:
  - Scout for pest thresholds
  - Corn-bean rotation
- Subsurface Tile Drainage

MINNESOTA WATER QUALITY CERTIFIED FARM

Sample Farm A
Assessment Tool Calculation

1) Field Physical Sensitivity: 7.9
2) Nutrient Management: 10
3) Tillage Management: 8
4) Pest Management: 10

Preliminary score: 8.9

5) No Irrigation and no Tile Drainage adjustment because NM & TM average $\geq$ 9
6) Conservation Practices: eligibility standard achieved

CERTIFICATION ELIGIBLE

MINNESOTA WATER QUALITY CERTIFIED FARM

Sample Farm B

Olmsted County, MN

- Crop: Corn
- Slope is 5%-10%, more erodible soils
- Synthetic nitrogen and phosphorous fertilizer within state BMP ranges for rate, timing, and placement
- Mulch tillage
- Advanced Integrated Pest Management:
  - Scout for pest thresholds
  - Corn-bean rotation

Sample Farm B
Assessment Tool Calculation

1) Field Physical Sensitivity: 5.3
2) Nutrient Management: 10
3) Tillage Management: 8
4) Pest Management: 10

Preliminary score: 8.3

5) No Irrigation or Tile Drainage
6) Conservation Practices: Grass Waterway **9.05**

CERTIFICATION ELIGIBLE

MINNESOTA WATER QUALITY CERTIFIED FARM

Certified

Minnesota Agricultural Water Quality Certification: Record #: 9

Producer & Field/Site Information

Producer: Example Farms

Field Name: S-40

Description / Rotation Information: Corn in a Corn-Soy rotation

Pilot WS: Whitewater River

County: Olmsted

Township: *Range:* *Section:*

Forty: *Acres:* 40

Field/Site Summary

	Field Sensitivity	Nutrient Management	Tillage Management	Pest Management
WQI Ranking:	5.25	10	8	10
Weighting Factor:	0.25	0.25	0.25	0.25
Weighted Value:	1.31	2.5	2	2.5

Weighted Mean Value of Core Components: 8.31

Adjusted Mean Value with Irrigation & Tile Drainage: 8.31

Adjusted Mean Value with Conservation Practices: 9.05

Final Score: 9.05

Status (> 8.5 for Certification): ***Certification Eligible***

Field Physical Sensitivity

Slope (%): 5-10%

HSG: C - moderately high runoff potential

K-factor: 0.33 - 0.43 high erodibility

Organic Matter: 2-4%

Precipitation Station: Elgin 2 SSW

Nutrient Management

Nitrogen Application Rate: MN BMP recommendation

Phosphorus Application Rate: UMN recommendation

Synthetic Fertilizer Timing: Recommended

Synthetic Fertilizer Source: Recommended

Synthetic Fertilizer Placement: Recommended

Manure Application Timing & Placement: No Manure Applied

Tillage Management

Mulch Till with a STIR value of 31 to 60

Pest Management

Advanced IPM: Low risk IPM plus cultural practices that minimize pests

Tile Drain System & Irrigation Management

Tile Drain System: No Tile Drain (0%)

Irrigation Method and Adjustment: No Irrigation (0%)

Conservation Practices

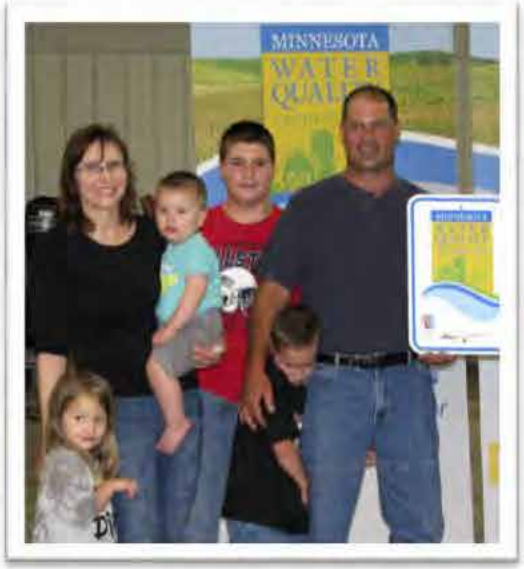
Conservation Practice 1: Grass Waterway

Conservation Practice 2:

Conservation Practice 3:

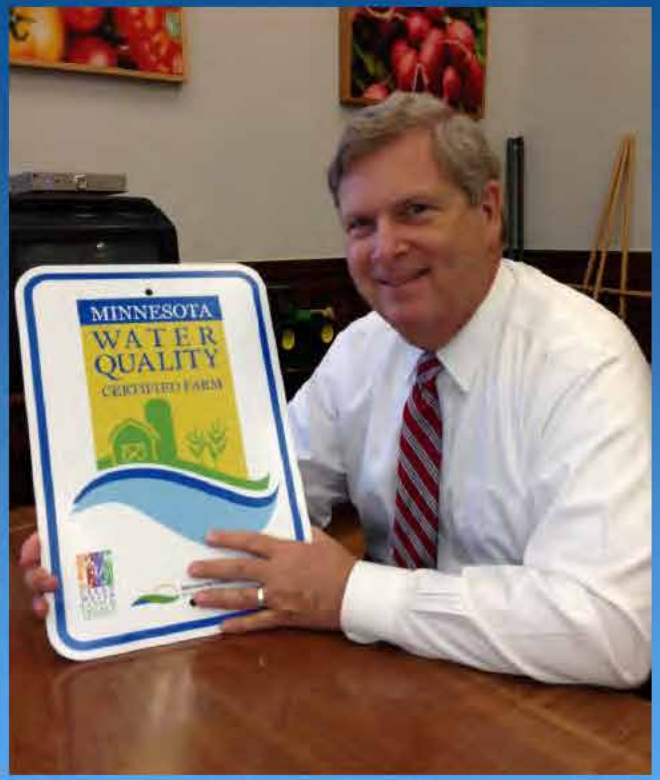
Certification Acknowlegement

This site has been reviewed for the Minnesota Agricultural Water Quality Program and meets certification requirements.



* 10 year term of certification, with amendments and re-certification as desired.

Questions?



MINNESOTA WATER QUALITY CERTIFIED FARM

www.mda.state.mn.us/awqcp

CLEAN WATER LAND & LEGACY AMENDMENT