

NOTICE: This document is required under s. 281.65, Wis. Stats., and chs. NR 153 and 154, Wis. Adm. Code. A final project report must be submitted as part of the final reimbursement request. Personally identifiable information contained in this form will be used for determining reimbursement eligibility in the Targeted Runoff Management and Notice of Discharge Grant Programs and will not be used for any other purpose.

INSTRUCTIONS: Send the completed, electronic copy of this form and all attachments to the Department of Natural Resources (DNR) Region Nonpoint Source Coordinator. Please read all instructions prior to completion.

Grant Type							
Select Grant Type Small Scale Non Total Maximum Daily Load (TMDL)							
Project Name & Location							
Project Name							
Retzlaff Ag Waste Project							
Grant Number				Governmental Unit Name			
TRC-TRC59000Y16				Shawano County			
County		Watershed Name		12-Digit HUC			
Shawano		Middle Wolf River		040302020902			
Project Contact Name			Phone Number		E-mail Address		
Brian Hanson			(715) 526-4636		brian.hanson@co.shawano.wi.us		
<input type="checkbox"/> For a project with multiple site locations, an aerial photo map is attached with each site location labeled.							

Site Location - 1							
Name of Cost-Share Recipient					Animal Units	Nearest Receiving Waterbody	
Nathan Retzlaff					500	UN Trib. to Schoenick Creek	
Township	Range	E / W	Section	Quarter	Quarter/Quarter	Latitude	Longitude
26	15	E	14	SW	SW	44.7225	-88.6438
Compliance Requirements - 1							
Chs. NR 151 or 243 Wis. Adm. Code Notice Type		Notice letter attached	Compliance achieved? If no, explain in site information			Compliance determination letter attached	
		<input type="checkbox"/>	<input checked="" type="radio"/> Yes <input type="radio"/> No			<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> Attached is a copy of the written statement the County provided to the landowner and cost-share recipient of the landowner's obligation to maintain compliance with performance standards & prohibitions on cropland and livestock facilities addressed by the cost-share agreement. Compliance at these sites must be maintained in perpetuity regardless of future cost sharing. The County has also placed a copy of this written statement in the County files.							

Summary of Results - 1							
Best Management Practice Installed	Quantity	Unit of Measure	Performance Standard/Prohibition Addressed	Total Installation Cost	Load Reduction		
					Phosphorus lbs/yr	Nitrogen lbs/yr	Sediment Tons/yr
Manure Storage Systems	1	No.	Code(s) 4	\$216,789.93			
Milking Center Waste Control Systems	1	No.	Code(s) 7	\$1,000.00	267	537	
Waste Transfer Systems	1	No.	Code(s) 4	\$117,072.89			
Relocate/Abandon Animal Feeding Operations	1	No.	Code(s) 12	\$0.00	82.6		
Nutrient Management	428	Acres	Code(s) 9	\$0.00	442.3	613.3	
Waterway Systems	2	Acres	Code(s) 1	\$0.00	74.1	192.5	104.6

Site Location Attachment - 1	
Check the box if the required information for the site is attached:	
<input checked="" type="checkbox"/> Photos of pre-and post-implementation of BMP(s)	<input checked="" type="checkbox"/> Load reduction modeling documents
<input checked="" type="checkbox"/> Aerial photo map of site with BMPs labeled	<input type="checkbox"/> Water quality monitoring results/summary, if applicable

Site Information - 1

Narrative space will expand to fit

During the initial grant application, there were 4 main BMP's that were the target of this grant. They were identified as:

- 1) Manure Storage System
- 2) Waste Transfer System
- 3) Milking Center Waste Control
- 4) Nutrient Management

All 4 of these BMP's were installed as planned. However during a comprehensive site visit for an EQIP application in 2015, staff identified a few other resource concerns that may be violations of NR 151. We identified 2 small gully erosion issues on the north side of the freestall barn & also an outdoor feedlot that drained through a pipe and helped to form one of the gullies and probably was leading to a discharge to the unnamed creek at the bottom of the hill. The landowner agreed to install a grass waterway at each gully locations & also agreed to abandon the outdoor lot eliminating the runoff concern by moving the animals to a new freestall barn that was being built as part of the overall farm upgrades. There was no cost sharing for these BMP's as part of this grant, however we did include them as part of the summary of results & also included them in the continuing compliance determination letter. By completing all of these BMP's on this property, it is now in complete compliance with all of the NR 151 requirements.

DNR may use this site as a success story to meet state and federal reporting needs.

Additional Project Information and/or Comments

Narrative space will expand to fit

Grantee Certification

A responsible government official (authorized signatory) must authorize and date the final report form prior to submittal to DNR.

I certify that, to the best of my knowledge, the project is complete and the information contained in this final report and attachments are correct and true.

Name of Authorized Government Official	Title of Authorized Government Official	Date
Scott M. Frank	County Conservationist	02/07/2018

For DNR Use Only

- Received complete reports with all attachments Practices implemented were consistent with the grant agreement

Comments about this project:

I did not make it out to the site but pictures and communications with Shawano County staff indicate the project was completed as designed.

Name of Region Nonpoint Source Coordinator	Date
Eric Evensen	03/06/2018

Send the Final Report and attachments to the Community Financial Assistance Grants Manager and to the Runoff Management Grant Coordinator. Keep a printed copy for the Region file.



Un Named Creek
Waters of the State

Gully Erosion Present

Pipe Outlet from
Milkhouse & Feedlot

Barn

Existing Milkhouse

Existing Feedlot


Legend

 Waterbodies

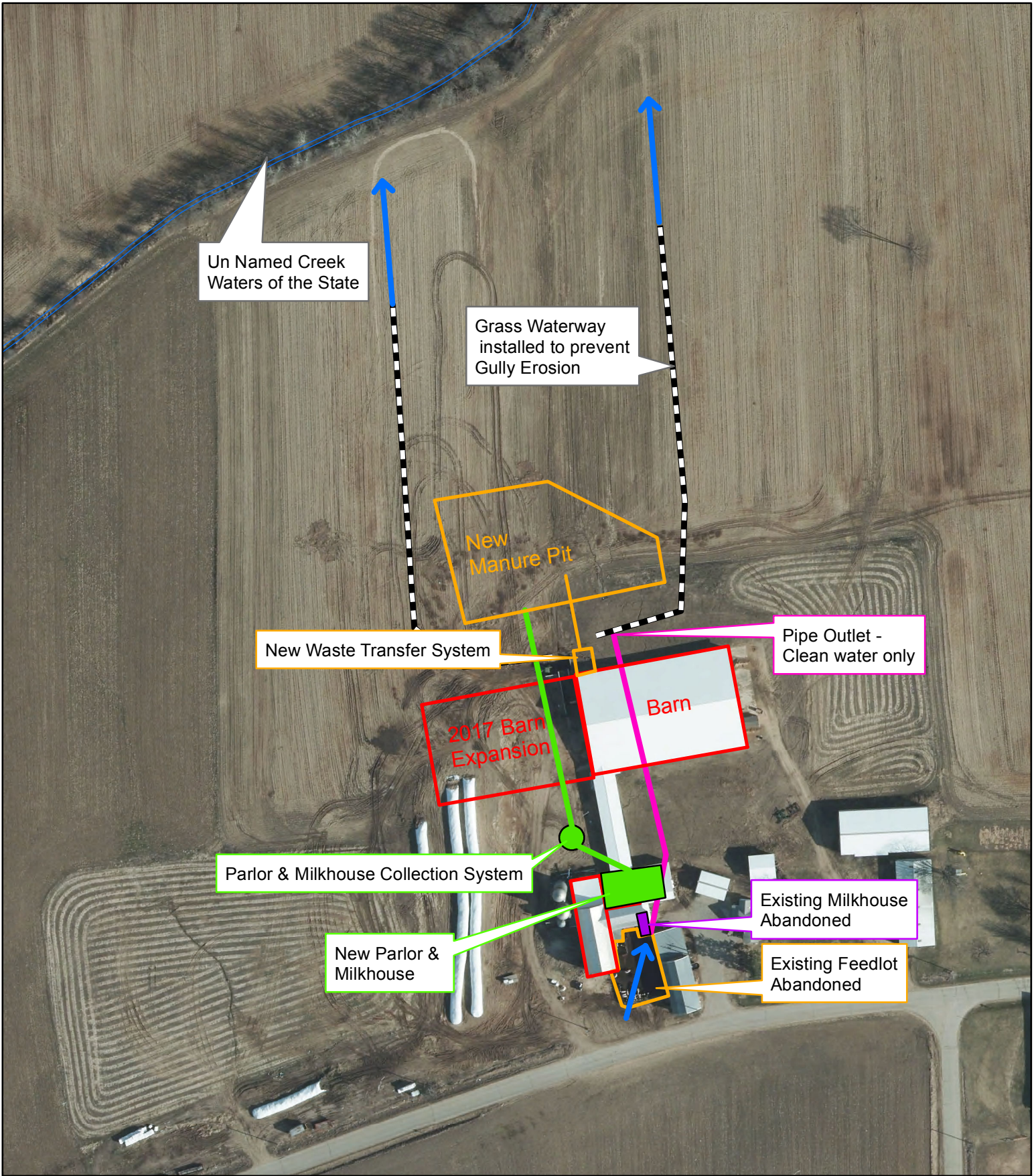
**T.26N. - R.15E.
Belle Plaine
Section 14**

**Nate Retzlaff
Farm
2016 Conditions**



0 75 150 300 Feet


1 inch = 154 feet



Un Named Creek
Waters of the State

Grass Waterway
installed to prevent
Gully Erosion

New
Manure Pit

New Waste Transfer System

Pipe Outlet -
Clean water only

Barn

2017 Barn
Expansion

Parlor & Milkhouse
Collection System

Existing Milkhouse
Abandoned

New Parlor &
Milkhouse

Existing Feedlot
Abandoned

Legend

 Waterbodies

**T.26N. - R.15E.
Belle Plaine
Section 14**

Nate Retzlaff

Farm

**Post Construction
Conditions**



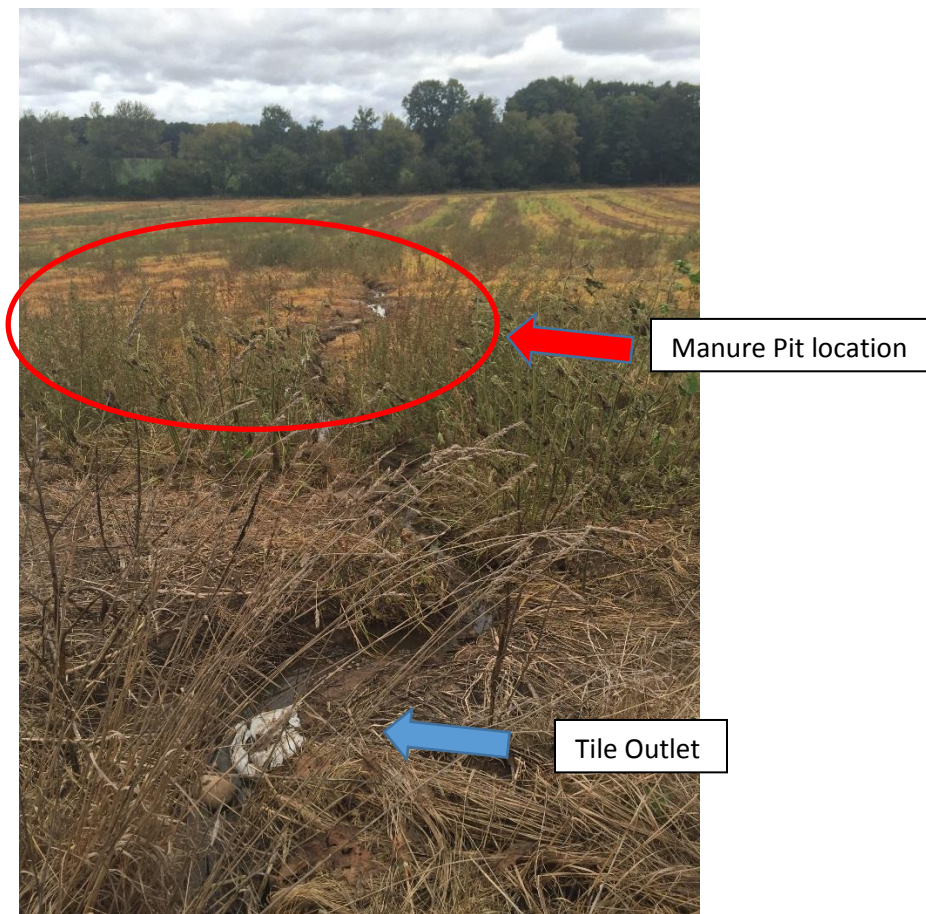
0 75 150 300 Feet

1 inch = 150 feet

Outdoor Feedlot & old milkhouse which drained to Un Named Creek. Will both be abandoned at completion of project.



Outlet from feedlot showing Runoff & cahannelized flow



Gully erosion from channelized flow from farmstead.



New Manure Pit – Looking West from Top of ramp



Milkhouse Waste outlet into manure Pit – Gravity Drain System



Waste Transfer – 2 Cell Tanks with covers & hydraulic piston pump system



Waste Transfer – 18" Auger Channel with sand auger & slatted grating



Barnyard Relocating Load Reduction

BUFFER DESIGN USING BARNY (existing conditions)

OWNER: Nate Retzlaff

DESIGNER: BGH

DATE: 1/18/2018

CHK BY: _____

DATE: _____

	Input	Output	1 Madison
			2 Appleton
Closest City of similar climate:	<input type="text" value="2"/>		3 Wausau
			4 Eau Claire
Paved lot area:	<input type="text" value="4,200"/>	sq ft	
Earth lot area:	<input type="text" value="0"/>	sq ft	
Animal Lot size:		<input type="text" value="4,200"/>	sq ft
Is there a DESIGNED settling basin	<input type="text" value="2"/>	Yes= 1; No= 2	
Animals on lot:	<input type="text" value="40"/>	number	
Type of animal:	<input type="text" value="1"/>		(Dairy = 1; Beef=2)
Ave. Animal Weight:	<input type="text" value="600"/>	lbs	
Lot Use:	<input type="text" value="1"/>		1= Heavy; 2= Medium; 3= Light)

TRIBUTARY AREAS

Tributary area:	<input type="text" value="8,000"/>	sq ft	<input type="text" value=""/>	sq ft
Runoff Curve Number:	<input type="text" value="92"/>			
Roof area:	<input type="text" value="3,700"/>	sq ft		

82.6 lbs P per year at D.S. Lot edge:

Maximum permissible P Output that can be released	<input type="text" value="15"/>	lbs	Your choice based on impacted resources- Max is 15
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BUFFERS - Size by trial and error

First Buffer	Length: <input type="text"/>	ft (See Note Below)
	Slope: <input type="text"/>	
	"c" : <input type="text"/>	→
Second Buffer	Length: <input type="text"/>	ft
	Slope: <input type="text"/>	
	"c" : <input type="text"/>	

P (lbs) after the buffers: **82.6** lbs P per year

NO GOOD - Too much P released

"c" Value Table	
Permanent Meadow	0.59
Woods, Heavy Litter	0.59
Woods, Lt Ltr	0.29
Well managed grazing	0.44
Fair managed grazing	0.29
Good Pasture	0.22
Fair Pasture	0.15
Small Grain	0.29
Legume	0.29
Contoured Row Crop	0.29
Non-contoured row crop	0.05

BUFFER SIZING

Chosen Buffer Width	<input type="text"/>	feet	6,300 sq ft	Min. Acceptable Buffer Area
Chosen Buffer Length	<input type="text"/>	feet	0 feet	Min. Bfr. Len. Based on BARNY
			#DIV/0!	Min. Bfr. Len. Based on Area
			#DIV/0!	

section
4

SOURCE CONTROL

Sources and Characteristics of Milking Center Wastewater

Washing milking and milk cooling equipment contribute waste milk, cleaning compounds and sanitizers to the wastewater discharge. Frequently, excess colostrum and antibiotic treated milk is poured into the floor drain contributing to the wastewater discharge. Milkroom wash down can contain dirt, floor lime, feed particles, and manure. Water softener discharge can contribute chloride, calcium and magnesium to the discharge. The above is common to both milking parlors and stanchion barn pipeline milking systems. In addition to the above, wash down of milking parlors and holding areas can contain waste milk, manure, feed and soil. Management can greatly affect the quantity and level of contamination in the milking center wastewater discharge.

Table 5 provides some values for the various discharge quantities and contamination levels. By including flows from the various components of a system, one can see how the quantity and contamination level varies. One must realize how significant the management factor contributes to the degree of contamination. Source control practices can reduce the volume and quantity of contaminants discharged from the milking center.

Table 5 Dairy waste characterization - milking center^a

Component	Units	Milk House Only	Milk House & Parlor	Milk House, Parlor, & Holding Area ^a	Milk House, Parlor, & Holding Area ^b
Volume	ft ³ /day/1000lb	0.22	0.60	1.40	1.60
Water Volume	gal/d/ay/1,400 lb cow	2.3 ^c	6.3 ^c	14.7 ^c	16.8 ^c
Moisture	%	99.72	99.40	99.70	98.50
Total Solids	% wet basis (w.b.)	0.28	0.60	0.30	1.50
Volatile Solids	lb/1,000 gal	12.90	35.00	18.30	99.96
COD (chemical oxygen demand)	lb/1,000 gal	25.30	41.70	-	-
BOD ₅	lb/1,000 gal	-	8.37	-	-
N	lb/1,000 gal	0.72	1.67	1.00	7.50
P	lb/1,000 gal	0.58	0.83	0.23	0.83
K	lb/1,000 gal	1.50	2.50	0.57	3.33

^aHolding area scraped and flushed - manure excluded.

^bHolding area scraped and flushed - manure included.

^cThese values may vary by up to 500%.

^dWright and Graves, 1992

$$140 \text{ cows} = 882 \text{ gal/day} = 321,930 \text{ gal/year}$$

$$\begin{aligned} \text{BOD} &= 2695 \\ \text{N} &= 537 \\ \text{P} &= 267 \end{aligned}$$

Input data for STEPL calculations

Selected Watershed Information

State	County	FIPS	Watershed Name	HUC12	Watershed Total Area (acre)
Wisconsin	Shawano	55115	Schoenick Creek	40302020902	18574.54

Landuse area (acres)

Watershed Name	HUC12	Urban	Cropland	Pastureland	Forest	User Defined	Feedlots	Water	Others
Schoenick Creek	40302020902	827.73	5923.25	2955.61	8584.85	0	2.483	283.1	0

Agricultural Animals

Watershed Name	HUC12	Beef Cattle	Dairy Cattle	Swine	Sheep	Horse	Chicken	Turkey	Duck
Schoenick Creek	40302020902	1897	1373	116	41	66	744	2	7

Septic System data

Watershed Name	HUC12	Septic Systems	Population per Septic Syst	% Septic Failure Rate
Schoenick Creek	40302020902	118	2	0.96

Hydrologic Soil Group

Watershed Name	HUC12	Hydrologic Soil Group
Schoenick Creek	40302020902	B

STEP 1

Nutrient Management Load Reduction

Total Load This is the summary of annual nutrient and sediment load for each subwatershed. This sheet is initially protected.

1. Total load by subwatershed(s)

Watershed	N Load (no BMP)	P Load (no BMP)	BOD Load (no BMP)	Sediment Load (no BMP)	E. coli Load (no BMP)	N Reduction	P Reduction	BOD Reduction	Sediment Reduction	E. coli Reduction	N Load (with BMP)	P Load (with BMP)	BOD (with BMP)	Sediment Load (with BMP)	E. coli Load (with BMP)	%N Reduction	%P Reduction	%BOD Reduction	%Sed Reduction	%E. coli Reduction
	lb/year	lb/year	lb/year	t/year	Billion MPN/yr	lb/year	lb/year	lb/year	t/year	Billion MPN/yr	lb/year	lb/year	lb/year	t/year	Billion MPN/yr	%	%	%	%	%
W1	86268.9	21181.5	161348.9	4115.9	0.0	613.0	442.3	0.0	0.0	0.0	85655.9	20739.2	161348.9	4115.9	0.0	0.7	2.1	0.0	0.0	0.0
Total	86268.9	21181.5	161348.9	4115.9	0.0	613.0	442.3	0.0	0.0	0.0	85655.9	20739.2	161348.9	4115.9	0.0	0.7	2.1	0.0	0.0	0.0

2. Total load by land uses (with BMP)

Sources	N Load (lb/yr)	P Load (lb/yr)	BOD Load (lb/yr)	Sediment Load (t/yr)	E. coli Load (Billion MPN/yr)
Urban	3496.64	538.08	13381.19	80.38	0.00
Cropland	65855.42	17513.84	106317.76	3494.57	0.00
Pastureland	10341.40	1121.56	32214.57	348.75	0.00
Forest	1186.87	565.48	2845.61	75.97	0.00
Feedlots	4532.69	906.54	6043.59	0.00	0.00
User Defined	0.00	0.00	0.00	0.00	0.00
Septic	28.98	11.35	118.36	0.00	0.00
Gully	213.90	82.35	427.80	116.25	0.00
Streambank	0.00	0.00	0.00	0.00	0.00
Groundwater	0.00	0.00	0.00	0.00	0.00
Total	85655.90	20739.20	161348.87	4115.92	0.00

428 Acres of Nutrient Management in this watershed

STEPL

Gully Loads Reduction

Total Load This is the summary of annual nutrient and sediment load for each subwatershed. This sheet is initially protected.

1. Total load by subwatershed(s)																				
Watershed	N Load (no BMP)	P Load (no BMP)	BOD Load (no BMP)	Sediment Load (no BMP)	E. coli Load (no BMP)	N Reduction	P Reduction	BOD Reduction	Sediment Reduction	E. coli Reduction	N Load (with BMP)	P Load (with BMP)	BOD (with BMP)	Sediment Load (with BMP)	E. coli Load (with BMP)	%N Reduction	%P Reduction	%BOD Reduction	%Sed Reduction	%E. coli Reduction
	lb/year	lb/year	lb/year	t/year	Billion MPN/yr	lb/year	lb/year	lb/year	t/year	Billion MPN/yr	lb/year	lb/year	lb/year	t/year	Billion MPN/yr	%	%	%	%	%
W1	86268.9	21181.5	161348.9	4115.9	0.0	192.5	74.1	385.0	104.6	0.0	86076.4	21107.4	160963.9	4011.3	0.0	0.2	0.3	0.2	2.5	0.0
Total	86268.9	21181.5	161348.9	4115.9	0.0	192.5	74.1	385.0	104.6	0.0	86076.4	21107.4	160963.9	4011.3	0.0	0.2	0.3	0.2	2.5	0.0

2. Total load by land uses (with BMP)					
Sources	N Load (lb/yr)	P Load (lb/yr)	BOD Load (lb/yr)	Sediment Load (t/yr)	E. coli Load (Billion MPN/yr)
Urban	3496.64	538.08	13381.19	80.38	0.00
Cropland	66468.43	17956.13	106317.76	3494.57	0.00
Pastureland	10341.40	1121.56	32214.57	348.75	0.00
Forest	1186.87	565.48	2845.61	75.97	0.00
Feedlots	4532.69	906.54	6043.59	0.00	0.00
User Defined	0.00	0.00	0.00	0.00	0.00
Septic	28.98	11.35	118.36	0.00	0.00
Gully	21.39	8.24	42.78	11.63	0.00
Streambank	0.00	0.00	0.00	0.00	0.00
Groundwater	0.00	0.00	0.00	0.00	0.00
Total	86076.40	21107.37	160963.85	4011.30	0.00

* 2 gullies fixed with waterway systems

SHAWANO



COUNTY

LAND CONSERVATION DEPARTMENT

311 N MAIN STREET - COURTHOUSE
SHAWANO, WI 54166-2145
Phone (715) 526-6766 Fax (715) 526-6273
www.co.shawano.wi.us

February 7th, 2018

NATHAN P. RETZLAFF
W7775 BELLE PLAINE AVE.
SHAWANO, WI 54166

RE: Notice to Maintain Compliance with Agricultural Performance Standards and Prohibitions on property described as: SW 1/4 SW 1/4 SEC 14 T26N R15E. (PARCEL # 010-14330-0000) and other lands owned/operated for Nutrient Management requirements.

Dear Mr. Retzlaff:

The purpose of this letter is to provide notice of the requirement to maintain compliance with state Agricultural Performance Standards and Prohibitions at the livestock facility and cropland addressed in your cost share agreement (TRM-59-16-01).

As a result of installing the conservation practices, the livestock facility has been brought into compliance with following state standards and prohibitions:

- 1) Sheet, Rill and Wind Erosion Performance Standard (s. NR 151.02)
- 2) Manure Storage Facilities Performance Standards (s. NR 151.05)
- 3) Process Wastewater Handling Performance Standard (s. NR 151.055)
- 4) Nutrient Management (s. NR 151.07)
- 5) Manure Management Prohibitions (s. NR 151.08)

In accordance with ch. NR 151, Wis. Adm. Code, any cropland practice or livestock facility that is brought into compliance with a state ag-performance standard or prohibition must remain in compliance in perpetuity regardless of future cost sharing. It is required that you and any future landowners or operators maintain compliance with the standards and prohibitions at the parcels and lands identified. I have enclosed a copy of Chapter NR151 Runoff Management (Subchapters I & II) for your reference.

If you have any questions, please contact me.

Sincerely,

A handwritten signature in cursive script that reads "Scott M. Frank".

Scott M. Frank
County Conservationist
(715) 526-4632
Scott.Frank@co.shawano.wi.us