AFFIDAVIT OF POSTING

STATE OF WISCONSIN)
Town of Ledgeview)
Brown County)

I, Charlotte K. Nagel, Town Clerk of the Town of Ledgeview, Brown County, Wisconsin, attest and affirm all of the following:

1. That the following action was posted pursuant to s. 60.80, Wis. stats:
The Ledgeview Town Board Public Hearing Notice scheduled for Tuesday, May 29, 2018 at 5:30 p.m., a copy here onto attached;

2. That the above-noted action was posted as required in the following 3 places in the Town of Ledgeview, Brown County, Wisconsin:

Ledgeview Town Hall, 3700 Dickinson Road, De Pere, WI 54115

Piggly Wiggly, 575 Swan Road, De Pere, WI 54115

I-43 Shell Station, 3285 Cedar Hedge Lane, Green Bay, WI 54311

Town of Ledgeview website at www.ledgeviewwisconsin.com

3. That the posting of this action occurred at the following times and dates:

Prior to 5:00 p.m. on Friday, May 11, 2018.

That I filed this affidavit in the records of the town clerk for the Town of Ledgeview on May 14th, 2018.

Dated this 14th day of May, 2018.

Charlotte Nagel
Charlotte Nagel, Town Clerk
Town of Ledgeview, Brown County, WI

Subscribed and sworn to before me this 14th day of May, 2018.

Sarah K. Burdette
Town Administrator
Town of Ledgeview, Brown County, WI

Ledgeview
Set your sights high

NOTICE OF PUBLIC HEARING
TOWN OF LEDGEVIEW

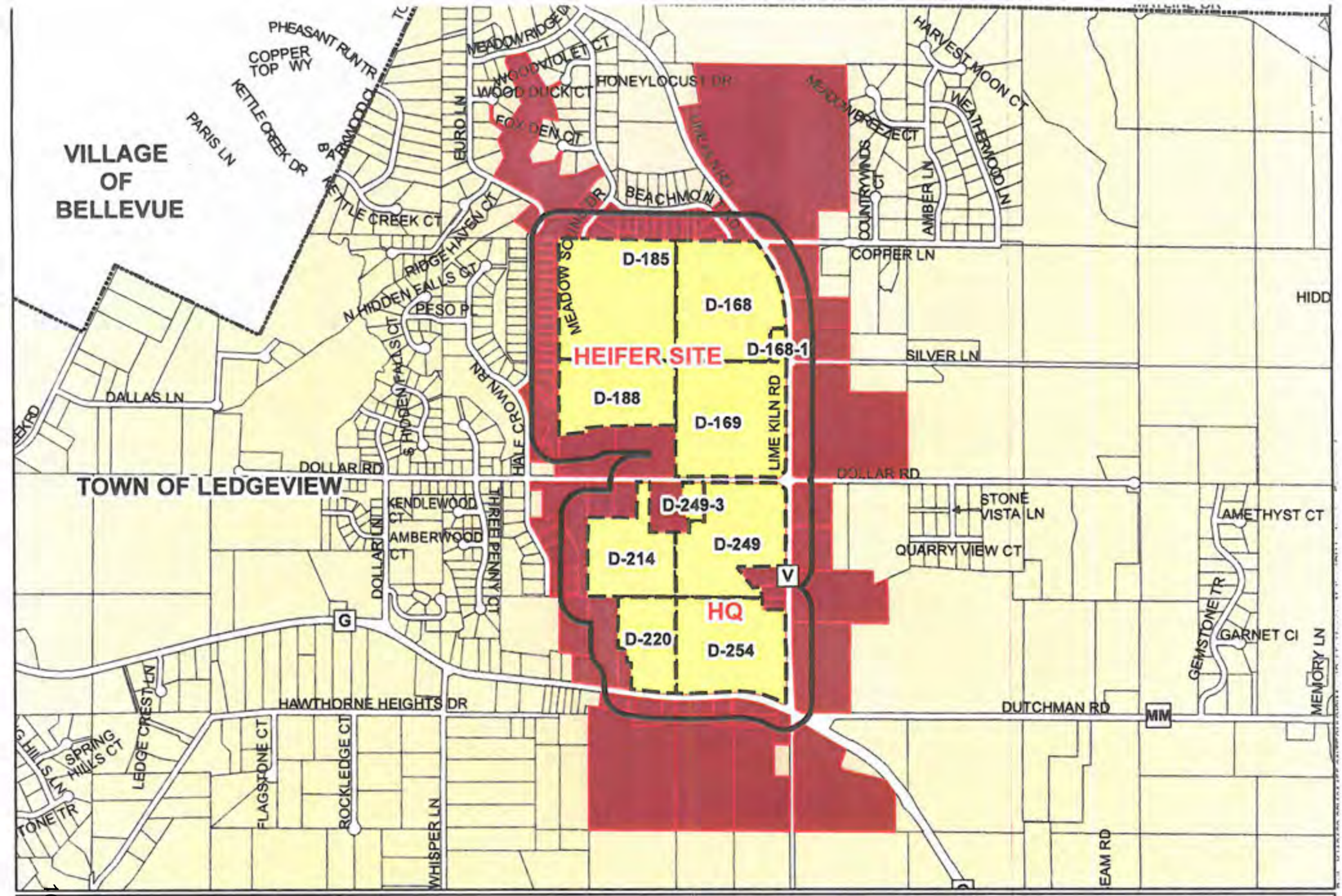
Tuesday, May 29, 2018 at 5:30 p.m.
or as soon thereafter as can be heard
3700 Dickinson Road, De Pere, WI 54115

Notice is hereby given that the Ledgeview Town Board will be holding a public hearing on **TUESDAY, MAY 29, 2018 AT 5:30 P.M. or as soon thereafter as can be heard** at the Ledgeview Municipal Building, 3700 Dickinson Road, De Pere, WI 54115. The purpose of the public hearing is to hear comment on the request by Jason Pansier, owner, for a conditional use permit and livestock facility siting approval relating to property located at 3499 Lime Kiln Road and 3875 Dickinson Road. Copies of the proposed conditional use permit application and livestock siting application are available on the town's website at www.ledgeviewwisconsin.com.

All persons interested are invited to attend this hearing and be heard. Written comments may be submitted in lieu of public appearance to the Town Clerk, 3700 Dickinson Road, De Pere, WI 54115. The Town Board may discuss and act on the applications after the public hearing.

Charlotte K. Nagel
Charlotte K. Nelson, Clerk
Town of Ledgeview, Brown County, WI

Signed, dated and posted: May 11, 2018
Published: May 15th and May 22nd, 2018


VILLAGE OF BELLEVUE
TOWN OF LEDGEVIEW
D-185
D-168
D-168-1
HEIFER SITE
D-188
D-169
D-249-3
D-249
D-214
HQ
D-220
D-254
PHEASANT RUN TR
COPPER TOP WY
KETTLE CREEK DR
PARIS LN
KETTLE CREEK CT
MEADOW RIDGE LN
WOOD VIOLET CT
WOOD DUCK CT
HONEYLOCUST DR
FOX DEN CT
BEACHMONT RD
MEADOW SOUND DR
RIDGE HAVEN CT
N HIDDEN FALLS CT
PESO PL
HIDDEN FALLS CT
HALF CROWN RN
THREE PENNY CT
DALLAS LN
DOLLAR RD
KENDLEWOOD CT
AMBERWOOD CT
DOLLAR LN
LIME KILN RD
COPPER LN
SILVER LN
HARVEST MOON CT
WEATHERWOOD LN
AMBER LN
COUNTRY WINDS CT
STONE VISTA LN
QUARRY VIEW CT
AMETHYST CT
GEMSTONE TR
GARNET CI
MEMORY LN
HAWTHORNE HEIGHTS DR
DUTCHMAN RD
LEDGE CREST LN
SPRING HILLS CT
FLAGSTONE CT
ROCKLEDGE CT
WHISPER LN
G
V
MM
Parcels for Notification
Town of Ledgeview
300 Foot Buffer
Subject Parcels
Parcels Notified
Ledgeview Parcels
0 700 1,400 2,800 Feet
N
Ledgeview
Set your sights high
Mead & Hunt

1645

Charlotte Nagel

From: GRSC-West-Legals mbx <GRSC-West-Legals@gannett.com>
Sent: Friday, May 11, 2018 9:38 AM
To: Charlotte Nagel
Subject: RE: 0002919959 Ledgeview Public Hearing Notice - Ledgeview Farm LLC
Attachments: 0002919959 (160 KB)

Hello Charlotte,

Please find attached your order confirmation and proof of the ad.

Your ad is set to run in:

- Green Bay Press Gazette on May 15th and 22nd, 2018. SCost 68.81

The total cost is $68.81 which includes an affidavit, which will be mailed to you after the ad publishes. Please reply by 5 pm Monday, May 14th with changes or approval of the ad. You will be able to receive an affidavit 7-10 business days after the last day of printing.

Thanks,

Samuel Beaton
Public Notice Coordinator

USA TODAY NETWORK
WISCONSIN

888-774-7744

From: Charlotte Nagel [mailto:cnagel@ledgeviewwisconsin.com]
Sent: Friday, May 11, 2018 9:00 AM
To: GPG-legals mbx <legals@greenbaypressgazette.com>
Subject: 0002919959 Ledgeview Public Hearing Notice - Ledgeview Farm LLC

Greetings,

Attached is a Public Hearing Notice for Ledgeview Farm, LLC, for publication in the May 15th and May 22nd editions of the Green Bay Press Gazette. Please confirm publication dates.

Sincerely,

Charlotte Nagel, Clerk

Town of Ledgeview
3700 Dickinson Road
De Pere, WI 54115
Telephone: (920) 336-3360, Ext. 104
Fax: (920) 336-8517
cnagel@ledgeviewwisconsin.com
Population: 7,431

CONFIRMATION

wisconsin media
PART OF THE USA TODAY NETWORK

435 E. Walnut
Green Bay, WI 54301
(888)774-7744

TOWN OF LEDGEVIEW , LEGALS
3700 DICKINSON RD
DE PERE WI 54115-8797

Account	AD#	Net Amount	Tax Amount	Total Amount	Payment Method	Payment Amount	Amount Due
GWM-281504	0002919959	$68.81	$0.00	$68.81	Credit Card	$0.00	$68.81

Sales Rep: sbeaton **Order Taker:** sbeaton **Order Created** 05/11/2018

Product	# Ins	Start Date	End Date
GWM-GPG-Green Bay Press-Gazette	2	05/15/2018	05/22/2018
GWM-GPGW-Green Bay Press-Gazette Digital	28	05/15/2018	06/11/2018

* ALL TRANSACTIONS CONSIDERED PAID IN FULL UPON CLEARANCE OF FINANCIAL INSTITUTION

Text of Ad: 05/11/2018

TOWN OF LEDGEVIEW
Tuesday, May 29, 2018 at 5:30 p.m. or as soon thereafter as can be heard
3700 Dickinson Road, De Pere, WI 54115

Notice is hereby given that the Ledgeview Town Board will be holding a public hearing on TUESDAY, MAY 29, 2018 AT 5:30 P.M. or as soon thereafter as can be heard at the Ledgeview Municipal Building, 3700 Dickinson Road, De Pere, WI 54115. The purpose of the public hearing is to hear comment on the request by Jason Pansier, owner, for a conditional use permit and livestock facility siting approval relating to property located at 3499 Lime Kiln Road and 3675 Dickinson Road. Copies of the proposed conditional use permit application and livestock siting application are available on the town's website at www.ledgeviewwisconsin.com.

All persons interested are invited to attend this hearing and be heard. Written comments may be submitted in lieu of public appearance to the Town Clerk, 3700 Dickinson Road, De Pere, WI 54115. The Town Board may discuss and act on the applications after the public hearing.

Charlotte K. Nagel
Charlotte K. Nelson, Clerk
Town of Ledgeview, Brown County, WI
Signed, dated and posted: May 11, 2018

Run: May 15, 22 WNAXLP

PRESS-GAZETTE media
A GANNETT COMPANY

STATE OF WISCONSIN
BROWN COUNTY

TOWN OF LEDGEVIEW , LEGALS

3700 DICKINSON RD
DE PERE WI 541158797

Being duly sworn, doth depose and say that she/he is an authorized representative of the Green Bay Press Gazette, a newspaper published in Green Bay, Wisconsin, and that an advertisement of which the annexed is a true copy, taken from said paper, which was published therein on:

Account Number:	GWM-281504
Order Number:	0002919959
No. of Affidavits:	1
Total Ad Cost:	$68.81
Published Dates:	05/15/18, 05/22/18

TOWN OF LEDGEVIEW
Tuesday, May 29, 2018 at 5:30 p.m. or as soon thereafter as can be heard
3700 Dickinson Road, De Pere, WI 54115

Notice is hereby given that the Ledgeview Town Board will be holding a public hearing on TUESDAY, MAY 29, 2018 AT 5:30 P.M. or as soon thereafter as can be heard at the Ledgeview Municipal Building, 3700 Dickinson Road, De Pere, WI 54115. The purpose of the public hearing is to hear comment on the request by Jason Pansier, owner, for a conditional use permit and livestock facility siting approval relating to property located at 3499 Lime Kiln Road and 3875 Dickinson Road. Copies of the proposed conditional use permit application and livestock siting application are available on the town's website at www.ledgeviewwisconsin.com.

All persons interested are invited to attend this hearing and be heard. Written comments may be submitted in lieu of public appearance to the Town Clerk, 3700 Dickinson Road, De Pere, WI 54115. The Town Board may discuss and act on the applications after the public hearing.

Charlotte K. Nagel
Charlotte K. Nelson, Clerk
Town of Ledgeview, Brown County, WI
Signed, dated and posted: May 11, 2018
Run: May 15, 22

WNAXLP

(Signed) Peter Chong **(Date)** 5/23/2018
Legal Clerk

Signed and sworn before me

My commission expires 12/6/2021

BERGEN GORNOWICH
Notary Public
State of Wisconsin

TOWN OF LEDGEVIEW , LEGALS
Re: Ledgeview public hearing may 29

GANNETT WI MEDIA
435 EAST WALNUT ST
PO BOX 23430
GREEN BAY, WI 54305-3430

GANNETT
Wisconsin Media
Delivering Customers. Driving Results

PHONE 920-431-8298
FAX 877-943-0443
EMAIL legals@greenbaypressgazette.com

AFFIDAVIT OF POSTING

STATE OF WISCONSIN)
Town of Ledgeview)
Brown County)

I, Charlotte K. Nagel, Town Clerk of the Town of Ledgeview, Brown County, Wisconsin, attest and affirm all of the following:

1. That the following action was posted pursuant to s. 60.80, Wis. stats:
The Ledgeview Town Board Agenda for the Public Hearing scheduled for Tuesday, May 29, 2018 at 5:30 p.m., a copy here onto attached;

2. That the above-noted action was posted as required in the following 3 places in the Town of Ledgeview, Brown County, Wisconsin:

Ledgeview Town Hall, 3700 Dickinson Road, De Pere, WI 54115

Piggly Wiggly, 575 Swan Road, De Pere, WI 54115

I-43 Shell Station, 3285 Cedar Hedge Lane, Green Bay, WI 54311

Town of Ledgeview website at www.ledgeviewwisconsin.com

3. That the posting of this action occurred at the following times and dates:

Prior to 5:00 p.m. on Friday, May 25, 2018.

That I filed this affidavit in the records of the town clerk for the Town of Ledgeview on May 29th, 2018.

Dated this 29th day of May, 2018.

Charlotte Nagel
Charlotte Nagel, Town Clerk
Town of Ledgeview, Brown County, WI

Subscribed and sworn to before me this 29th day of May, 2018.

Sarah K. Burdette
Town Administrator
Town of Ledgeview, Brown County, WI

Ledgeview
Set your sights high

LEDGEVIEW TOWN BOARD AGENDA
Tuesday, May 29, 2018 at 5:30 p.m.
or as soon thereafter as possible
Ledgeview Municipal Building
3700 Dickinson Road, De Pere, WI 54115

The Town Board may discuss and act on the following:

CALL TO ORDER
ROLL CALL
PUBLIC HEARING:

1. The purpose of the public hearing is to hear comments on the request by Jason Pansier, owner, for a conditional use permit and livestock facility siting approval relating to property located at 3499 Lime Kiln Road and 3875 Dickinson Road.

Town Board
Philip J. Danen, Chairman
Renee Van Rossum, Supervisor
Ken Geurts, Supervisor
Cullen Peltier, Supervisor
Mark Danen, Supervisor

CLOSED SESSION:

1. The Town Board may convene into closed session pursuant to WI State Statute §19.85 (1).
2. The Board may then reconvene into open session to take action on items discussed in closed session.

ADJOURNMENT:

NEXT REGULAR MEETING MONDAY, JUNE 4TH, 2018 AT 6:00 PM

BY THE DIRECTION OF THE TOWN BOARD CHAIRMAN:

Charlotte K. Nagel
Charlotte Nagel, Clerk
Town of Ledgeview, Brown County, WI
Signed, dated and posted: May 25, 2018

Notice is hereby given that the Ledgeview Town Board may take action on any specific item listed within this agenda. Where citizens provide input to the Ledgeview Town Board on items not specifically listed within this agenda, the only appropriate action is referral to a Committee or to a subsequent Town Board meeting. Any person wishing to attend who, because of disability, requires special accommodations should contact the Town Clerk at (920) 336-3360, 3700 Dickinson Road, at least 48 hours prior to the meeting so arrangements can be made.

Gmail

Charlotte Nelson <charnelson87@gmail.com>

Ledgeview Town Board Agenda

1 message

Charlotte Nagel <charnelson87@gmail.com> Sat, May 26, 2018 at 12:42 PM
To: janderson9@gannett.com, metro@gannett.com

Greetings,

Attached is the Ledgeview Town Board Agenda for Tuesday, May 29, 2018 at 5:30 PM.

Sincerely,

Charlotte Nagel, Clerk
Town of Ledgeview, Brown County, WI

18-05-29 TB Agenda.pdf
128K

LEDGEVIEW TOWN BOARD AGENDA
Tuesday, May 29, 2018 at 5:30 p.m.
or as soon thereafter as possible
Ledgeview Municipal Building
3700 Dickinson Road, De Pere, WI 54115

The Town Board may discuss and act on the following:

CALL TO ORDER
ROLL CALL
PUBLIC HEARING:

1. The purpose of the public hearing is to hear comments on the request by Jason Pansier, owner, for a conditional use permit and livestock facility siting approval relating to property located at 3499 Lime Kiln Road and 3875 Dickinson Road.

Town Board
Philip J. Danen, Chairman
Renee Van Rossum, Supervisor
Ken Geurts, Supervisor
Cullen Peltier, Supervisor
Mark Danen, Supervisor

CLOSED SESSION:

1. The Town Board may convene into closed session pursuant to WI State Statute §19.85 (1).
2. The Board may then reconvene into open session to take action on items discussed in closed session.

ADJOURNMENT:

NEXT REGULAR MEETING MONDAY, JUNE 4TH, 2018 AT 6:00 PM

BY THE DIRECTION OF THE TOWN BOARD CHAIRMAN:

Charlotte K. Nagel
Charlotte Nagel, Clerk
Town of Ledgeview, Brown County, WI
Signed, dated and posted: May 25, 2018

Notice is hereby given that the Ledgeview Town Board may take action on any specific item listed within this agenda. Where citizens provide input to the Ledgeview Town Board on items not specifically listed within this agenda, the only appropriate action is referral to a Committee or to a subsequent Town Board meeting. Any person wishing to attend who, because of disability, requires special accommodations should contact the Town Clerk at (920) 336-3360, 3700 Dickinson Road, at least 48 hours prior to the meeting so arrangements can be made.

NOTICE OF PUBLIC HEARING
TOWN OF LEDGEVIEW

Tuesday, May 29, 2018 at 5:30 p.m.
or as soon thereafter as can be heard
3700 Dickinson Road, De Pere, WI 54115

Notice is hereby given that the Ledgeview Town Board will be holding a public hearing on **TUESDAY, MAY 29, 2018 AT 5:30 P.M. or as soon thereafter as can be heard** at the Ledgeview Municipal Building, 3700 Dickinson Road, De Pere, WI 54115. The purpose of the public hearing is to hear comment on the request by Jason Pansier, owner, for a conditional use permit and livestock facility siting approval relating to property located at 3499 Lime Kiln Road and 3875 Dickinson Road. Copies of the proposed conditional use permit application and livestock siting application are available on the town's website at www.ledgeviewwisconsin.com.

All persons interested are invited to attend this hearing and be heard. Written comments may be submitted in lieu of public appearance to the Town Clerk, 3700 Dickinson Road, De Pere, WI 54115. The Town Board may discuss and act on the applications after the public hearing.

Charlotte K. Nagel
Charlotte K. Nelson, Clerk
Town of Ledgeview, Brown County, WI

Signed, dated and posted: May 11, 2018
Published: May 15th and May 22nd, 2018

Ledgeview
Set your sights high

TOWN OF LEDGEVIEW
SIGN-UP SHEET

Public Hearing - on the request by Jason Pansier, owner, for a conditional use permit and Livestock facility siting approval relating to property located at 3499 Lime Kiln Road and 3875 Dickinson Road.

Tuesday, May 29, 2018 at 5:30 PM

PRINT NAME	SIGNATURE	ADDRESS
BOB SOBRACSKE		3656 AMBERWOOD CT.
RYAN PAQUE		3917 N. SECRET CANYON CT
Lee Adams		611 Marble Rock Cir.
John Ponch	John M Ponch	856 North Main St Seymour WI
		825 Spring Hills Ct. De Pere WI
Kim Voss		3585 Beachmont Rd
Kurt Voss		3585 Beachmont Rd
Brent/Brook Vandenlangenberg		
Michelle & Tony Lagowski		729 Iron Horse Way
Jason Kuchenbecker		6938 Holy-Mor Rd
Andrew Tenor		3851 Dickinson Rd.
Mark Forman		608 Marble Rock Circle Green Bay, 54311

PRINT NAME	SIGNATURE	ADDRESS
Drieen Furmann	Drieen Furmann	608 Marble Rock Circle Green Bay 54311
Rick Kriewaldt	Rick Kriewaldt	675 Marble Rock Circle Green Bay 54311
STEVE CORRICK	Steve Corrick	4602 Dickinson Rd.
Patti & Tony Cousineau	Cousineau	2573 Harvest Moon Court
Holly Schlag	Holly Schlag	2038 Wayside Pl Green Bay, WI 54311
Cristy Janitch	Cristy Janitch	2264 Fox Den Ct

Ledgeview
Set your sights high

TOWN OF LEDGEVIEW
SIGN-UP SHEET

Public Hearing - on the request by Jason Pansier, owner, for a conditional use permit and Livestock facility siting approval relating to property located at 3499 Lime Kiln Road and 3875 Dickinson Road.

Tuesday, May 29, 2018 at 5:30 PM

PRINT NAME	SIGNATURE	ADDRESS
Kristin Mehta		3646 Beachmont Rd
Vinay Mehta		3646 Beachmont Rd
Mark Borchardt		USDA-ARS Marshfield
Beau Koenig		4706 Dickinson Rd
Jaden Kerckhoff		Support for farmers
Heidi Schmitt Marquez		2984 Shawano Ave GB
Charity Schneider		3626 Beachmont Rd
KEVIN P. KANE	K. P. Kane	4151 DICKINSON RD.
Maureen Muldoon		UW-Oshkosh
Tricia Adams		611 Marble Rock Circle
Barb Gilling		2273 Fox Den Ct
Kristin Hart		739 Iron Horse Way

PRINT NAME	SIGNATURE	ADDRESS
Connie Kellogg	Connie Kellogg	661 Marble Rock Circle
RICHARD KELLOGG		661 MARBLE ROCK CIR
Tim Kuehn		3965 Three Penny Ct
Eric VanMilligan		3590 Meadow Sound Dr.
Julie Enright	Julie K Enright	2277 Dollar Rd.
James Enright		2277 Dollar Rd.
DARREL MAY		3611 Pine Grove

Ledgeview
Set your sights high

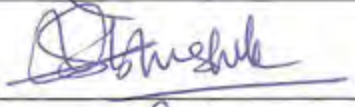
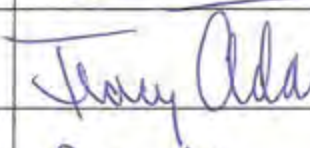
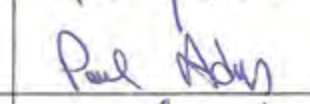
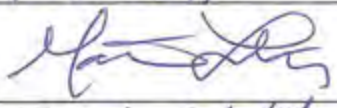
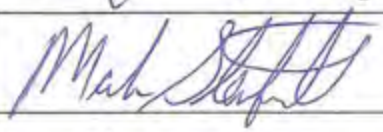
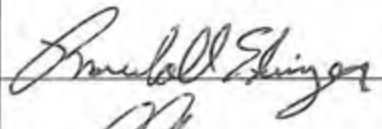
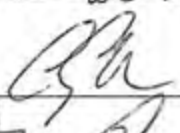
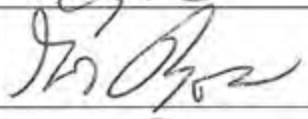
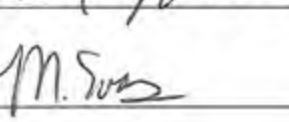
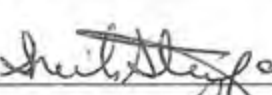
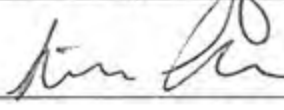
TOWN OF LEDGEVIEW
SIGN-UP SHEET

Public Hearing - on the request by Jason Pansier, owner, for a conditional use permit and Livestock facility siting approval relating to property located at 3499 Lime Kiln Road and 3875 Dickinson Road.

Tuesday, May 29, 2018 at 5:30 PM

PRINT NAME	SIGNATURE	ADDRESS
Mary Sobralske	Mary Sobralske	3656 Amberwood Ct
Anna Kim	Anna Kim	3665 Beachmont Rd
Robert Kissell	Robert Kissell	2722 Copper Cove
Tim Dancs	Tim Dancs	Ledgeview Farms
Courtney Roach	Courtney Roach	Roach and Associates
Tammy Landwehr	Tammy Landwehr	3663 Kendlewood Court
Alan Cheslock	Alan Cheslock	3565 Beachmont
Christine Schillinger	Christine Schillinger	714 Iron Horse Way
Jeanne McKenna	Jeanne McKenna	3645 Beachmont
Dan McKenna	Dan McKenna	3645 Beachmont
Mitch Barton	Mitch Barton	2273 Foxtown ct.
Susan Tesar	Susan Tesar	3505 Lime Kiln Rd

PRINT NAME	SIGNATURE	ADDRESS
Colleen Kuchenbecker	Colleen Kuchenbecker	6938 Holly Mor Rd Greenleaf WI 54126
MIKE TESAR		3505 LIME KILN -
Jason Parsia	Ledgeview Farms	
Kate Ann Count	Kate Ann Count	3976 Three Penny Ct
Ryan Parsia	Ledgeview Farms	
Marenda + Michael Avery	Marenda Avery	3585 Meadow Sound Dr
Gaetano & Amanda Auricchio		718 Iron Horse Way
Allison Kaufman	allison kaufman	3433 Meadow Sound Dr
Jennifer Sullivan		3830 Beachmont Rd
Carol Finnegan		4105 Lime Kiln Rd
QUENTIN FINNEGAN		"
Wendy & BOUCHONVILLE	Wayne Bouchonville	2232 Meadow Ridge Dr
MARK NICHOLAS		3980 Half Crown Run
DEAN STOLLEE	Dean Stollee	4061 Half Crown Run
Heather Hean		5825 Dickinson Rd
Ray Schneider III		3666 Beadmont Rd
Tami Schneider		3606 Beachmont Rd.
PATRICK MADSON		3605 Beachnut Rd

PRINT NAME	SIGNATURE	ADDRESS
MANAR SHAHBARI		733 Iron Horse Way
Krista Pennenberg		733 Iron Horse Way
Abhishek Keshav		3686 Beachmont Rd
Tracy Adams		345 Amber Ln
PAUL ADAMS		3451 AMBER LANE
Matt Lutsey		3455 Meadow Sound Dr
Mark Steinfeldt		4695 Lime kiln Rd
Randy Edinger		4315 Heritage Rd.
Curt Cassell		3580 Meadow Sound Rd.
Greg Basetski		3651 Euro Lane
Mike Martin		3424 Meadow Sound Dr
Meredith Evans		645 Marble Rock Circle
Sheila Steinfeldt		4695 Lime Kiln Rd
Steven Laurent		2424 Copper Lane

The Ledgeview Town Board held a public hearing on **Tuesday, May 29, 2018 at 5:30 p.m.** at the Municipal Building located at 3700 Dickinson, De Pere, WI 54115.

A. CALL TO ORDER

The meeting was called to order by Chairman Danen at 5:30 p.m.

B. ROLL CALL

Members present were Chairman Danen, Supervisors Renee Van Rossum, Ken Geurts, Cullen Peltier, and Mark Danen.

Staff present were Administrator Sarah Burdette, Engineer Scott Brosteau, Planner Dustin Wolff, Attorney Vanessa Wishart, Attorney Larry Konopacki, and Clerk Charlotte Nagel.

PUBLIC HEARING:

1. **The purpose of the public hearing is to hear comments on the request by Jason Pansier, owner, for a conditional use permit and livestock facility siting approval relating to property located at 3499 Lime Kiln Road and 3875 Dickinson Road.**

Chairman Danen made the following opening comments prior to the start of the public hearing:

- This public hearing was being recorded
- The purpose of the Town Board meeting is to hear comment on the request by Jason Pansier for a conditional use permit and livestock facility siting approval relating to property located at 3499 Lime Kiln Rd. and 3875 Dickinson Rd.
- The Town Board will not take action on the applications until its June 4th meeting to allow time for additional submittals from the Applicant and others in response to information presented at this meeting.
- The Comment Card system was explained
- A time limit of three minutes would be allowed for those wishing to speak
- The Town has been and is willing to continue to compile a record of all proceedings and communications related to the applications, including records of public meetings and copies of all correspondence and other records provided to the Town, and will carefully consider this record in making its decision. All submittals received through the June 4th meeting will be included in the record.

Chairman Danen advised that Ledgeview Farms provided information and responded to questions at the May 16th Zoning & Planning Commission Meeting and the Town is in receipt of a letter from Ledgeview Farms Attorney dated May 25, 2018 in which the position of the Applicant regarding the Town's authority and obligations in this matter are detailed. Chairman Danen asked if anyone representing Ledgeview Farms would like to address the Town Board with any additional comments at this time.

John Roach, Roach & Associates, 856 N. Main Street, Seymour, WI, the engineering firm representing Jason Pansier and Ledgeview Farms addressed the board. Mr. Roach informed the Board that the Town of Ledgeview has accepted the Livestock Siting Application which outlines the plan to expand the farm. The plan includes details to expand/create a waste storage facility, to expand and modernize the feed storage area, and to provide a transfer system for them as well as to collect yard runoff from the yard at the current heifer site. Mr. Roach explained that there are essentially two sites included in the expansion; the heifer site and the home site. The sites were divided in two for design purposes but are both included in the overall expansion. The expansion design was completed according to the NRCS standards. Mr. Roach indicated that the farm has received county permits and approvals as well as DNR approvals of the expansion plan, leaving the approval of the Livestock Siting Application as the final step in the process.

Chairman Danen asked if anyone else would like to address the Board on behalf of Ledgeview Farms. None was heard.

The Town invited Dr. Muldoon and Dr. Borchardt to speak to us about the geology and hydrology of our region of the state and the potential groundwater, surface water, and public health impacts that can be caused by livestock agriculture.

Dr. Maureen Muldoon, Professor of Geology, UW-Oshkosh – Dr. Muldoon has researched groundwater flow for decades. Recent projects on which she worked focused on groundwater quality in Kewaunee County and the role of groundwater in various wetlands in Door County.

Dr. Muldoon gave a presentation on watersheds and water cycle, ground water basics, geology of the area, aquifers in the area, and existing water quality in the area. A copy of Dr. Muldoon's presentation is attached to the record copy of the meeting minutes.

Dr. Borchardt is a research biologist for the USDA – Agricultural Research Service. He is an expert on the measurement, fate, transport and health effects of human and agricultural zoonotic pathogens in the environment.

Dr. Borchardt gave a presentation on human and livestock pathogen movement in the environment, brown water events in Wisconsin, study and sampling of analysis of water, well contamination, and risk factors of human fecal contamination. A copy of Dr. Borchardt's presentation is attached to the record copy of the meeting minutes.

Town Planner Dustin Wolff of Mead & Hunt presented the findings of fact to the Town Board which included the requested action, summary of non-compliance, development history, a review of the proposed facility improvements, odor and emissions, public health concerns and nutrient management, potential impacts of operations to nearby property values, design and alternatives discussion, emergency management, compliance with regulations, and community mistrust. A copy of Mr. Wolff's presentation is attached to the record copy of the meeting minutes.

At this time, Chairman Danen collected the comment cards so those who wish to address the Board could do so. The comment card also allowed those who didn't wish to address the Board but wanted their opinion heard to do so as well by indicating if they were for or against the item. The audience was reminded that decision standard for the conditional use and livestock siting application is measurable standards as it relates to human health and safety. A total of 44 cards were collected; five indicated the wishes to address the board (1 of which left prior to public comment), 43 against, 1 for.

Dr. Ray Schneider, 3606 Beachmont Road – Dr. Schneider stated that this conversation needed to happen in 2007. When the farm applies for a CAFO permit the Town is notified because a CAFO Farm produces a lot more waste than a family farm. When Dr. Schneider purchased the lot he was told that the farm was a family farm under a hundred head of cattle. All the exhibits indicate that this is not a family farm. If the intentions of the farm were known in 2007, there wouldn't be a need for this meeting tonight as subdivision planning would have been done appropriately. This isn't on the Board, this is on Ledgeview Farms because they weren't forthright with the Town. Dr. Schneider asked the Board to act in a way that protects its citizenry from Ledgeview Farms because it's been operating in violation of DNR rules since 2007 and EPA rules since

2013. They haven't come into compliance with those violations and there's no way they should be allowed to operate a large manure pit.

Al Cheslock, 3565 Beachmont Road – Mr. Cheslock advised this his house is about 1,000 feet from the proposed manure pit location. Had there been a manure pit there in 2016, he would not have purchased the lot. Based on Mr. Wolff's presentation there should have been a manure pit there had the farm been compliant with the required permitting at that time. Mr. Cheslock advised that he put together a memo outlaying some of the same non-compliance issues as Mr. Wolff and would like it to be made part of the record.

Kristine Schillinger, speaking on behalf of Kristine and Patrick Schillinger, 714 Iron Horse Way – Mr. Schillinger submitted an e-mail that he would like made part of the record. That e-mail included a Manure Gas Safety report from DATCP of which Ms. Schillnger read aloud. Ms. Schillinger also did a public records search on deaths due to manure gases and found death was caused not only to farmers, but to residents due to gas inhalation or from children falling into the manure pit and drowning. Ms. Schillinger added that Ledgeview Farms is not a good cooperate business partner of the town and is unable to assure proper maintenance and required recordkeeping as demonstrated in past practice. The manure pit is a risk for causing great bodily harm to people of all ages but especially the children in the area and requests denial of the application.

Dr. Manar Alshahrori, 733 Iron Horse Way – Dr. Alshahrori advised that he is a Pulmonologist who has been in practice for 20 years. Dr. Alshahrori indicated that it takes two breaths to die from the gases emitting from manure pits. Manure pit gases are considered to be as toxic as cyanide. Dr. Alshahrori has published articles on this subject and will submit them for the record. The elephant in the room is that no one wants to talk about the effects of the gases on the human lung. Dr. Alshahrori talked about "farmer's lung" as a career hazard resulting from constant inhalation of toxic manure gases. Dr. Alshahrori stated that the use of antibiotics on the CAFO farms alters the make-up of the ecoli and other bugs that were talked about tonight. Dust also gets deep in the lungs which can lead to heart attack, stroke, and death in general. These are very well documented and well known facts. Dr. Alshahrori will be submitting materials to be included in the record.

After three calls for additional public comments, none were heard. There were no other residents wishing to address the Board at this time.

Chairman Danen advised that the Town Board would be going into closed session based on the letter received from the Applicant's attorney on May 25th, to discuss possible litigation related to Town action on the requests for approvals from Ledgeview Farms, LLC and the application of the Town's ordinances to that action.

CLOSED SESSION:

1. **The Town Board may convene into closed session pursuant to WI State Statute 19.85(1)(g) provides that the Town may enter into closed session to confer with legal counsel for the Town wo is rendering oral or written advice concerning strategy to be adopted by the Town Board with respect to litigation in which it is or is likely to become involved.**
2. **The Board may then reconvene into open session to take action on items discussed in closed session.**

MOTION by Danen/Geurts for the Town Board to convene into closed session pursuant to WI State Statute 19.85(1)(g) provides that the Town may enter into closed session to confer with legal counsel for the Town who is rendering oral or written advice concerning strategy to be adopted by the Town Board with respect to litigation in which it is or is likely to become involved. The Board may reconvene into open session to take

action on items discussed in closed session. No further discussion. Roll call vote: Geurts - aye, Van Rossum – aye, Danen – aye, Peltier – aye, M. Danen - Aye. Motion carried in a roll call vote, 5-0.

At 7:21 p.m., the Town Board convened into closed session.

At 7:54 p.m. motion by Danen/Geurts for the Town Board to reconvene in to open session. No further discussion. Motion carried in a voice vote, 5-0.

The Town Board reconvened into open session at 7:54 PM.

The Board reiterated that no decision was going to be made tonight allow time for additional submittals from the Applicant and others in response to information presented at this meeting. The deadline for any submittals is noon on Friday, June 1st. Action will be taken by the Board at its June 4th meeting. No action was taken.

ADJOURNMENT:

MOTION by Danen/Geurts to adjourn. No further discussion. Motion carried in a voice vote, 5-0. Meeting adjourned at 7:55 p.m.

Charlotte K. Nelson, Clerk
Town of Ledgeview, Brown County, WI

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Alan Cheslock
Address: 3565 Beachmont Rd.

Date: 5/29/18
Regarding: Ledgeview Farms Livestock & Siting

Do you wish to speak to the Board? Yes X No ____
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Christine Schillinger
Address: 714 Iron Horse Way
Green Bay, WI 54311

Date: May 29, 2018
Regarding: manure pit + farm expansion by Ledgeview Farms

Do you wish to speak to the Board? Yes X No ____
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Dr. MANAR SHATTAUER MD
Date: 5/29/2018
Address: 1733 Iron Horse Way
Regarding: Ledgeview Farms

Do you wish to speak to the Board? Yes X No ____
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Ray Schneider
Date: 5/29/18
Address: 3606 Beachmont Rd
Regarding: Pension expansion

Do you wish to speak to the Board? Yes X No ____
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Left before speaking

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Kurt Voss
Address: 3585 Beachmont Rd.

Date: 5/29/18
Regarding: Ledgeview Farms permit application

Do you wish to speak to the Board? Yes ✓ No ____
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against ✓

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

W/drew
had to take wife home

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Vinay Mehta
Address: 3046 Beachmont Rd

Date: 5/29/2018
Regarding: Proposed manure Facility

Do you wish to speak to the Board? Yes X No ____
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Jaden Kerkhoff

Date: 05/29/18

Address:

Regarding: Support Farmers

Do you wish to speak to the Board? Yes ____ No X
(Will be limited to 3 minutes)

Are you for or against the item? For X Against ____

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Lee Adams

Date: 5/29/18

Address: 611 Marble Rock Circle
Green Bay, WI 54311

Regarding: conditional use permit for Ledgeview Farms

Do you wish to speak to the Board? Yes ____ No X
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Tracy Adams
Address: 3451 Amber Lane
Green Bay WI 54311

Date: 5/29/18
Regarding: Ledgeview Farms

Do you wish to speak to the Board? Yes ____ No ____
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Tricia Adams
Address: 611 Marble Rock Circle

Date: 5/29/2018
Regarding: conditional use permit & livestock facility siting for Ledgeview Farms.

Do you wish to speak to the Board? Yes ____ No ✓
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against ✓

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: GRETAND TAMANDA AHRICCHIO
Address: 718 IRON HORSE WAY
GREEN BAY, WI 54311

Date: 5/29/18
Regarding: MANURE PITS
APPLICATION

Do you wish to speak to the Board? Yes ____ No X
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Michael Avery
Address: 3585 meadow Sound Dr
De pere, WI 54114

Date: May 28, 2018
Regarding: Farm expansion

Do you wish to speak to the Board? Yes ____ No X
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Greg Bosetski
Address: 365 Euro Lane
De Pere, WI 54115

Date: 5/29/18
Regarding: Ledgeview Farms

Do you wish to speak to the Board? Yes ____ No X
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: James Enright
Address: 2277 Dollar Rd
DePere, WI

Date: 5/29/18
Regarding: Ledgeview Farms application

Do you wish to speak to the Board? Yes ____ No X
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Julie Enright
Address: 2277 Dollar Rd.
DePere, WI

Date: 5/29/18
Regarding: Ledgeview Farms (Pansier's) application

Do you wish to speak to the Board? Yes ____ No X
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Finucan, Quentin + Carol
Address: 4105 Lime Kiln Rd
Green Bay WI 54311

Date: 05/29/2018
Regarding: Pansier Livestock facility expansion

Do you wish to speak to the Board? Yes ____ No X
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Mark Forman
Address: 608 Marble Rock Circle
Green Bay, WI 54311

Date: 5/29/18
Regarding: Ledgeview Farm Manure Pit

Do you wish to speak to the Board? Yes ____ No X
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Kristin Harty
Address: 739 Iron Horse Way

Date: 5/28/2018
Regarding: Ledgeview Farms

Do you wish to speak to the Board? Yes ____ No X
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: KEVIN P. KANE
Address: 4157 DICKINSON RD.

Date: 5/29/18
Regarding: LEDGEVIEW HEIFER SIDE YARDAGES

Do you wish to speak to the Board? Yes ____ No X
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Anna Kim
Address: 36665 Beachmont Road De Pere 54115

Date: 5-29-2018
Regarding: Expansion of Ledgeview Farm (Pansier Farm)

Do you wish to speak to the Board? Yes ____ No ✓
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against ✓

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Rick Kniewaldt
Address: 675 Marble Rock Circle
Green Bay, WI 54311

Date: 5-29-18
Regarding: Manure Pit

Do you wish to speak to the Board? Yes ____ No X
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Robert + Kim Kissel
Address: 2422 Copper Cove

Date: 5-29-18
Regarding: Manure Pit Location

Do you wish to speak to the Board? Yes ____ No X
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Tim Kuehn
Address: 3965 Three Penny Ct
DePere, WI 54115

Date: 5/29/18
Regarding: Ledgeview Farm – CAFO
Expanded operations

Do you wish to speak to the Board? Yes ____ No ____
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Anthony Labowski
Address: 729 Deer Horse Way
Green Bay WI 54311

Date: 5/29/18
Regarding: Permit for pit | headcount

Do you wish to speak to the Board? Yes ____ No X
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Michelle Logowski
Address: 729 Iron Horseway
Green Bay 54311

Date: 5/29/18
Regarding: Manure Pit

Do you wish to speak to the Board? Yes ____ No X
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Steven Laurent
Address: 2424 Copper Lane

Date: 5-29-18
Regarding: Ledgeview Farm Permit

Do you wish to speak to the Board? Yes ____ No X
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Matt Lutzey
Address: 3495 Meadow Sound Dr
DePere WI 54115

Date: 5/28/18
Regarding: Ledgeview Farms

Do you wish to speak to the Board? Yes ____ No X
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: PATRICK MADSON
Address: 3605 Beechnut Rd
DePere, WI 54115

Date: 5/29/2018
Regarding: Ledgeview Farms

Do you wish to speak to the Board? Yes ____ No X
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Daniel McKeon & Jeanne
Address: 3645 Beachwood Rd.

Date: 5/29/18
Regarding: Manure Pit

Do you wish to speak to the Board? Yes ____ No ✓
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against ✓

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Mike Martin
Address: 3424 Meadowood Dr

Date: 5/29/2018
Regarding: Manure Pit

Do you wish to speak to the Board? Yes ____ No X
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Sean Moran
Address: 709 Iron Horse Way
Green Bay, WI 54311

Date: 5/29/18
Regarding: Ledgeview Farms Expansion

Do you wish to speak to the Board? Yes ____ No X
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Kristi Pennenberg
Address: 733 Iron Horse Way
Green Bay WI 54311

Date: 5/29/18
Regarding: mine pit

Do you wish to speak to the Board? Yes ____ No X
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Ryan Roove

Date: 5-29-18

Address: 3917 N Selnet Carmen Ct

Regarding: Pansier Farm Expansion

Do you wish to speak to the Board? Yes ____ No ____
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Charity Schrader

Date: 5.29.18

Address: 3626 Beachmont Rd

Regarding: Manure Pit

Do you wish to speak to the Board? Yes ____ No ✓
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against ✓

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Tami Schneider
Address: 3606 Beachmont Rd
DePere, WI 54115

Date: 05/29/18
Regarding: Ledgeview Farms

Do you wish to speak to the Board? Yes ____ No ✓
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against ✓

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Mary Sobralske
Address: 3656 Amberwood Ct
De Pere, WI 54115

Date: 5/29/18
Regarding: Conditional use for Ledgeview Farms re: Jason Pahsier

Do you wish to speak to the Board? Yes ____ No X
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Robert Sobralske
Address: 3656 Amberwood Ct
DePere WI 54115

Date: 5/29/18
Regarding: Conditional use for Ledgeview Farms re: Jason Pansier

Do you wish to speak to the Board? Yes ____ No X
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Mark Steinhoff
Address: 4695 Linc Kiln Rd

Date: 5-29-18
Regarding: Ledgeview farms

Do you wish to speak to the Board? Yes ____ No ____
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against ✓

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: DEAN STOLLER
Address: 4061 HALF CROWN RUN

Date: 5.29.18
Regarding: LEDGEVIEW FARMS

Do you wish to speak to the Board? Yes ____ No X
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Sheila Steinfeldt
Address: 4695 Limekiln Rd
Green Bay, WI 54311

Date: 5/29/18
Regarding: Ledgeview Farms

Do you wish to speak to the Board? Yes ____ No X
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: MIKE TESAR
Address: 3565 LIME KILN RD
GREEN BAY, WI. 54311

Date: 05/29/18
Regarding: LEDGEVIEW FARMS SITE EXPANSION

Do you wish to speak to the Board? Yes ✓ No ___
(Will be limited to 3 minutes)

Are you for or against the item? For ___ Against ✓

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Susan Tesar
Address: 3505 Lime Kiln Rd
Green Bay, Wis. 54311

Date: 5-29-18
Regarding: Ponsen Manure Pit

Do you wish to speak to the Board? Yes ___ No X
(Will be limited to 3 minutes)

Are you for or against the item? For ___ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Brett & Brook VanDenLangenberg
Address: 3711 Euro Lane (close June 21)
De Pere, WI, 54115

Date: 5/29/18
Regarding: Livestock facility

Do you wish to speak to the Board? Yes ____ No X
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Ledgeview
Set your sights high

Town Board Meeting Comment Card

Name: Eric VanMiller
Address: 3590 Meadow Sound Dr.
De Pere, WI. 54115

Date: 5/29/2018
Regarding: Siting Permit Process of Ledgeview

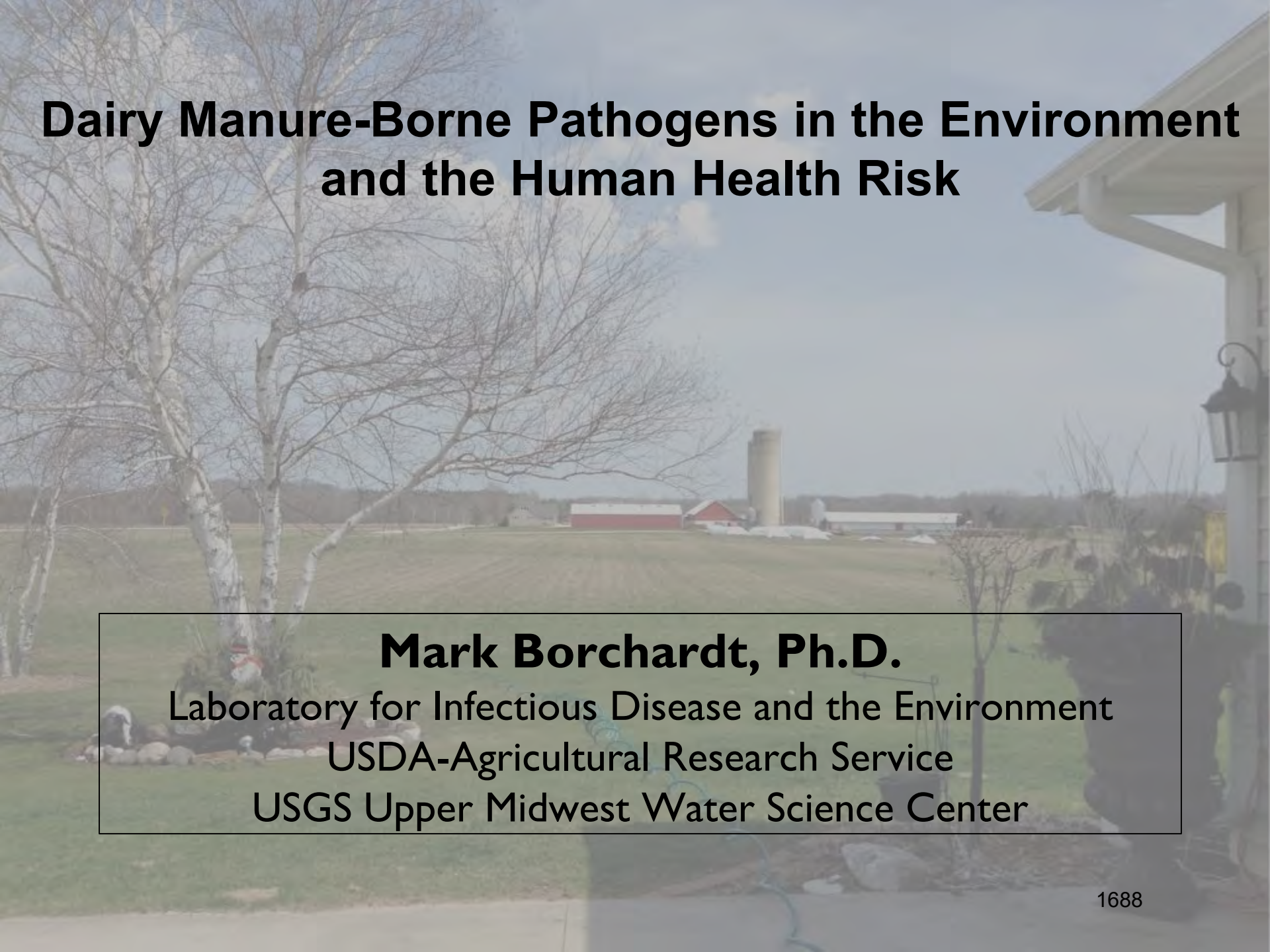
Do you wish to speak to the Board? Yes ____ No X
(Will be limited to 3 minutes)

Are you for or against the item? For ____ Against X

Town Board Rules of Public Interaction

The Chair may invoke a requirement to use Appearance Slips when the Chair finds it necessary, to systematically and more accurately receive citizen comments on matters before the Board. Also, when citizens speak to the Board, they must await suspension of the Operating Rules by the Board to enable them to speak, confine their remarks to the matter under discussion and must avoid personality references. No citizen may speak more than once on the matter under discussion and may not exceed three minutes at a time, unless the time is extended by the Chair. Written statements are welcome and will be distributed to Board Members. Parliamentary procedure limits Board interaction to hearing public comments; Board discussion during public comments is prohibited under procedural guidelines.

Dairy Manure-Borne Pathogens in the Environment and the Human Health Risk



Mark Borchardt, Ph.D.
Laboratory for Infectious Disease and the Environment
USDA-Agricultural Research Service
USGS Upper Midwest Water Science Center

Manure's Double-Edged Sword

Manure as Asset

Manure field-application is a cost-effective and sustainable approach for optimal soil tilth and fertility

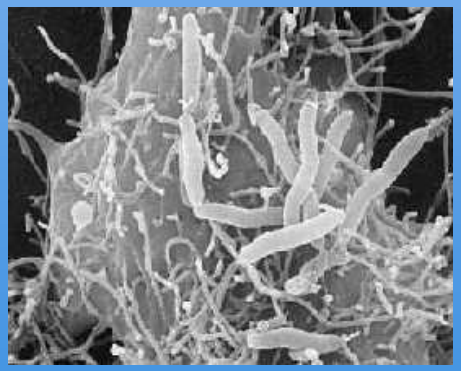
Manure as Liability

Manure may contain pathogens harmful to both humans and livestock

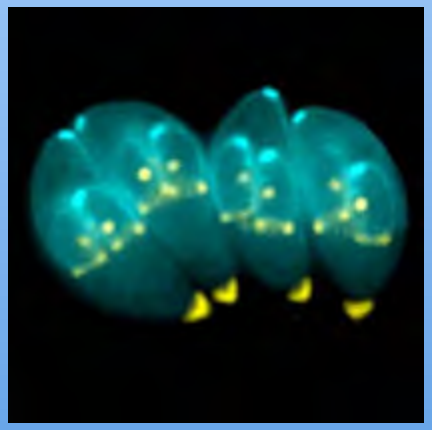
Societal goal: Maximize the beneficial uses of manure while minimizing environmental pathogen transmission

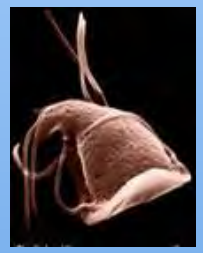
Pathogens Present in Dairy Manure

Bacteria (e.g., *Campylobacter*, *Salmonella*, *E. coli* O157:H7, *Listeria monocytogenes)*

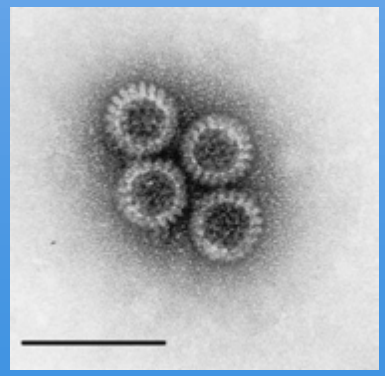


Protozoa, (e.g., *Cryptosporidium*, *Giardia*, *Toxoplasma)*

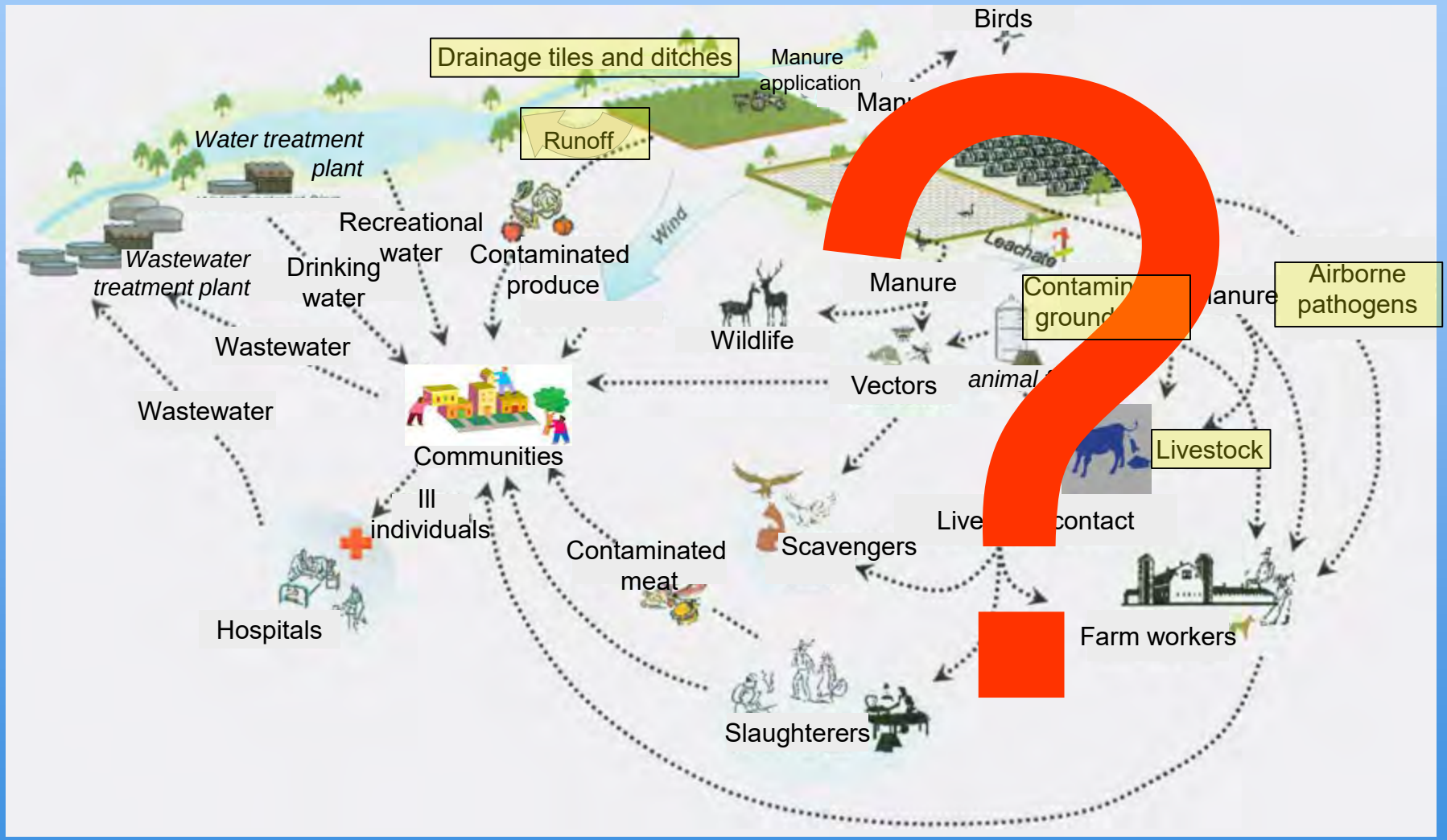




Viruses (e.g., rotavirus)



Human and Livestock Pathogen Movement in the Environment



Rogers and Haines, 2005, EPA/600/R-06/021

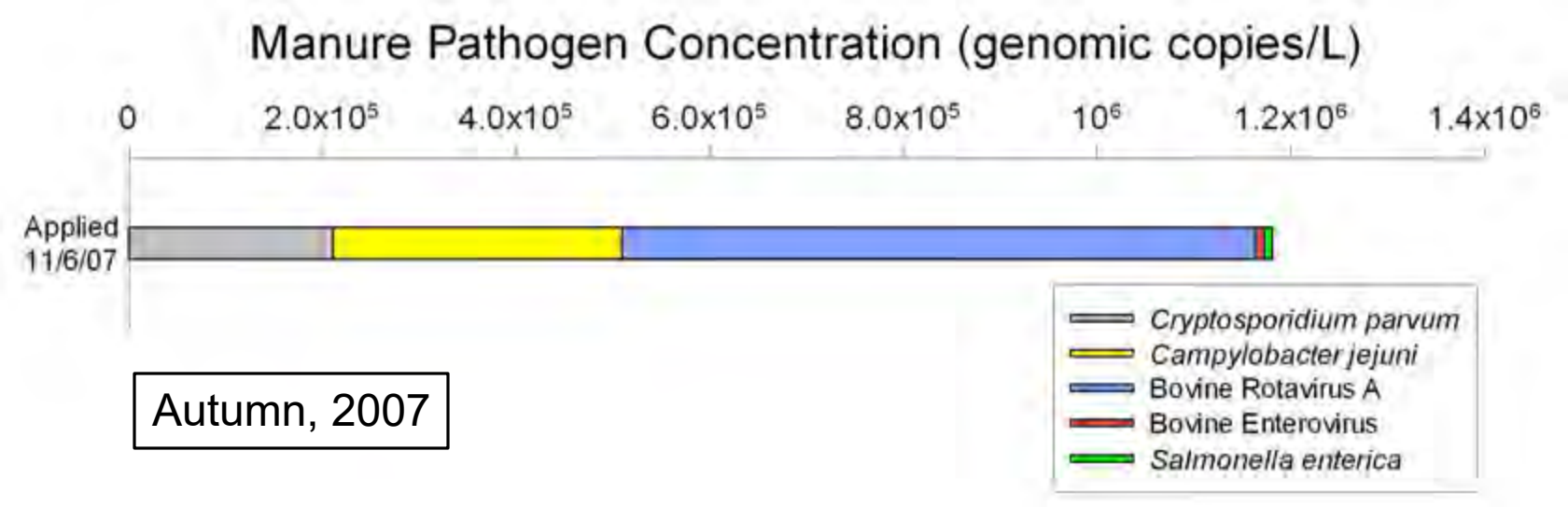
Estimates of Enteric Illness Attributable to Contact with Animals and Their Environments in the United States

- 445,213 /3.2 million illnesses (14%) from animal contact

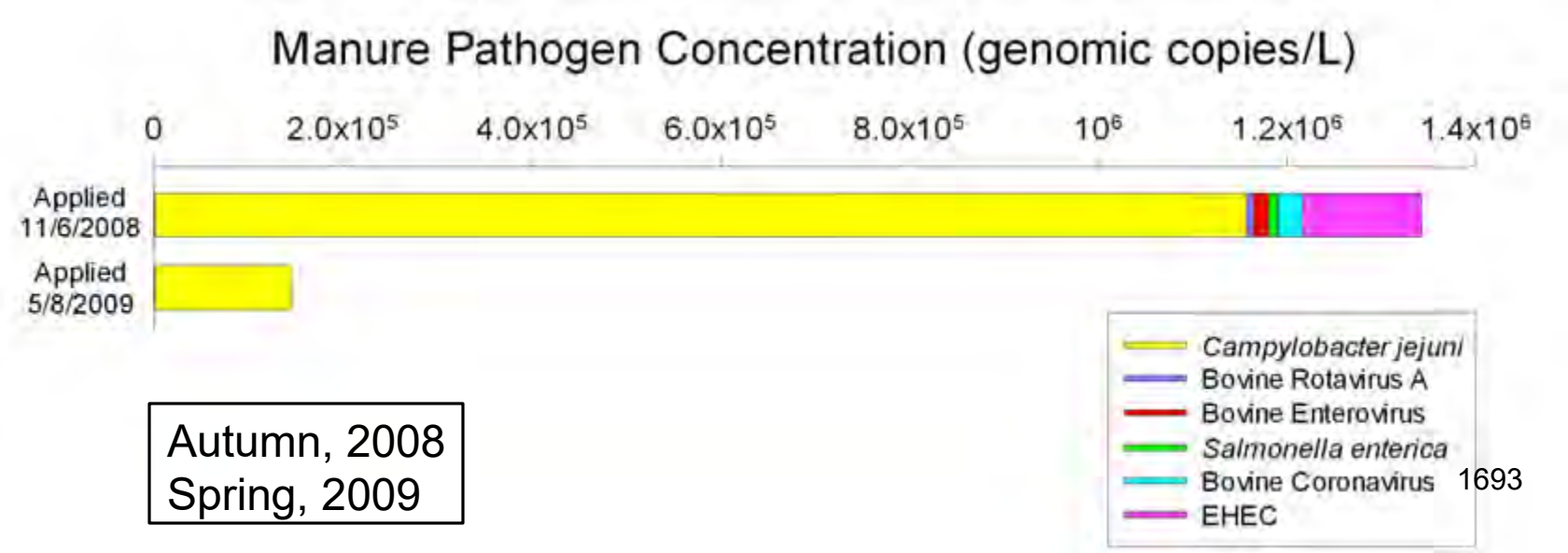
Organism	% from animal contact	Annual # illnesses	Annual # hospitalizations	Annual # deaths
Campylobacter species	17%	187,481	1,877	17
ST E. coli	14	16,057	230	2
Non-typhoid Salmonella	11	127,155	2,392	47
Cryptosporidium species	16	113,344	412	7

Centers for Disease Control and Prevention: Hale et al. 2012, CID, 54:S472-79.

Pathogens in manure from a single farm by year and season



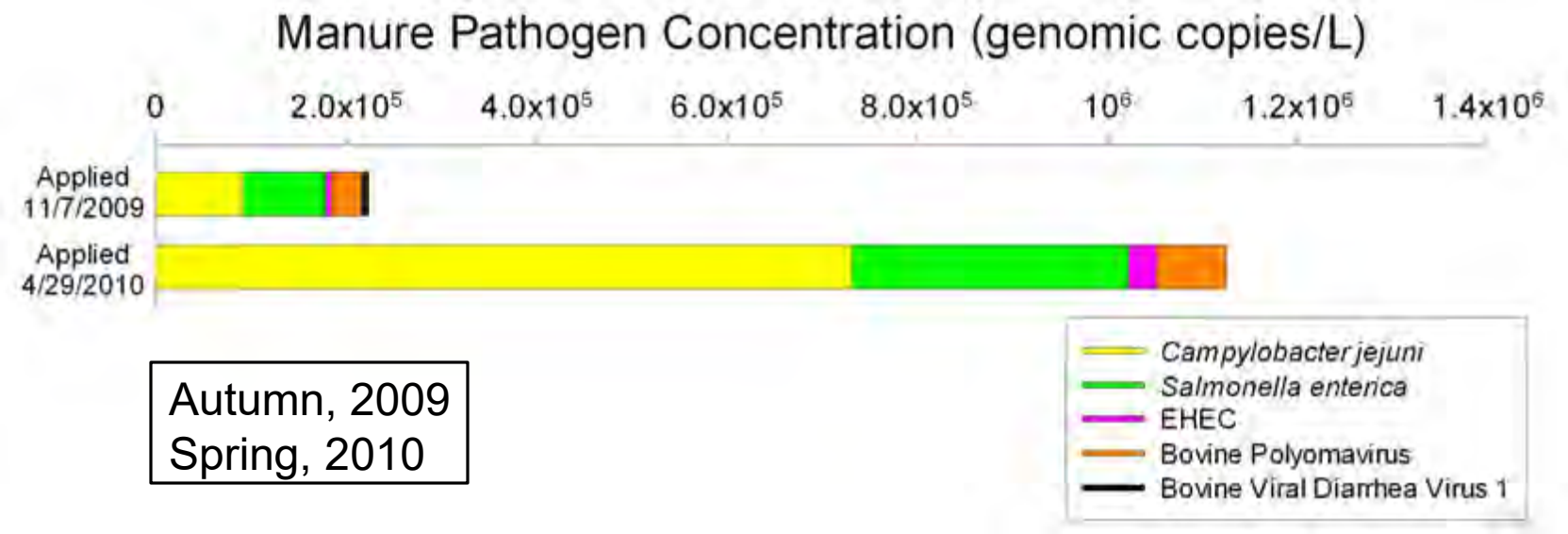
Autumn, 2007



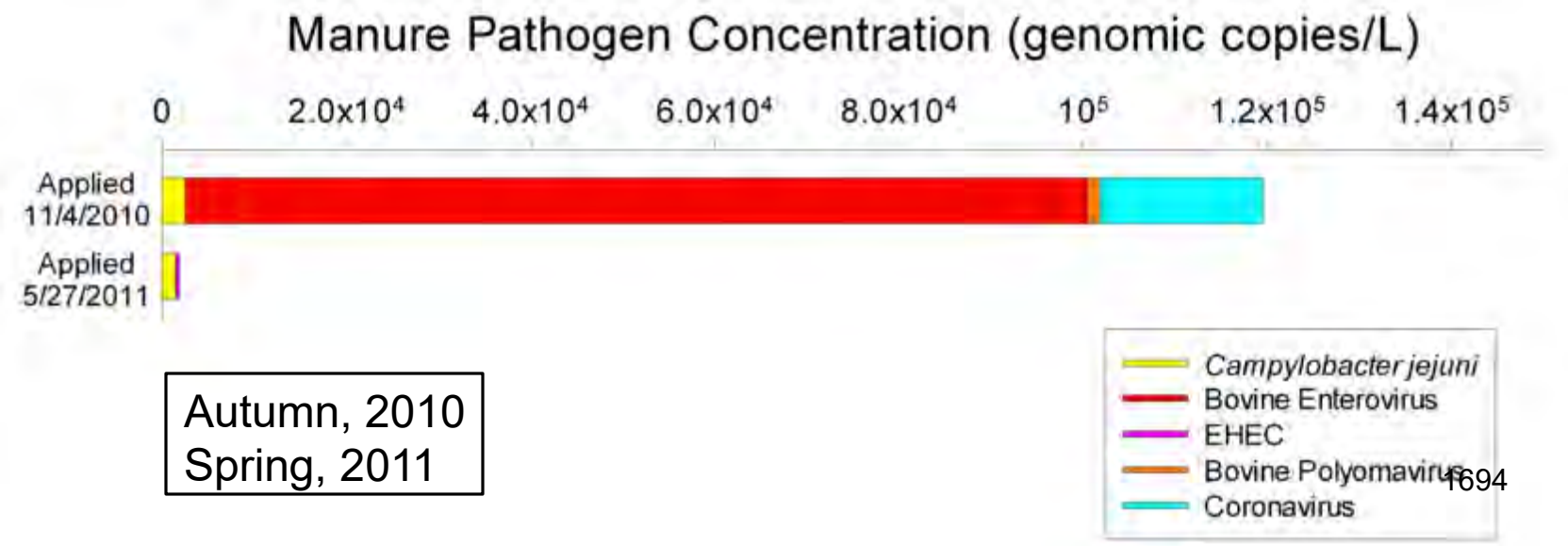
Autumn, 2008
Spring, 2009

1693

Pathogens in manure from a single farm by year and season



Autumn, 2009
Spring, 2010



Autumn, 2010
Spring, 2011

Brown Water Events in Northeast Wisconsin

- Groundwater recharge, especially spring snow melt, can generate brown water events
- Several outbreaks associated with these events e.g., EHEC, *Campylobacter jejuni*
- This well is code compliant, 123 ft deep, cased to 63 ft

Photos courtesy of Chuck Wagner

Kewaunee County Cattle

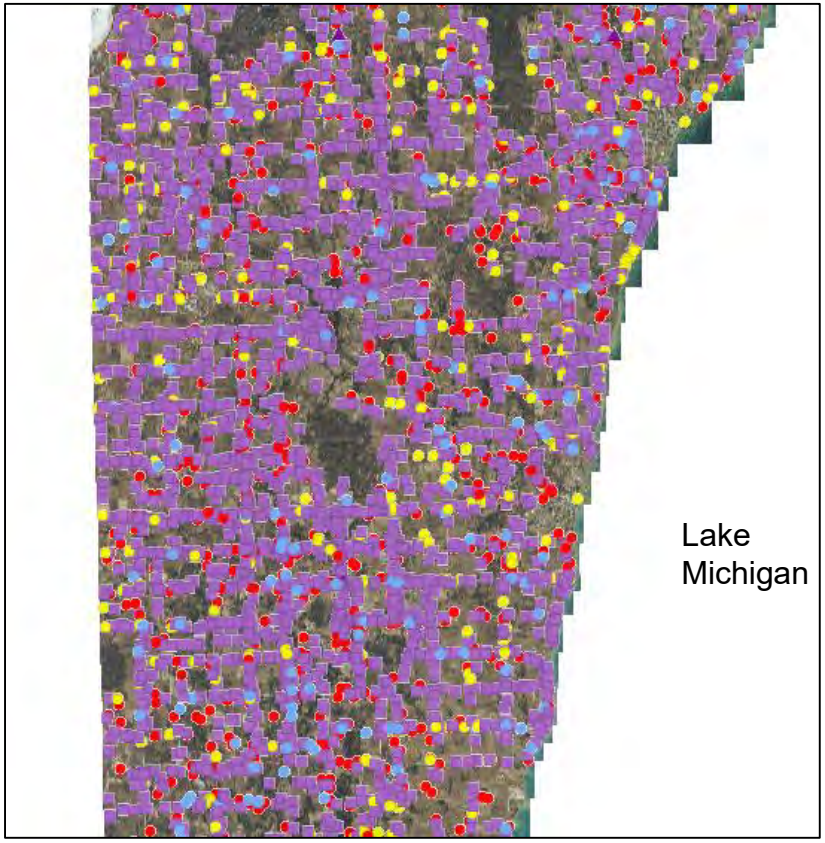
- All cattle & calves in 2016 = 97,000
- Milk cows in 2013 = 45,500
- Milk cow herds in 2016 = 167
- Concentrated Animal Feeding Operations (CAFOs) 15 dairy, one beef
- Approximately 700 million gallons cattle manure per year

Kewaunee County Septic Systems

- 4822 septic systems in the county
- 540 holding tanks, 155 abandoned

Personal comm. Lee Luft, Kewaunee County Supervisor, March 7, 2017

Legend
Purple = replaced or inspected
Red = not inspected
Yellow = holding tank
Blue = abandoned system



Kewaunee County septic systems

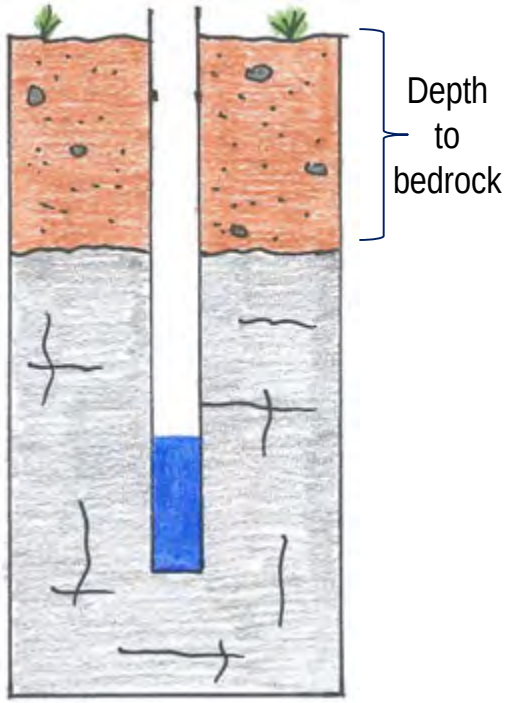
Approximately 200 million gallons septic effluent per year released to the subsurface

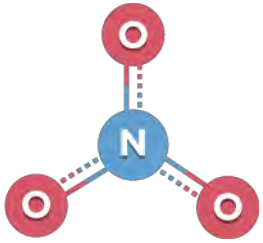
Research Objectives

1. Estimate county-wide contamination rate for nitrate and indicator bacteria as related to depth-to-bedrock
2. Determine source of fecal contamination using viruses and fecal markers
3. Identify risk factors for private well contamination using statistical models

Objective 1: Total Coliform, *E. coli*, Nitrate

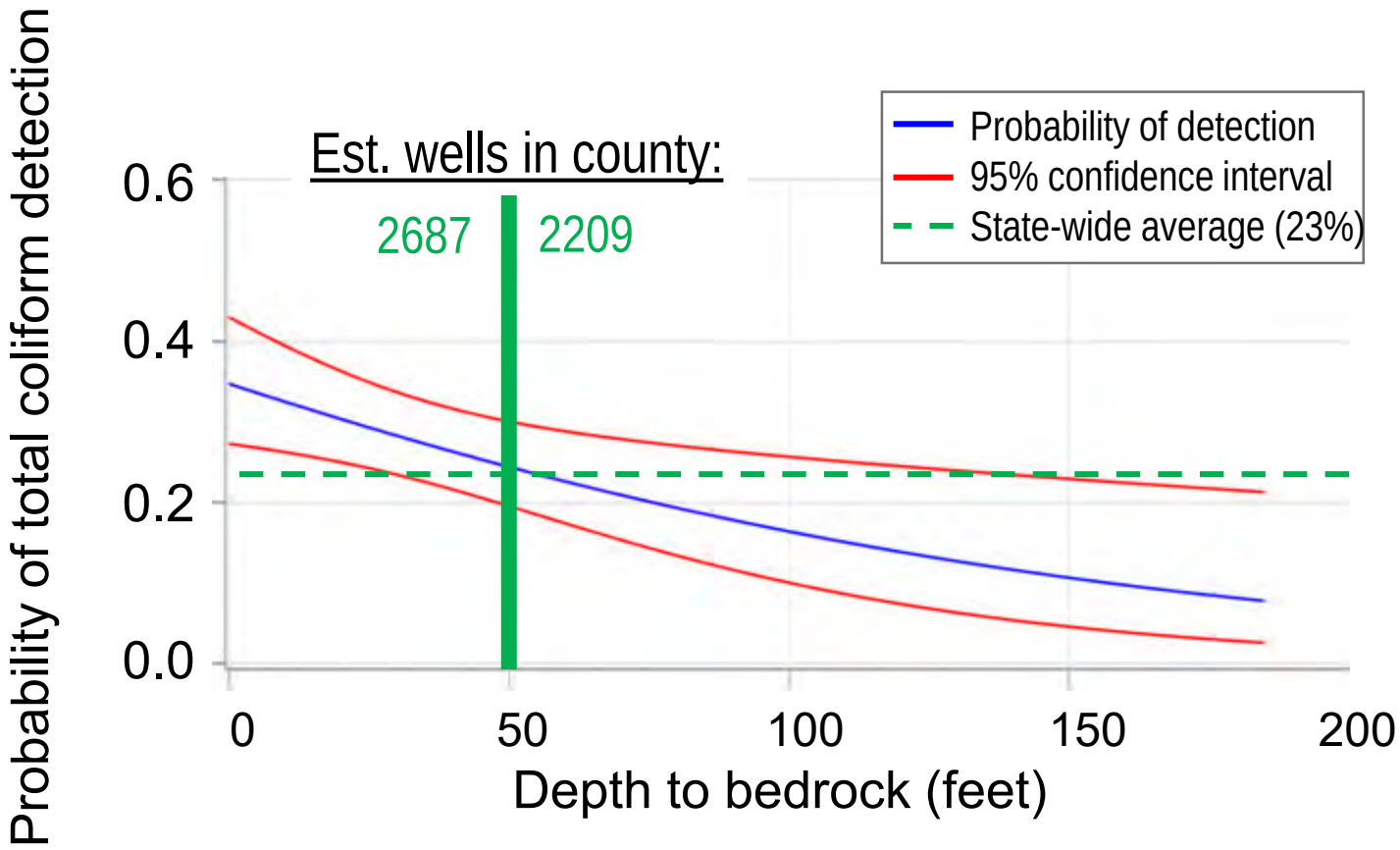
- County-wide randomized sampling of private wells – 4,896 in county
- Stratified by depth-to-bedrock: 0-5 ft, 5-20 ft, 20+ ft
- Participation rate ~ 50%
- Several day "Synoptic" sampling
- Recharge
  - November 2015
  - 317 wells in analysis
- No recharge
  - July 2016
  - 400 wells in analysis





1699

Effect of depth to bedrock on total coliform contamination



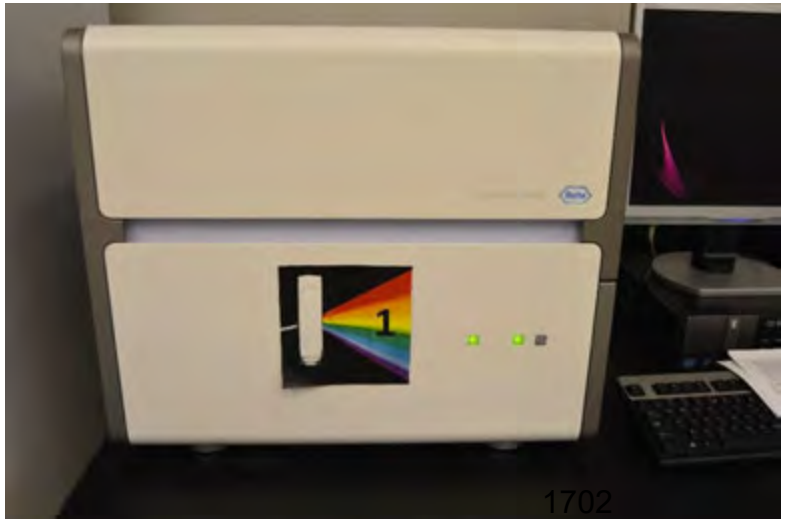
Fall, 2015
n = 315
p = 0.009

Objective 2: Determine fecal source

- Randomized stratified sampling from 208 wells positive for total coliform, *E. coli*, or high nitrate ($N\text{-}NO_3^-$ > 10 ppm)
- Five sampling rounds:
  - April, August, November, 2016
  - January and March, 2017

Study Sampling and Analyses

- Collected 138 samples from 131 household wells in Kewaunee County
- Pump ~800 L through hemodialysis filters
- qPCR for microbial genetic targets
  - Human-specific microbes
  - Bovine-specific microbes
  - Non-specific microbes (pathogens of both people and cattle)



Microbes: Identifying the Fecal Source

(n = 138 samples from 131 wells) (red font indicates pathogenic)

Host	Microorganism	Wells	Concentration (gene copies/L)
Human-specific	Adenovirus A	1	1
	Bacteroidales-like Hum M2	7	< 1 – 1050
	Human *Bacteroides*	27	< 1 – 34
	Cryptosporidium hominis	1	qualitative
	Rotavirus A (G1 P[8])	7	qualitative
	All	**33**	

Not detected: [human-specific] adenovirus B & C, D, F, enterovirus, human polyomavirus, norovirus GI & GII
[bovine-specific] coronavirus, bovine diarrheal virus 1 & 2

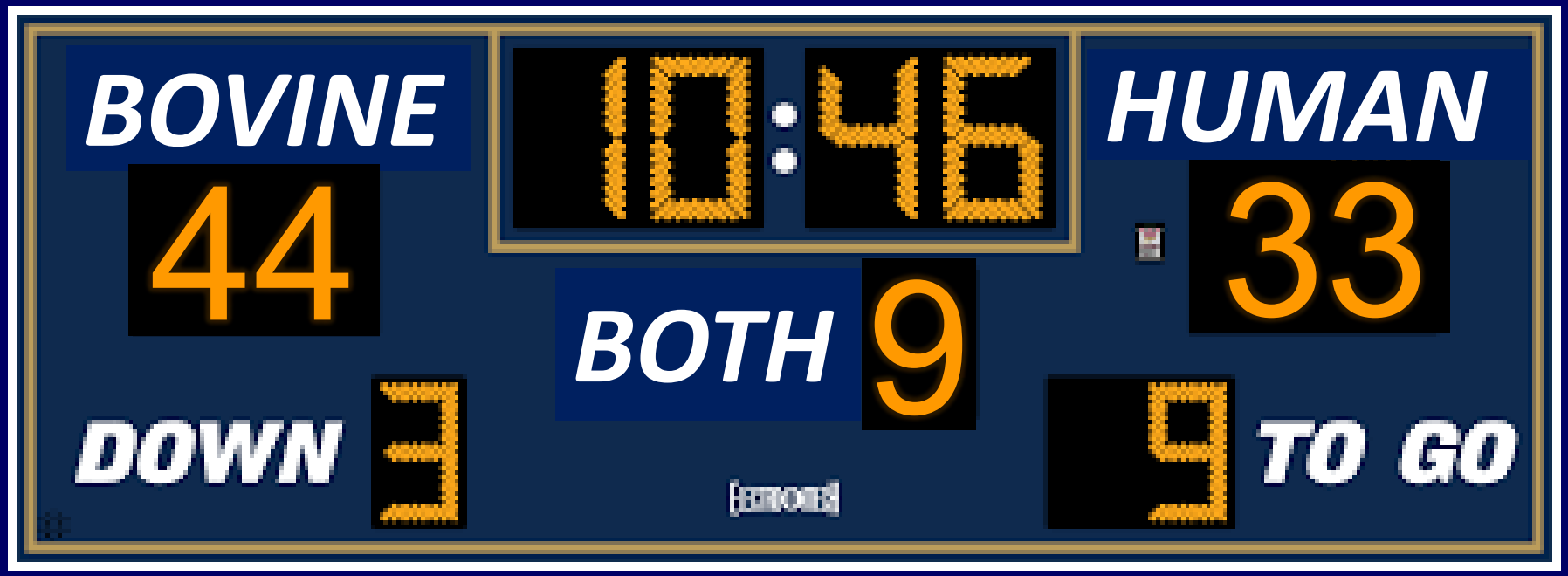
Microbes: Identifying the Fecal Source

(n = 138 samples from 131 wells) (red font indicates pathogenic)

Host	Microorganism	Wells	Concentration (gene copies/L)
Bovine-specific	*Bacteroidales*-like Cow M2	2	29 - 915
	Bacteroidales-like Cow M3	4	3 – 49,818
	Bovine *Bacteroides*	36	< 1 – 42,398
	Bovine polyomavirus	8	< 1 – 451
	Bovine enterovirus	1	2
	Rotavirus A (G10 P[11])	12	qualitative
	All	**44**	

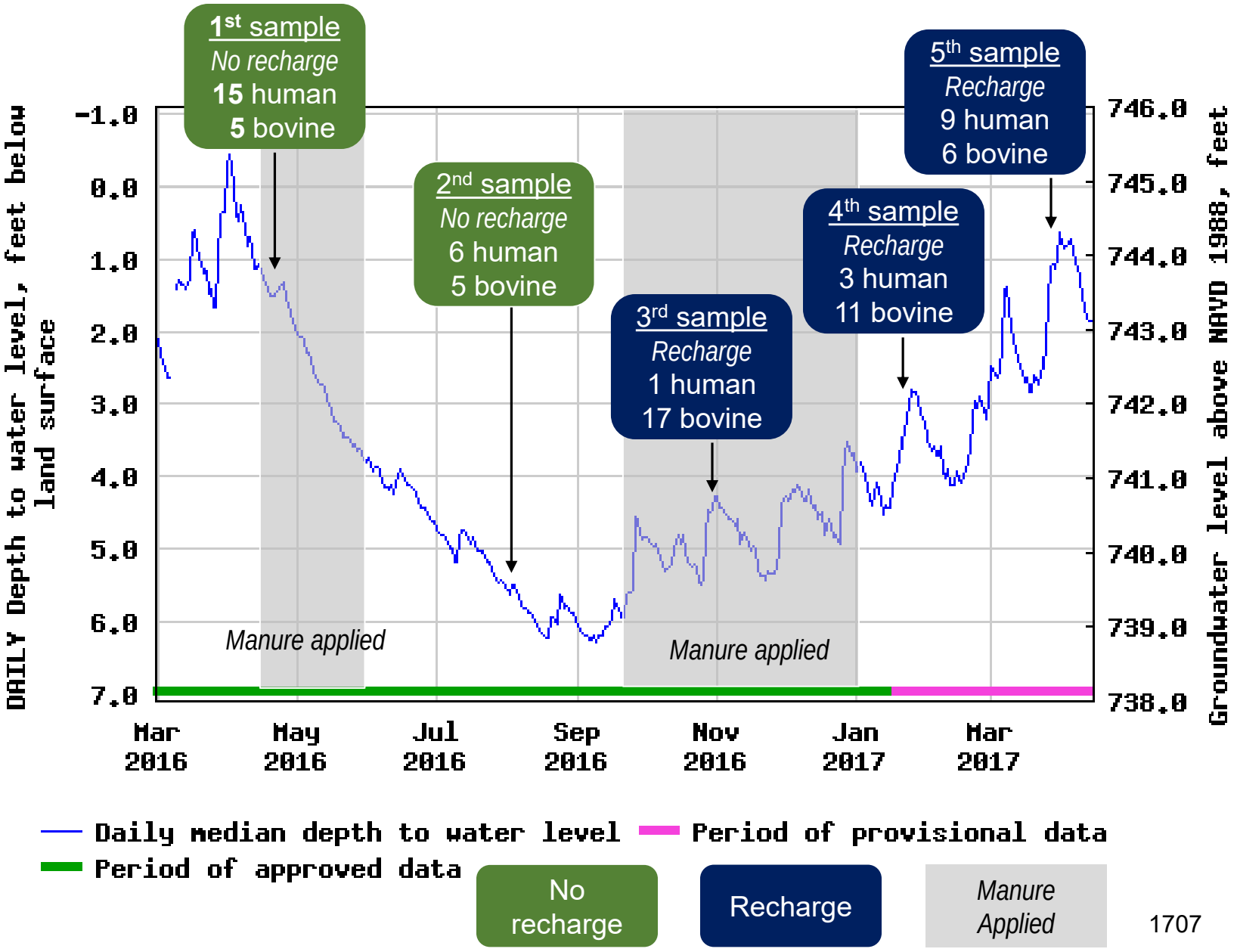
Not detected: [human-specific] adenovirus B & C, D, F, enterovirus, human polyomavirus, norovirus GI & GII
[bovine-specific] coronavirus, bovine diarrheal virus 1 & 2

Well Contamination Scoreboard



Host	Microorganism	Wells	Concentration (gene copies/L)
Non-specific	*Campylobacter jejuni*	1	< 1
	Cryptosporidium parvum	13	qualitative
	Cryptosporidium spp.	16	< 1 – 3
	Giardia lamblia	2	< 1
	Pathogenic *E. coli* (*eae* gene)	1	4
	Pathogenic *E. coli* (*stx1* gene)	1	16
	Pathogenic *E. coli* (*stx2* gene)	1	1
	Pepper mild mottle virus	13	2 - 3811
	Rotavirus A (*NSP3* gene)	17	< 1 – 4481
	Rotavirus A (*VP7* gene)	7	< 1 – 732
	Rotavirus C	3	45 – 1301
	Salmonella (*invA* gene)	3	< 1 – 13
	Salmonella (*ttr* gene)	5	5 – 59
	All	**44**	
	Total positive wells	**79**	**< 1 - 49818**

Groundwater levels during sampling for pathogens & fecal indicators

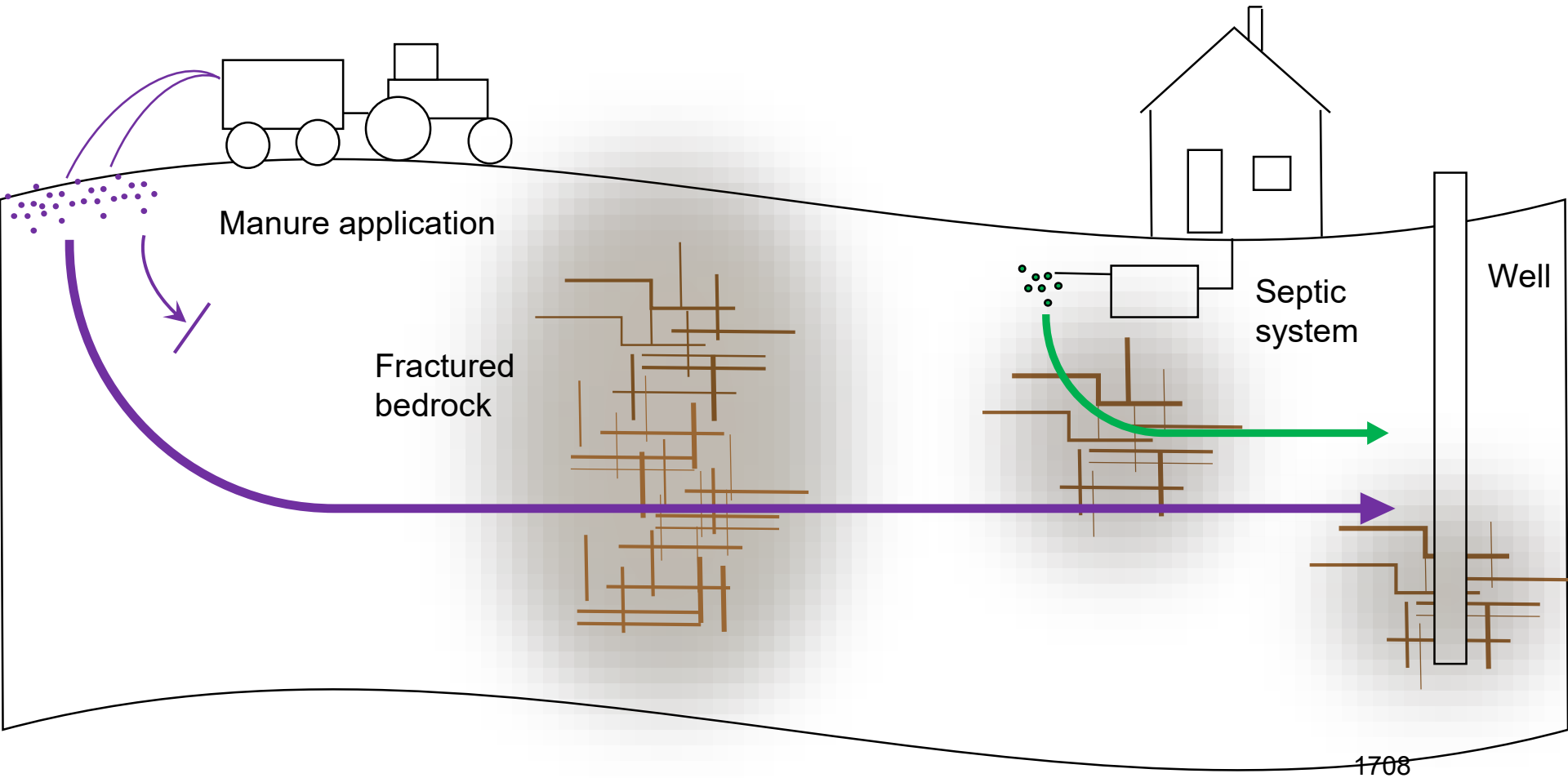


1707

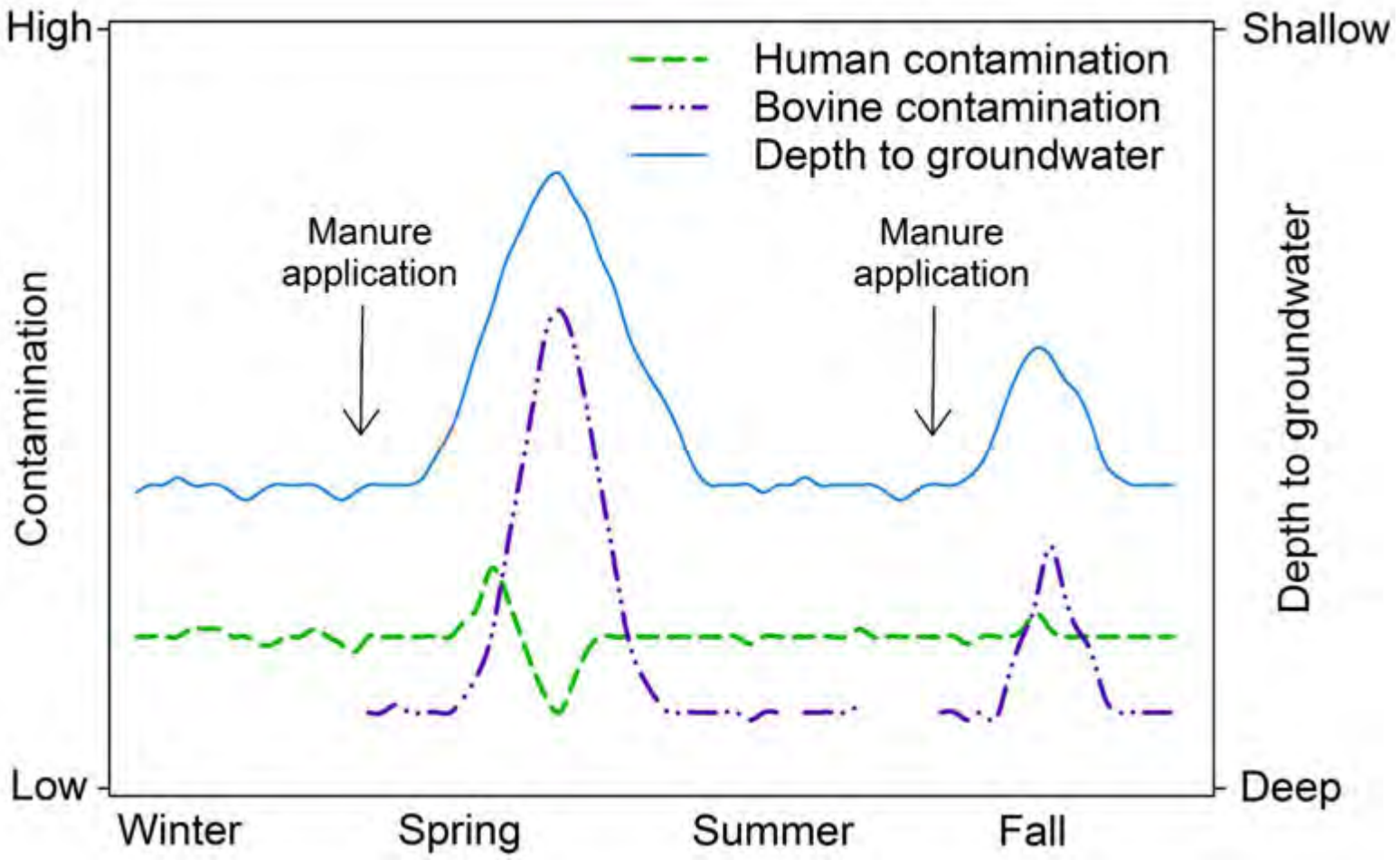
Conceptual Model of Fecal Contamination in Kewaunee County - 1

Bovine pathogen source
- Large fecal source
- Surface applied periodically
- Episodic infiltration

Human pathogen source
- Small fecal source
- Sub-surface release continuously
- Continuous infiltration



Conceptual Model of Fecal Contamination in Kewaunee County - 2



Objective 3: Statistical Risk Factor Analysis

Contamination Sources – *Distance; count or acres within 750, 1500, 3000 ft of well*

Bovine	*Human*
Agricultural fields	Septic systems (all, drain field, uninspected)
Manure storages	Septage-applied fields

Karst Features – *Count within 750, 1500 and 3000 feet of well*

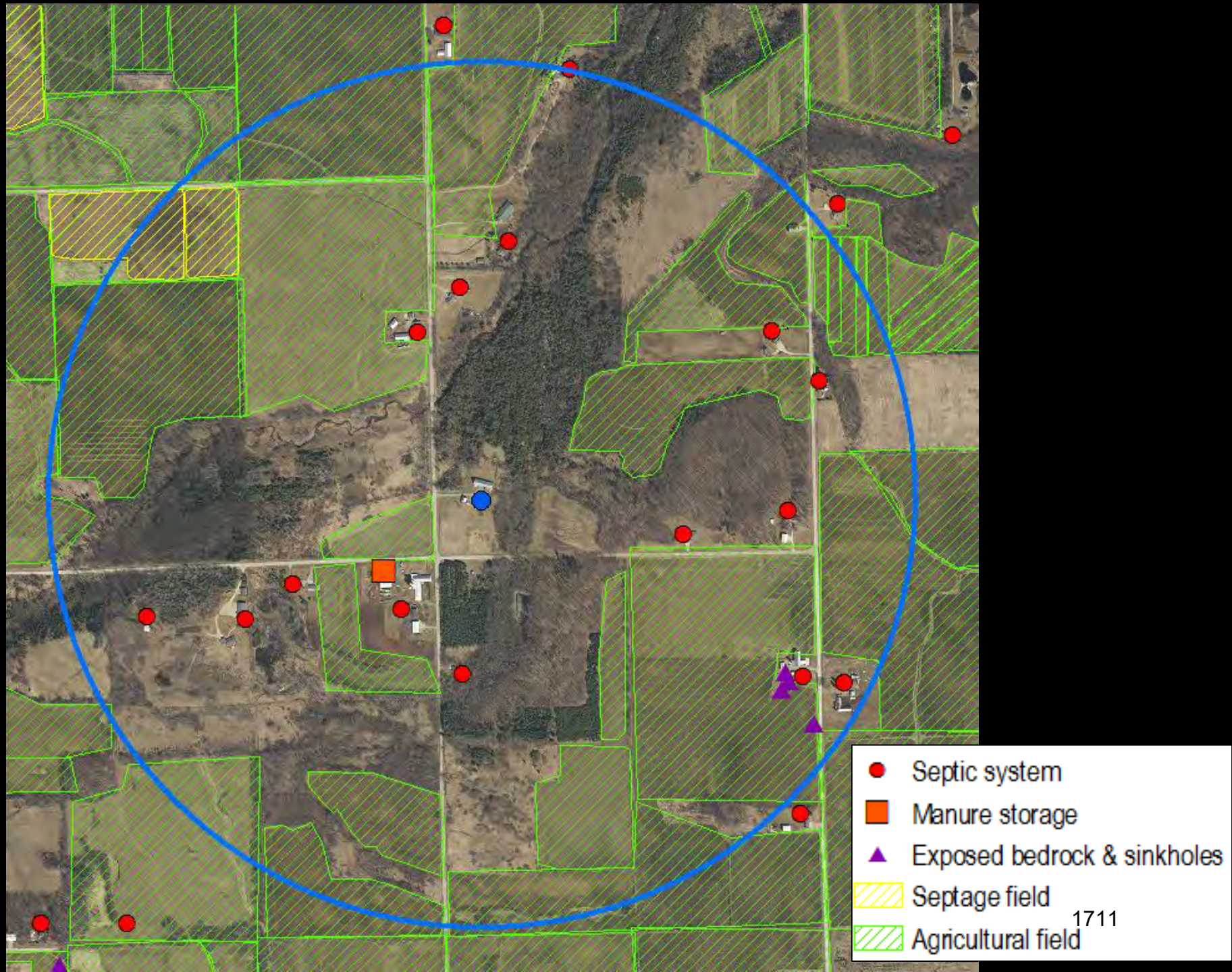
- Sinkholes
- Bedrock features at the surface

Precipitation & Groundwater Recharge – *2, 7, 14, 21 days prior to sampling*

- Precipitation (cumulative, no snowfall)
- Groundwater recharge (cumulative)
- Depth to groundwater (median & minimum)

Well Construction & Siting

- Well depth
- Casing depth
- Depth to groundwater
- Depth to bedrock
- Open interval length
- Well age
- Length of casing into bedrock
- Length of casing below water table
- Elevation
- Soil drainage


Septic system
Manure storage
Exposed bedrock & sinkholes
Septage field
Agricultural field

Risk Factors for Human Fecal Contamination

Important factors

- Distance to nearest neighbor's septic system
- Number of neighbors' septic drain fields around well
- Precipitation
- Depth to groundwater
- Depth to bedrock

Surprising unimportant factors

- Well construction variables (e.g., casing depth)

Risk Factors for Manure Contamination

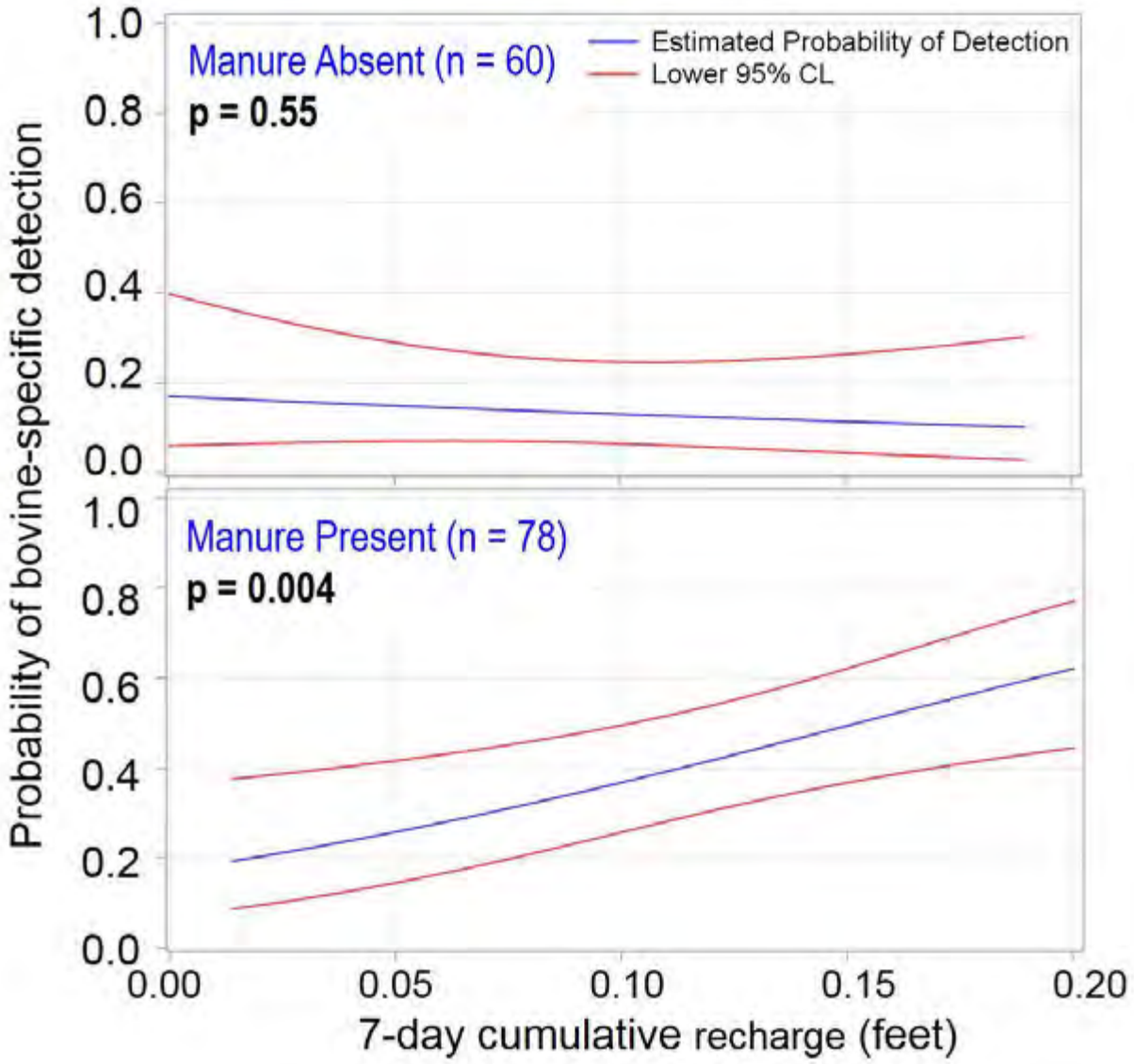
Important factors

- Recharge
- Depth to groundwater
- Depth to bedrock
- Interactions between ag land use, manure application, and groundwater recharge

Surprising unimportant factors

- Well construction variables (e.g., casing depth)

Bovine-Specific Microbes in Private Wells by Previous 7 Days Cumulative Recharge



Risk Factors for Total Coliform and High Nitrate Contamination

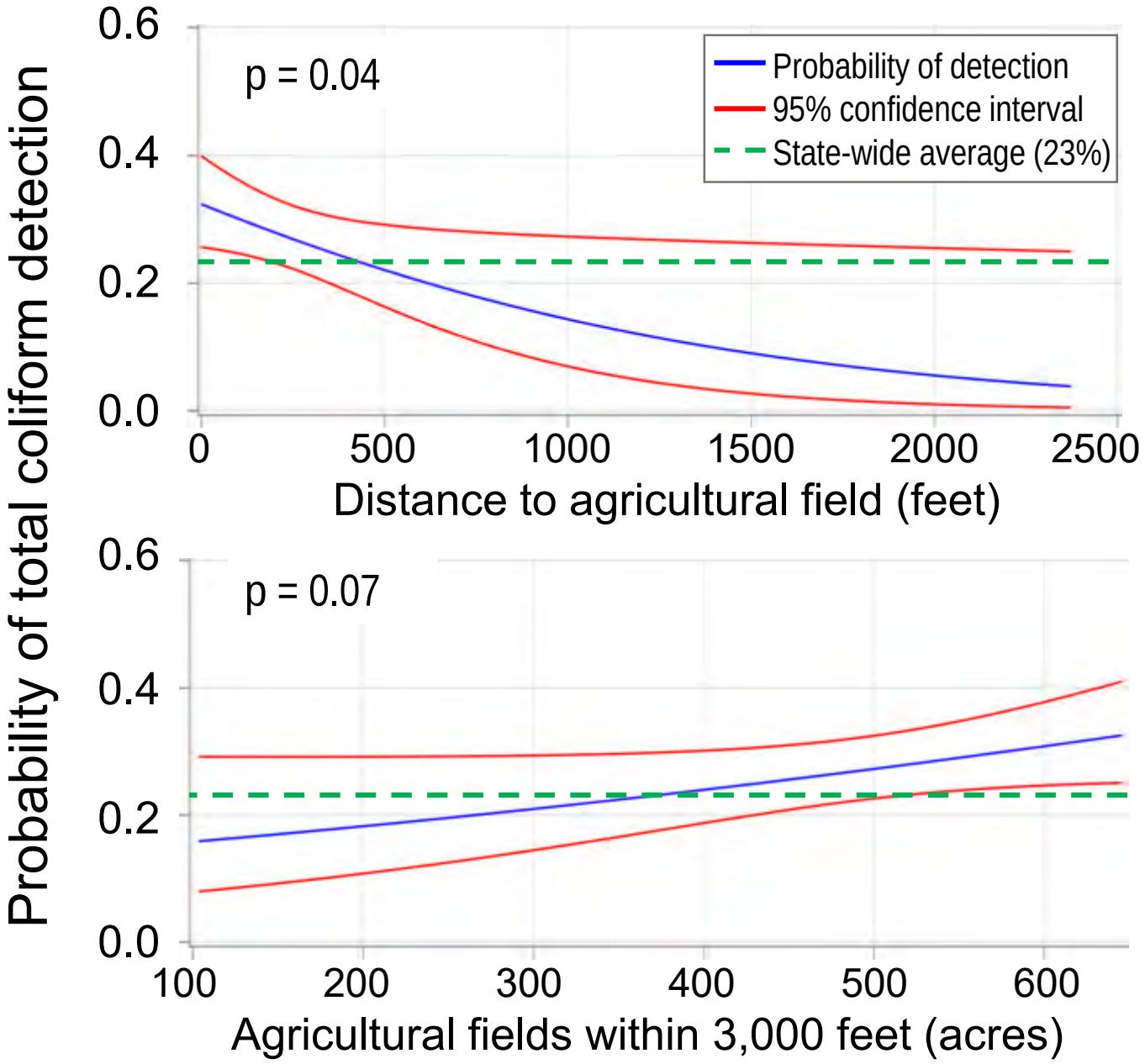
Important factors

- Distance between well and agricultural field
- Number of acres of ag fields around well
- Number of sink holes around well
- Distance to nearest manure lagoon
- Recharge
- Depth to bedrock

Surprising unimportant factors

- Septic system variables
- Well construction variables (e.g., casing depth)

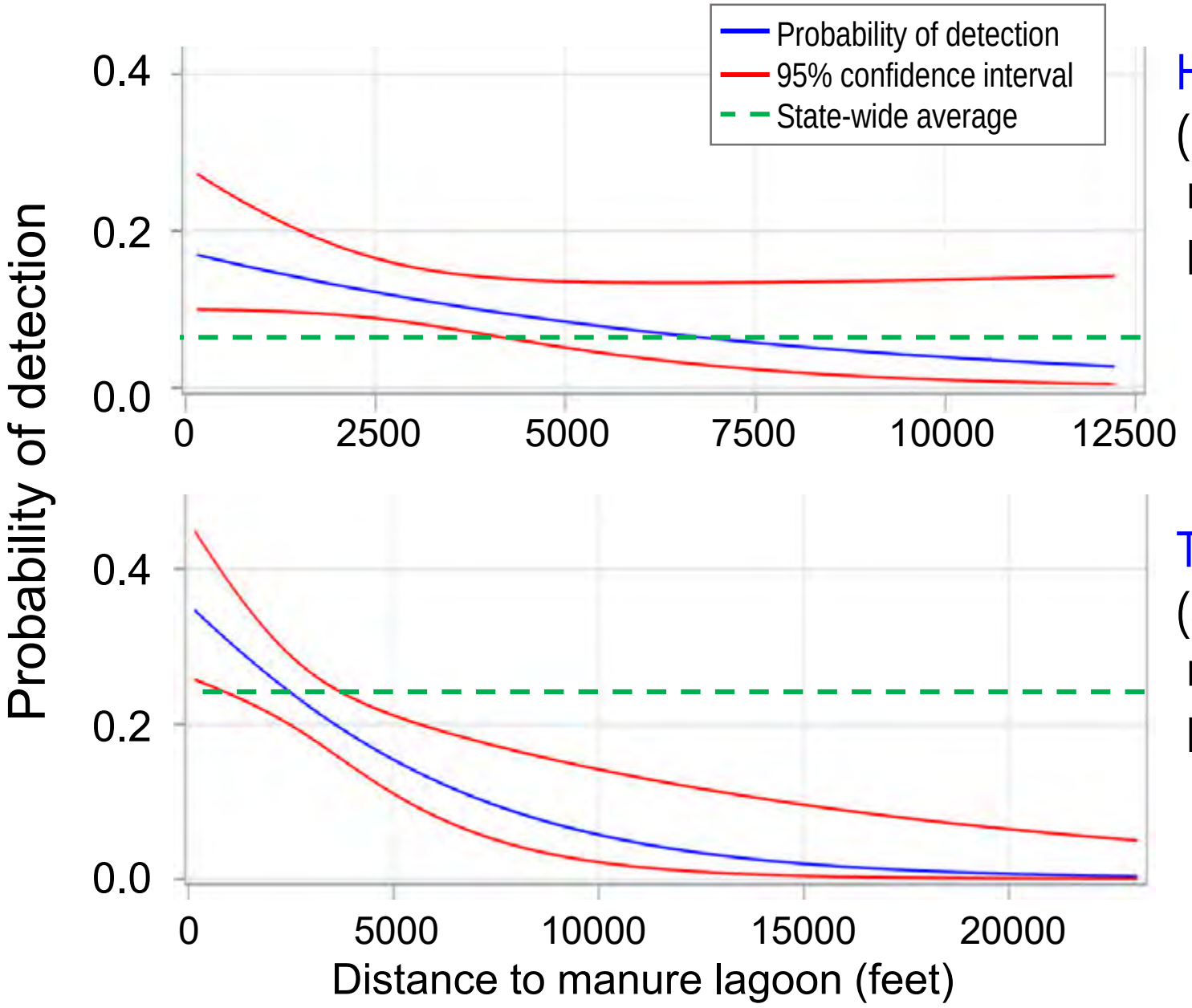
Risk Factors for Total Coliform Contamination



Fall 2015 data (n = 315)

Fall 2015 data (n = 315)

Manure Lagoon Association with Coliforms and Nitrate



High Nitrate
(Fall)
n = 319
p = 0.082

High nitrate:
$N\text{-}NO_3^-$ > 10 ppm

Total coliform
(Summer)
n = 397
p = 0.0014

1717

Do people get sick from drinking contaminated private well water?

- Consider one pathogen: *Cryptospordium parvum*
- Confirmed cryptosporidiosis cases in Kewaunee County reported to State:
  - 2 to 9 cases per year (2010 to 2016)
- Under-reporting of cryptosporidiosis cases in the USA is estimated to be 100-fold (Centers for Disease Control and Prevention, 2012)
- Therefore, in Kewaunee County there are likely 200 to 900 cryptosporidiosis cases per year

How many of these cases are from private wells?

Estimate of Kewaunee County *Cryptosporidium parvum* infections from private wells

	People	Calves
Population using private wells	12,200	17,300
Wells contaminated by *C. parvum*	3.1%	3.1% (assumed)
Population exposed per day	380	540
Infections per exposure	10 infections per 10,000 people	85 infections per 10,000 calves
Total infections per year	140	1,700

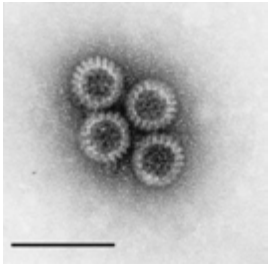
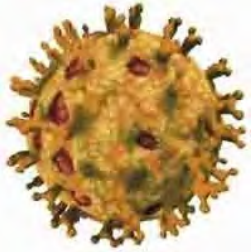
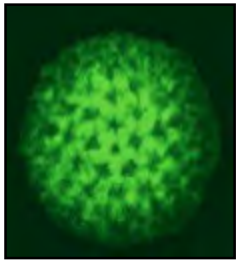
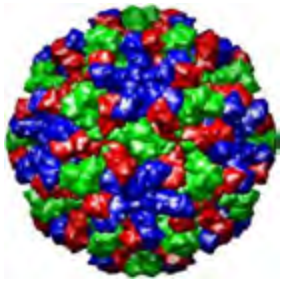
Solutions for Preventing Exposure to Manure-borne Pathogens in the Environment

Practices to Minimize Transport	Practices to Maximize Inactivation
Distance between livestock and waterways	Storage time
Vegetated treatment areas	Chemical treatment (e.g., lime)
Settling basins and wetlands	Thermophilic processes (e.g., aerated composting)
Manure storage and treatment lagoons	Anaerobic digestion

From: Atwill et al. 2011 An Introduction to Waterborne Pathogens in Agricultural Watersheds, NRCS

Questions?

Comments?

County-wide contamination rate; weighted by depth to bedrock

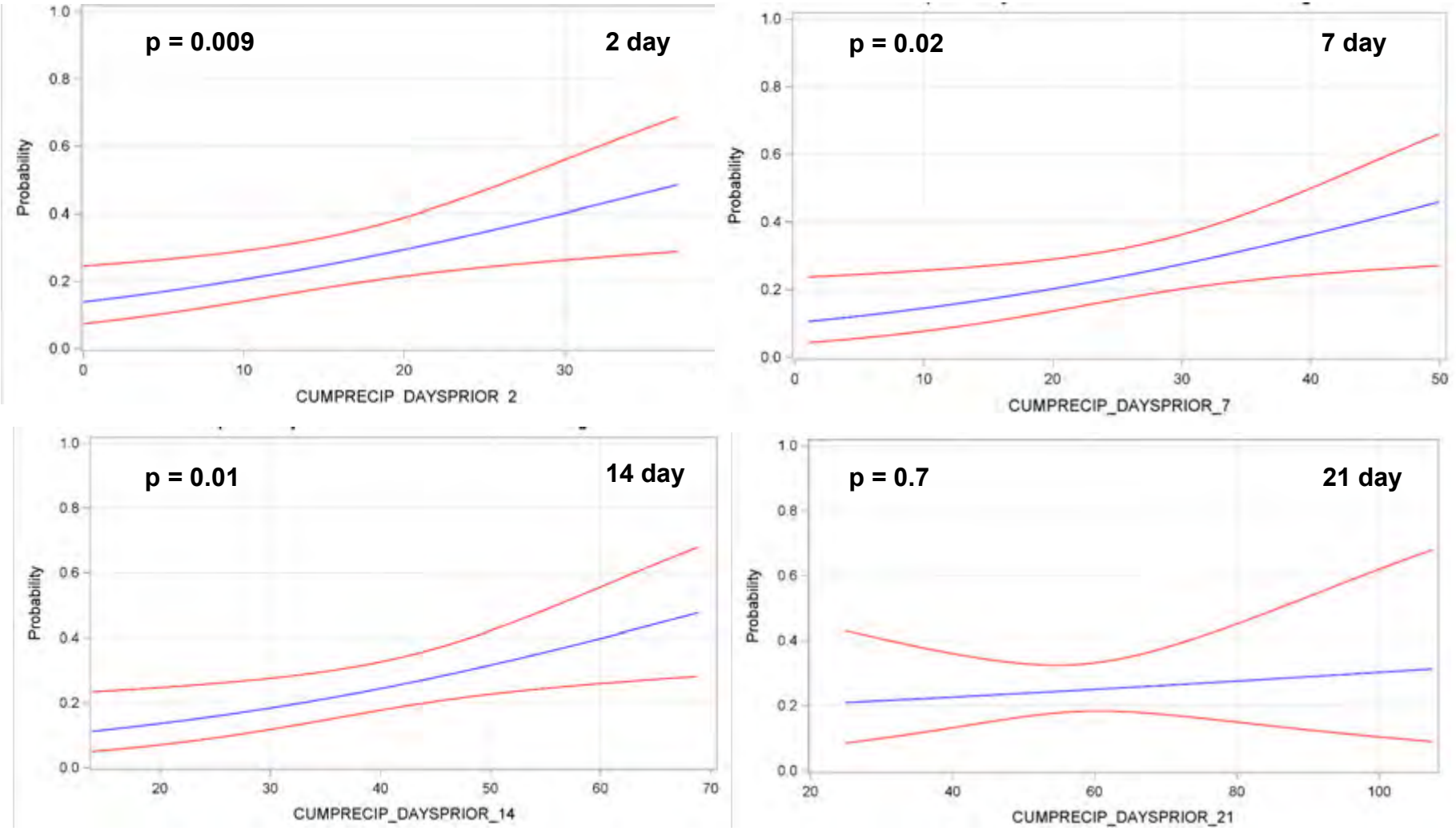
Percent wells contaminated

	Kewaunee County		Wisconsin*
	Recharge (n = 317)	No Recharge (n = 400)	(n = 534)
Total coliform	20.8	22.2	22.8
E. coli	0.4	1.2	2.6
High nitrate	7.4	6.8	6.6
Any of the 3 contaminants	26.4	27.6	NA

High nitrate: exceeds health standard; N-NO_3^- > 10 ppm

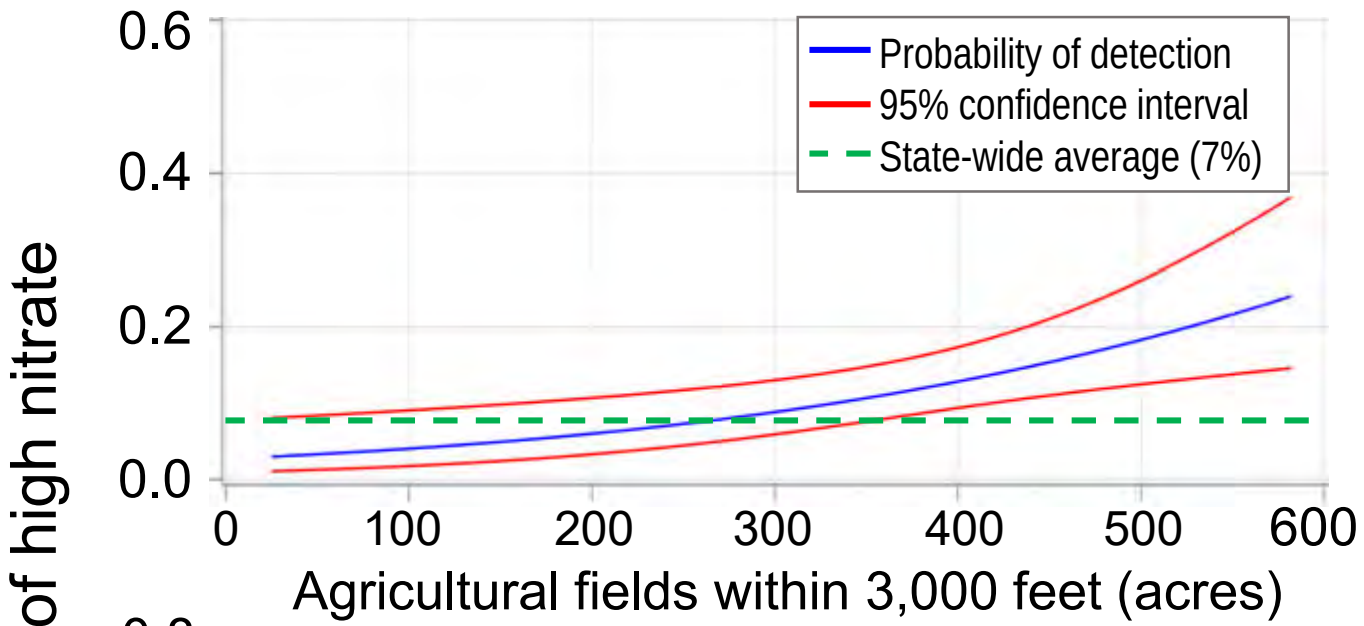
*private wells sampled; *Information on the quality of water found at community water systems and private wells. United States GAO/RCED-97-123, June 1997*

Probability of well contamination with human fecal markers as related to cumulative precipitation

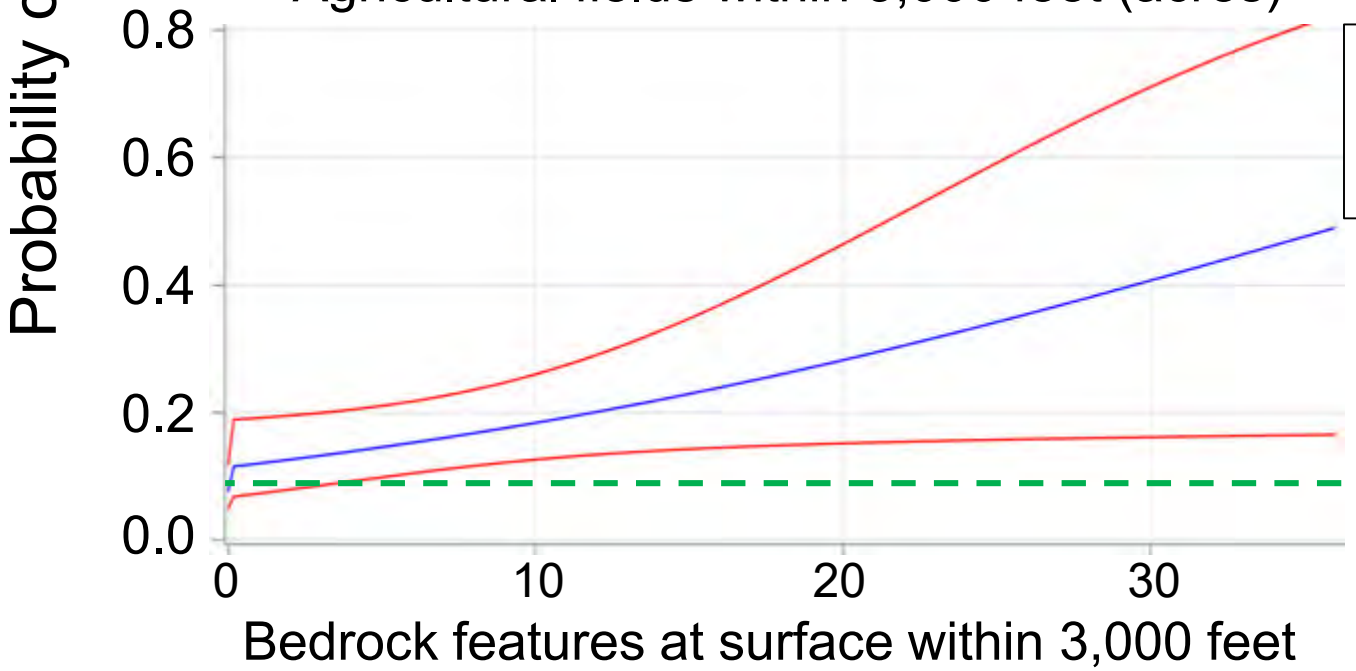


Cumulative precipitation in millimeters

Risk Factors for High Nitrate (*N-NO_3^- > 10 ppm)* Contamination



P = 0.002
Fall 2015 data
(n = 318)



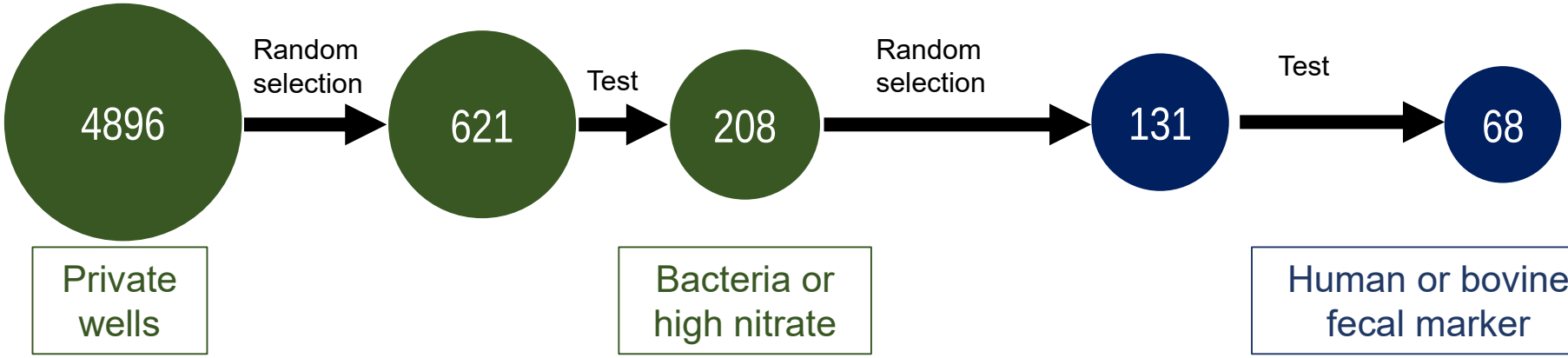
P = 0.04
Summer 2016 data
(n = 399)

1724

Project objectives & study design

1. Measure total coliform, *E. coli*, nitrate → 2. Determine fecal source

Given contamination



Outcome: County-wide occurrence as % wells contaminated

Outcome: Number of wells with human or bovine fecal markers

Pathogens & fecal markers in Kewaunee County: Comparison to other studies

Wisconsin 2003:
Private wells
50 tested

Ontario 2017:
Private wells
11 tested

Pennsylvania 2017
Private wells
5 tested

0% 8% 15% 45% 60% 100%

Study wells positive for microorganisms

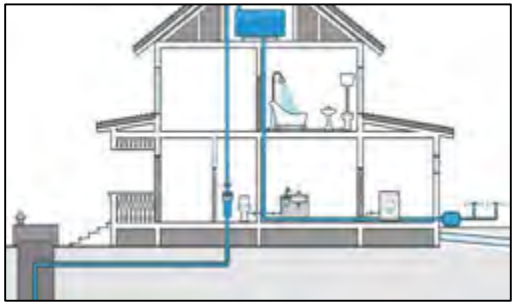
Canada & USA 1990 – 2013
Public & private wells
12,616 tested

Kewaunee County
Private wells
131 tested

From Farm Field to Household Well

Manure applied Oct 25, 2016

> 1 inch rain Oct 26, 2016



House near field

Farm field sampled Oct 27, 2016

Bovine Bacteroides
Bovine enterovirus
Bovine polyomavirus
M2 Bacteroides-like
M3 Bacteroides-like

Rotavirus A NSP3
Rotavirus A VP7
Rotavirus C

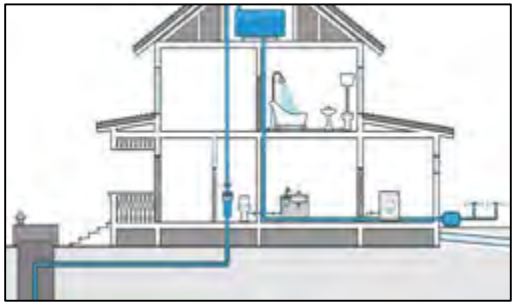
Tap water Oct 27, 2016

Bovine Bacteroides
Bovine enterovirus
Bovine polyomavirus
M2 Bacteroides-like
M3 Bacteroides-like
Campylobacter jejuni
Cryptosporidium
Rotavirus A NSP3
Rotavirus A VP7
Rotavirus C

From Farm Field to Household Well

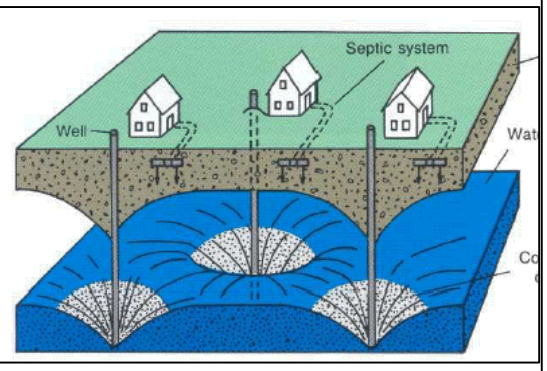
Manure applied Oct 25, 2016

> 1 inch rain Oct 26, 2016



House near field

Neighbor's well sampled Oct 31, 2016



Bovine Bacteroides

Bovine polyomavirus
M2 Bacteroides-like
M3 Bacteroides-like

Rotavirus A NSP3
Rotavirus A VP7
Rotavirus C

Tap water Oct 27, 2016

Bovine Bacteroides
Bovine enterovirus
Bovine polyomavirus
M2 Bacteroides-like
M3 Bacteroides-like
Campylobacter jejuni
Cryptosporidium
Rotavirus A NSP3
Rotavirus A VP7
Rotavirus C

Summary

- Well contamination in the fractured dolomite aquifer in Kewaunee County results from both human and bovine fecal sources.
- Wells are contaminated with pathogens of significant concern: *Salmonella*, EHEC, *Cryptosporidium*, rotavirus.
- At depths to bedrock less than 50 feet total coliform and nitrate contamination rates generally exceed statewide averages.
- Risk factors for well contamination are: groundwater recharge, depth to groundwater, sink holes, precipitation, timing of manure application, agricultural land use, and the density of septic drain fields.

We Thank…

Kevin Masarik
UW-Stevens Point Watershed Science and Education

Kevin Erb
UW-Extension – Environmental Resources Center

Leah Kammel & Laura Hubbard
Upper Midwest Water Science Center

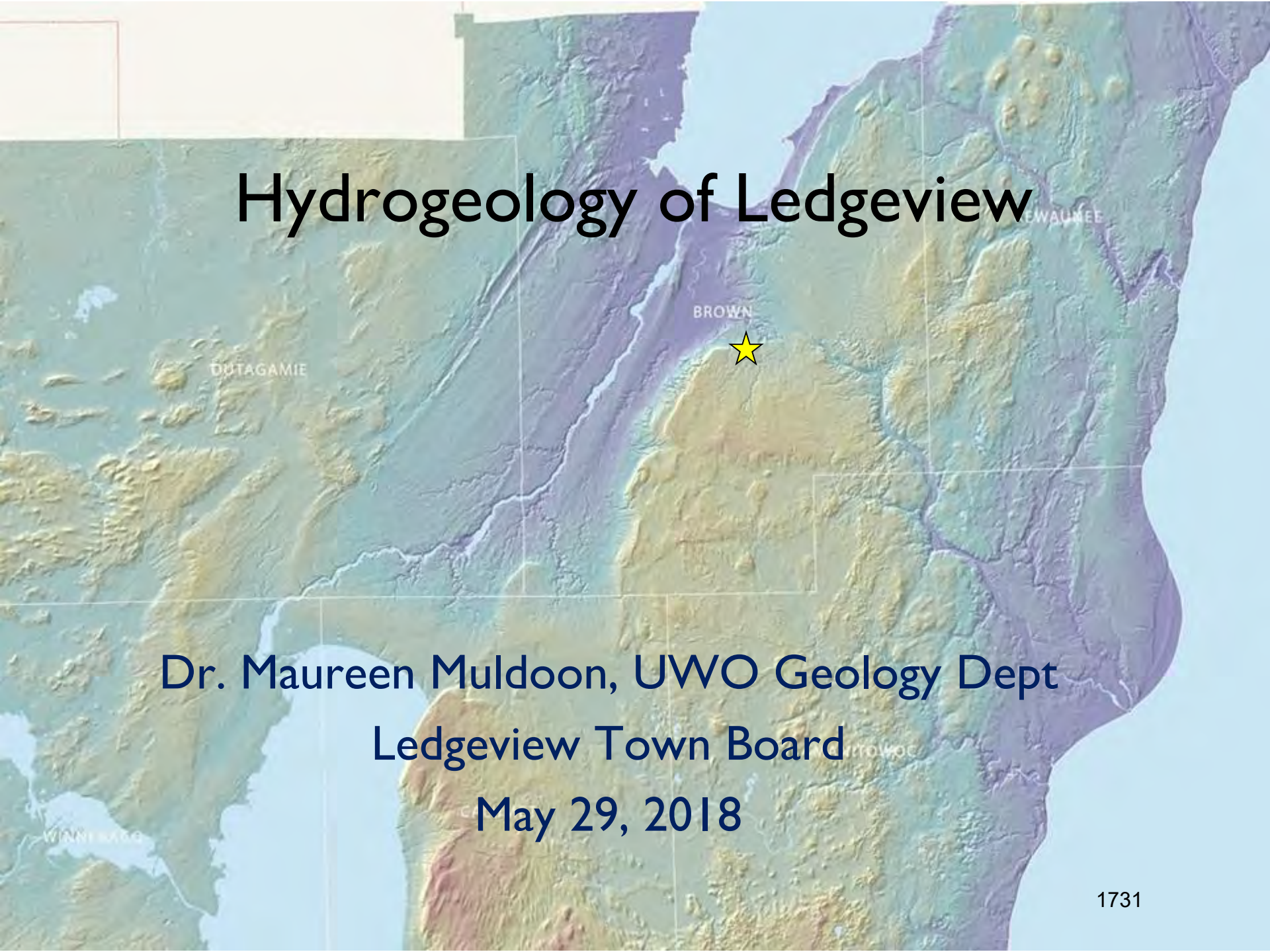
Stephen Mauel
Wisconsin Geological & Natural History Survey

Dustin Goering and Liz Houle
NOAA National Weather Service

Travis Engels
Kewaunee County Land and Water Conservation

Staff at the ERIC Lab, UW-Oshkosh

Hydrogeology of Ledgeview



Dr. Maureen Muldoon, UWO Geology Dept

Ledgeview Town Board

May 29, 2018

1731

Outline

- Watersheds & Water Cycle
- Groundwater Basics
- Geology
- Aquifers
- Existing Water Quality

Water Cycle

- Processes
  - Evaporation
  - Transpiration
  - Precipitation
  - Infiltration
  - Groundwater flow
  - Overland flow
  - Stream runoff

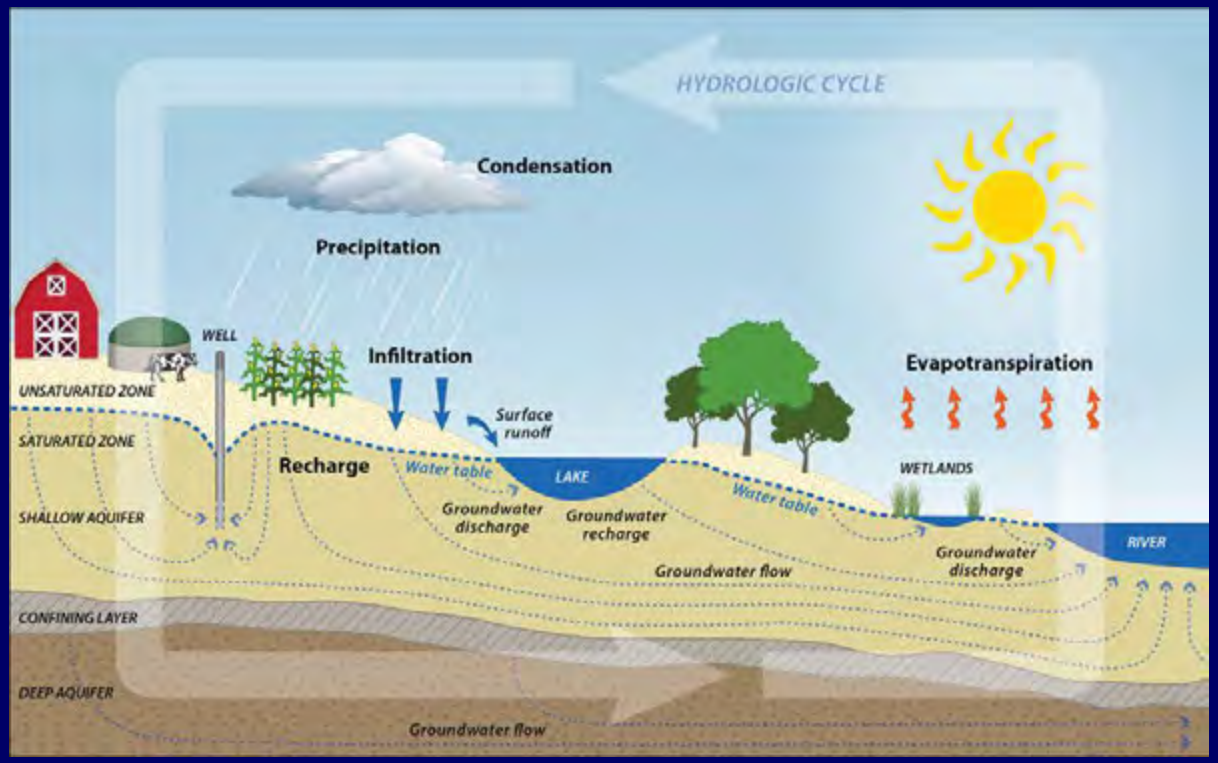
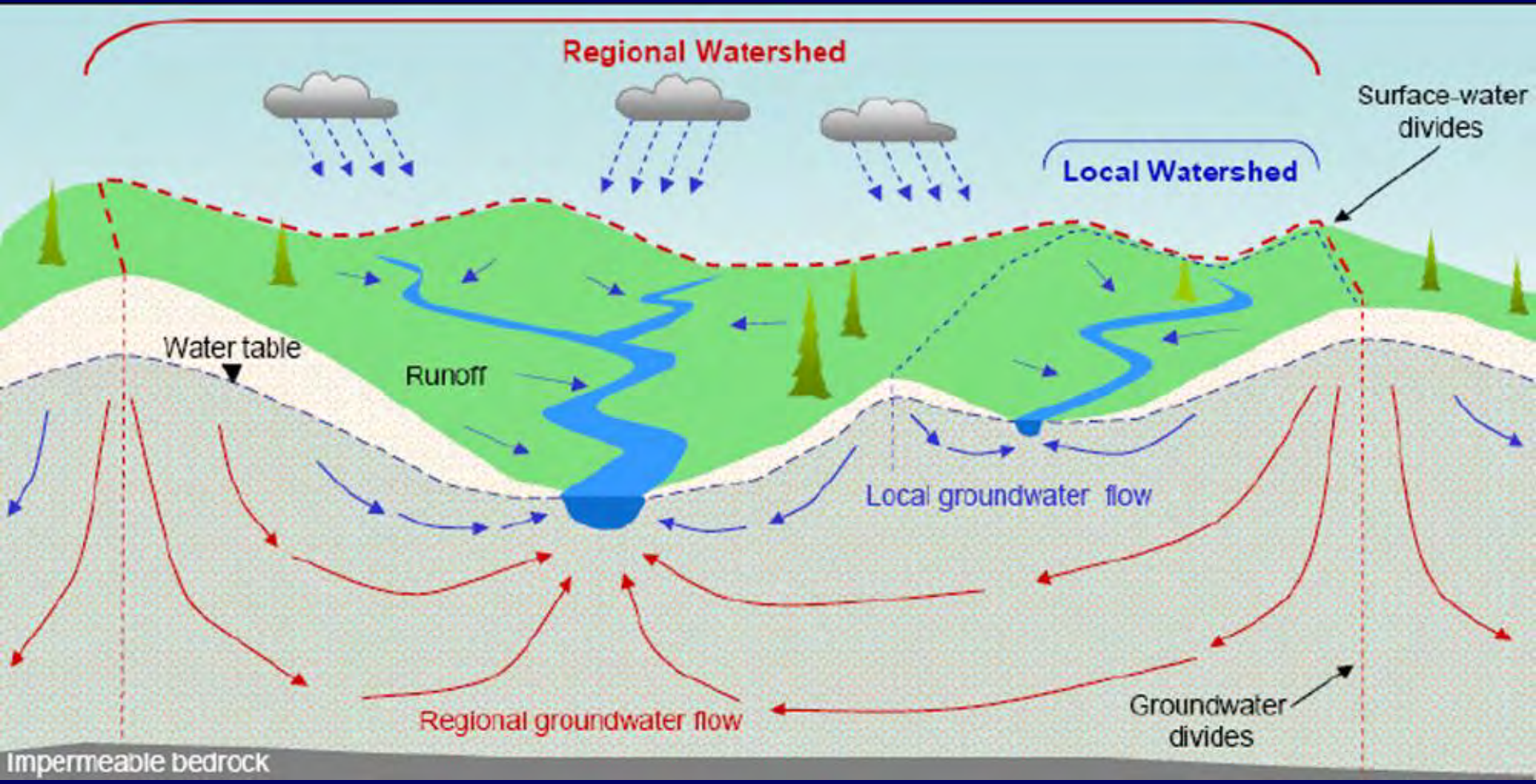


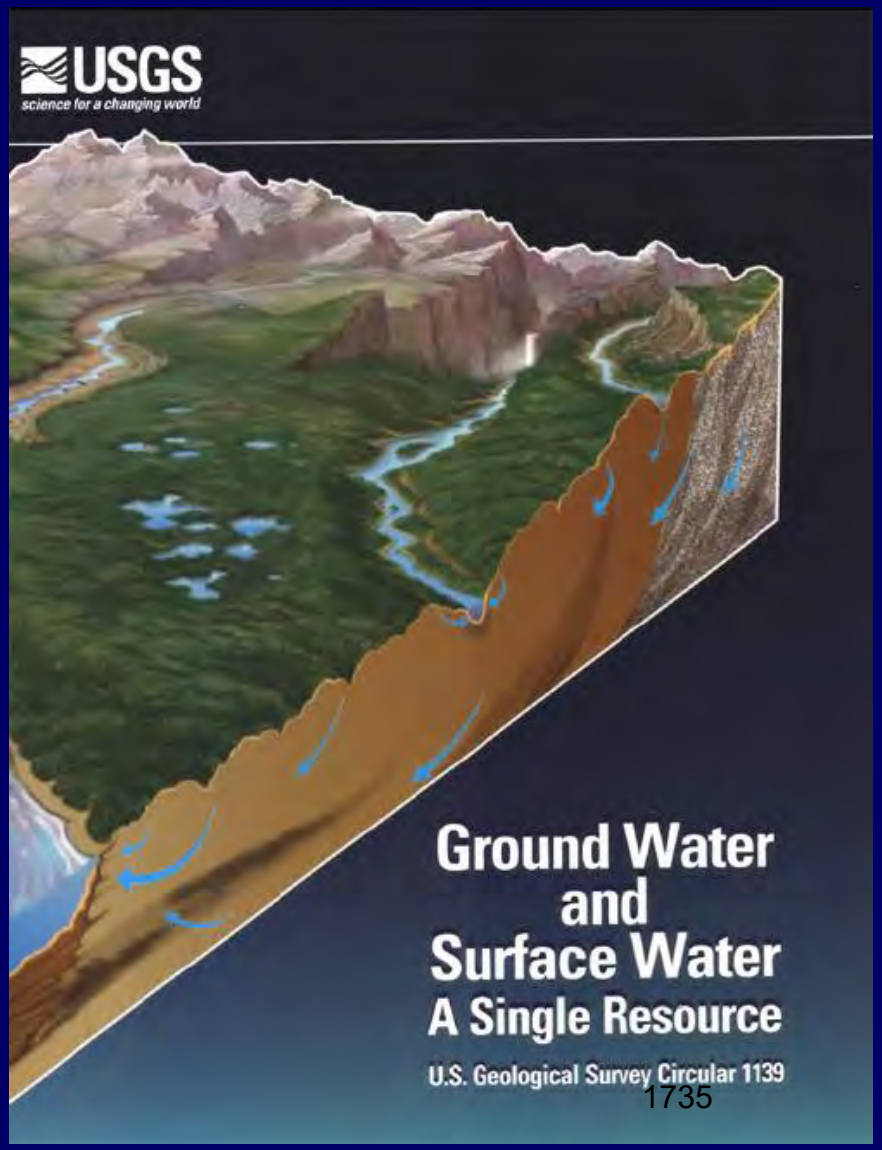
Figure from WI Geological and Natural History Survey

Watersheds & Water Cycle



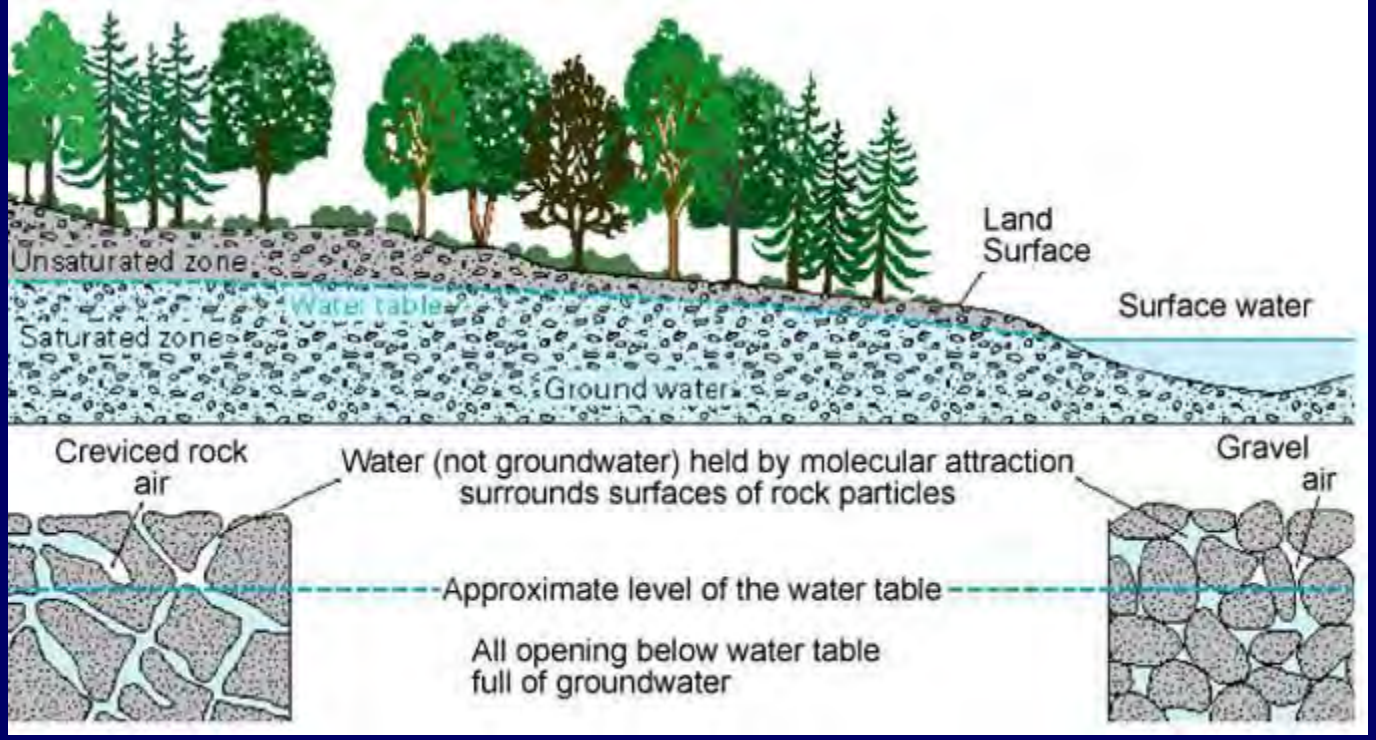
GW & SW: A Single Resource

- USGS Circular 1139
  http://pubs.usgs.gov/circ/circ1139/
- The hydrologic cycle and interactions of ground water and surface water
- Chemical interactions of ground water and surface water
- Effects of human activities on the interaction of ground water and surface water

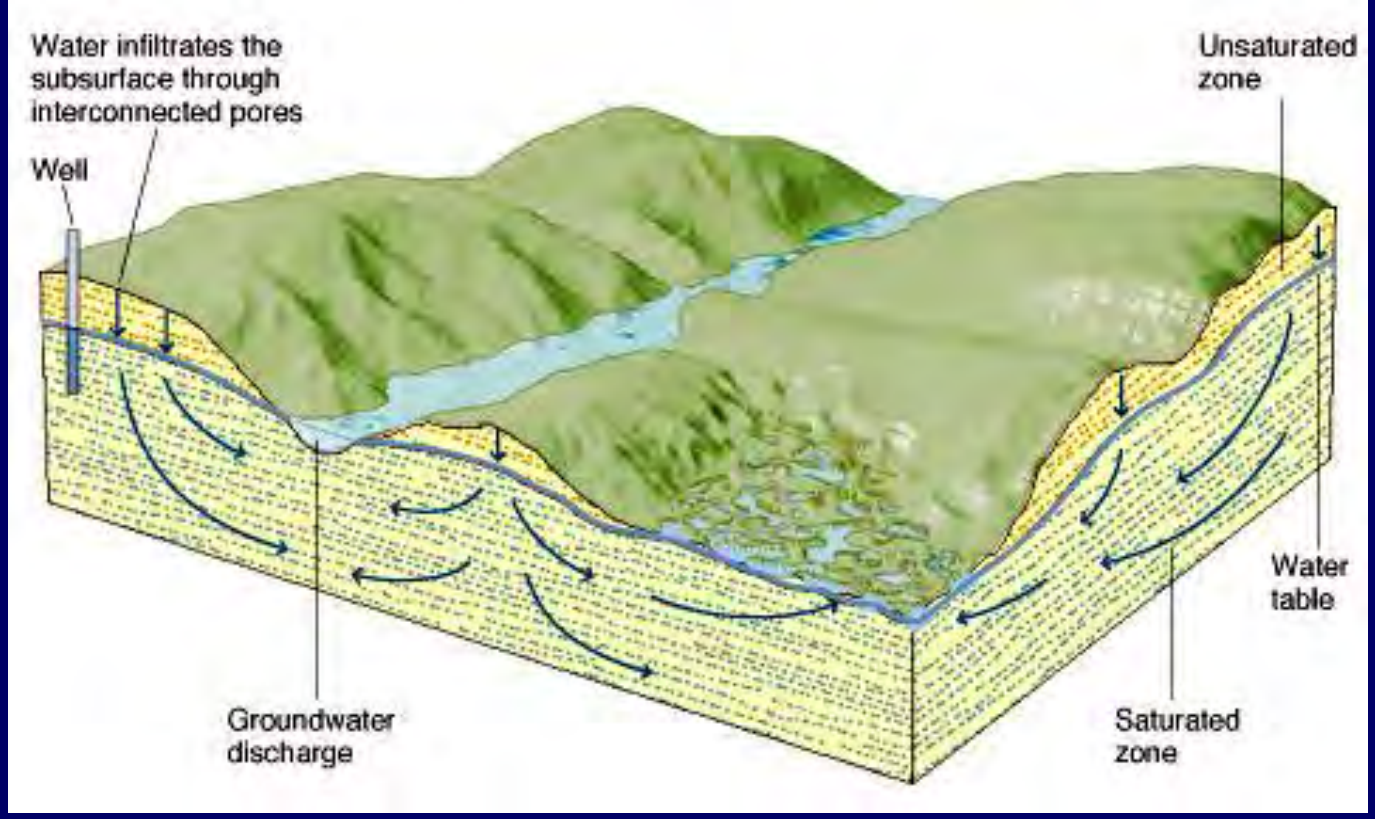


Outline

- Watersheds & Water Cycle
- Groundwater Basics
- Geology
- Aquifers
- Existing Water Quality



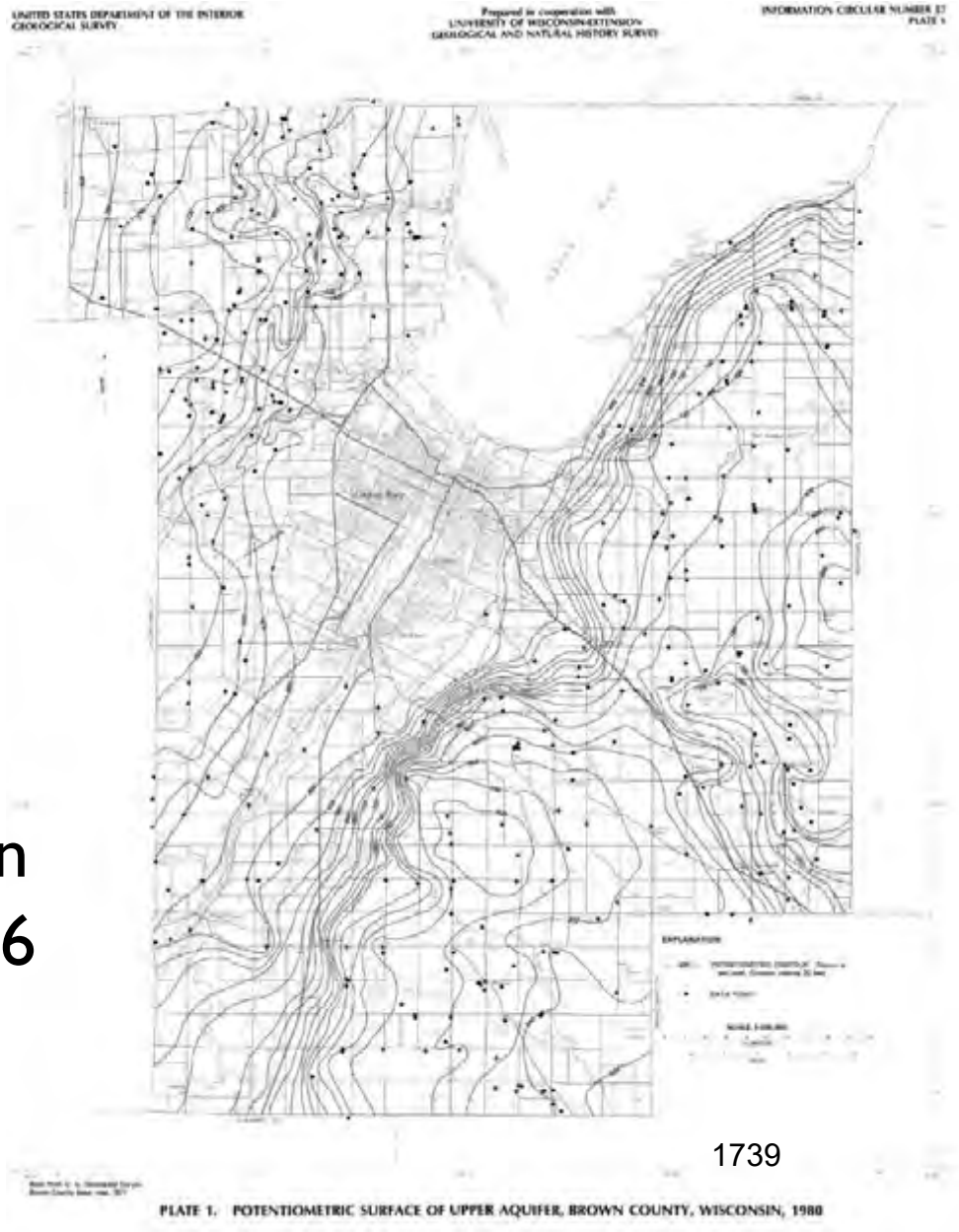
- Groundwater Recharge -- water that seeps past the root zone and makes it to the water table (top of the saturated zone)
- Aquifer – a geologic unit that can store and transmit usable quantities of water to a well
- Water table is boundary between unsaturated and saturated zones
  - Unsaturated zone - pores spaces contain both air and water
  - Zone of saturation - pores spaces are filled with water



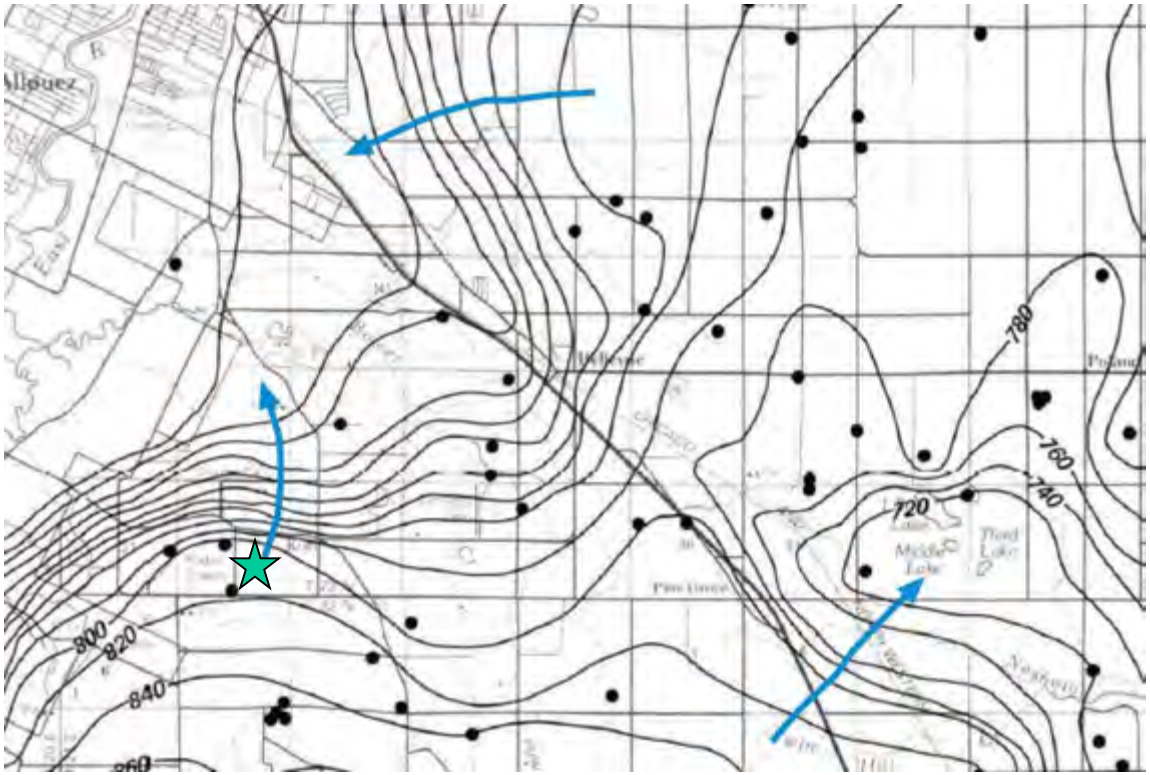
- Groundwater flow is from areas of higher hydraulic head to areas of lower hydraulic head.
- Recharge area -- area where precipitation infiltrates and recharges the groundwater flow system. Groundwater flow is generally downward in these areas.
- Discharge area -- area where water exits the aquifer. In this diagram streams and lakes are the discharge areas.

Water Elevations in the Upper Aquifer

- From *Hydrogeology and Ground-water Use and Quality, Brown County, Wisconsin*
- By J.T Krohelski
- WI Geological & Natural History Survey Information Circular 57, published 1986



Water Elevations in the Upper Aquifer



- From *Hydrogeology and Ground-water Use and Quality, Brown County, Wisconsin*. J.T Krohelski
- WI Geological & Natural History Survey Information Circular 57, published 1986

1740

Outline

- Watersheds & Water Cycle
- Groundwater Basics
- Geology
- Aquifers
- Existing Water Quality

BEDROCK GEOLOGY OF WISCONSIN

UNIVERSITY OF WISCONSIN-EXTENSION

Geological and Natural History Survey

APRIL 1981
REVISED 2005

EXPLANATION

DEVONIAN
- D — dolomite and shale

SILURIAN
- Sd — dolomite

ORDOVICIAN
- Om — Maquoketa Formation—shale and dolomite
- Os — Sinnipee Group—dolomite with some limestone and shale
- Osp — St. Peter Formation—sandstone with some limestone shale and conglomerate
- Opc — Prairie du Chien Group—dolomite with some sandstone and shale

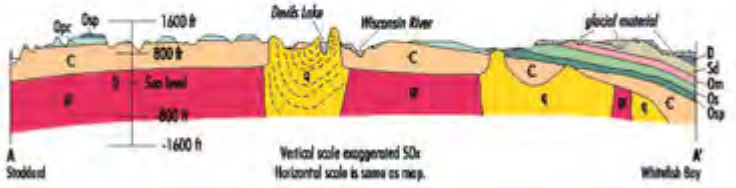
CAMBRIAN
- C — sandstone with some dolomite and shale

MIDDLE PROTEROZOIC
- Keweenawan rock—
  - ss, sandstone
  - v, basaltic to rhyolitic lava flows
  - i, gabbroic, anorthositic and granitic rock
- Wolf River rock—
  - g, rapakivi granite, granite, and syenite
  - a, anorthosite and gabbro

LOWER PROTEROZOIC
- q — quartzite
- gr — granite, diorite, and gneiss
- s, metasedimentary rock, argillite, siltstone, quartzite, graywacke, and iron formation
- vo, basaltic to rhyolitic metavolcanic rock with some metasedimentary rock
- ga, meta-gabbro and hornblende diorite

LOWER PROTEROZOIC OR UPPER ARCHEAN
- mv, metavolcanic rock
- gn, granite, gneiss, and amphibolite

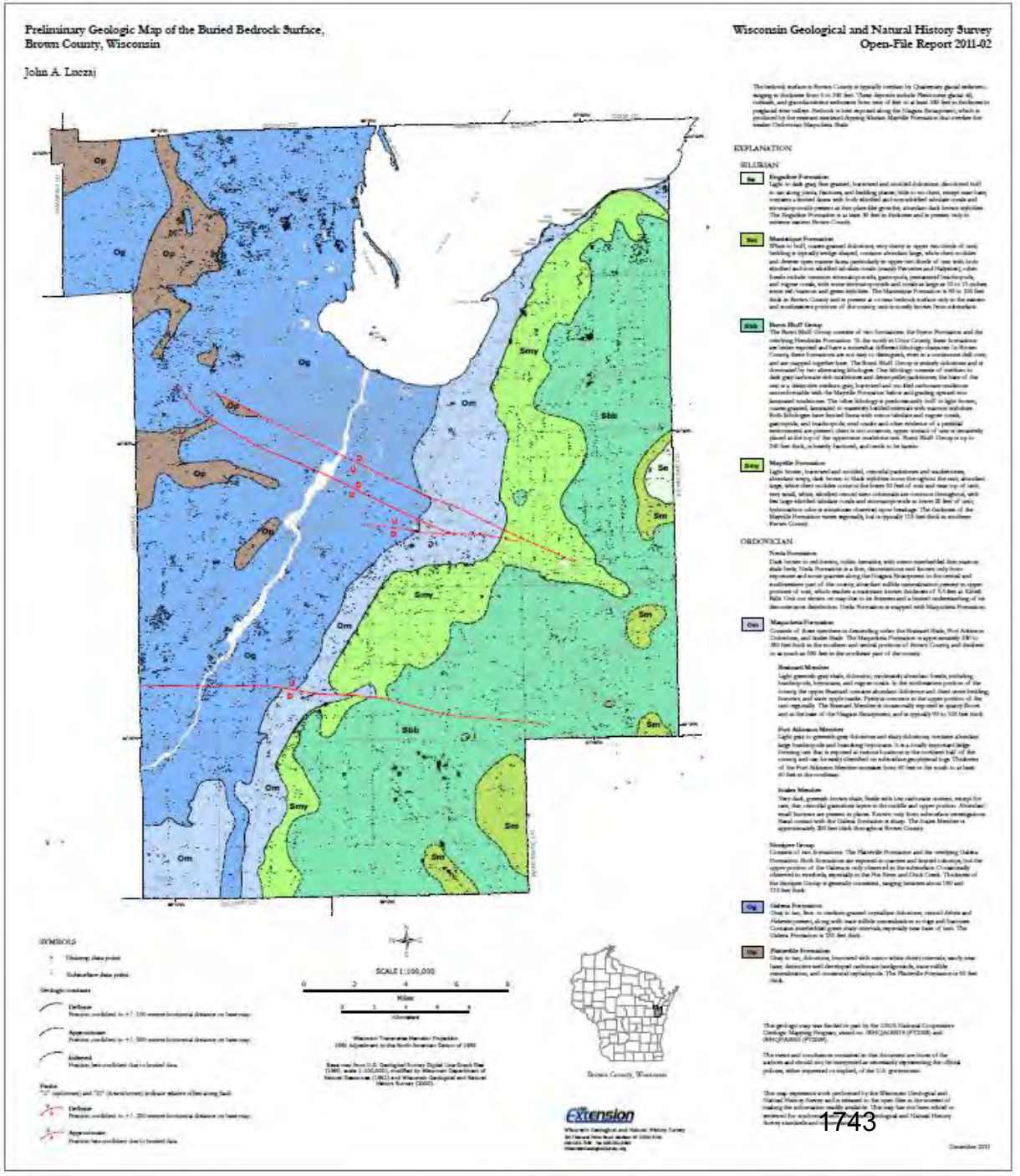
0 30 60 mi
0 50 100 km



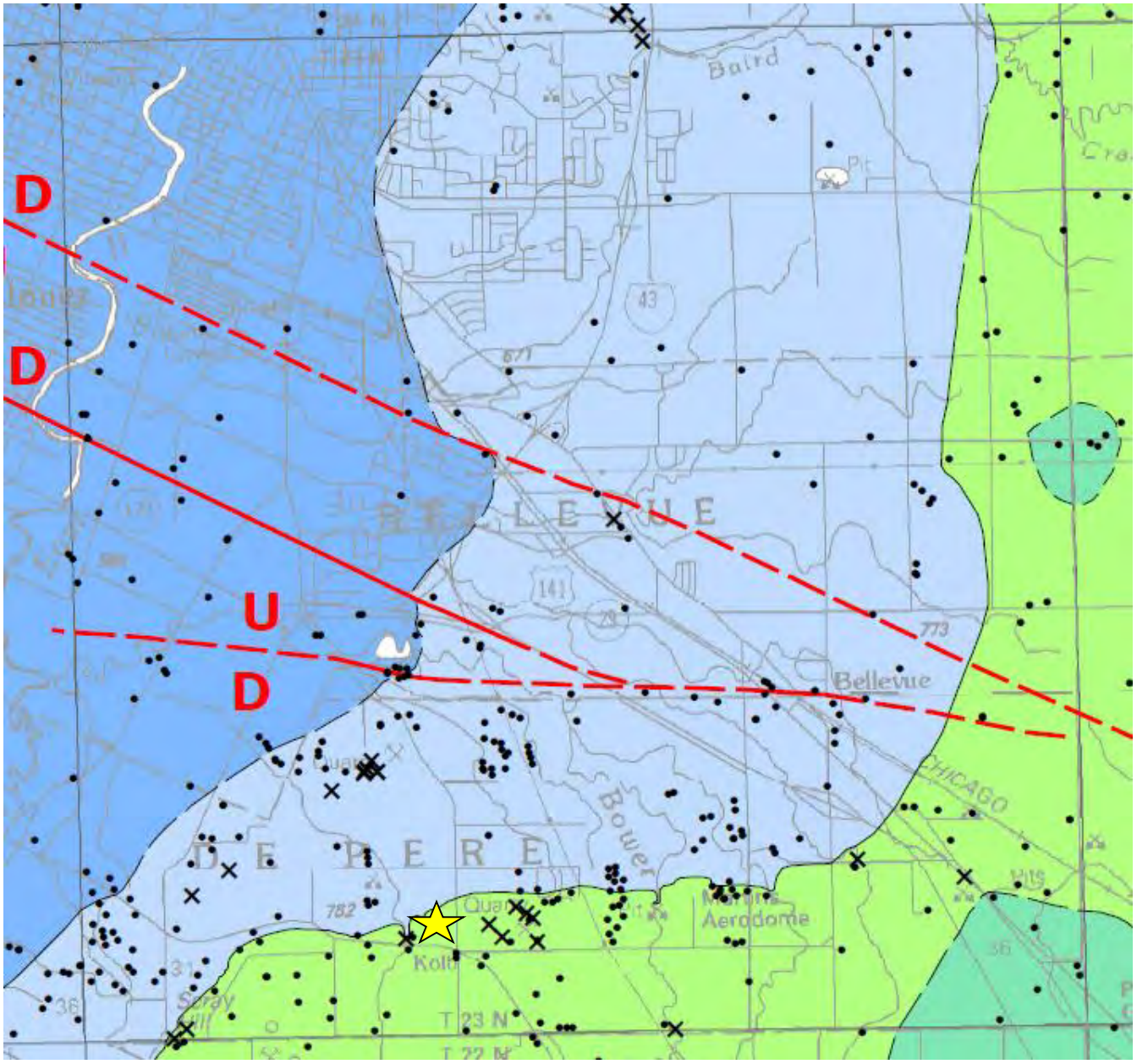
1742

Bedrock Geology

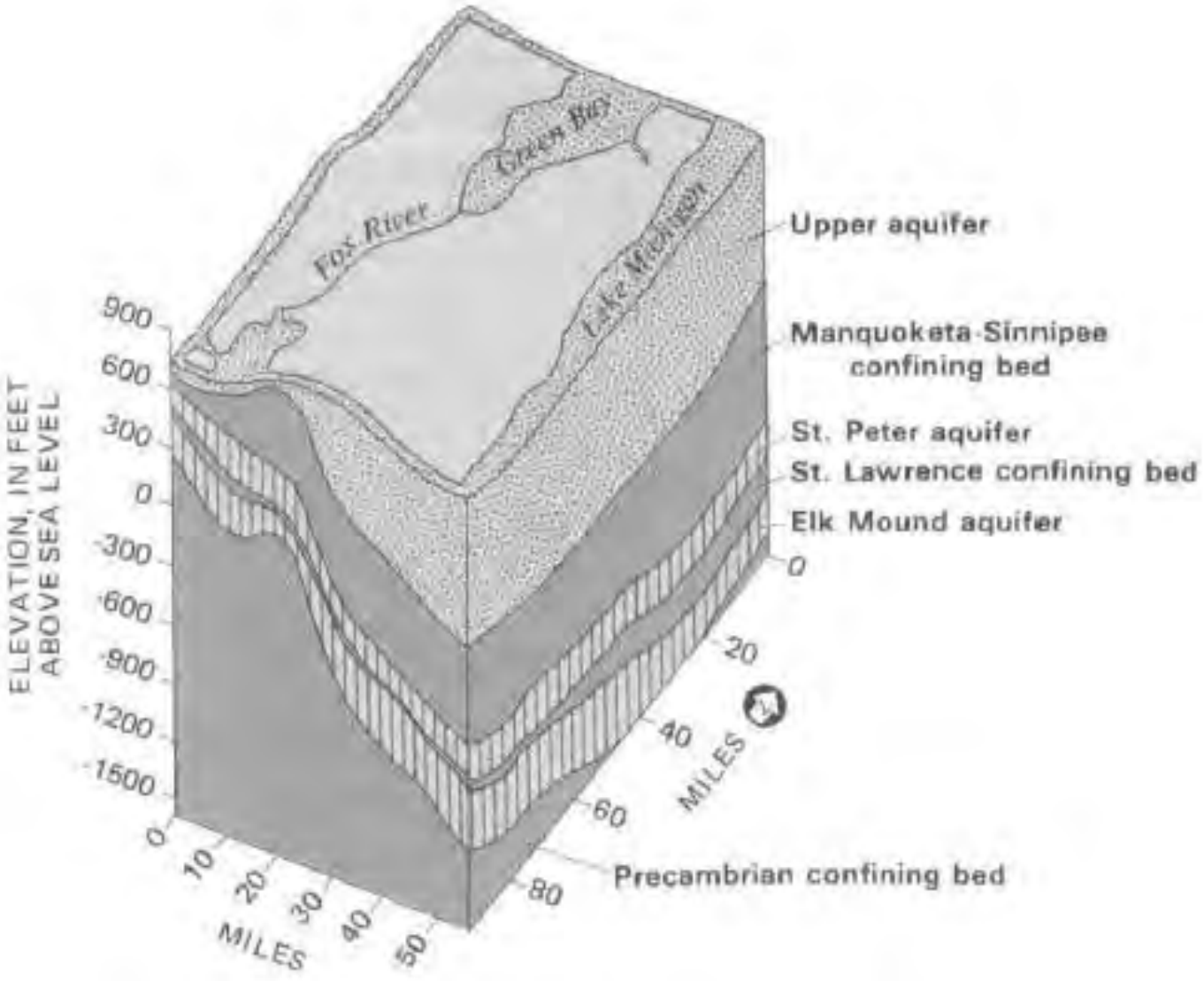
- by John Luczaj, UWGB
- Available from WI Geological & Natural History Survey (WGNHS)
- Open-File Report 2011-02



Geology Detail

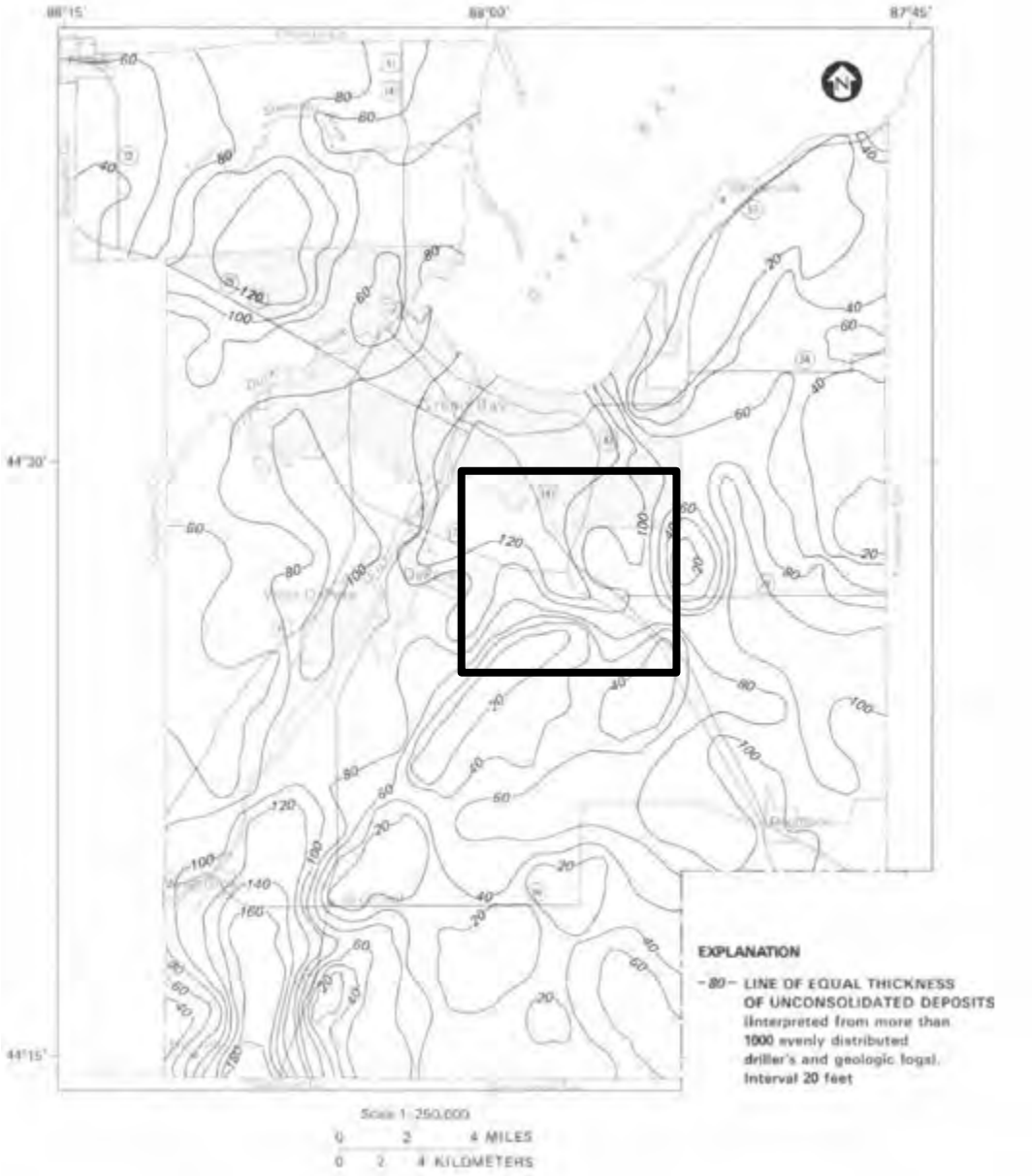


1744



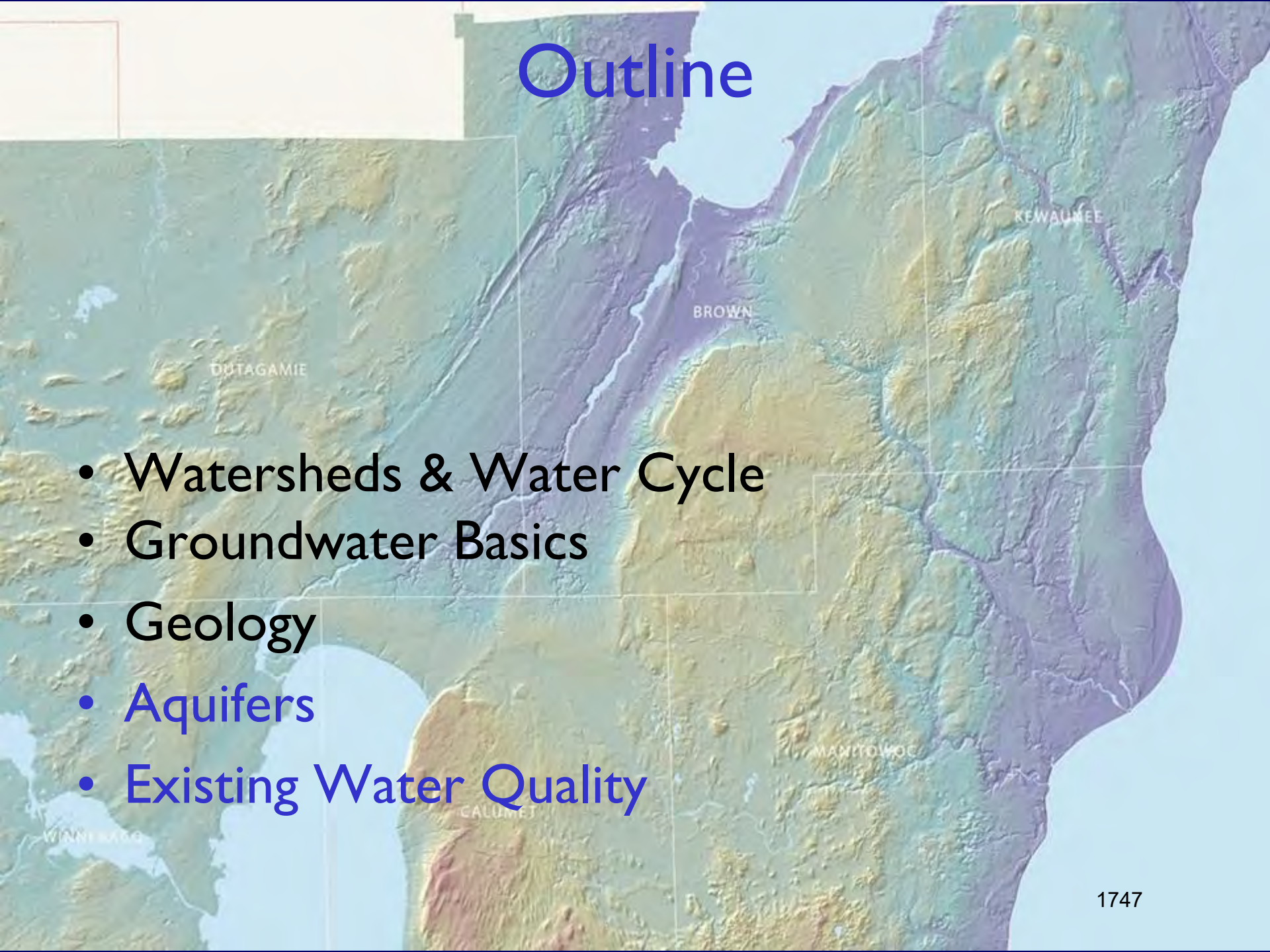
From *Hydrogeology and Ground-water Use and Quality, Brown County, Wisconsin*
By J.T Krohelski, WGNSH Information Circular 57, published 1986

Depth to Rock

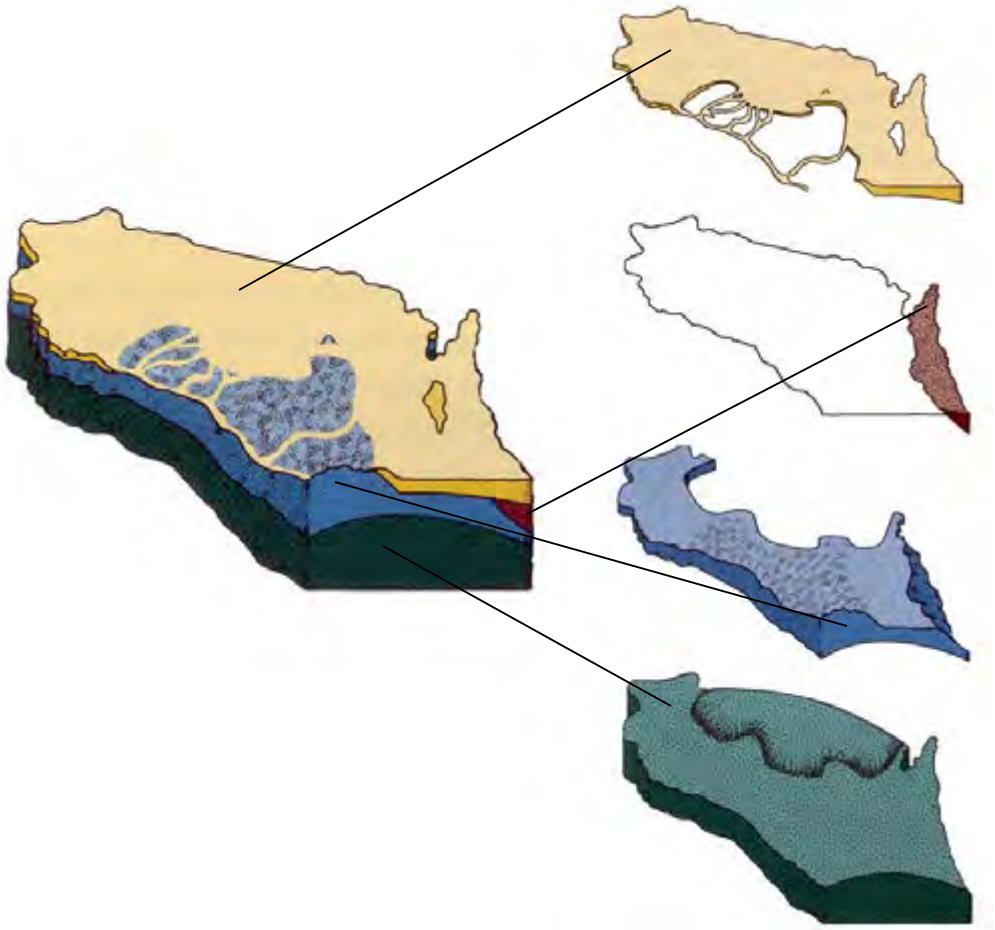


Outline

- Watersheds & Water Cycle
- Groundwater Basics
- Geology
- Aquifers
- Existing Water Quality



Wisconsin Aquifers

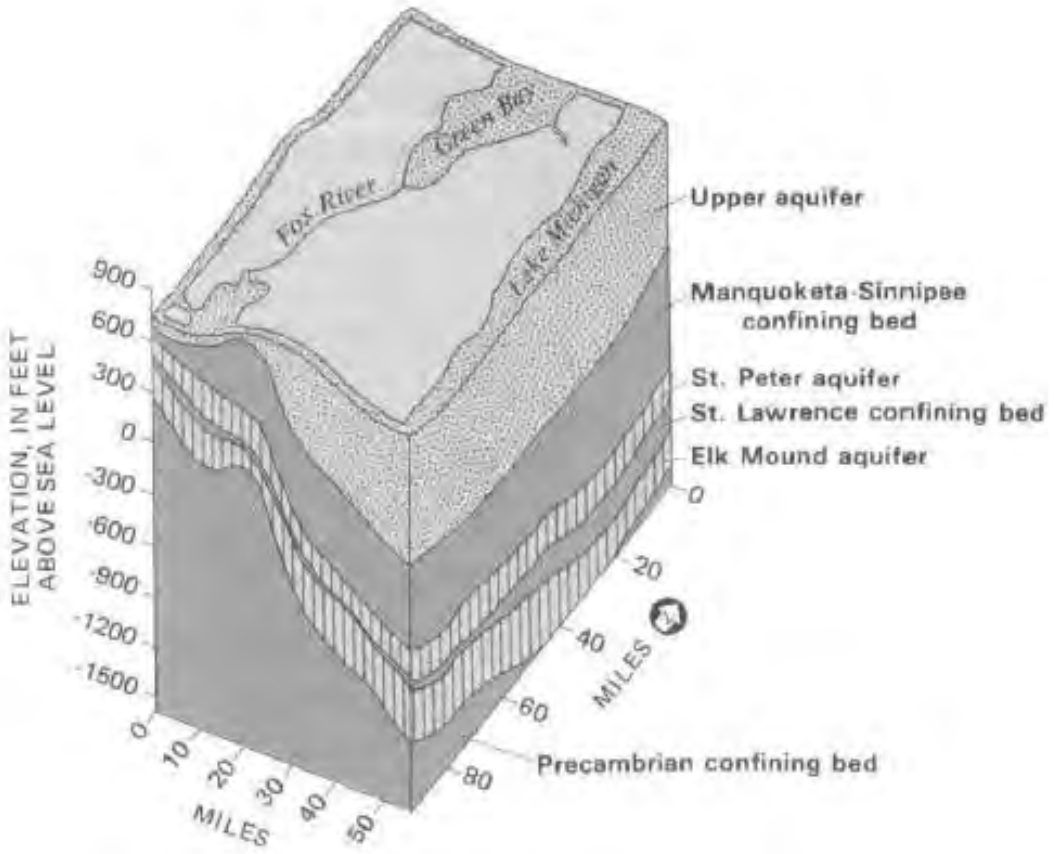


- Sand & gravel aquifer
- Silurian dolomite aquifer
- Sandstone & dolomite aquifer
- Crystalline bedrock aquifer

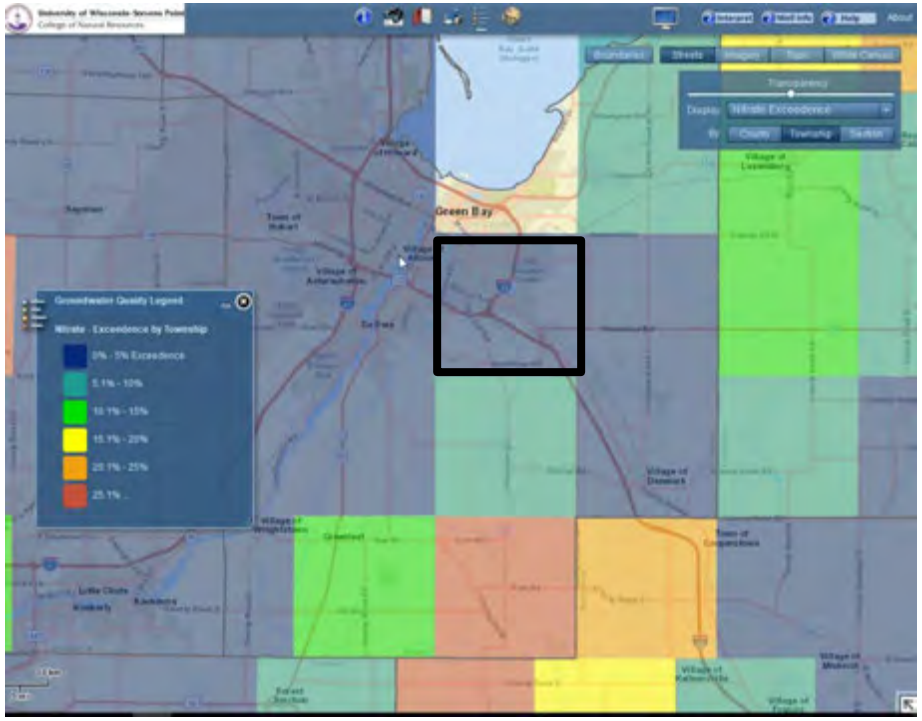
Image from DNR Magazine supplement: Groundwater Wisconsin's Buried Treasure

Domestic Wells

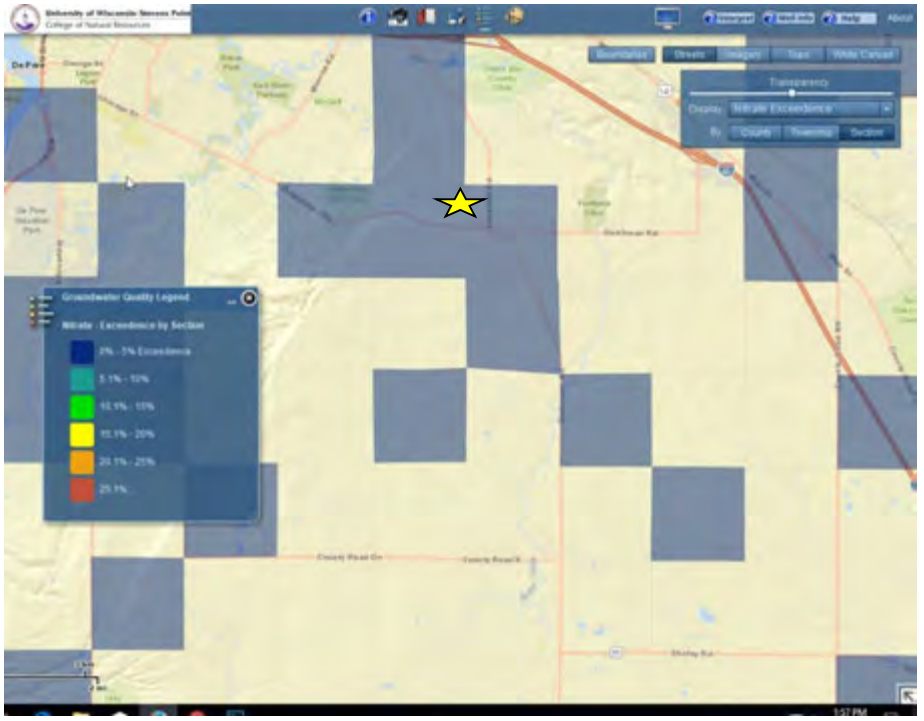
- Looked at wells in section 31, where farm is located
- Shallow wells (~60 feet or less in depth)
  - Sand and gravel
  - Silurian Dolomite
- Deep wells (>500 ft)
  - Extend below the Maqouketa shale



Existing Water Quality Data: Nitrate-N



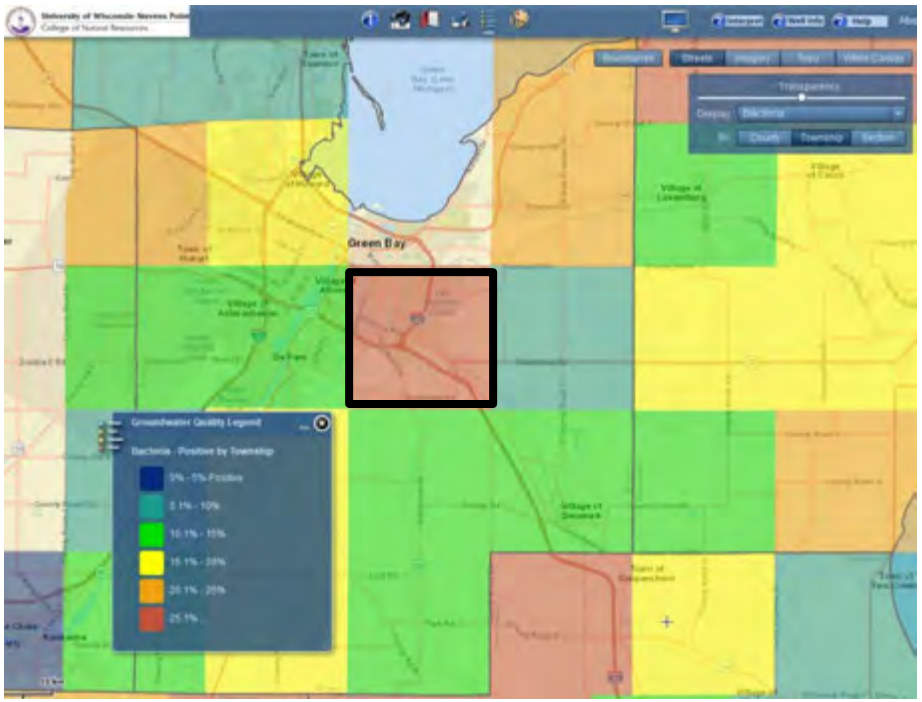
By Township



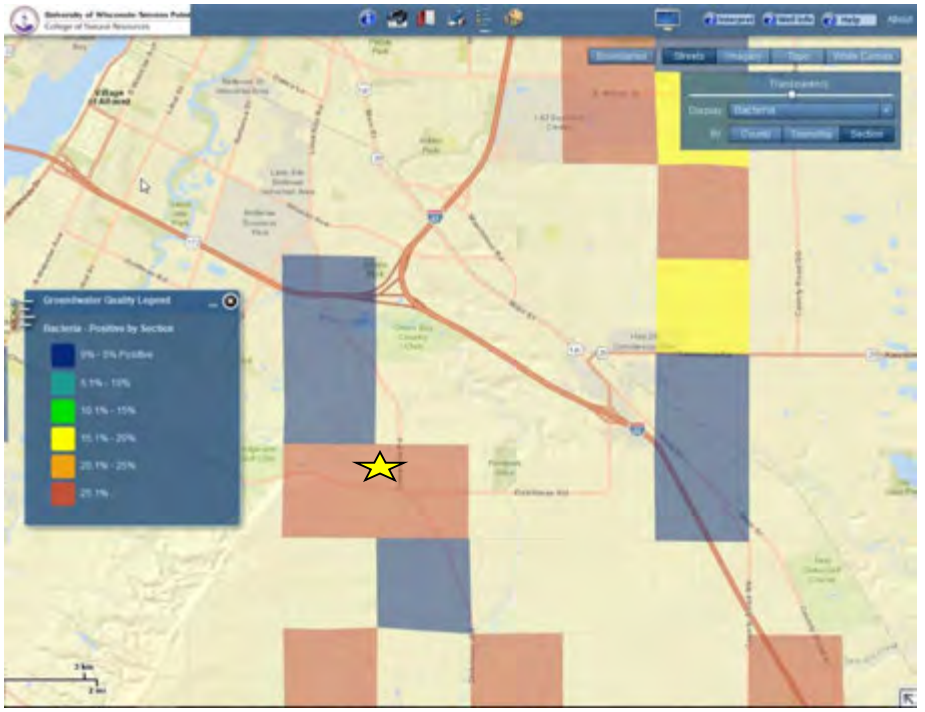
By Section

Data from the UW Stevens Point Well Water Quality Viewer
https://www.uwsp.edu/cnr-ap/watershed/Pages/WellWaterViewer.aspx

Existing Water Quality Data: Bacteria



By Township



By Section

Data from the UW Stevens Point Well Water Quality Viewer
https://www.uwsp.edu/cnr-ap/watershed/Pages/WellWaterViewer.aspx

Summary

- Geology
  - Near the contact of the Silurian dolomite and the underlying Maquoketa shale
  - Soils in the area of the farm site are generally <20 ft in thickness
- Groundwater
  - Domestic wells tap both the shallow aquifer (sand & gravel or Silurian dolomite) and the deeper limestone and dolomite aquifer
  - Published map suggests that groundwater flow is to the north in the area of the farm site
  - Existing water-quality data do not show significant impacts from nitrate, but that bacteria detections may be elevated

Gilson Agri-Products L.L.C.

4226 Cooperstown Road
Denmark WI 54208
920-864-7228

Dear Supervisor,

I have owned Gilson Agri-Products LLC for 32 years. I am one of the vendors for Ledgeview Farms and I have been doing business for 30 years with them. It would be an economic hardship for me if this farm were to close. I think more than that is the loss of a family farm. It happens all to often in America. Corporate farming is taking over America and that is a sad fact.

I hope some sort of compromise will happen to keep this farm alive. Actually a manure pit is the safest way to handle manure. There is less run off going to the ditches and less tractor traffic on the road to contend with.

I hope you find a way to please both sides of this dispute.

Sincerely
Stanley Gilson

Stanley Gilson

Gilson Agri-Products LLC

To Whom It May Concern,

Why do you want Dairy Farms in your community? Dairy Producers provide a great infusion of money to the community in which they live, purchase and hire services from the community. Many Dairy Farms are family run businesses that take great pride in producing a healthy and nutritious product for the world.

A dairy farmer gets a milk check and then they pay bills, for the products or services used or hired in the month or months pervious.

Lets start in January, **Taxes** are due that money goes back to help run the state, county, town, local schools, and collage(s). Next there are day to day expenses, **Milk Hauler** they take the milk to the **Processing Facilities** to be bottled or made into other consumable products. **Electricity** to harvest the milk, to run equipment like silos, conveyors, lights the list goes on. The **Internet & Phones** which allows the farmer to communicate the outside world.

Lets go to Spring many farmers grow the feed to feed the cattle. If they do not own enough land to provide feed for their herd they rent land from neighboring **Landlords.** They have to have **Equipment** to run the land, more often than not they will buy from the local equipment dealerships. So that if ever repairs are needed that they are close by and can fix the implements quicker, or buying parts to repair the item them self, it is closer. Next **Fuel** is needed to run the Equipment to prepare, plant and harvest the crops for the livestock. More and more Farmers are hiring **Agronomists** to help them decide what crops to plant in what fields given the soil types and topography. **Fertilizer** is applied at recommended rates to maximize the production of the land and care for the soil for generations to come. A **Seed Dealer** is needed to obtain the seed needed to plant the crops, this might include alfalfa, corn, soybeans, wheat, just to name a few. After the growing season now comes harvest, sometimes farmers hire **Custom Operators** to chop the haylage or corn silage, or a combine to combine the wheat or corn. Now that all of the feed is in we have to utilize it to the best or our abilities, so many farmers hire a **Nutritionist** to balance rations to optimize performance in both the reproduction and production of the dairy cows. By providing a balanced diet to the cow she can absorb many nutrients and doesn't excrete them into the manure, and what the nutrients that are left in the manure is used by the growing crop for food. Many farmers hire an **Artificial Inseminator** from a **Semen Company** to breed the cattle, so they can calve and begin to produce milk. About 35 days after being bred A **Veterinarian** comes to the farm and performs a pregnancy exam to see if the animal is Pregnant. After a long nine month wait if we're lucky a beautiful calf is born, and so starts the cycle of life. If we get a heifer calf she will grow into a cow to producing offspring and milk for the country. Out of the milk that is produced we get so many products that we as humans have come to enjoy: Milk, Ice Cream, Cheese, Yogurt, Cottage Cheese, Sour Cream, Whey and Milk Powder to name a few. If the cow has a bull calf, he will be raised and enjoy his time on earth until he becomes the steak and meat to feed the human body.

Lastly most people including Dairy Farmers use **Banks** or **Credit Unions** to momentarily hold the milk check till they can infuse the money back into the community.

In Closing Dairy Farmers are working or "On Call" 24 hours a day 365 days a year and Farming is not only a job for them, but a way of life to raise their families and to care for the Land for the Future Generations and to Feed the WORLD. As the World's population continues to increase we will need more food and farmers not Less. So please take the time to remember how the food is produced and all the hands it touches before you get to eat every day. Reducing dairy farmers in our community not only has an emotional impact but a monetary impact as well.

Scenic Central Milk Producers

Thank You For Your Time

Jon Mielke

Town of Ledgeview
C/O Charlotte Nelson
3700 Dickinson Road
DePere WI 54115

RECEIVED

To the Board and Staff,

As a concerned citizen, I`m writing in regards to Ledgeview Farms that needs a permit for a manure pit. This farm had many expansions projects in the past (millions of dollars) and they always followed procedures set forth by the Ledgeview Town Broad. You have granted permits in the past for each time that they applied. With their business growth, it`s inconceivable to me that you didn`t realize that with more cattle, there would be more waste. Keep in mind that the manure pit will be built to State and Local specifications. I would recommend that you the Township do landscaping so it blends into the surrounding landscape (planting grass, trees, etc.). It is also my understanding that there are state programs in which you could apply for. The residents in the area could also do landscaping by planting Tree lines on their property.

Agriculture is very important to our area but also to the State of Wisconsin. The Ledgeview Farms has a high tax base for your Township. They have many employees who also pay taxes and spend their money in the community. Again, everyone benefits from dairy farm in the State of Wisconsin.

In closing, they were at their present location first. The residential community built out to them, they all knew about the Ledgeview Farms when they applied for their building permits.

I`m asking you to allow the Ledgeview Farms to follow NRCS Wisconsin laws and operate as an agriculture business, as they have been doing since before the depression to present.

Regards,

Jerry Zimdars
ABS Sales Representative

1-15-2018

To: Charlotte Nelson,

I am sending this letter in support of the Pansier family in regard to their request that has been brought before the Town of Ledgeview Board. I have known the family for more than (30) thirty years.

Pansiers' contribute millions of dollars every year to your local economy. This farm and this family was located at its' present site, long before the surrounding houses were built. I hope you take into consideration the importance of agriculture and where your food supply comes from.

Thank you for your consideration.

Paul D. Olson
Paul D Olson
National President of the

National Farmers Organization

CLOVER
AUTO & TRUCK SUPPLY

January 16, 2018

Mr. Philip J. Danen
Chairman
1316 Angels Path #81
De Pere, WI 54115

Dear Mr. Danen,

Our company has three locations in the Northeast Wisconsin area and we employ 35 people who all live and support their families in our community. Our company is primarily engaged in business to business commerce and our success is tied directly to the success of the industries we serve. Auto repair, heavy truck repair, local government, collision repair, construction and agriculture are among the industries we serve.

I am specifically writing to you today about the importance of the agricultural industry to our company. We work closely with dozens of agricultural customers across the region including many within the Town of Ledgeview. The agricultural segment has been a long-time contributor to our success as a company and has been a critical component of our growth in recent years.

I am aware that you have received proposals for the expansion of Ledgeview Farms. Ledgeview Farms has been in operation since the 1930's and has contributed to the prosperity of the Town of Ledgeview and companies like ours for many years. I encourage you to support the requested expansion of Ledgeview Farms, so our entire community can continue to grow!

I can be reached at 920-784-2862 if you would like to discuss the importance of agriculture to our company.

Sincerely,

John O'Connor, Owner

GENEX
Part of Cooperative Resources International

PHILIP J. DANEN
TOWN OF LEDGEVIEW CHAIRMAN
1316 ANGELS PATH #81
DE PERE WI 54115

January 17, 2018

Dear Chairman Danen:

My name is Huub te Plate and I am the Chief Operating Officer at GENEX, located in Shawano, Wisconsin. I am writing about our support of Ledgeview Dairy, LLC. This farm, owned by the Pansier family, is a long-standing customer of our cooperative and a very good example of today's dairy farmer.

Today's dairy farmers are hard-working men and women who take pride in providing the highest quality dairy products to their family, community, and customers. They are members of their communities and they stay involved with community projects. They care deeply about the environment and strive to farm in ways that reduce any impact on the environment.

Dairies like Ledgeview Dairy, LLC., are the backbone of GENEX and we are very appreciative of their support of agriculture.

If you have questions or concerns, feel free to give me a call.

Sincerely,

Huub te Plate
Chief Operating Officer
GENEX

PO Box 469, Shawano, WI 54166-0469
Phone: 715-526-2141 | info@crinet.com | www.crinet.com

317 Green Bay Road
Sturgeon Bay, WI 54235
(920) 743-6555
Fax (920) 743-6743
www.doorcountycoop.com

Established Since 1939

January 18, 2018

Town of Ledgeview Board of Supervisors
Ledgeview Municipal Building
3700 Dickinson Road
DePere, Wisconsin 54115

Dear Ledgeview Town Supervisors:

We would like to express our support for the proposed manure storage facility project at Ledgeview Farms, LLC, which is owned and operated by the Pansier family in the Town of Ledgeview. We believe that the Pansier family has demonstrated a high level of responsible stewardship regarding the land they farm, thereby earning the right to continue to grow and develop their business without undue restrictions (i.e. increased setbacks, etc.).

Ledgeview Farms, LLC and the Pansier family have played a key role in the local economy for decades. They prioritize using local vendors, which in turn supports a variety of other businesses and individuals in our local and surrounding communities. For example, their support and patronage of our Shirley Feed Mill has allowed, and will continue to allow us to provide up to twenty (20) full time jobs.

Today's modern dairy farms must continuously adapt to evolving market demands and economic pressures, in addition to the economies of scale which dictate that remaining farms must maximize their investments in order to remain profitable. The proposed manure storage facility project will have negligible impact towards the voiced concerns of people in opposition to the project. It will, however, provide the efficiencies needed to allow this local business to remain a key part of our local economic engine for decades to come.

Sincerely,

Brian Duquaine
President/CEO
Door County Cooperative- Shirley Feed Mill

Fox Valley Farm Management Association
Michael Harer
3962 N Richmond St
Appleton, WI 54913
920-993-1366 phone
920-882-1104 fax
920-858-4138 cell phone
mharer@gmail.com

Jan 22nd, 2018

Re: Ledgeview Farms

I'm writing this letter for Ledgeview Farms to support their right to farm. Ledgeview Farms is so important to the local town, local community and businesses within 20-30 miles of their operation. They have employees, the contract services for nutrition, herd health, crop services, trucking, fuel, equipment, and seed to name a few. I'm asking that you allow Ledgeview Farms to follow NRCS rules to operate an agricultural business as they have done so since before the depression to present. We all benefit from allowing Ledgeview Farms to continue to produce Milk, Wheat, Corn and Meat for the community at a reasonable price.

Thank You for caring about Ledgeview Farms and your health with the delicious food all farms produce.

Michael Harer
Fox Valley Farm Management

DE PERE VETERINARY SERVICE, S.C.

K.R. Foust, D.V.M.
E.G. Brandt, D.V.M.

2021 County Rd. PP
De Pere, Wisconsin 54115
Phone 920-336-7233
Email: cows2021@newbc.rr.com

L.K. Edwards, D.V.M.
J.A. Bridges, D.V.M.

January 23, 2018

Phillip J. Danen, Chairman
316 Angels Path #81
DePere, WI 54115
54115pjdanen@ledgeviewwisconsin.com

Andy Schlag, Supervisor
2247 Scray Hill Rd
DePere, WI 54115
54115aschlag@ledgeviewwisconsin.com

Renee Van Rossum, Supervisor
845 Lone Oak St.
DePere, WI 54115
54115vanrossum@ledgeviewwisconsin.com

Ken Geurts, Supervisor
1962 Old Valley Ct
DePere, WI 54115
54115kgeurts@ledgeviewwisconsin.com

Cullen Peltier, Supervisor
1959 Prescott Place
DePere, WI 54115
54115cpeltier@ledgeviewwisconsin.com

Town of Ledgeview, All Board and Staff
C/O Charlotte Nelson
3700 Dickinson Rd.
DePere, WI 54115

To whom it may concern,

We at DePere Veterinary Service, S.C. support the Pansier family farm known as Ledgeview Farms LLC. Farms like Ledgeview Farms, LLC are part of Wisconsin's heritage and economy. As large animal veterinarians we are just one of many businesses dependent on farms like Ledgeview Farms for our business. According to the Wisconsin Department of Agriculture and Consumer Protection :

Wisconsin is home to about 8,800 dairy farms, more than any other state, and 1.28 million cows.

- The dairy industry itself contributes $43.4 billion to Wisconsin's economy each year.
- The dairy industry fuels the state's economy at more than $82,500 per minute.
- The feed mills, dairy equipment manufacturers and technicians, veterinarians, construction companies, genetics companies, milk haulers, dairy plants, dairy software companies - create a wave of economic impact that rolls across the entire state

Wisconsin agriculture provides jobs.

- Annually, 413,500 jobs or 11.9% of the state's employment.
- On-farm production contributes 153,900 jobs.
- Processing contributes 259,600 jobs.
- Every job in agriculture supports an additional 1.46 jobs elsewhere in Wisconsin

Wisconsin is #1 in cheese production.

- Our state's nearly 1,200 licensed cheesemakers produce over 600 types, styles and varieties of cheese – nearly double the number of any other state.
- Wisconsin cheesemakers make a quarter of the nation's cheese, producing 3.2 billion pounds in 2016.
- Wisconsin leads the nation in the production of 774 million pounds of specialty cheeses, including but not limited to asiago, gorgonzola, gruyere, aged cheddar, gouda, and limburger.

Agriculture is so important to the state of Wisconsin that the state has a statute which is commonly referred to as the "Right to Farm Law". According to the Wisconsin Legislative Council:

The statute commonly referred to as Wisconsin's "Right-to-Farm Law" is s. 823.08, Stats. This statute directs the courts, under specific conditions set forth in the statute, to favor agriculture in certain legal disputes over agricultural uses of land. This statute was created in the 1981 Legislative Session and was substantially revised in the 1995 session.

The Wisconsin Legislative Council also states that farms have certain rights because they were in operation before adjoining lands were developed;

One of the defenses available in private nuisance law is known as the "coming to the nuisance" defense. In a lawsuit involving an agricultural activity, this defense is available when the plaintiff moved into the area after the farming operation was established. This defense is not an automatic bar to recovery by the plaintiff, but is rather one more factor for the court to consider.

We at DePere Veterinary Service, S.C. hope that you will consider these points before taking any action that would have a negative impact on Ledgeview Farms, LLC, the local job force and the local economy.

Thank You,

Dr. Kenneth R. Foust DVM

Dr. Edith G. Brandt DVM

Dr. Loriann M. Kaster Edwards DVM

Dr. Jessie Allie Bridges DVM

1/25/18

Dear Mr. Danen,

My name is Jack Vande Hey President of Wrightstown Mfg Co in Wrightstown Wis. I would appreciate a favorable decision by Your board for the Pansier Family Farm (Ledge View Farms) expansion projects. I have done business with them for 20 plus years and have become to know them as very responsible and respectful people of not only the environment but there neighbors as well.

Thank You for Your consideration,

Jack Vande Hey

Jack Vande Hey,

Wrightstown Mfg. Co. Inc., Pres.

Untitled

to whom it may concerned

from rueden ag services llc.

I have been dealing with the Pansier family for a long time that is just running a family farm.Do to the dnr and epa they are just following the rules so they can keep farming in a safe way in regards to manure storage.If you do not want them on your tax roles anymore in your township ask them what they want for all there properties and buy them out! The worst they can say is no or who knows, they might surprise you?

thank you

Jeff Rueden
980-378-3161

Rueden Ag Services

Charlotte Nelson

From: Rick Kerkhoff <drivejohndeere@gmail.com>
Sent: Sunday, January 28, 2018 11:35 AM
To: pjdanen@ledgeviewwisconsin.com; aschlag@ledgeviewwisconsin.com; rvanrossum@ledgeviewwisconsin.com; kgeurts@ledgeviewwisconsin.com; cpeltier@ledgeviewwisconsin.com; cnelson@ledgeviewwisconsin.com
Subject: To the Town Board of Ledgeview...

To the Town Board of Ledgeview:

I am in support of allowing the Pansier Farm to expand. As a community we need to recognize the importance of family farms and support them in their business endeavors.

Many people will say they support local family farms because they have a nostalgic remembrance of years gone by. Did you know ninety-nine percent of U.S. farms are still family farms? If you say you support family farms, but slam farms over a certain size, you're hypocritical. You cannot only support a certain farm production practice or size. Family farms come in all shapes and sizes, but they're still family farms, and they account for 90 percent of the country's farm production

The Pansier farm has been a family business for many years. As a business they must ask themselves… how can a farm support the next generation or growing families if it stays the same size? The answer: It can't.

The location of the Pansier farm has been in place for decades. All farms face the struggle of the development of land and how it impacts their operation. We must all be respectful neighbors, which includes respecting another way of life different than our own. It also means being respectful of another person's dreams even when they are different than your own.

In today's economy, all farmers need the support of their local communities, and in-turn the local community need farmers. Studies have shown that locally owned farms have a multiplier effect: for every dollar the farm spends, a percentage remains in the local economy, contributing to the economic health of the community.

Farmers invest in their operations… they purchase goods and services from local businesses that are both agriculture related and non-agriculture related.

I have known the Pansiers' personally for many years. They are hardworking and want to maintain the only lifestyle they know. They have been involved with the volunteer fire department for Ledgeview and when the call comes in they drop what they are doing to go help someone in need. The world can use more good people like the Pansiers.

We are asking the Town Board of Ledgeview to create laws that protect and foster the potential of our family farms. The success of our local community depends on it.

Regards,

Rick Kerkhoff

Fellow Farmer, Neighbor and Friend

CP Feeds

Committed to Our Customers' Success

16322 W. Washington Street
Valders, WI 54245
Phone: 920-775-9600

January 24, 2018

Philip J. Danen, Chairman
Ledgeview Town Board
3700 Dickinson Road
De Pere, WI 54115

Dear Ledgeview Town Board,

We are writing to support agriculture in Ledgeview. With recent changes enacted by the Ledgeview Town Board, Ledgeview Farms is prevented from continuing to protect the environment while still operating their family owned business.

Agriculture is paramount to Wisconsin, its businesses, and its people. According to the Wisconsin Milk Marketing Board (WMMB), the Wisconsin Dairy Industry contributes $43.4 billion to the state economy annually. Wisconsin has 9,520 licensed dairy farms and 1,279,000 dairy cows according to the WMMB. This vital industry produces food and provides jobs in the immediate community. According to data collected in 2014 by the UW Extension, agriculture provided jobs for 17,045 Brown County residents. The agricultural industry drove $4.6 billion in economic activity in Brown County and contributed $1.3 billion to the county's total income. Lastly, agriculture paid $80.8 million in taxes in 2014, not counting all property taxes paid to local schools. Thank you for your consideration of working with an important industry in your community.

Sincerely,

James Downey Randy Marx Dennis Schueller

James Downey, Randy Marx, and Dennis Schueller
Dairy Nutritionists
CP Feeds LLC
16322 West Washington Street
Valders, WI 54245

RECEIVED FEB 0 1 2018

AgSource
Part of Cooperative Resources International

TOWN OF LEDGEVIEW BOARD & STAFF
C/O CHARLOTTE NELSON
3700 DICKINSON ROAD
DE PERE WI 54115

January 30, 2018

Dear Ms. Nelson:

My name is Pat Baier and I am the Chief Operating Officer at AgSource Cooperative Services, located Verona, Wisconsin. I am writing about our support of Ledgeview Dairy, LLC. This farm, owned by the Pansier family, is a long-standing customer of our services and a very good example of today's dairy farmer.

Today's dairy farmers are hard-working men and women who take pride in providing the highest quality dairy products to their family, community, and customers. They are members of their communities and they stay involved with community projects. They care deeply about the environment and strive to farm in ways that reduce any impact on the environment.

Dairies like Ledgeview Dairy, LLC., are the backbone of AgSource Cooperative and we are very appreciative of their support of agriculture.

If you have questions or concerns, feel free to give me a call.

Sincerely,

Patrick Baier
Chief Operating Officer
AgSource Cooperative Services

135 Enterprise Drive, PO Box 930230, Verona, WI 53593
P: 608.845.1900 • info@agsource.com

VanDrisse Insurance Agency, Inc
Gary VanDrisse
P.O. Box 100
Luxemburg WI 54217
920-845-2367

January 30, 2018

Town of Ledgeview, All Board and Staff C/O Charlotte Nelson
3700 Dickinson Road
De Pere, WI 54115

Re: Jason, Roy and Glen Pansier.
3870 Dickinson Road
De Pere WI 54115

Greetings,
I am contacting you to voice my concern about the dilemma the Pansier family is currently facing. Being the third generation in my family business, VanDrisse Insurance Agency, I always enjoy doing business with other people who are multi-generation operations. Jason Pansier is now the fourth generation at Ledgeview farms. The longevity of this operation proves a solid work ethic and a standard in business that has survived from generation to generation. The Pansiers have been loyal clients of VanDrisse Insurance for 40 years. They strive to do business locally and therefore positively impact the community where they reside. My small business relies on people like the Pansiers.

I understand that water quality is of utmost importance and therefore the DNR is requiring a manure pit to be put in. I am confident that the manure pit will be compliant with all DNR regulations. Thus, please allow the Pansiers to comply with the DNR and move forward with the manure pit so they can continue to operate their farm and help people like myself. Your willingness to let me express my concerns is greatly appreciated.

Thank You,

Gary VanDrisse Gary VanDrisse

Brown County Farm Bureau

PO Box 5550 •Madison, WI 53705 •888-644-8359 Fax: 608-828-5718 •www.wfbf.com

December 7, 2017

Dear Town of Ledgeview,

On behalf of the Brown County Farm Bureau (BCFB), we are contacting you about the recent farmland preservation zoning ordinance the Town of Ledgeview adopted. The BCFB is supportive of local land use planning and zoning. Further, the BCFB appreciates the fact that the Town of Ledgeview has areas within the township zoned for agriculture.

It is our understanding that the recent zoning ordinance update included setback provisions for livestock structures and manure storage facilities. Specifically, for farms with less than 1000 animal units, the livestock structures must be at least 400 feet from the property line. For farms with 1000 to 2500 animal units, livestock structures must be at least 700 feet from the property line. For farm with 2500 to 4000 animal units, livestock structures must be at least 1000 feet from the property line. For farms with more than 4000 animal units, livestock structures must be at least 1200 from the property line. Lastly, new or expanded manure storage facilities on farms with more than 500 animal units, must be at least 1320 feet from the property line.

These setbacks appear to be in conflict with Wisconsin Administrative Code ATCP 51 – Livestock Facility Siting. ATCP 51.12 contains the following setback distances for livestock structures. For farm with less than 1000 animal units, livestock structures setbacks cannot be greater than 100 feet from the property line or public road right-of-way. For farms with more than 1000 animal units, livestock structure setbacks cannot be greater than 200 feet from the property line or more than 150 feet from the public road right-of-way.

ATCP 51.12 also contains setback distance for manure storage facilities. The setback distance is 350 feet from the property line or public road right-of-way for all manure storage facilities regardless of the number of animal units. It should be noted that ATCP 51.12 contains three provisions that allow manure storage facilities to be constructed closer to the property line or public road right-of-way under certain circumstances.

The Brown County Farm Bureau respectfully requests that the Town of Ledgeview consult with your Legal Counsel about the discrepancies between the setback distances for livestock structures and manure storage facilities in your zoning ordinance compared to those in ATCP 51. After doing so, please reply to us as to how these differences are going to be resolved.

We look forward to your response.

Sincerely,

Stan Kaczmarek

President BCFB

VAN STRATEN SAND & GRAVEL INC.

PO Box 163
DePere, WI 54115
February 1, 2018

Philip J. Danen
1316 Angel Path #81
DePere, WI 54115

Chairman

We have deep concerns about your decision with Ledgeview Farm
3870 Dickinson Road
DePere, WI 54115

Since the DNR and Brown County gave Ledgeview Farm permits for their manure pit. It is difficult to understand your board's plan of action. We realize you have several homes in the area near the farm, but maybe these home owners need to understand or at least have researched their decision before they built.

We are very fortunate to have Ledgeview Farm as a customer their farm generates a large part of our business income. By not leaving the farm grow you will be hurting not only Ledgeview Farm, but many other business that supply the farm with products.

We hope you understand our concerns and consider all aspect of the problems that need to be dissolved.

Sincerely,

RDon Van Straten

Don Van Straten

Town Of Ledgeview C/O Charlotte Nelson

As an animal health supplier we support the Pansier family farm known as Ledgeview Farms LLC. Farms like Ledgeview Farms, LLC are part of Wisconsin's heritage and economy. As an animal health supplier we are just one of many businesses dependent on farms like Ledgeview Farms for our business. According to the Wisconsin Department of Agriculture and Consumer Protection:

Wisconsin is home to about 8,800 dairy farms, more than any other state, and 1.28 million dairy cows.

- The dairy industry itself contributes $43.4 billion to Wisconsin's economy each year.
- The dairy industry fuels the state's economy at more than $82,500 per minute.
- The feed mills, dairy equipment manufactures, and technicians, veterinarians, construction companies, genetic companies, milk haulers, dairy plants , dairy software companies-create a wave of economic impact that rolls across the entire state.

Wisconsin Agriculture provides jobs.

- Annually 413,500 jobs or 11.9% of the state's employment.
- On farm production contributes 153,900 jobs.
- Processing contributes 259,600 jobs.
- Every job in agriculture supports an additional 1.46 jobs elsewhere in Wisconsin

Wisconsin is #1 in cheese production

- Our state's nearly 1,200 licensed cheese makers product over 600 types, styles and varieties of cheese- nearly double the number in any other state.
- Wisconsin cheese makers make a quarter of the nation's cheese, producing 3.2 billion pounds in 2016.
- Wisconsin leads the nation in production of the 774 million pounds of specialty cheeses, including but not limited to asiago, gorgonzola, aged cheddar, gouda and limburger.

Agriculture is so important to the state of Wisconsin that the state has a statute which commonly *referred to as: "The Right to Farm Law"*. According to the Wisconsin Legislative Council.":

The statute commonly referred to as Wisconsin's "Right-o-Farm Law" is s. 823.08, Stats. This statute directs the courts, under specific conditions set forth in the statute, to favor agriculture in certain legal disputes over agriculture uses of land. This statute was created in the 1981 Legislative Session and was substantially revised in 1995 session.

The Wisconsin Legislative Council also states that farms have certain rights because they were in operation before adjoining lands were developed;

One of the defenses available in private nuisance law is known as the "coming to the nuisance" defense. In a lawsuit involving an agriculture activity, this defense is available when the plaintiff moved into an

area after the farming operation was established. This defense is not an automatic bar to recovery by the plaintiff, but is rather one more factor for the court to consider.

As an animal health Agribusiness supplier, we hope that you will consider these points before taking any action that would have a negative impact on Ledgview Farms LLC, the local job force and the local economy.

Thank you

Tom Heiman

Tom D. Heiman

Sr. Territory Manager

Boehringer Ingelheim Animal Health

2037 Rush Ct.

De Pere, WI 54115

1-920-366-7601

Thomas.heiman@boehringer-ingelheim.com

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	Price	Equated Sales Ratio	Miles from Large CAFO	CAFO Purchase	CAFO #
2016061199966678	31 010 19.124	31010	6/30/2016	1	2	0	10000	58500	68500	104.67	65442	40000	163.61	0.0	1	1
2015101299905607	31 010 3.11	31010	11/6/2015	1	2	0	25500	92900	118400	107.98	109647	65000	168.69	0.0	0	3
2016042599983130	31 010 19.153	31010	5/23/2016	1	2	0	14200	126000	140200	104.67	133941	125000	107.15	0.0	1	1
2016092899961951	31 010 4.133	31010	10/21/2016	1	2	0	14000	78200	92200	104.67	88084	82000	107.42	0.10	1	3
2015042099959315	31 010 4.131	31010	5/18/2015	1	2	0	14800	95900	110700	107.98	102516	107500	95.36	0.20	0	3
2017022999956046	31 016 5.112	31016	2/17/2017	1	2	0	10500	118800	129300	91.41	139754	120000	117.88	0.2	0	4
2015051699975334	31 016 7.012	31016	6/12/2015	1	2	0	17500	134500	152000	101.82	149285	147500	101.21	0.20	0	4
2015052599923018	31 006 28.132	31006	5/27/2015	1	2	0	14400	57000	71400	92.53	77162	60000	128.60	0.30	1	2
2016082699982083	31 016 5.123	31016	7/19/2016	1	2	0	37900	78900	116800	100.85	115818	149700	77.37	0.30	0	4
2016032699902969	31 006 33.164	31006	4/22/2016	1	2	0	44400	135200	179600	92.63	193888	232000	83.57	0.30	0	2
2015082499907495	31 010 29.071	31010	8/18/2015	1	2	0	23500	253000	276500	107.98	256058	300000	85.35	0.30	0	1
2015062299947260	31 016 16.GL 3.13	31016	7/17/2015	1	2	0	8000	72800	80800	101.82	79357	78000	101.74	0.40	0	4
2014032899922184	31 016 16.GL 3.11	31016	4/11/2014	1	2	0	10000	98400	108400	100.87	107470	95000	113.13	0.40	0	4
2016022899935889	31 016 16.GL 3.11	31016	3/18/2016	1	2	0	10000	98400	108400	100.85	107488	101500	105.90	0.40	0	4
2016031499977223	31 018 25.012	31018	4/8/2016	1	2	0	26500	130500	157000	105.74	148476	144500	102.75	0.40	0	1
2016102199913961	31 004 12.062	31004	11/18/2016	1	2	0	11800	126600	138400	103.03	134330	100000	134.33	0.50	0	5
2014090399944983	31 004 1.112	31004	10/1/2014	1	2	0	13000	151400	164400	108.25	151870	142500	106.58	0.50	0	5
2015111899968358	31 010 19.012	31010	12/15/2015	1	2	0	39300	157100	196400	107.98	181880	255000	71.33	0.50	0	1
2016042599983089	31 010 20.1613	31010	2/26/2016	1	2	0	13000	36000	49000	104.67	46813	49000	95.54	0.60	0	1
2015031099900624	31 006 28.017	31006	4/1/2015	1	2	0	20700	69600	90300	92.53	97587	85000	114.81	0.60	1	2
2016080699936178	31 010 9.072	31010	9/2/2016	1	2	0	13100	106500	119600	104.67	114261	126000	90.68	0.60	0	3
2014042899996372	31 016 17.126	31016	4/30/2014	1	2	0	18400	177500	195900	100.87	194220	171000	113.58	0.70	0	4
2016062599931576	31 016 17.129.1	31016	7/18/2016	1	2	0	24500	196300	220800	100.85	218943	223000	98.18	0.75	0	4
2015061599911609	31 010 29.043	31010	5/15/2015	1	2	0	19500	150300	169800	107.98	157247	175000	89.86	0.80	1	1
2016012299972506	31 018 24.012	31018	2/1/2016	1	2	0	23000	82200	105200	105.74	99488	89900	110.67	0.85	0	1
2014062199919304	31 010 17.108	31010	7/1/2014	1	2	0	20500	275500	296000	106.93	276818	248500	111.40	0.90	0	1
2016050199998047	31 020 36.03	31020	5/31/2016	1	2	0	13800	97000	110800	101.53	109130	120000	90.94	1.1	0	5
2016052099943585	31 010 15.143	31010	3/10/2016	1	2	0	16600	98800	115400	104.67	110248	69100	159.55	1.5	0	3
2014060399986276	31 004 11.162	31004	6/27/2014	1	2	0	16500	142000	158500	108.25	146420	158500	92.38	1.5	0	5
2014083099919199	31 020 2.062	31020	9/29/2014	1	2	0	19500	129700	149200	100.66	148224	167000	88.76	1.5	0	2
2014062299921837	31 020 31GL2.3 R25E	31020	7/15/2014	1	1	0	17900	0	17900	100.66	17783	32000	55.57	1.7	2	5
2015012399958145	31 020 10.142	31020	2/13/2015	1	2	0	13100	70500	83600	99.62	83921	85000	98.73	1.7	0	2
2014052599958541	31 020 2.112	31020	6/20/2014	1	2	0	11600	77700	89300	100.66	88716	110000	80.65	1.9	0	2
2015040699900262	31 006 29.011	31006	5/1/2015	1	2	0	17000	117400	134400	92.53	145246	153000	94.93	2.0	0	2
2016042099919404	31 006 9.141	31006	4/29/2016	1	2	0	31800	152900	184700	92.63	199394	220000	90.63	2.0	1	1
2015111049942794	31 002 29.105	31002	11/11/2015	1	2	0	46700	276600	323300	104.58	309144	300000	103.05	2.0	0	4
2015041499932161	31 002 33.165	31002	4/1/2015	1	2	0	9800	12900	22700	104.58	21706	14000	155.04	2.1	0	4
2014070499952170	31 010 22.121	31010	7/28/2014	1	2	0	23400	82900	106300	106.93	99411	75000	132.55	2.2	0	1
2015052499917936	31 020 30GL2.4 R25E	31020	5/8/2015	1	2	0	10900	139400	150300	99.62	150876	118500	127.32	2.2	0	5
2016032699902956	31 016 30.041	31016	4/22/2016	1	2	0	33500	131300	164800	100.85	163414	179200	91.19	2.2	0	4
2014032199902249	31 012 19.053	31012	4/11/2014	1	2	0	15600	125300	140900	102.44	137548	125000	110.04	2.3	0	B1
2015111079945968	31 020 17.16	31020	11/27/2015	1	2	0	25500	149700	175200	99.62	175872	166500	105.63	2.3	0	2
2014022899952726	31 004 4.153	31004	2/19/2014	1	2	0	5400	76300	81700	108.25	75473	76000	99.31	2.4	0	5
2016000499992167	31 006 30.057	31006	10/21/2015	1	2	0	21700	123000	144700	92.53	156377	172500	90.65	2.4	0	2
2015111079945945	31 006 30.052	31006	11/30/2015	1	2	0	21800	145400	167200	92.53	180693	195000	92.66	2.4	0	2
2014060299982917	31 018 22.133	31018	6/30/2014	1	2	0	41000	282000	323000	108.05	298925	400000	74.73	2.4	0	1
2016011699963139	31 020 11.011	31020	1/21/2016	1	2	0	19600	39300	58900	101.53	58012	75000	77.35	2.6	0	2
2015061699917466	31 020 2.132	31020	7/10/2015	1	2	0	12800	102700	115500	99.62	115943	108500	106.86	2.6	0	2
2016111299953971	31 006 WP 6	31006	10/5/2016	1	2	0	38600	158800	197400	92.63	213104	240000	88.79	2.6	0	2
2014072799901728	31 012 25.050	31012	8/25/2014	1	2	0	38700	260200	298900	102.44	291788	294000	99.25	2.6	0	2
2015030699991821	31 006 WP 10	31006	4/2/2015	1	2	0	45000	203700	248700	92.53	268770	309900	86.73	2.6	0	2
2016071099974240	31 012 25.0410	31012	7/7/2016	1	2	0	47400	263300	310700	98.51	315388	379000	83.22	2.6	0	2
2014071999884849	31 012 25.046	31012	7/31/2014	1	2	0	31600	146100	177700	102.44	173472	153500	113.01	2.7	0	2
2016111499959847	31 002 19.161	31002	9/30/2016	1	2	0	35000	122500	157500	101.49	155185	160000	96.99	2.7	0	4
2015073199957445	31 006 25.014	31006	8/28/2015	1	2	0	17000	145600	162600	92.53	175722	172500	101.87	2.7	0	4
2014071899983232	31 010 23.042	31010	7/24/2014	1	2	0	13200	23700	36900	106.93	34509	18000	191.72	2.8	0	3
2016091799931433	31 010 34.114	31010	9/1/2016	1	2	0	17600	27700	45300	104.67	43278	36000	120.22	2.8	0	1
2014092499924423	31 002 20.122	31002	10/2/2014	1	2	0	13200	64300	77500	103.00	75244	65000	115.76	2.8	0	4
2014081999978312	31 004 9.023	31004	9/12/2014	1	2	0	6400	98400	104800	108.25	96813	110000	88.01	2.8	0	5
2016021199909047	31 020 12.052	31020	2/29/2016	1	2	0	27200	114800	142000	101.53	139860	160000	87.41	2.8	0	2
2016111299991643	31 018 27.082	31018	12/22/2016	1	2	0	23400	132500	155900	105.74	147435	177500	83.06	2.8	0	1
2016100399976915	31 012 25.013	31012	9/22/2016	1	2	0	31600	190200	221800	98.51	225146	254900	88.33	2.8	0	2
2016100399976702	31 012 25.112	31012	11/1/2016	1	2	0	20700	248500	269200	98.51	273262	265000	103.12	2.8	0	2
2016010899951385	31 012 25.017	31012	1/20/2016	1	2	0	30400	294000	324400	98.51	329294	371000	88.76	2.8	0	2
2016082699982581	31 016 31.011	31016	9/20/2016	1	2	0	27500	177800	205300	100.85	203573	230000	88.51	2.9	0	4
2014072299993813	31 004 5.012	31004	8/21/2014	1	2	0	7100	54000	61100	108.25	56443	57500	98.16	3.0	0	5
2016000599996989	31 020 28.064	31020	12/31/2015	1	2	0	13700	45000	58700	99.62	58925	60000	98.21	3.0	1	2
2015072099935022	31 014 6.102	31014	8/14/2015	1	2	0	28500	150200	178700	100.20	178345	133500	133.59	3.0	0	B1
2015090199922444	31 020 33.071	31020	8/18/2015	1	1	0	72000	0	72000	99.62	72276	140175	51.56	3.0	2	5
2016061499907251	31 002 21.125	31002	6/30/2016	1	2	0	15400	114600	130000	101.49	128089	145000	88.34	3.0	0	4

Research Testing Groups

	>2.95 miles	1.95 to 2.95 miles	.95 to 1.95 miles	.55 to .95 miles	.30 to .55 miles	< .30 miles
	(119)	(32)	(7)	(8)	(11)	(7)
	51.56	74.73	55.57	89.86	71.33	95.36
	60.14	77.35	80.65	90.68	77.37	101.21
	64.89	83.06	88.76	95.54	83.57	107.15
	65.66	83.22	90.94	98.18	85.35	107.42
	66.20	86.73	92.38	110.67	101.74	117.88
	69.21	87.41	98.73	111.40	102.75	163.61
	74.49	88.01	159.55	113.58	105.90	168.69
	74.97	88.33		114.81	106.58	
	75.39	88.51			113.13	
	76.70	88.76			128.60	
	77.14	88.79			134.33	
	77.3	90.63				
	77.63	90.65				
	78.22	91.19				
	78.53	92.66				
	79.60	94.93				
	79.63	96.99				
	80.51	99.25				
	80.79	99.31				
	81.55	101.87				
	83.24	103.05				
	84.23	103.12				
	84.76	105.63				
	84.89	106.86				
	86.36	110.04				
	87.87	113.01				
	87.88	115.76				
	88.06	120.22				
	88.17	127.32				
	88.25	132.55				
	88.34	155.04				
	88.34	191.72				
	88.45					
	88.51					
	88.68					
	88.68					
	88.92					
	89.40					
	89.51					
	89.75					
	90.04					
	90.16					
	90.16					
	90.16					
	90.7					
	90.91					
	91.10					
	91.20					
	91.27					
	91.34					
	91.92					
	92.17					
	92.30					
	92.49					
	93.51					
	94.20					
	94.40					
	94.61					
	94.92					
	95.86					
	96.23					
	96.72					
	96.99					
	97.39					
	97.43					

Mean-Aggregate-Median

Mean Equated Sale Ratio parcels >2.95	97.38
miles from LARGE CAFO	
Aggregate Equated Sale Ratio parcels >2.95	95.20
miles from LARGE CAFO	
Median Equated Sale Ratio parcels >2.95	95.86
miles from LARGE CAFO	
Mean Equated Sale Ratio parcels 1.95 to	102.40
2.95 miles from LARGE CAFO	
Aggregate Equated Sale Ratio parcels 1.95	94.38
to 2.95 miles from LARGE CAFO	
Median Equated Sale Ratio parcels 1.95 to	95.96
2.95 miles from LARGE CAFO	
Mean Equated Sale Ratio parcels .95 to 1.95	95.23
miles from LARGE CAFO	
Aggregate Equated Sale Ratio parcels .95 to	94.99
1.95 miles from LARGE CAFO	
Median Equated Sale Ratio parcels .95 to	90.94
1.95 miles from LARGE CAFO	
Mean Equated Sale Ratio parcels .55 to .95	103.09
mile from LARGE CAFO	
Aggregate Equated Sale Ratio parcels .55 to	103.25
.95 mile from LARGE CAFO	
Median Equated Sale Ratio parcels .55 to .95	104.43
mile from LARGE CAFO	
Mean Equated Sale Ratio parcels .30 to .55	100.97
miles from Large CAFO	
Aggreagte Equated Sale Ratio parcels .30 to	93.70
.55 miles from Large CAFO	
Median Equated Sale Ratio parcels .30 to .55	102.75
miles from Large CAFO	
Mean Equated Sale Ratio parcels < .30 miles	123.05
from Large CAFO	
Aggregate Equated Sale Ratio parcels < .30	114.80
miles from Large CAFO	
Median Equated Sale Ratio parcels < .30	107.42
miles from LARGE CAFO	

Conclusion Median Ratios

	<or =.95 miles	.95 to 1.95 miles	.30 to .95 miles	greater than .95 miles
	(26)	(7)	(19)	(158)
Ratio	71.33	55.57	71.33	51.56
>.95 miles	95.40			
.30 to .95 miles	102.75			
<.30 miles	107.42			
	83.57	60.14		
	85.35	90.94	85.35	64.89
	89.86	92.38	89.86	65.66
	90.68	98.73	90.68	66.20
	95.36	159.55	95.54	69.21
	95.54		98.18	74.49
	98.54		101.74	74.73
	101.21		102.75	74.97
	101.74		105.90	75.39
	102.75		106.58	76.70
	105.90 =106.24		110.67	77.14
	106.58		111.40	77.3
	107.15		113.13	77.35
	107.42		113.58	77.63
	110.67		114.81	78.22
	111.40		128.60	78.53
	113.13		134.33	79.60
	113.58			79.63
	114.81			80.51
	116.46			80.65
	128.60			80.79
	134.33			81.55
	163.61			83.06
	168.69			83.22
				83.24
				84.23
				84.76
				84.89
				86.36
				86.73
				87.41
				87.87
				87.88
				88.01
				88.06
				88.17
				88.25
				88.33
				88.34
				88.34
				88.45
				88.51
				88.68
				88.68
				88.76
				88.76
				88.79
				88.92
				89.40
				89.51
				89.75
				90.04
				90.16
				90.16
				90.16
				90.63
				90.7
				90.91
				90.94
				91.10
				91.19

CAFO#

1	Kinnard	116.46
2	Pagel	128.60
3	Dairy Dreams	134.33
4	Ebert Dairy	163.61
5	Wakker Dairy	168.69
B1	Dairyland Farms	

201407159978396	31 020 33.063	31020	8/15/2014	1	2	0	18100	143800	161900	100.66	160841	172000	93.51	3.0	1 5	98.05		91.20
201505019906314	31 020 33.103	31020	5/29/2015	1	2	0	30500	207500	238000	99.62	238913	265000	90.16	3.0	0 5	98.15		91.27
201408129954227	31 006 20.069	31006	9/11/2014	1	1	0	18400	0	18400	93.41	19699	22300	88.34	3.1	0 2	98.16		91.34
201500209999295	31 020 32.132	31020	1/5/2015	1	2	0	17400	109000	126400	99.62	126885	99000	128.17	3.1	0 5	98.21		91.92
201403159989840	31 012 ZS 6	31012	4/14/2014	1	2	0	20500	145400	165900	102.44	161953	165000	98.15	3.1	0 2	98.23		92.17
201600149913628	31 012 ZS 20	31012	1/8/2016	1	2	0	25000	159300	184300	98.51	187081	177000	105.70	3.1	0 2	98.52		92.30
201509089938094	31 012 24.123	31012	9/30/2015	1	2	0	16900	160500	177400	101.44	174875	202500	86.36	3.1	0 2	98.58		92.38
201608299992795	31 002 21.103	31002	9/28/2016	1	2	0	13000	83100	96100	101.49	94688	93500	101.27	3.2	0 4	98.63		92.49
201406189916610	31 004 22.063	31004	7/18/2014	1	2	0	20900	160900	181800	108.25	167944	144200	116.47	3.2	0 5	98.81		92.66
201507129915378	31 006 19.014	31006	7/30/2015	1	2	0	17000	62500	79500	92.53	85916	69000	124.52	3.3	0 2	98.81		93.51
201506169917473	31 020 14.143	31020	7/15/2015	1	2	0	7600	75900	83500	99.62	83820	77000	108.86	3.3	0 2	98.99		94.20
201607169987094	31 020 1.013	31020	8/11/2016	1	2	0	10400	120300	130700	101.53	128730	146500	87.87	3.4	0 2	99.22		94.40
201608029932622	31 006 17.121.8	31006	8/24/2016	1	2	0	18400	82900	101300	92.63	109359	110000	99.42	3.5	0 2	99.42		94.61
201408309918484	31 012 17.153	31012	9/26/2014	1	2	0	17500	110400	127900	102.44	124857	135000	92.49	3.5	0 B1	99.46		94.92
201410249917405	31 012 26.152	31012	11/14/2014	1	2	0	14500	127800	142300	102.44	138914	140000	99.22	3.5	0 2	99.65	=95.40	94.93
201506029959321	31 012 17.123	31012	6/30/2015	1	2	0	21200	131700	152900	101.44	150723	160000	94.20	3.5	0 B1	99.77		95.86
201404289996344	31 006 17.141.7	31006	5/15/2014	1	2	0	21000	139000	160000	93.41	171294	178000	96.23	3.5	0 2	100.34		96.23
201503179916304	31 006 17.042	31006	4/15/2015	1	2	0	18700	141500	160200	92.53	173128	183000	94.61	3.5	0 2	100.68		96.72
201609059907248	31 006 17.141.7	31006	9/29/2016	1	2	0	21000	139000	160000	92.63	172729	190000	90.91	3.5	0 2	101.13		96.99
201610289923561	31 006 17.141.10	31006	11/21/2016	1	2	0	21100	236900	258000	92.63	278526	314900	88.45	3.5	0 2	101.24		96.99
201507109909335	31 006 17.034	31006	7/31/2015	1	1	0	22600	0	22600	92.53	24424	27700	88.17	3.6	0 2	101.27		97.39
201505119961412	31 018 3.162	31018	5/28/2015	1	2	0	25700	127100	152800	107.95	141547	137000	103.32	3.7	0 1	102.39		97.43
201609119919657	31 002 1ASR 8	31002	9/30/2016	1	2	0	13800	76100	89900	101.49	88579	104500	84.76	3.8	0 4	102.91		98.05
201609129922490	31 006 18.11	31006	10/10/2016	1	2	0	47900	169700	217600	92.63	234912	295000	79.63	3.8	0 2	102.99		98.15
201505249915741	31 012 4.0412	31012	6/22/2015	1	1	0	31900	0	31900	101.44	31446	47500	66.20	3.9	0 1	103.32		98.16
201604189966285	31 012 4.0412	31012	5/16/2016	1	1	0	31900	0	31900	98.51	32381	49900	64.89	3.9	0 1	103.82		98.21
201605039904248	31 002 1ASR 19	31002	5/12/2016	1	2	0	14600	98400	113000	101.49	111339	121900	91.34	3.9	0 4	104.56		98.23
201608089942815	31 016 31.15	31016	8/31/2016	1	2	0	24500	127200	151700	100.85	150424	195000	77.14	3.9	0 4	104.92		98.52
201507149924260	31 004 17.165	31004	7/29/2015	1	2	0	3200	63500	66700	106.12	62853	63000	99.77	4.0	0 5	105.70		98.58
201609129922879	31 004 5.063	31004	9/23/2016	1	2	0	9100	83000	92100	103.03	89392	120000	74.49	4.0	0 5	106.42		98.63
201606089992641	31 018 33.052	31018	6/10/2016	1	2	0	28000	120800	148800	105.74	140721	179900	78.22	4.0	0 1	106.52		98.73
201611059939452	31 002 22.163	31002	12/1/2016	1	1	0	33300	0	33300	101.49	32811	26000	126.20	4.1	0 4	108.07		98.81
201401139964919	31 006 9.151	31006	2/7/2014	1	2	0	20000	54300	74300	93.41	79545	50000	159.09	4.1	0 2	108.86		98.81
201408199978626	31 018 16.093	31018	9/5/2014	1	2	0	33500	69500	103000	108.05	95323	95000	100.34	4.1	0 1	109.01		98.99
201609049902957	31 012 10.164	31012	9/30/2016	1	2	0	28000	123400	151400	98.51	153684	205000	74.97	4.1	0 1	109.35		99.22
201604169957310	31 002 22.167	31002	4/15/2016	1	2	0	23200	271900	295100	101.49	290763	242500	119.90	4.1	0 4	110.44		99.25
201604319992177	31 006 8.159	31006	4/27/2016	1	2	0	51200	210200	261400	92.63	282196	274000	102.99	4.1	0 2	111.72		99.31
201610089986581	31 012 10.133.1	31012	11/3/2016	1	2	0	28300	234500	262800	98.51	266765	300000	88.92	4.1	0 1	114.14		99.42
201405029906170	31 012 16.166	31012	5/16/2014	1	2	0	60900	192100	253000	102.44	246981	240000	102.91	4.2	0 B1	115.12		99.46
201605239953490	31 018 16.093	31018	6/17/2016	1	2	0	33500	69500	103000	105.74	97408	127000	76.70	4.3	0 1	115.74		99.65
201501029927931	31 016 5.05 T23N	31016	1/30/2015	1	2	0	36400	93700	130100	101.82	127776	140000	91.27	4.3	0 4	116.47		99.77
201611129953974	31 002 8.08	31002	10/26/2016	1	2	0	24400	111100	135500	101.49	133509	158500	84.23	4.4	0 3	117.33		100.34
201604139955425	31 012 13.0611	31012	4/15/2016	1	2	0	15900	130000	145900	98.51	148101	167000	88.68	4.5	0 1	119.90		100.68
201606089992887	31 012 13.068	31012	6/30/2016	1	2	0	14500	140700	155200	98.51	157542	176000	89.51	4.5	0 1	121.53		101.13
201606069986411	31 012 14.044	31012	6/29/2016	1	2	0	14400	190900	205300	98.51	208397	235000	88.68	4.6	0 1	124.52		101.24
201409289935908	31 012 10.134	31012	9/19/2014	1	2	0	33200	205100	238300	102.44	232630	235000	98.99	5.0	1 1	125.17		101.27
201500309923130	31 018 19.162	31018	1/27/2015	1	2	0	27500	94100	121600	107.95	112645	102000	110.44	5.3	0 1	126.20		101.87
201504279985926	31 004 29.082	31004	5/21/2015	1	2	0	7100	40900	48000	106.12	45231	60000	75.39	5.4	0 5	128.17		102.39
201602149911048	31 004 29.091	31004	3/11/2016	1	2	0	12900	95900	108800	103.03	105601	90000	117.33	5.4	0 5	133.59		102.91
201606089993051	31 018 30.062	31018	7/8/2016	1	2	0	39500	183400	222900	105.74	210798	215000	98.05	5.4	0 1	137.78		102.99
201606059981369	31 014 14.101	31014	6/24/2016	1	2	0	28300	253700	282000	97.16	290232	320000	90.7	5.5	0 2	151.93		103.05
201503069990134	31 018 8.101	31018	3/31/2015	1	1	0	50700	0	50700	107.95	46966	59000	79.60	5.6	0 1	156.68		103.12
201403249912828	31 004 31.162	31004	4/11/2014	1	2	0	6400	92000	98400	108.25	90901	117600	77.3	5.6	0 5	159.09		103.32
201605039904710	31 004 31.162	31004	6/1/2016	1	2	0	6400	92000	98400	103.03	95507	138000	69.21	5.6	1 5	188.34		103.82
201510179913807	31 018 18.022	31018	11/12/2015	1	2	0	27000	153100	180100	107.95	166836	172500	96.72	5.6	0 1			104.56
201511189969799	31 018 18.013	31018	12/15/2015	1	2	0	27000	168000	195000	107.95	180639	174000	103.82	5.6	0 1			104.92
201506069969249	31 018 17.063 & 18.011	31018	6/25/2015	1	2	0	54300	170600	224900	107.95	208337	180000	115.74	5.6	0 1			105.63
201406149903672	31 018 8.102	31018	7/11/2014	1	2	0	58400	237600	296000	108.05	273937	240000	114.14	5.6	0 1			105.70
201600199920037	31 018 8.118	31018	1/14/2016	1	1	0	28900	0	28900	105.74	27331	30000	91.10	5.8	0 1			106.42
201602289936464	31 018 8.111	31018	3/25/2016	1	1	0	38100	0	38100	105.74	36031	41000	87.88	5.8	0 1			106.52
201605069909285	31 014 23.162	31014	6/3/2016	1	1	0	33600	0	33600	97.16	34581	57500	60.14	5.8	2 2			106.86
201405209946171	31 014 15.152	31014	5/22/2014	1	2	0	10500	71200	81700	101.26	80684	85000	94.92	5.8	0 2			108.07
201600149912986	31 014 10.131	31014	12/14/2015	1	2	0	36600	92800	129400	100.20	129143	85000	151.93	5.8	0 2			108.86
201611289988099	31 014 10.131	31014	7/14/2016	1	2	0	36600	92800	129400	97.16	133177	85000	156.68	5.8	0 2			109.01
201502309952881	31 014 10.032	31014	3/24/2015	1	2	0	28500	133800	162300	100.20	161978	160000	101.24	5.8	0 2			109.35
201407149974884	31 014 15.021	31014	8/13/2014	1	2	0	23500	54000	77500	101.26	76536	85000	90.04	6.0	0 2			110.04
201401179971133	31 008 13.162	31008	2/10/2014	1	2	0	17000	109800	126800	104.67	121140	124900	96.99	6.0	0 5			110.44
201505019906306	31 014 23.103	31014	5/28/2015	1	2	0	16600	102100	118700	100.2	118464	132000	89.75	6.00	0 2			111.72
201407149974889	31 014 26.103	31014	8/13/2014	1	2	0	37200	102800	140000	101.26	138258	150000	92.17	6.00	0 5			113.01
201405259958571	31 014 15.153	31014	6/20/2014	1	2	0	26800	161300	188100	101.26	185760	188000	98.81	6.0	0 2			114.14
201405039908439	31 014 20.062	31014	5/30/2014	1	2	0	14500	206100	220600	101.26	217855	195000	111.72	6.0	0 2			115.12
201611299992245	31 014 35.131	31014	12/15/2016	1	2	0	14500	197900	212400	97.16	218600	199900	109.35	6.0	0 5			115.74
201601019940315	31 014 21.123	31014	1/29/2016	1	2	0	23500	17900	41400	97.16	42608	40000	106.52	6.2	0 2			115.76
201506169918282	31 018 1ASR 29.7	31018	6/26/2015	1	1	0	43800	0	43800	107.95	40574	45000	90.16	6.2	0 1			116.47
201610189909619	31 018 1ASR 67	31018	11/3/2016	1	2	0	21600	97500	119100	105.74	112633	110000	102.39	6.2	0 1			117.33
201609139926527	31 008 SHP 13	31008	9/7/2016	1	2	0	36300	95700	132000	100.54	131291	132000	99.46	6.20	0 5			119.90
201405239949344	31 018 BVC 2	31018	6/5/2014	1	2	0	27000	136800	163800	108.05	151591	149900	101.13	6.2	0 1			120.22
201510099998525	31 018 BVC 5	31018	10/13/2015	1	2	0	27000	137400	164400	107.95	152292	165000	92.30	6.2	0 1			121.53
201407049952367	31 018 1ASR 79	31018	7/23/2014	1	2	0	108200	41600	149800	108.05	138635	170000	81.55	6.2	0 1			124.52
201508289913082	31 018 BVC 4	31018	8/27/2015	1	2	0	27000	138300	165300	107.95	153126	173000	88.51	6.2	0 1			125.17
201505019906243	31 018 1ASR 46	31018	5/8/2015	1	2	0	183400	107100	290500	107.95	269106	249000	108.07	6.2	0 1			126.20
201608029932235	31 018 1ASR 18	31018	8/17/2016	1	2	0	117200	265300	382500	105.74	361732	339900	106.42	6.2	0 1			127.32
201607249907729	31 018 1ASR 26	31018	6/23/2016	1	2	0	93000	204100	297100	105.74	280969	349000	80.51	6.2	0 1			128.17
201409289935983	31 018 1ASR 132.2	31018	9/2/2014	1	2	0	74200	322100	396300	108.05	366761	388500	94.40	6.2	0 1			132.55
201508039967596	31 018 1ASR 134	31018	8/21/2015	1	2	0	185900	234000	419900	107.95	388976	396000	98.23	6.2	0 1			133.59
201600119907006	31 004 32.113	31004	12/18/2015	1	2	0	2700	55200	57900	106.12	54560	56000	97.43	6.7	0 5			137.78
201511229975335	31 004 32.1120	31004	12/21/2015	1	2	0	5900	67400	73300	106.12	69072	60000	115.12	6.7	0 5			151.93
201606149906857	31 004 32.114	31004	6/29/2016	1	2	0	5300	96500	101800	103.03	98807	100000	98.81	6.7	0 5			155.04
201610079983434	31 004 32.104	31004	10/31/2016	1	2	0	33500	135900	169400	103.03	164419	165000	99.65	6.7	0 5			156.68
201408269907194	31 008 25.032	31008	9/24/2014	1	2	0	28900	288500	317400	104.67	303232	290000	104.56	6.7	0 5			159.09
201606119996869	31 008 2.1113	31008	7/7/2016	1	2	0	7100	80000	87100	100.54	86632	96900	89.40	6.9	0 5			159.55
201611099952799	31 008 2.1115	31008	12/7/2016	1	2	0	7800	100000	107800	100.54	107221	121500	88.25	6.9	0 5			188.34
201611169965708	31 008 2.114	31008	12/12/2016	1	2	0	9700	140000	149700	100.54	148895	147892	100.68	6.9	0 5			191.72

201504189948996	31 012 4.048	31012	5/4/2015	1	1	0	30000	0	30000	101.44	29573	30000	98.58	7.0	0	1
201404149965180	31 008 10.014	31008	5/2/2014	1	2	0	7500	61500	69000	104.67	65920	35000	188.34	7.0	0	5
201608269982146	31 004 31.153	31004	8/31/2016	1	2	0	9000	49200	58200	103.03	56489	41000	137.78	7.0	0	5
201605069909240	31 008 10.041	31008	5/31/2016	1	2	0	18500	63300	81800	100.54	81360	65000	125.17	7.0	0	5
201506279965341	31 008 11.068	31008	7/17/2015	1	2	0	4300	59200	63500	103.57	61310	68000	90.16	7.0	0	5
201509309981870	31 012 33.122	31012	10/26/2015	1	2	0	22600	90200	112800	101.44	111194	116000	95.86	7.0	0	2
201608159959475	31 012 28.132	31012	8/26/2016	1	2	0	14500	92100	106600	98.51	108208	130000	83.24	7.00	0	2
201508249907204	31 008 11.072	31008	9/18/2015	1	2	0	17000	105800	122800	103.57	118566	130000	91.20	7.0	0	5
201607189993256	31 018 31.033	31018	6/20/2016	1	2	0	51000	126600	177600	105.74	167957	138200	121.53	7.00	0	1
201511319989953	31 014 5.072	31014	12/28/2015	1	2	0	14500	147000	161500	100.2	161179	165500	97.39	7.0	0	2
201503289957463	31 002 2.041	31002	4/20/2015	1	2	0	13100	95200	108300	104.58	103558	95000	109.01	7.6	0	4
201407289904317	31 014 29.071	31014	8/11/2014	1	2	0	38500	211700	250200	101.26	247087	235500	104.92	7.9	0	2
201408029909931	31 012 19.162	31012	8/22/2014	1	2	0	17600	109700	127300	102.44	124271	126000	98.63	8.0	0	2
201509139945625	31 012 32.154	31012	9/17/2015	1	2	0	17800	116200	134000	101.44	132092	150000	88.06	8.0	0	2
201511319989948	31 012 19.164	31012	12/28/2015	1	2	0	20600	261000	281600	101.44	277591	302000	91.92	8.0	0	2
201603049953653	31 014 19.164	31014	4/1/2016	1	2	0	24500	116800	141300	97.16	145425	180000	80.79	8.1	0	2
201608129949178	31 008 21.152	31008	8/11/2016	1	2	0	55200	168600	223800	100.54	222597	339000	65.66	9.2	0	5
201408269907179	31 008 32.061	31008	9/24/2014	1	2	0	36500	141800	178300	104.67	170341	172900	98.52	10.3	0	5
201506309980305	31 008 29.061	31008	7/27/2015	1	2	0	56300	142400	198700	103.57	191849	226000	84.89	10.4	0	5
201404299900583	31 008 29.061.1	31008	5/23/2014	1	2	0	58700	229000	287700	104.67	274857	350000	78.53	11.0	0	5
201608169963758	31 008 30.13	31008	9/12/2016	1	2	0	32500	99800	132300	100.54	131589	169500	77.63	11.7	0	5

Charlotte Nagel

From: Sarah Burdette <sburdette@ledgeviewwisconsin.com>
Sent: Monday, May 21, 2018 9:31 AM
To: Charlotte Nagel
Subject: FW: Plunging Property Values determined by Wisconsin Department of Revenue Report
Attachments: 11_1_SRA 3 yr grid_LG_CAFO.pdf; Untitled attachment 00110.htm; 2017-81-01 Findings of Fact_Final.pdf; Untitled attachment 00113.htm; Adjustment Calculation.pdf; Untitled attachment 00116.htm; Base Data All CAFOs legal size.pdf; Untitled attachment 00119.htm; Base Data LG CAFOs legal size.pdf; Untitled attachment 00122.htm; Ebert_Locator map.jpeg; Untitled attachment 00125.htm; Kewaunee County CAFO by units.pdf; Untitled attachment 00128.htm; Large CAFO map_Kewaunee.pdf; Untitled attachment 00131.htm; Large CAFO-Satellite View.jpeg; Untitled attachment 00134.htm

Follow Up Flag: Follow up
Flag Status: Flagged

For the town board public hearing file for May 29.

Sarah K. Burdette
Administrator
Town of Ledgeview

Ledgeview
Set your sights high

3700 Dickinson Road
De Pere, WI 54115
Phone: 920.336.3360, ext. 108
Mobile: 920-639-6083
sburdette@ledgeviewwisconsin.com www.LedgeviewWisconsin.com

From: Tami Schneider [mailto:traelschneider@gmail.com]
Sent: Friday, May 18, 2018 7:27 AM
To: sburdette@ledgeviewwisconsin.com
Subject: Fwd: Plunging Property Values determined by Wisconsin Department of Revenue Report

Hi Sarah,

I am forwarding you more info on CAFOs and land values. I'm not sure if you get these articles from other citizens but thought you should ,as the board, see what we see. There are lots of great researchers in our community!

Thank you!
Tami Schneider

Sent from my iPhone

Begin forwarded message:

From: Lynn Utesch <lnutesch@yahoo.com>
Date: May 17, 2018 at 8:47:03 PM CDT
To: David Evans <evansdd@gmail.com>
Cc: Allison Kaufman <allisonkkaufman@gmail.com>, Amanda Auricchio <amanda_auricchio@yahoo.com>, Anne Laurent <AnnieMLaurent@gmail.com>, Anthony Alagowski <alagowski@att.net>, Barb Gilling <barb@pdqcarwash.com>, Becky DeGroot <bdegroot27@gmail.com>, Beth Perry <bperry1041@aol.com>, Bob & Kim Kissel <rek@new.rr.com>, Bob Gryboski <Bob@gryboskibuilders.com>, Brian Brittain <4brittsindepere@gmail.com>, Brooke Neville <office@nevillesales.com>, CARRIE MADSON <carrielmadson@gmail.com>, Chad Anderson <chad.anderson@editfruitjuice.com>, Charity Schneider <charityjayne1106@gmail.com>, Cheryl Servais <jservais2@new.rr.com>, Christine Metzler <Metzler652@hotmail.com>, Christine Schillinger <schillingerchristine@yahoo.com>, Cindy & Tom Sullivan <cbrownsull@yahoo.com>, Crystal Kriewaldt <crystal@uwalumni.com>, Curt Czachor <curt@cpblawyers.com>, Dan McKenna <dnlmckenna@gmail.com>, David Ames <aps@new.rr.com>, Eric Van Miller <ejvanmiller@kidsdentalexperts.com>, Erin Enright <erinenright@uwalumni.com>, Gaetano Auricchio <Gaetano.Auricchio@belgioioso.com>, Glen <glenjordan@sbcglobal.net>, "Goebelamy@icloud.com" <Goebelamy@icloud.com>, Heidi Eggers-Ulve <ulve@sbcglobal.net>, James Lyerly <james.lyerly@gmail.com>, Jamie Swenson-Macak <jjswengb@gmail.com>, Jeanne McKenna <jeannemck@gmail.com>, Jennifer Sullivan <jenniferhoener@hotmail.com>, Jenny Longlais <jlonglai@me.com>, Jessica McCarthy <jessicamacjgg3@me.com>, Jim Enright <jenright@new.rr.com>, JoAnn Hennigan <jojoshenn@gmail.com>, Jodi Ciesielczyk <jodi.ciesielczyk@gmail.com>, Joe & Pam Pardini <jpardini@new.rr.com>, John Connelly <jconnelly@d2ingredients.com>, Jon Sullivan <sullivanj@packers.com>, Judy Treml <judyjutre@aol.com>, Justin Rebman <justinrebman@gmail.com>, Kim Anderson <ck1anderson@msn.com>, Kim Voss <ssovk@yahoo.com>, Kristin Lyerly <kristin.lyerly@gmail.com>, Kurt Voss <kvoss@ameriluxinternational.com>, "L.Lindsley@spgcares.com" <L.Lindsley@spgcares.com>, Lee Adams <lee.adams82@gmail.com>, Lisa Goodwin <lgoodwin@new.rr.com>, Lori Martin <lorimartin.lm@gmail.com>, Lynn Utesch <lnutesch@yahoo.com>, Marenda Avery <marendaporter@hotmail.com>, Mark Forman <markf@belmark.com>, Matt Gerhard <matt@mgerhardconstruction.com>, Matt Lutsey <matt@wasedafarms.com>, Matt Walters <matt4_4@hotmail.com>, Matthew Karman <mkarman@midwestexpansion.com>, Megan Ristow <megan.ristow@yahoo.com>, Meghan Greene <meghangreene@yahoo.com>, Melissa Cheslock <melissacheslock@outlook.com>, Mevy Yilmaz <my@optima-usa.com>, Michael Tesar <michaelgtesar@yahoo.com>, Michael and Cristy Janitch <muskymaj@new.rr.com>, Michele Pesiri <mpesiri@hotmail.com>, Michelle Lagowski <michelle@lagowskidesign.com>, Mike & Kim Terry <kmterry91@new.rr.com>, Mike Avery <mtavery73@gmail.com>, Mike Bown <mike.bown@schreiberfoods.com>, Mike G <spikeg@yahoo.com>, Mike Pollatz <Mpollatz12@gmail.com>, Missy Gallagher

<missyvg@yahoo.com>, Nick Kolanko <nkolanko@gmail.com>, Patricia Cousineau <pcousi@new.rr.com>, Patrick Schillinger <pat.schillinger@gmail.com>, Ray Schneider <rschneider2@new.rr.com>, Rebecca Van Miller <rvanmiller@gmail.com>, Rick Kriewaldt <rick.kriewaldt@fpl.com>, Rob Shepherd <rshepherd@vyron.com>, Ryan Radue <ryanradue@gmail.com>, Ryan Steve Patty Radue <raduehomes@hotmail.com>, SPearson <spearsonm@aol.com>, "\"Schillinger, Patrick J\"" <PJSchillinger@integrysgroup.com>, "Sean.Moran@belgioioso.com" <Sean.Moran@belgioioso.com>, Shelly Weigandt <shelly@weigandt.com>, Steve Harty <steve.harty@greenbayymca.org>, Steven Laurent <Stevenmlaurent@gmail.com>, Susan Frost <susan@frostmc.com>, Tamra Schneider <traelschneider@gmail.com>, Terrance and Angelika Edgar <tedgar@sbcglobal.net>, Todd & Mary Ruekl <karlia@sbcglobal.net>, Tom Sylvester <tomsylvester@hotmail.com>, Tracy Gwidt <mgwidt1@yahoo.com>, Walt and Cathy Ratschan <wcratsch@aol.com>, Wayne Bouchonville <wbouchonville@new.rr.com>, "bjgerl@hotmail.com" <bjgerl@hotmail.com>, "bswiekatowski@new.rr.com" <bswiekatowski@new.rr.com>, "daswiek@gmail.com" <daswiek@gmail.com>, "keithgarot@new.rr.com" <keithgarot@new.rr.com>, lothlorien2010 <manar71@hotmail.com>

Subject: Plunging Property Values determined by Wisconsin Department of Revenue Report

Reply-To: Lynn Utesch <lnutesch@yahoo.com>

This report was completed in November of 2017. The Determination from the Department of Revenue was that residences within a quarter mile radius of a large CAFO--had home values decrease by 13%. Homeowners within a mile of a CAFO suffered a 8% loss in home value. Articles were published in both the Green Bay Press Gazette and the Wisconsin State Journal on Deb and Scott Kliment's successful challenge of the loss of their home value due to proximity of CAFO.

CAFO's, Concentrated Animal Feeding Operations, threaten human health, may contaminate land, air & water, cause home values to plummet, destroy infrastructure, and have the ability to create serious quality of life issues, [among a myriad of other issues.]

If you are looking for anymore information prior to your meeting please do not hesitate to ask, or call our home.

Wishing your community the best,

Lynn Utesch
920-388-0868

2017 Appeal #2017-81-01
Findings of Fact section D-6

The Subject property is a single family residence with several utility buildings, located on a 14.41 acre parcel in eastern Kewaunee County. The parcel is mostly wooded except for the building sites. The appellant believes the value of the property is negatively impacted by a Concentrated Animal Feeding Operation (CAFO) located directly across the road from the subject. The Wisconsin Department of Natural Resources (DNR) defines a CAFO as "A Wisconsin animal feeding operation with 1,000 animal units or more". The DNR may designate a smaller-scale animal feeding operation (fewer than 1,000 animal units) as a CAFO if it has pollutant discharges to navigable waters or contaminates a well.

The Department of Revenue (DOR) found the appellant presented no definitive evidence to support their opinion of value. The assessor presented a comparable sales grid, but the total value adjustments were extensive, and show that the sales are not reasonably comparable, and cannot be used as a basis to establish value. Appraisals submitted to the BOR by the appellant, which were submitted to DOR by the assessor, ranged in date from 1995 to 2010 – which made them only relevant as historical data.

In the absence of a sale of the subject property and reasonably comparable properties, DOR completed a sales study of all recent (past three years) arms-length residential sales in Kewaunee County townships to test whether the proximity to a CAFO impacts property values and if so, to what extent. Because our study is countywide and each municipality assesses at a different percentage or market value, we equated the assessments of each sale to full value using the applicable municipal aggregate ratio, which allows us to compare assessed values between municipalities. This is a process DOR performs annually to analyze market value changes for purposes of adjusting the Equalized Value. Our study is based on rural sales, and excludes sales from the two villages and two cities in the County. Sales which are located on significant water bodies were not included in the ratio analysis, since waterfront sales typically form a unique marketplace. Residential sales purchased by area farmers were included in the ratio study since they were validated as arm's length transactions by the various municipal assessors.

The equated assessment ratios were graphed using the measured distance of each sale property from a CAFO. The CAFOs included in the study area were: Da-Ran Dairy LLC (0059579), Dairy Dreams LLC (0062057), Deer Run Dairy LLC (0093789), Ebert Dairy Enterprises LLC (formerly Duescher's), Ebert Dairy Enterprises LLC (0062235), El-Na Farms LLC (0063061), Halls Calf Ranch (006503), Heims Hillcrest Dairy LLC (0064131), Kinnard Farms Inc. (0059536), Pagel's Ponderosa LLC (0059536), Rolling Hills Dairy Farm (0062707), Seidl's Mountain View Dairy LLC (0063665), Skyline Blue Acres (0063410), Stahl Bros Dairy LLC (0061999), Stahl Farms (0062332), and Wakker Dairy Farm Inc. (0063673). The result of this study including all Kewaunee County CAFOs suggested the possibility of trends, but overall was inconclusive. See Figure 1 below. Therefore, the results of the study were further segregated by the size of the CAFO.

A more in-depth analysis of the data indicated the size of the CAFO is relevant to market trends. The ratio study was altered to graph the equated assessment ratios to the measured distance from each large CAFO. Large CAFOs (LG CAFOs) were determined to be operations with more than four thousand (4,000) units which included: Kinnard Farms Inc., Pagels Ponderosa Dairy, Dairy Dreams LLC, Ebert Dairy Enterprises LLC, and Wakker Dairy Farm Inc. all located in Kewaunee County; plus Dairyland Farm LLC (two miles west of the Brown/Kewaunee line) located in Brown County. One hundred eighty four (184) sales over the last three years were included in our study.

The sales ratios measure the relationship between the equated (full value) assessment and the sale price. A ratio above 100 indicates a sales price which is less than the equated assessment. A ratio below 100 indicates a sales price which is greater than the equated assessment. Equated sales ratios were taken from the sales ratio analysis blend group of the townships in Kewaunee County. Six groups were used in the analysis. The first mile was divided into three groups, as this would likely encompass the most intense effect from the LG CAFO. The second and third mile from a LG CAFO were groups and the last group included parcels greater than 2.95 miles from a LG CAFO. Distribution of these sales are listed below:

- 4% (7 sales) were < .30 miles from a LG CAFO
- 6% (11 sales) were .30 to .55 miles from a LG CAFO
- 4% (8 sales) were .55 to .95 miles from a LG CAFO
- 4% (7 sales) were .95 to 1.95 miles from a LG CAFO
- 17% (32 sales) were 1.95 to 2.95 miles from a LG CAFO
- 69% (119 sales) were > 2.95 miles from a LG CAFO

The analysis included measurement and study of each group in light of their mean, aggregate and median sales ratios. Comparison of the mean ratios (Figure 2) for the six groups showed a significantly higher ratio for the group less than .30 miles from a LG CAFO. Comparison of the aggregate ratios (Figure 3) for the six groups showed a significantly higher ratio for both the group less than .30 miles from a LG CAFO and the group from .55 to .95 miles from a LG CAFO. The aggregate ratio (Figure 4) for the group from .30 to .55 miles from a LG CAFO was influenced by several high dollar sales which is the weakness of the aggregate ratio measure where the group is relatively small. Comparison of the median ratios showed significantly higher ratios for the three groups .95 miles and less from a LG CAFO versus the three groups where parcels were one mile and further from a LG CAFO. All three measures of central tendency point to parcels closer to LG CAFOs having higher equated assessment to sale price ratios. The median ratio measures were found to be the most statistically sound measure for the study.

Based on analysis of the sales, we found that there was no identifiable impact to residences beyond one mile from the CAFO. We also found that properties within about ¼ mile were impacted the most. Additionally, sales between ¼ and 1 mile from the CAFOs were adversely impacted, but to a lesser degree. (Figure 5). The median ratio study results were applied to these three groups of sales looking at the ratio relationship to the distance from the nearest LG CAFO:

- >.95 miles Median Ratio 95.40%
- .30 to .95 miles Median Ratio 102.75%
- <.30 miles Median Ratio 107.42%

[(>.95 miles ratio minus <.30 miles ratio)/>.95 miles ratio] * 100 = percent change

[(95.40 – 107.42)/95.40] * 100 = - 13%

[(>.95 miles ratio minus .30 to .95 miles ratio)/>.95 miles ratio] * 100 = percent change

[(95.40 – 102.75)/95.40] * 100 = - 8%

As the subject parcel in this appeal is less than .30 miles from a LG CAFO, the results of the study show that an economic obsolescence factor of minus 13% should be applied to the unadjusted total local assessment. The reduction should be applied equally to the land and improvement assessments.

DOR considers this study to be appropriately extensive for application across Kewaunee County only. While the trends may be useful to consider in nearby, similar counties, it is not appropriate to apply beyond the immediate area. Kewaunee County is somewhat unique in that there are a significant number of LG CAFO's from which to gather data.

Summary of Findings:

- The value of property located more than one mile away from a CAFO is not impacted
- The value of property located within any distance from a CAFO that is smaller than 4,000 units is not impacted
- The value of property located within one quarter mile of a large CAFO (greater than 4,000 units) is reduced by 13%
- The value of property located between ¼ mile and one mile of a large CAFO is reduced by 8%

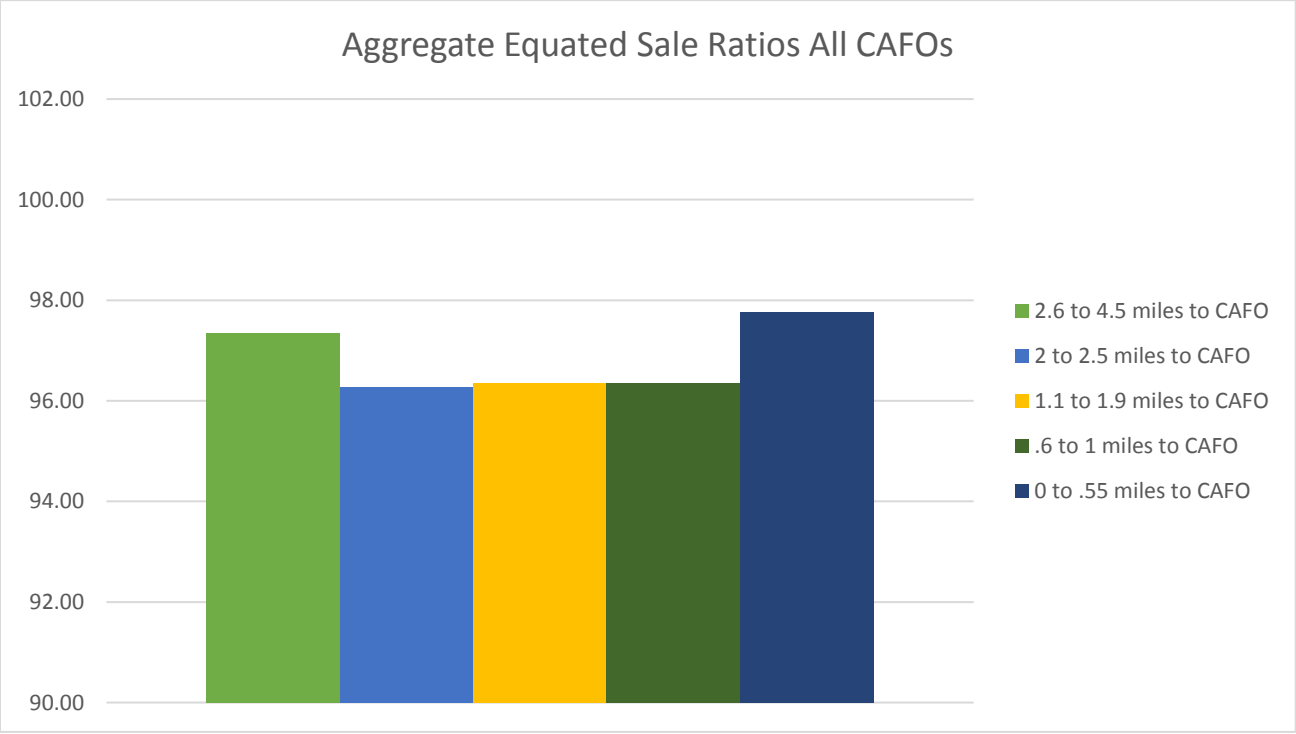


Figure 1

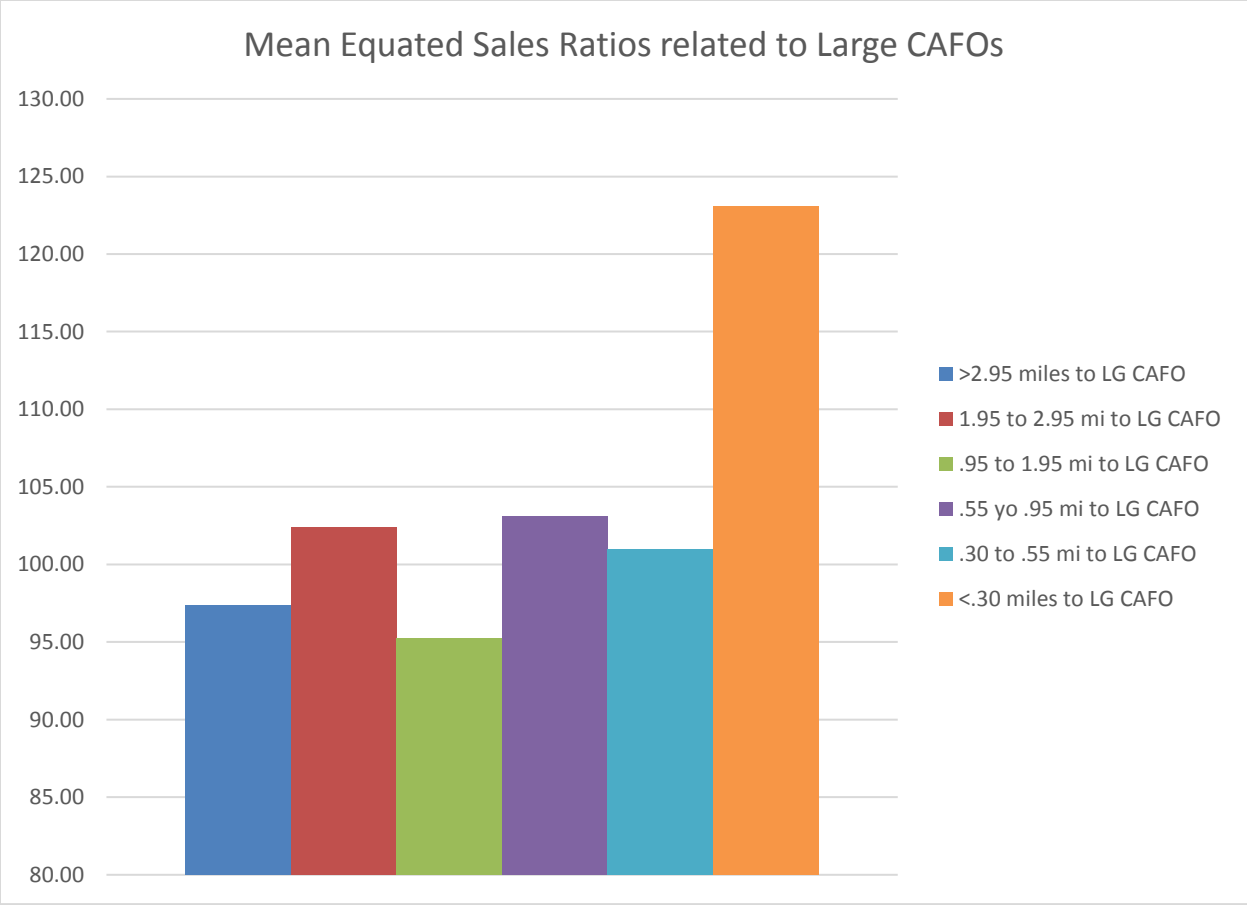

Mean Equated Sales Ratios related to Large CAFOs
130.00
125.00
120.00
115.00
110.00
105.00
100.00
95.00
90.00
85.00
80.00
>2.95 miles to LG CAFO
1.95 to 2.95 mi to LG CAFO
.95 to 1.95 mi to LG CAFO
.55 yo .95 mi to LG CAFO
.30 to .55 mi to LG CAFO
<.30 miles to LG CAFO

Figure 2

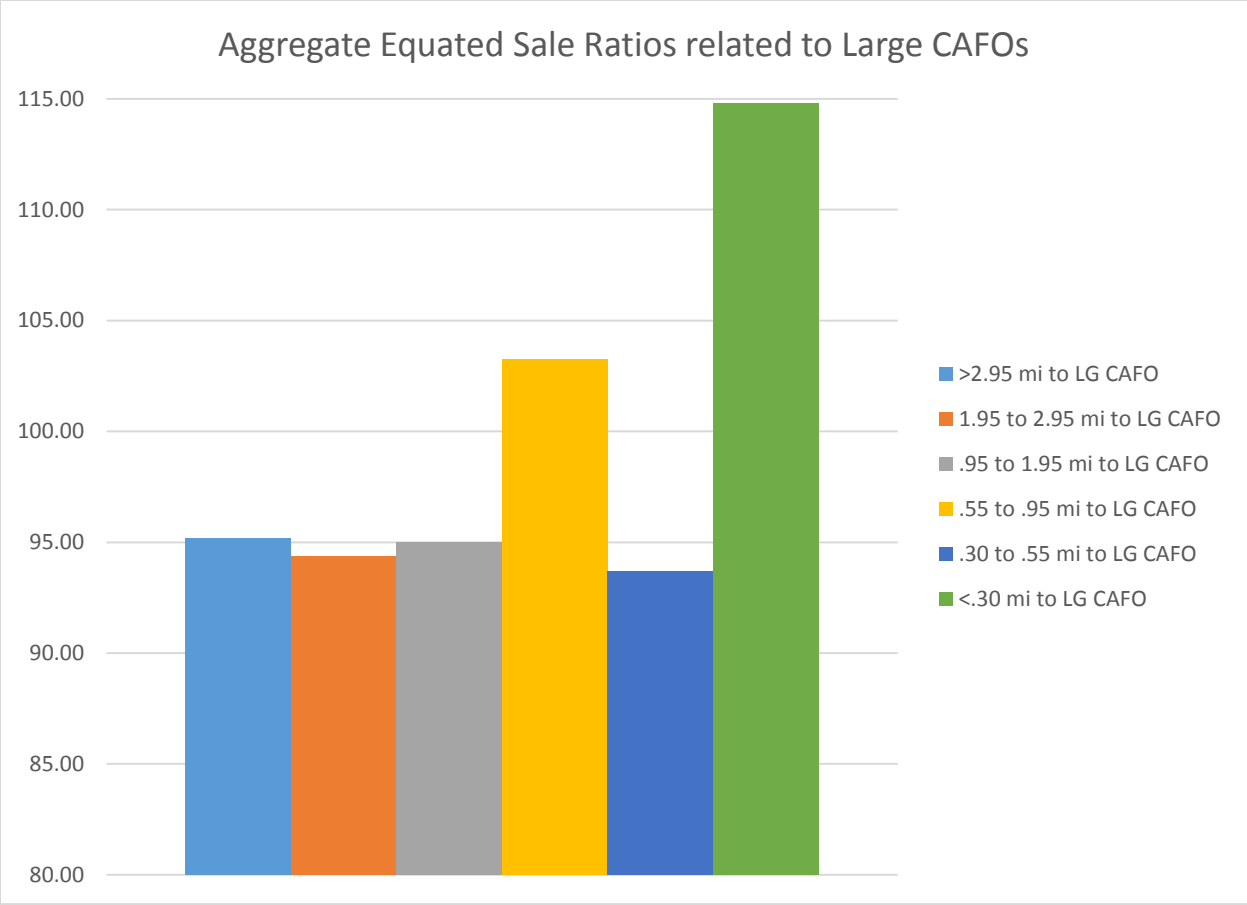

Aggregate Equated Sale Ratios related to Large CAFOs
115.00
110.00
105.00
100.00
95.00
90.00
85.00
80.00
>2.95 mi to LG CAFO
1.95 to 2.95 mi to LG CAFO
.95 to 1.95 mi to LG CAFO
.55 to .95 mi to LG CAFO
.30 to .55 mi to LG CAFO
<.30 mi to LG CAFO

Figure 3

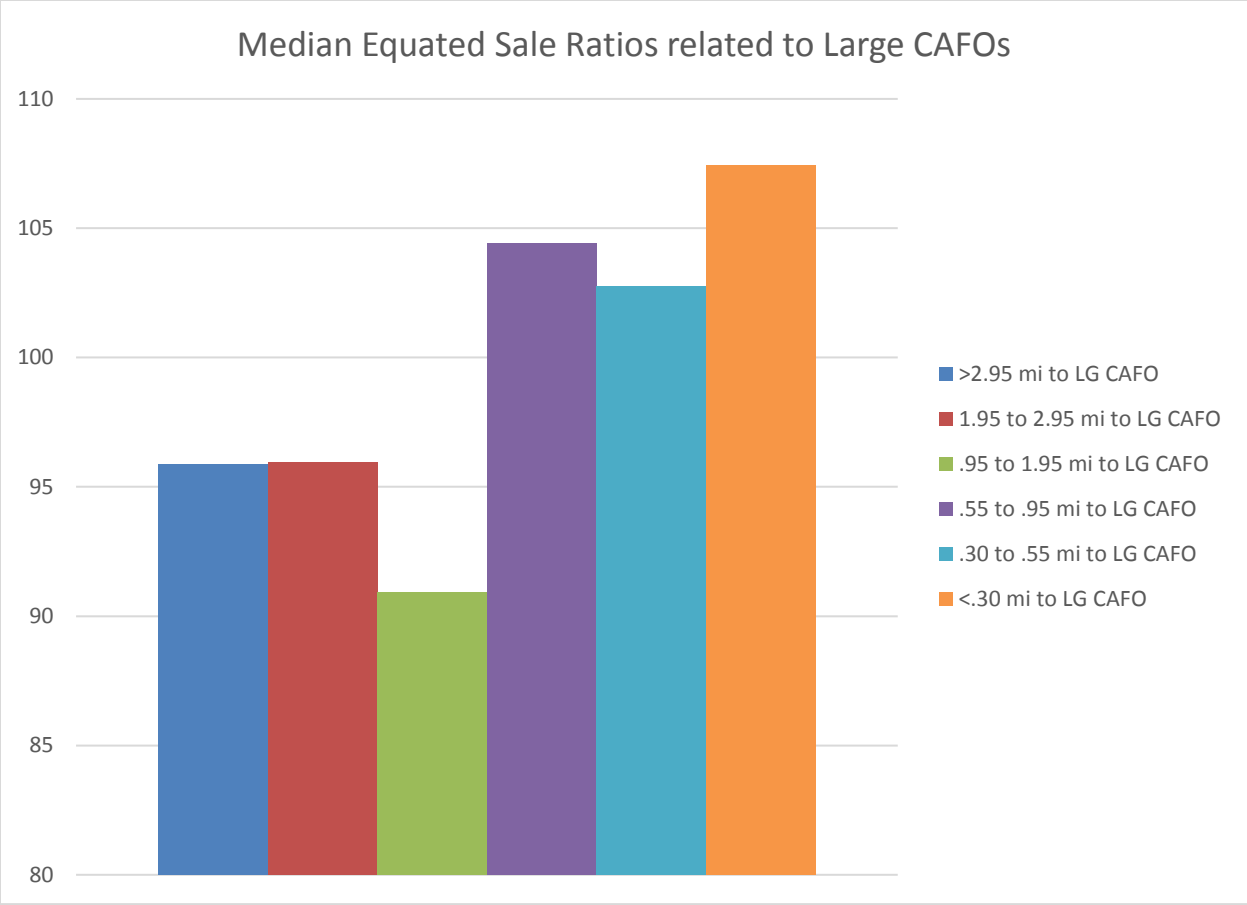

Median Equated Sale Ratios related to Large CAFOs
110
105
100
95
90
85
80
>2.95 mi to LG CAFO
1.95 to 2.95 mi to LG CAFO
.95 to 1.95 mi to LG CAFO
.55 to .95 mi to LG CAFO
.30 to .55 mi to LG CAFO
<.30 mi to LG CAFO

Figure 4

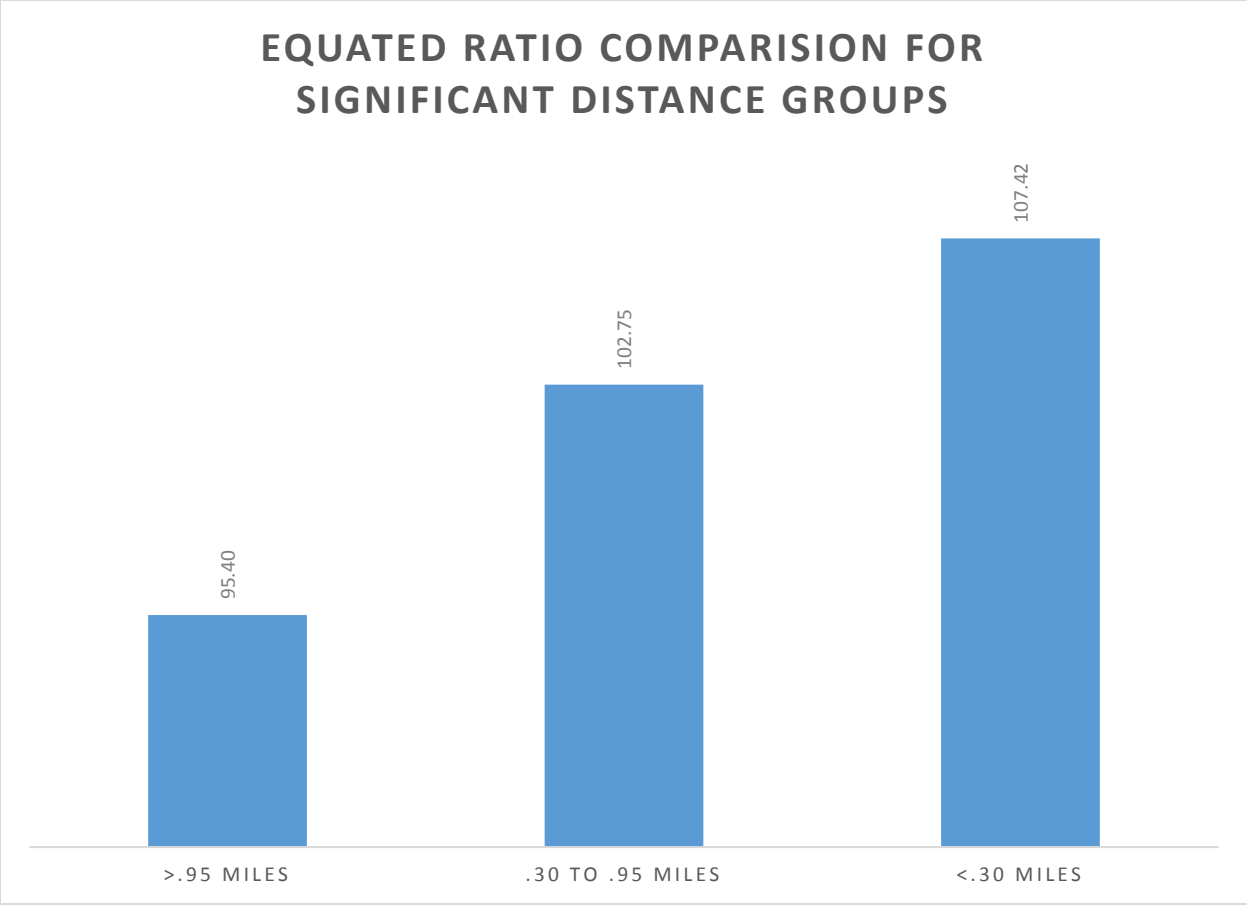

EQUATED RATIO COMPARISION FOR SIGNIFICANT DISTANCE GROUPS
95.40
102.75
107.42
>.95 MILES
.30 TO .95 MILES
<.30 MILES

Figure 5

Percent Change for Parcels Less Than One Mile from Large CAFO

- >.95 miles Median Ratio 95.40%
- .30 to .95 miles Median Ratio 102.75%
- <.30 miles Median Ratio 107.42%

[(>.95 miles ratio minus <.30 miles ratio)/>.95 miles ratio] * 100 = percent change

[(95.40 – 107.42)/95.40] * 100 = - 13%

[(>.95 miles ratio minus .30 to .95 miles ratio)/>.95 miles ratio] * 100 = percent change

[(95.40 – 102.75)/95.40] * 100 = - 8%

Base Data All CAFOs

RETR Number	Parcel Number	Municipality	Sale Date	Cla	Vacant or Improve	Water Frtg Cod	Land Assessmer	Improvement Assessment	Total Local Assessme	Equating Ratio	Equated Local Assessment	Price	Equated Sales Ratio	Miles from nearest CAFO	Purchaser
201611129953974	31 002 8.08	31002	5/23/2016	1	2	0	14200	126000	140200	104.67	133941	125000	107.15	0.00	Kinnard Farms Inc.
201609119919657	31 002 1ASR 8	31002	6/30/2016	1	2	0	10000	58500	68500	104.67	65442	40000	163.61	0.00	Kinnard Farms Inc.
201606149907251	31 002 21.125	31002	11/6/2015	1	2	0	25500	92900	118400	107.98	109647	65000	168.69	0.00	Nemetz
201605039904248	31 002 1ASR 19	31002	10/21/2016	1	2	0	14000	78200	92200	104.67	88084	82000	107.42	0.10	Dairy Dreams LLC
201408059931523	31 002 6.GL3.03 R26E	31002	5/28/2015	1	2	0	16600	102100	118700	100.2	118464	132000	89.75	0.20	Bertrand
201611149959847	31 002 19.161	31002	5/18/2015	1	2	0	14800	95900	110700	107.98	102516	107500	95.36	0.20	Joly
201608299992795	31 002 21103	31002	6/12/2015	1	2	0	17500	134500	152000	101.82	149285	147500	101.21	0.20	Paplham Welding & Fabricating
201409109981173	31 002 5.027	31002	7/19/2016	1	2	0	37900	78900	116800	100.85	115818	149700	77.37	0.25	Haen
201511049942794	31 002 29.105	31002	4/22/2016	1	2	0	44400	135200	179600	92.63	193888	232000	83.57	0.25	Vande Walle
201503289957463	31 002 2.041	31002	8/18/2015	1	2	0	23500	253000	276500	107.98	256058	300000	85.35	0.30	Cook
201401049947567	31 002 5.028	31002	9/2/2016	1	2	0	13100	106500	119600	104.67	114261	126000	90.68	0.30	Alberts
201409249924423	31 002 20.122	31002	5/27/2015	1	2	0	14400	57000	71400	92.53	77162	60000	128.60	0.30	Pagel's Pond. Dairy LLC
201604169957310	31 002 22.167	31002	12/15/2015	1	2	0	39300	157100	196400	107.98	181880	255000	71.33	0.35	Nowak
201611059939452	31 002 22.163	31002	3/18/2016	1	2	0	10000	98400	108400	100.85	107488	101500	105.90	0.35	Neubauer
201504149932161	31 002 33.165	31002	4/11/2014	1	2	0	10000	98400	108400	100.87	107470	95000	113.13	0.35	Grange
201605039904710	31 004 31.162	31004	8/13/2014	1	2	0	37200	102800	140000	101.26	138258	150000	92.17	0.40	Prusik
201609129922879	31 004 5.063	31004	7/17/2015	1	2	0	8000	72800	80800	101.82	79357	78000	101.74	0.40	Coggins
201504279985926	31 004 29.082	31004	4/8/2016	1	2	0	26500	130500	157000	105.74	148476	144500	102.75	0.40	Jergenson
201403249912828	31 004 31.162	31004	1/22/2014	1	1	1	56600	0	56600	100.87	56114	55500	101.11	0.50	McDonald
201408199978312	31 004 9.023	31004	10/1/2014	1	2	0	13000	151400	164400	108.25	151870	142500	106.58	0.50	Engel
201406039986276	31 004 11.162	31004	11/18/2016	1	2	0	11800	126600	138400	103.03	134330	100000	134.33	0.50	Robinson
201600119907006	31 004 32.113	31004	2/26/2016	1	2	0	13000	36000	49000	104.67	46813	49000	95.54	0.55	Sargent
201407229993813	31 004 5.012	31004	8/26/2016	1	2	0	14500	92100	106600	98.51	108208	130000	83.24	0.60	Salentine
201606149906857	31 004 32.114	31004	9/7/2016	1	2	0	36300	95700	132000	100.54	131291	132000	99.46	0.70	Schram

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	PricePRICE	Equated Sales Ratio	Miles from nearest CAFO	Purchaser
201610149998001	31 004 6.GL1.6 R25E	31004	4/30/2014	1	2	3	18400	177500	195900	100.87	194220	171000	113.58	0.70	Hoppe
201402289952726	31 004 4.153	31004	6/20/2016	1	2	0	51000	126600	177600	105.74	167957	138200	121.53	0.75	Abts
201610079983434	31 004 32.104	31004	5/15/2015	1	2	0	19500	150300	169800	107.98	157247	175000	89.86	0.80	Kinnard (Brian)
201507149924260	31 004 17.165	31004	7/18/2016	1	2	0	24500	196300	220800	100.85	218943	223000	98.18	0.80	Moore
201409039944983	31 004 1.112	31004	5/4/2015	1	1	0	30000	0	30000	101.44	29573	30000	98.58	0.80	Gloshen
201511229975335	31 004 32.1120	31004	10/20/2016	1	2	1	140000	11400	151400	103.03	146948	148000	99.29	0.80	Grabowski
201406189916610	31 004 22.063	31004	7/1/2014	1	2	0	20500	275500	296000	106.93	276818	248500	111.40	0.80	Kusniesz
201602149911048	31 004 29.091	31004	10/26/2015	1	2	0	22600	90200	112800	101.44	111194	116000	95.86	0.85	Nemetz
201610219913961	31 004 12.062	31004	2/1/2016	1	2	0	23000	82200	105200	105.74	99488	89900	110.67	0.85	Peot
201608269982146	31 004 31.153	31004	9/17/2015	1	2	0	17800	116200	134000	101.44	132092	150000	88.06	0.90	Kraynik
201609129922490	31 006 18.11	31006	7/15/2014	1	2	1	10400	50500	60900	100.87	60378	61800	97.70	0.90	Huber
201603269902969	31 006 33.164	31006	8/22/2014	1	2	0	17600	109700	127300	102.44	124271	126000	98.63	0.90	Peot
201503069991821	31 006 WP 10	31006	12/28/2015	1	2	0	20600	261000	281600	101.44	277591	302000	91.92	1.0	Ledvina
201507109909335	31 006 17.034	31006	2/10/2014	1	2	0	17000	109800	126800	104.67	121140	124900	96.99	1.0	Sinkula
201408129954227	31 006 20.069	31006	9/24/2014	1	2	0	36500	141800	178300	104.67	170341	172900	98.52	1.0	Jensen
201610289923561	31 006 17.141.10	31006	9/22/2015	1	2	1	52600	143300	195900	101.82	192401	187000	102.89	1.0	Malingowski
201611129953971	31 006 WP 6	31006	6/10/2016	1	2	0	28000	120800	148800	105.74	140721	179900	78.22	1.1	DeJardin
201604029919404	31 006 9.141	31006	5/31/2016	1	2	0	13800	97000	110800	101.53	109130	120000	90.94	1.1	Perry
201600049992167	31 006 30.057	31006	5/22/2014	1	2	0	10500	71200	81700	101.26	80684	85000	94.92	1.1	Drewiske
201609059907248	31 006 17.141.7	31006	12/28/2015	1	2	0	14500	147000	161500	100.2	161179	165500	97.39	1.1	Jurczykowski
201511079945945	31 006 30.052	31006	4/1/2015	1	2	0	20700	69600	90300	92.53	97587	85000	114.81	1.1	Baudhuin's Grandview Dairy LLC
201503179916304	31 006 17.042	31006	6/24/2016	1	2	0	28300	253700	282000	97.16	290232	320000	90.7	1.2	Winnekens
201504069900262	31 006 29.011	31006	7/28/2014	1	2	0	23400	82900	106300	106.93	99411	75000	132.55	1.2	Bovine Enterprises LLC
201404289996344	31 006 17.141.7	31006	6/20/2014	1	2	0	26800	161300	188100	101.26	185760	188000	98.81	1.3	Engebose

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	PricePRICE	Equated Sales Ratio	Miles from nearest CAFO	Purchaser
201608029932622	31 006 17.121.8	31006	5/16/2014	1	2	0	60900	192100	253000	102.44	246981	240000	102.91	1.3	Laurent
201507319957445	31 006 25.014	31006	9/24/2014	1	2	0	28900	288500	317400	104.67	303232	290000	104.56	1.3	Wilde
201604319992177	31 006 8.159	31006	1/29/2016	1	2	0	23500	17900	41400	97.16	42608	40000	106.52	1.3	Paplham Welding & Fabricating
201503109900624	31 006 28.017	31006	1/27/2015	1	2	0	27500	94100	121600	107.95	112645	102000	110.44	1.3	Shallow
201507129915378	31 006 19.014	31006	3/6/2015	1	2	1	19100	72400	91500	101.82	89866	72000	124.81	1.3	Norton
201505259923018	31 006 28.132	31006	2/7/2014	1	2	0	20000	54300	74300	93.41	79545	50000	159.09	1.3	Gruetzmacher
201401139964919	31 006 9.151	31006	7/31/2015	1	1	0	22600	0	22600	92.53	24424	27700	88.17	1.4	Dorner
201608129949178	31 008 21.152	31008	11/21/2016	1	2	0	21100	236900	258000	92.63	278526	314900	88.45	1.4	Werth
201608169963758	31 008 30.13	31008	4/27/2016	1	2	0	51200	210200	261400	92.63	282196	274000	102.99	1.4	Etienne
201404299900583	31 008 29.061.1	31008	9/12/2016	1	2	0	32500	99800	132300	100.54	131589	169500	77.63	1.5	Fischer
201506309980305	31 008 29.061	31008	9/29/2014	1	2	0	19500	129700	149200	100.66	148224	167000	88.76	1.5	Obry
201611099952799	31 008 2.1115	31008	9/29/2016	1	2	0	21000	139000	160000	92.63	172729	190000	90.91	1.5	Laak
201606119996869	31 008 2.1113	31008	6/27/2014	1	2	0	16500	142000	158500	108.25	146420	158500	92.38	1.5	Seiler
201506279965341	31 008 11.068	31008	5/15/2014	1	2	0	21000	139000	160000	93.41	171294	178000	96.23	1.5	Kratz
201508249907204	31 008 11.072	31008	9/1/2016	1	2	0	17600	27700	45300	104.67	43278	36000	120.22	1.5	Paral
201401179971133	31 008 13.162	31008	10/21/2015	1	2	0	21700	123000	144700	92.53	156377	172500	90.65	1.6	Diehm
201408269907179	31 008 32.061	31008	7/8/2016	1	2	0	39500	183400	222900	105.74	210798	215000	98.05	1.6	Cherney
201609139926527	31 008 SHP 13	31008	8/24/2016	1	2	0	18400	82900	101300	92.63	109359	110000	99.42	1.6	Roethle
201611169965708	31 008 2.114	31008	5/16/2016	1	1	0	31900	0	31900	98.51	32381	49900	64.89	1.7	Detampel
201408269907194	31 008 25.032	31008	6/22/2015	1	1	0	31900	0	31900	101.44	31446	47500	66.20	1.7	Process
201605069909240	31 008 10.041	31008	3/30/2016	1	2	1	34000	157000	191000	100.85	189393	210000	90.19	1.7	Baird
201404149965180	31 008 10.014	31008	11/30/2015	1	2	0	21800	145400	167200	92.53	180693	195000	92.66	1.7	Remiker
201511189968358	31 010 19.012	31010	4/15/2015	1	2	0	18700	141500	160200	92.53	173128	183000	94.61	1.7	Van Ess
201508249907495	31 010 29.071	31010	6/20/2014	1	2	0	11600	77700	89300	100.66	88716	110000	80.65	1.8	Riemer

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	PricePRICE	Equated Sales Ratio	Miles from nearest CAFO	Purchaser
201506159911609	31 010 29.043	31010	2/13/2015	1	2	0	13100	70500	83600	99.62	83921	85000	98.73	1.8	Koudelka
201608069936178	31 010 9.072	31010	11/14/2014	1	2	0	14500	127800	142300	102.44	138914	140000	99.22	1.8	Zeman
201504209959315	31 010 4.131	31010	7/29/2015	1	2	0	3200	63500	66700	106.12	62853	63000	99.77	1.8	Kinjerski
201604259983089	31 010 20.1613	31010	8/28/2015	1	2	0	17000	145600	162600	92.53	175722	172500	101.87	1.8	Rohr
201604259983130	31 010 19.153	31010	7/24/2014	1	2	0	13200	23700	36900	106.93	34509	18000	191.72	1.9	Frankowski
201609289961951	31 010 4.133	31010	5/23/2014	1	2	0	58700	229000	287700	104.67	274857	350000	78.53	2.0	Wotachek
201406219919304	31 010 17.108	31010	9/11/2014	1	1	0	18400	0	18400	93.41	19699	22300	88.34	2.0	Wisnicky
201609179931433	31 010 34.114	31010	8/13/2014	1	2	0	23500	54000	77500	101.26	76536	85000	90.04	2.0	Rodrian
201407049952170	31 010 22.121	31010	7/17/2015	1	2	0	4300	59200	63500	103.57	61310	68000	90.16	2.0	Reckelberg
201605209943585	31 010 15.143	31010	4/29/2016	1	2	0	31800	152900	184700	92.63	199394	220000	90.63	2.0	Kinnard (Collin)
201606119996678	31 010 19.124	31010	9/18/2015	1	2	0	17000	105800	122800	103.57	118566	130000	91.20	2.0	Lensmire
201510129905607	31 010 3.11	31010	9/26/2014	1	2	0	17500	110400	127900	102.44	124857	135000	92.49	2.0	Robertson
201407189983232	31 010 23.042	31010	6/30/2015	1	2	0	21200	131700	152900	101.44	150723	160000	94.20	2.0	Figlinski
201604189966285	31 012 4.0412	31012	5/1/2015	1	2	0	17000	117400	134400	92.53	145246	153000	94.93	2.0	Cherney
201505249915741	31 012 4.0412	31012	11/11/2015	1	2	0	46700	276600	323300	104.58	309144	300000	103.05	2.0	Petermann
201609049902957	31 012 10.164	31012	4/11/2014	1	2	0	15600	125300	140900	102.44	137548	125000	110.04	2.0	Roeser
201607109974240	31 012 25.0410	31012	3/11/2016	1	2	0	12900	95900	108800	103.03	105601	90000	117.33	2.0	Miller
201608159959475	31 012 28.132	31012	3/10/2016	1	2	0	16600	98800	115400	104.67	110248	69100	159.55	2.0	Brice-Georgel
201509089938094	31 012 24.123	31012	7/27/2015	1	2	0	56300	142400	198700	103.57	191849	226000	84.89	2.1	Denor
201509139945625	31 012 32.154	31012	7/7/2016	1	2	0	7100	80000	87100	100.54	86632	96900	89.40	2.1	Seibert
201610039976915	31 012 25.013	31012	7/30/2015	1	2	0	17000	62500	79500	92.53	85916	69000	124.52	2.1	Anderson Const. LLC
201604139955425	31 012 13.0611	31012	6/9/2014	1	2	1	93900	143600	237500	100.87	235463	255000	92.34	2.2	Hammerling
201606069986411	31 012 14.044	31012	12/12/2016	1	2	0	9700	140000	149700	100.54	148895	147892	100.68	2.2	Kropp
201601089951385	31 012 25.017	31012	11/27/2015	1	2	0	25500	149700	175200	99.62	175872	166500	105.63	2.2	Horst

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	PricePRICE	Equated Sales Ratio	Miles from nearest CAFO	Purchaser
201610089986581	31 012 10.133.1	31012	4/1/2015	1	2	0	9800	12900	22700	104.58	21706	14000	155.04	2.2	Jorgenson
201606089992887	31 012 13.068	31012	3/24/2015	1	2	0	28500	133800	162300	100.20	161978	160000	101.24	2.3	Bergwin
201511319989948	31 012 19.164	31012	5/31/2016	1	2	0	18500	63300	81800	100.54	81360	65000	125.17	2.3	Leschensky
201408309918484	31 012 17.153	31012	8/14/2015	1	2	0	28500	150200	178700	100.20	178345	133500	133.59	2.3	Dworak
201506029959321	31 012 17.123	31012	12/21/2015	1	2	1	91200	189800	281000	101.82	275981	320000	86.24	2.4	Storm
201509309981870	31 012 33.122	31012	12/29/2016	1	2	1	81100	63300	144400	100.85	143185	165000	86.78	2.4	Coleman
201403159989840	31 012 ZS 6	31012	8/11/2016	1	2	0	55200	168600	223800	100.54	222597	339000	65.66	2.5	Kownig
201504189948996	31 012 4.048	31012	6/30/2014	1	2	0	41000	282000	323000	108.05	298925	400000	74.73	2.5	Frisaue
201408029909931	31 012 19.162	31012	12/7/2016	1	2	0	7800	100000	107800	100.54	107221	121500	88.25	2.5	Falat
201409289935908	31 012 10.134	31012	10/22/2014	1	2	1	100000	97900	197900	100.87	196202	205000	95.71	2.5	Simons
201410249917405	31 012 26.152	31012	5/8/2015	1	2	0	10900	139400	150300	99.62	150876	118500	127.32	2.5	Neary
201407279901728	31 012 25050	31012	12/14/2015	1	2	0	36600	92800	129400	100.20	129143	85000	151.93	2.5	Christoph
201405029906170	31 012 16.166	31012	7/14/2016	1	2	0	36600	92800	129400	97.16	133177	85000	156.68	2.5	Vanderkelen
201610039976702	31 012 25.112	31012	5/2/2014	1	2	0	7500	61500	69000	104.67	65920	35000	188.34	2.5	Lemke
201600149913628	31 012 ZS 20	31012	1/21/2016	1	2	0	19600	39300	58900	101.53	58012	75000	77.35	2.6	Sinay
201403219902249	31 012 19.053	31012	7/22/2015	1	2	1	61200	147500	208700	101.82	204973	210000	97.61	2.6	Shorter
201407199984849	31 012 25.046	31012	6/8/2016	1	2	1	171000	170100	341100	100.85	338231	342000	98.90	2.6	Spence
201605069909285	31 014 23.162	31014	9/5/2014	1	2	0	33500	69500	103000	108.05	95323	95000	100.34	2.7	Holochwost
201603049953653	31 014 19.164	31014	7/10/2015	1	2	0	12800	102700	115500	99.62	115943	108500	106.86	2.7	Kuehl
201505019906306	31 014 23.103	31014	12/1/2016	1	2	0	11700	75000	86700	100.85	85971	76500	112.38	2.7	Swanson
201407149974884	31 014 15.021	31014	12/22/2016	1	2	0	23400	132500	155900	105.74	147435	177500	83.06	2.8	Bley
201606059981369	31 014 14.101	31014	4/2/2015	1	2	0	45000	203700	248700	92.53	268770	309900	86.73	2.8	Kuehl
201407149974889	31 014 26.103	31014	2/29/2016	1	2	0	27200	114800	142000	101.53	139860	160000	87.41	2.8	Hau
201405209946171	31 014 15.152	31014	10/5/2016	1	2	0	38600	158800	197400	92.63	213104	240000	88.79	2.8	Havel

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	PricePRICE	Equated Sales Ratio	Miles from nearest CAFO	Purchaser
201511319989953	31 014 5.072	31014	9/30/2016	1	2	0	35000	122500	157500	101.49	155185	160000	96.99	2.8	Berceau
201405259958571	31 014 15.153	31014	4/14/2014	1	2	0	20500	145400	165900	102.44	161953	165000	98.15	2.8	Agamaite
201502309952881	31 014 10.032	31014	1/8/2016	1	2	0	25000	159300	184300	98.51	187081	177000	105.70	2.8	Murphy
201407289904317	31 014 29.071	31014	6/2/2014	1	1	1	108300	0	108300	100.87	107371	100000	107.37	2.8	Konz
201601019940315	31 014 21.123	31014	5/21/2015	1	2	0	7100	40900	48000	106.12	45231	60000	75.39	3.0	Ruatti
201611299992245	31 014 35.131	31014	6/17/2016	1	2	0	33500	69500	103000	105.74	97408	127000	76.70	3.0	Holochwost
201405039908439	31 014 20.062	31014	4/11/2014	1	2	0	6400	92000	98400	108.25	90901	117600	77.3	3.0	Cook
201507209935022	31 014 6.102	31014	10/10/2016	1	2	0	47900	169700	217600	92.63	234912	295000	79.63	3.0	Magyar
201600149912986	31 014 10.131	31014	4/1/2016	1	2	0	24500	116800	141300	97.16	145425	180000	80.79	3.0	Ledvina
201611289988099	31 014 10.131	31014	7/7/2016	1	2	0	47400	263300	310700	98.51	315388	379000	83.22	3.0	Coad
201508189997195	31 016 17.106	31016	9/30/2015	1	2	0	16900	160500	177400	101.44	174875	202500	86.36	3.0	Pe
201607159983257	31 016 00017 0680	31016	9/12/2014	1	2	0	6400	98400	104800	108.25	96813	110000	88.01	3.0	Mardelle
201608089942815	31 016 31.15	31016	9/22/2016	1	2	0	31600	190200	221800	98.51	225146	254900	88.33	3.0	Warner
201608269982083	31 016 5.123	31016	1/20/2016	1	2	0	30400	294000	324400	98.51	329294	371000	88.76	3.0	Larson
201511289981929	31 016 3.GL 3.6	31016	8/15/2014	1	2	0	18100	143800	161900	100.66	160841	172000	93.51	3.0	Pagel
201700059905694	31 016 3.GL 3.5	31016	12/18/2015	1	2	0	2700	55200	57900	106.12	54560	56000	97.43	3.0	Niemojuski
201608269982581	31 016 31.011	31016	8/21/2014	1	2	0	7100	54000	61100	108.25	56443	57500	98.16	3.0	Brusky
201603189984201	31 016 19.032	31016	12/31/2015	1	2	0	13700	45000	58700	99.62	58925	60000	98.21	3.0	Pagel's Pond. Dairy LLC
201603269902956	31 016 30.041	31016	6/29/2016	1	2	0	5300	96500	101800	103.03	98807	100000	98.81	3.0	Detampel
201501029927931	31 016 5.05 T23N	31016	8/25/2014	1	2	0	38700	260200	298900	102.44	291788	294000	99.25	3.0	Sterns
201405139931737	31 016 9.GL 1.7	31016	2/19/2014	1	2	0	5400	76300	81700	108.25	75473	76000	99.31	3.0	Havlovitz
201409319943864	31 016 16.GL 1.5	31016	10/31/2016	1	2	0	33500	135900	169400	103.03	164419	165000	99.65	3.0	Wilda & Homeyer
201507079902182	31 016 16.GL 2	31016	11/1/2016	1	2	0	20700	248500	269200	98.51	273262	265000	103.12	3.0	Wilcox
201406229921896	31 016 20 066	31016	7/31/2014	1	2	0	31600	146100	177700	102.44	173472	153500	113.01	3.0	Walton

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	PricePRICE	Equated Sales Ratio	Miles from nearest CAFO	Purchaser
201606259931576	31 016 17.129.1	31016	12/21/2015	1	2	0	5900	67400	73300	106.12	69072	60000	115.12	3.0	Buresh
201605309972428	31 016 32.GL 1.5	31016	6/25/2015	1	2	0	54300	170600	224900	107.95	208337	180000	115.74	3.0	Englebert
201400239925923	31 016 16.GL 3.3	31016	1/5/2015	1	2	0	17400	109000	126400	99.62	126885	99000	128.17	3.0	Lemmens
201505169975334	31 016 7.012	31016	3/25/2016	1	1	0	38100	0	38100	105.74	36031	41000	87.88	3.1	Anschutz
201506229947260	31 016 16.GL 3.13	31016	1/14/2016	1	1	0	28900	0	28900	105.74	27331	30000	91.10	3.1	Zla Tohlavek
201508249907217	31 016 17.124	31016	11/12/2015	1	2	0	27000	153100	180100	107.95	166836	172500	96.72	3.1	DeJardin
201602289935889	31 016 16.GL 3.11	31016	12/15/2015	1	2	0	27000	168000	195000	107.95	180639	174000	103.82	3.1	Baierl
201405039910539	31 016 29.GL 1.3	31016	8/11/2014	1	2	0	38500	211700	250200	101.26	247087	235500	104.92	3.1	Kulhanek
201611029936641	31 016 3.GL 1.12	31016	10/2/2014	1	2	0	13200	64300	77500	103.00	75244	65000	115.76	3.1	Charles
201403289922184	31 016 16.GL 3.11	31016	8/27/2015	1	2	0	27000	138300	165300	107.95	153126	173000	88.51	3.2	Damery
201404289996372	31 016 17.126	31016	5/29/2015	1	2	0	30500	207500	238000	99.62	238913	265000	90.16	3.2	Paral
201503209923901	31 016 19.017	31016	10/13/2015	1	2	0	27000	137400	164400	107.95	152292	165000	92.30	3.2	Waldera
201406029982917	31 018 22.133	31018	8/21/2015	1	2	0	185900	234000	419900	107.95	388976	396000	98.23	3.2	Crabill
201605239953490	31 018 16.093	31018	2/14/2014	1	2	1	106400	312600	419000	108.05	387769	385000	100.72	3.2	Vogel Fam. Trust
201606089992641	31 018 33.052	31018	6/5/2014	1	2	0	27000	136800	163800	108.05	151591	149900	101.13	3.2	Hollich
201503069990134	31 018 8.101	31018	11/3/2016	1	2	0	21600	97500	119100	105.74	112633	110000	102.39	3.2	Guilette
201607249907729	31 018 1ASR 26	31018	6/10/2015	1	2	1	106800	83100	189900	107.95	175914	170000	103.48	3.2	Lenss
201407049952367	31 018 1ASR 79	31018	10/20/2014	1	2	2	99100	84700	183800	108.05	170100	160000	106.31	3.2	Sherman
201611299991643	31 018 27.082	31018	8/17/2016	1	2	0	117200	265300	382500	105.74	361732	339900	106.42	3.2	Peters
201602289936464	31 018 8.111	31018	5/8/2015	1	2	0	183400	107100	290500	107.95	269106	249000	108.07	3.2	Lenhard
201508289913082	31 018 BVC 4	31018	6/30/2016	1	2	0	119100	77300	196400	105.74	185736	170000	109.26	3.2	Miller
201506169918282	31 018 1ASR 29.7	31018	12/27/2016	1	2	1	105200	87100	192300	105.74	181859	145000	125.42	3.2	Walczyk
201600199920037	31 018 8.118	31018	9/28/2015	1	2	3	205800	295400	501200	107.95	464288	295000	157.39	3.2	Charles
201510099998525	31 018 BVC 5	31018	8/11/2016	1	2	0	10400	120300	130700	101.53	128730	146500	87.87	3.3	Kustka

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	PricePRICE	Equated Sales Ratio	Miles from nearest CAFO	Purchaser
201505159970904	31 018 1ASR44	31018	12/15/2016	1	2	0	14500	197900	212400	97.16	218600	199900	109.35	3.3	Slaby
201409289935983	31 018 1ASR 132.2	31018	7/11/2014	1	2	0	58400	237600	296000	108.05	273937	240000	114.14	3.3	Kostichka
201611289986125	31 018 1ASR 6	31018	9/19/2014	1	2	0	33200	205100	238300	102.44	232630	235000	98.99	3.4	Seidl
201510179913807	31 018 18.022	31018	7/15/2015	1	2	0	7600	75900	83500	99.62	83820	77000	108.86	3.4	Obry
201606089993051	31 018 30.062	31018	9/23/2016	1	2	0	9100	83000	92100	103.03	89392	120000	74.49	3.5	Conard
201508039967596	31 018 1ASR 134	31018	6/23/2016	1	2	0	93000	204100	297100	105.74	280969	349000	80.51	3.5	Linzmeier/Metzler Trust
201408199978626	31 018 16.093	31018	7/23/2014	1	2	0	108200	41600	149800	108.05	138635	170000	81.55	3.5	Larson
201402059906301	31 018 1ASR 36	31018	9/20/2016	1	2	0	27500	177800	205300	100.85	203573	230000	88.51	3.5	Szydel
201405239949344	31 018 BVC 2	31018	6/26/2015	1	1	1	43800	0	43800	107.95	40574	45000	90.16	3.5	Borak
201610189909619	31 018 1ASR 67	31018	5/15/2015	1	2	0	101100	231000	332100	107.95	307642	329000	93.51	3.5	DeWolfe
201603149977223	31 018 25.012	31018	9/2/2014	1	2	0	74200	322100	396300	108.05	366761	388500	94.40	3.5	Diedric
201505119961412	31 018 3.162	31018	12/15/2016	1	2	0	184600	64900	249500	105.74	235953	248000	95.14	3.5	Restmeester
201505159970777	31 018 DB 22	31018	5/30/2014	1	2	0	14500	206100	220600	101.26	217855	195000	111.72	3.5	Salm
201511189969799	31 018 18.013	31018	3/31/2015	1	1	0	50700	0	50700	107.95	46966	59000	79.60	3.8	Mancheski
201409249927881	31 018 1ASR 114.1	31018	5/28/2015	1	2	0	25700	127100	152800	107.95	141547	137000	103.32	3.8	Jauquet
201608029932235	31 018 1ASR 18	31018	4/15/2016	1	2	0	23200	271900	295100	101.49	290763	242500	119.90	3.9	Massey
201505019906243	31 018 1ASR 46	31018	12/1/2016	1	1	0	33300	0	33300	101.49	32811	26000	126.20	3.9	Benes
201606019976240	31 018 DB 13	31018	6/1/2016	1	2	0	6400	92000	98400	103.03	95507	138000	69.21	4.0	Seidl
201500309923130	31 018 19.162	31018	9/30/2016	1	2	0	28000	123400	151400	98.51	153684	205000	74.97	4.0	Zoppetti
201601229972506	31 018 24.012	31018	8/31/2016	1	2	0	24500	127200	151700	100.85	150424	195000	77.14	4.0	DeGrant
201406149903672	31 018 8.102	31018	9/28/2016	1	2	0	13000	83100	96100	101.49	94688	93500	101.27	4.0	DuQuaine
201506069969249	31 018 17.063	31018	7/18/2014	1	2	0	20900	160900	181800	108.25	167944	144200	116.47	4.0	Williams & Timreck
201607189993256	31 018 31.033	31018	8/31/2016	1	2	0	9000	49200	58200	103.03	56489	41000	137.78	4.0	Hasselman
201700129919664	31 018 1ASR 63	31018	1/30/2015	1	2	0	36400	93700	130100	101.82	127776	140000	91.27	4.1	Holmes

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	PricePRICE	Equated Sales Ratio	Miles from nearest CAFO	Purchaser
201508309919709	31 018 1ASR 146	31018	10/26/2016	1	2	0	24400	111100	135500	101.49	133509	158500	84.23	4.3	Buechner & Miner
201509019922444	31 020 33.071	31020	6/30/2016	1	2	0	15400	114600	130000	101.49	128089	145000	88.34	5.0	Salzsieder
201406229921837	31 020 31GL2.3 R25E	31020	4/15/2016	1	2	0	15900	130000	145900	98.51	148101	167000	88.68	5.0	Stodola
201601169963139	31 020 11.011	31020	6/29/2016	1	2	0	14400	190900	205300	98.51	208397	235000	88.68	5.0	Phillips
201405259958541	31 020 21.12	31020	6/30/2016	1	2	0	14500	140700	155200	98.51	157542	176000	89.51	5.0	Christoph
201602119909047	31 020 12.052	31020	4/22/2016	1	2	0	33500	131300	164800	100.85	163414	179200	91.19	5.0	Pribek
201607169987094	31 020 1.013	31020	11/3/2016	1	2	0	28300	234500	262800	98.51	266765	300000	88.92	5.5	Kratz
201408309919199	31 020 2.062	31020	9/30/2016	1	2	0	13800	76100	89900	101.49	88579	104500	84.76	6.2	Classon
201505019906314	31 020 33.103	31020	5/12/2016	1	2	0	14600	98400	113000	101.49	111339	121900	91.34	6.3	Pinchart
201605019998047	31 020 36.03	31020	4/20/2015	1	2	0	13100	95200	108300	104.58	103558	95000	109.01	7.2	Massart
201407159978396	31 020 33.063	31020	7/28/2014	1	2	1	121900	60300	182200	103.00	176897	190000	93.10	10.0	Pisula
201600059996989	31 020 28.064	31020	8/18/2015	1	1	0	72000	0	72000	99.62	72276	140175	51.56	V	Salentine
201501239958145	31 020 10.142	31020	7/15/2014	1	1	0	17900	0	17900	100.66	17783	32000	55.57	V	Crevcoure
201511079945968	31 020 17.16	31020	9/18/2015	1	1	1	39600	0	39600	101.82	38893	65000	59.84	V	Slapp
201506169917466	31 020 2.132	31020	6/3/2016	1	1	0	33600	0	33600	97.16	34581	57500	60.14	V	Connor
201604029919392	31 020 31GL4.3 R25E	31020	8/5/2016	1	1	2	30000	0	30000	100.85	29748	45000	66.11	V	Neumann
201506169917473	31 020 14143	31020	10/3/2014	1	1	5	63500	0	63500	103.00	61652	59900	102.92	V	Balch
201505249917936	31 020 30GL2.4 R25E	31020	4/28/2016	1	1	1	110000	0	110000	101.53	108342	100000	108.34	V	Romenesko
201500209999295	31 020 32.132	31020	1/31/2014	1	1	5	58900	0	58900	103.00	57186	50000	114.37	V	Balch

Base Data - Large CAFOs

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	Price	Equated Sales Ratio	Miles from Large CAFO	Purchaser
201606119996678	31 010 19.124	31010	6/30/2016	1	2	0	10000	58500	68500	104.67	65442	40000	163.61	0.0	Kinnard Farms Inc.
201510129905607	31 010 3.11	31010	11/6/2015	1	2	0	25500	92900	118400	107.98	109647	65000	168.69	0.0	Nemetz
201604259983130	31 010 19.153	31010	5/23/2016	1	2	0	14200	126000	140200	104.67	133941	125000	107.15	0.0	Kinnard Farms Inc.
201609289961951	31 010 4.133	31010	10/21/2016	1	2	0	14000	78200	92200	104.67	88084	82000	107.42	0.10	Dairy Dreams LLC
201504209959315	31 010 4.131	31010	5/18/2015	1	2	0	14800	95900	110700	107.98	102516	107500	95.36	0.20	Joly
201702299956046	31 016 5.112	31016	2/17/2017	1	2	0	10500	118800	129300	91.41	139754	120000	117.88	0.2	Parkos
201505169975334	31 016 7.012	31016	6/12/2015	1	2	0	17500	134500	152000	101.82	149285	147500	101.21	0.20	Paplham Welding & Fabricating
201505259923018	31 006 28.132	31006	5/27/2015	1	2	0	14400	57000	71400	92.53	77162	60000	128.60	0.30	Pagel's Pond. Dairy LLC
201608269982083	31 016 5.123	31016	7/19/2016	1	2	0	37900	78900	116800	100.85	115818	149700	77.37	0.30	Haen
201603269902969	31 006 33.164	31006	4/22/2016	1	2	0	44400	135200	179600	92.63	193888	232000	83.57	0.30	Vande Walle
201508249907495	31 010 29.071	31010	8/18/2015	1	2	0	23500	253000	276500	107.98	256058	300000	85.35	0.30	Cook
201506229947260	31 016 16.GL 3.13	31016	7/17/2015	1	2	0	8000	72800	80800	101.82	79357	78000	101.74	0.40	Coggins
201403289922184	31 016 16.GL 3.11	31016	4/11/2014	1	2	0	10000	98400	108400	100.87	107470	95000	113.13	0.40	Grange
201602289935889	31 016 16.GL 3.11	31016	3/18/2016	1	2	0	10000	98400	108400	100.85	107488	101500	105.90	0.40	Neubauer
201603149977223	31 018 25.012	31018	4/8/2016	1	2	0	26500	130500	157000	105.74	148476	144500	102.75	0.40	Jergenson
201610219913961	31 004 12.062	31004	11/18/2016	1	2	0	11800	126600	138400	103.03	134330	100000	134.33	0.50	Robinson

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	Price	Equated Sales Ratio	Miles from Large CAFO	Purchaser
201511189968358	31 010 19.012	31010	12/15/2015	1	2	0	39300	157100	196400	107.98	181880	255000	71.33	0.50	Nowak
201604259983089	31 010 20.1613	31010	2/26/2016	1	2	0	13000	36000	49000	104.67	46813	49000	95.54	0.60	Sargent
201503109900624	31 006 28.017	31006	4/1/2015	1	2	0	20700	69600	90300	92.53	97587	85000	114.81	0.60	Baudhuin's Grandview Dairy LLC
201608069936178	31 010 9.072	31010	9/2/2016	1	2	0	13100	106500	119600	104.67	114261	126000	90.68	0.60	Alberts
201404289996372	31 016 17.126	31016	4/30/2014	1	2	0	18400	177500	195900	100.87	194220	171000	113.58	0.70	Hoppe
201606259931576	31 016 17.129.1	31016	7/18/2016	1	2	0	24500	196300	220800	100.85	218943	223000	98.18	0.75	Moore
201506159911609	31 010 29.043	31010	5/15/2015	1	2	0	19500	150300	169800	107.98	157247	175000	89.86	0.80	Kinnard (Brian)
201601229972506	31 018 24.012	31018	2/1/2016	1	2	0	23000	82200	105200	105.74	99488	89900	110.67	0.85	Peot
201406219919304	31 010 17.108	31010	7/1/2014	1	2	0	20500	275500	296000	106.93	276818	248500	111.40	0.90	Kusniesz
201605019998047	31 020 36.03	31020	5/31/2016	1	2	0	13800	97000	110800	101.53	109130	120000	90.94	1.1	Perry
201605209943585	31 010 15.143	31010	3/10/2016	1	2	0	16600	98800	115400	104.67	110248	69100	159.55	1.5	Brice-Georgel
201406039986276	31 004 11.162	31004	6/27/2014	1	2	0	16500	142000	158500	108.25	146420	158500	92.38	1.5	Seiler
201408309919199	31 020 2.062	31020	9/29/2014	1	2	0	19500	129700	149200	100.66	148224	167000	88.76	1.5	Obry
201406229921837	31 020 31GL2.3 R25E	31020	7/15/2014	1	1	0	17900	0	17900	100.66	17783	32000	55.57	1.7	Crevcoure
201501239958145	31 020 10.142	31020	2/13/2015	1	2	0	13100	70500	83600	99.62	83921	85000	98.73	1.7	Koudelka
201405259958541	31 020 2.112	31020	6/20/2014	1	2	0	11600	77700	89300	100.66	88716	110000	80.65	1.9	Riemer
201504069900262	31 006 29.011	31006	5/1/2015	1	2	0	17000	117400	134400	92.53	145246	153000	94.93	2.0	Cherney
201604029919404	31 006 9.141	31006	4/29/2016	1	2	0	31800	152900	184700	92.63	199394	220000	90.63	2.0	Kinnard (Collin)
201511049942794	31 002 29.105	31002	11/11/2015	1	2	0	46700	276600	323300	104.58	309144	300000	103.05	2.0	Petermann

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	Price	Equated Sales Ratio	Miles from Large CAFO	Purchaser
201407049952170	31 010 22.121	31010	7/28/2014	1	2	0	23400	82900	106300	106.93	99411	75000	132.55	2.2	Bovine Enterprises LLC
201505249917936	31 020 30GL2.4 R25E	31020	5/8/2015	1	2	0	10900	139400	150300	99.62	150876	118500	127.32	2.2	Neary
201603269902956	31 016 30.041	31016	4/22/2016	1	2	0	33500	131300	164800	100.85	163414	179200	91.19	2.2	Pribek
201403219902249	31 012 19.053	31012	4/11/2014	1	2	0	15600	125300	140900	102.44	137548	125000	110.04	2.3	Roeser
201511079945968	31 020 17.16	31020	11/27/2015	1	2	0	25500	149700	175200	99.62	175872	166500	105.63	2.3	Horst
201402289952726	31 004 4.153	31004	2/19/2014	1	2	0	5400	76300	81700	108.25	75473	76000	99.31	2.4	Havlovitz
201600049992167	31 006 30.057	31006	10/21/2015	1	2	0	21700	123000	144700	92.53	156377	172500	90.65	2.4	Diehm
201511079945945	31 006 30.052	31006	11/30/2015	1	2	0	21800	145400	167200	92.53	180693	195000	92.66	2.4	Remiker
201406029982917	31 018 22.133	31018	6/30/2014	1	2	0	41000	282000	323000	108.05	298925	400000	74.73	2.4	Frisaue
201601169963139	31 020 11.011	31020	1/21/2016	1	2	0	19600	39300	58900	101.53	58012	75000	77.35	2.6	Sinay
201506169917466	31 020 2.132	31020	7/10/2015	1	2	0	12800	102700	115500	99.62	115943	108500	106.86	2.6	Kuehl
201611129953971	31 006 WP 6	31006	10/5/2016	1	2	0	38600	158800	197400	92.63	213104	240000	88.79	2.6	Havel
201407279901728	31 012 25.050	31012	8/25/2014	1	2	0	38700	260200	298900	102.44	291788	294000	99.25	2.6	Sterns
201503069991821	31 006 WP 10	31006	4/2/2015	1	2	0	45000	203700	248700	92.53	268770	309900	86.73	2.6	Kuehl
201607109974240	31 012 25.0410	31012	7/7/2016	1	2	0	47400	263300	310700	98.51	315388	379000	83.22	2.6	Coad
201407199984849	31 012 25.046	31012	7/31/2014	1	2	0	31600	146100	177700	102.44	173472	153500	113.01	2.7	Walton
201611149959847	31 002 19.161	31002	9/30/2016	1	2	0	35000	122500	157500	101.49	155185	160000	96.99	2.7	Berceau
201507319957445	31 006 25.014	31006	8/28/2015	1	2	0	17000	145600	162600	92.53	175722	172500	101.87	2.7	Rohr
201407189983232	31 010 23.042	31010	7/24/2014	1	2	0	13200	23700	36900	106.93	34509	18000	191.72	2.8	Frankowski
201609179931433	31 010 34.114	31010	9/1/2016	1	2	0	17600	27700	45300	104.67	43278	36000	120.22	2.8	Paral
201409249924423	31 002 20.122	31002	10/2/2014	1	2	0	13200	64300	77500	103.00	75244	65000	115.76	2.8	Charles
201408199978312	31 004 9.023	31004	9/12/2014	1	2	0	6400	98400	104800	108.25	96813	110000	88.01	2.8	Mardelle

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	Price	Equated Sales Ratio	Miles from Large CAFO	Purchaser
201611299991643	31 018 27.082	31018	12/22/2016	1	2	0	23400	132500	155900	105.74	147435	177500	83.06	2.8	Bley
201610039976915	31 012 25.013	31012	9/22/2016	1	2	0	31600	190200	221800	98.51	225146	254900	88.33	2.8	Warner
201610039976702	31 012 25.112	31012	11/1/2016	1	2	0	20700	248500	269200	98.51	273262	265000	103.12	2.8	Wilcox
201601089951385	31 012 25.017	31012	1/20/2016	1	2	0	30400	294000	324400	98.51	329294	371000	88.76	2.8	Larson
201608269982581	31 016 31.011	31016	9/20/2016	1	2	0	27500	177800	205300	100.85	203573	230000	88.51	2.9	Szydel
201407229993813	31 004 5.012	31004	8/21/2014	1	2	0	7100	54000	61100	108.25	56443	57500	98.16	3.0	Brusky
201600059996989	31 020 28.064	31020	12/31/2015	1	2	0	13700	45000	58700	99.62	58925	60000	98.21	3.0	Pagel's Pond. Dairy LLC
201507209935022	31 014 6.102	31014	8/14/2015	1	2	0	28500	150200	178700	100.20	178345	133500	133.59	3.0	Dworak
201509019922444	31 020 33.071	31020	8/18/2015	1	1	0	72000	0	72000	99.62	72276	140175	51.56	3.0	Salentine
201606149907251	31 002 21.125	31002	6/30/2016	1	2	0	15400	114600	130000	101.49	128089	145000	88.34	3.0	Salzsieder
201407159978396	31 020 33.063	31020	8/15/2014	1	2	0	18100	143800	161900	100.66	160841	172000	93.51	3.0	Pagel
201505019906314	31 020 33.103	31020	5/29/2015	1	2	0	30500	207500	238000	99.62	238913	265000	90.16	3.0	Paral
201408129954227	31 006 20.069	31006	9/11/2014	1	1	0	18400	0	18400	93.41	19699	22300	88.34	3.1	Wisnicky
201500209999295	31 020 32.132	31020	1/5/2015	1	2	0	17400	109000	126400	99.62	126885	99000	128.17	3.1	Lemmens
201403159989840	31 012 ZS 6	31012	4/14/2014	1	2	0	20500	145400	165900	102.44	161953	165000	98.15	3.1	Agamaite
201600149913628	31 012 ZS 20	31012	1/8/2016	1	2	0	25000	159300	184300	98.51	187081	177000	105.70	3.1	Murphy
201509089938094	31 012 24.123	31012	9/30/2015	1	2	0	16900	160500	177400	101.44	174875	202500	86.36	3.1	Pe
201608299992795	31 002 21.103	31002	9/28/2016	1	2	0	13000	83100	96100	101.49	94688	93500	101.27	3.2	DuQuaine
201406189916610	31 004 22.063	31004	7/18/2014	1	2	0	20900	160900	181800	108.25	167944	144200	116.47	3.2	Williams & Timreck
201507129915378	31 006 19.014	31006	7/30/2015	1	2	0	17000	62500	79500	92.53	85916	69000	124.52	3.3	Anderson Const. LLC
201506169917473	31 020 14.143	31020	7/15/2015	1	2	0	7600	75900	83500	99.62	83820	77000	108.86	3.3	Obry
201607169987094	31 020 1.013	31020	8/11/2016	1	2	0	10400	120300	130700	101.53	128730	146500	87.87	3.4	Kustka

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	Price	Equated Sales Ratio	Miles from Large CAFO	Purchaser
201408309918484	31 012 17.153	31012	9/26/2014	1	2	0	17500	110400	127900	102.44	124857	135000	92.49	3.5	Robertson
201410249917405	31 012 26.152	31012	11/14/2014	1	2	0	14500	127800	142300	102.44	138914	140000	99.22	3.5	Zeman
201506029959321	31 012 17.123	31012	6/30/2015	1	2	0	21200	131700	152900	101.44	150723	160000	94.20	3.5	Figlinski
201404289996344	31 006 17.141.7	31006	5/15/2014	1	2	0	21000	139000	160000	93.41	171294	178000	96.23	3.5	Kratz
201503179916304	31 006 17.042	31006	4/15/2015	1	2	0	18700	141500	160200	92.53	173128	183000	94.61	3.5	Van Ess
201609059907248	31 006 17.141.7	31006	9/29/2016	1	2	0	21000	139000	160000	92.63	172729	190000	90.91	3.5	Laak
201610289923561	31 006 17.141.10	31006	11/21/2016	1	2	0	21100	236900	258000	92.63	278526	314900	88.45	3.5	Werth
201507109909335	31 006 17.034	31006	7/31/2015	1	1	0	22600	0	22600	92.53	24424	27700	88.17	3.6	Dorner
201505119961412	31 018 3.162	31018	5/28/2015	1	2	0	25700	127100	152800	107.95	141547	137000	103.32	3.7	Jauquet
201609119919657	31 002 1ASR 8	31002	9/30/2016	1	2	0	13800	76100	89900	101.49	88579	104500	84.76	3.8	Classon
201609129922490	31 006 18.11	31006	10/10/2016	1	2	0	47900	169700	217600	92.63	234912	295000	79.63	3.8	Magyar
201505249915741	31 012 4.0412	31012	6/22/2015	1	1	0	31900	0	31900	101.44	31446	47500	66.20	3.9	Process
201604189966285	31 012 4.0412	31012	5/16/2016	1	1	0	31900	0	31900	98.51	32381	49900	64.89	3.9	Detampel
201605039904248	31 002 1ASR 19	31002	5/12/2016	1	2	0	14600	98400	113000	101.49	111339	121900	91.34	3.9	Pinchart
201608089942815	31 016 31.15	31016	8/31/2016	1	2	0	24500	127200	151700	100.85	150424	195000	77.14	3.9	DeGrant
201507149924260	31 004 17.165	31004	7/29/2015	1	2	0	3200	63500	66700	106.12	62853	63000	99.77	4.0	Kinjerski
201609129922879	31 004 5.063	31004	9/23/2016	1	2	0	9100	83000	92100	103.03	89392	120000	74.49	4.0	Conard
201606089992641	31 018 33.052	31018	6/10/2016	1	2	0	28000	120800	148800	105.74	140721	179900	78.22	4.0	DeJardin
201611059939452	31 002 22.163	31002	12/1/2016	1	1	0	33300	0	33300	101.49	32811	26000	126.20	4.1	Benes
201401139964919	31 006 9.151	31006	2/7/2014	1	2	0	20000	54300	74300	93.41	79545	50000	159.09	4.1	Gruetzmacher
201408199978626	31 018 16.093	31018	9/5/2014	1	2	0	33500	69500	103000	108.05	95323	95000	100.34	4.1	Holochwost

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	Price	Equated Sales Ratio	Miles from Large CAFO	Purchaser
201604169957310	31 002 22.167	31002	4/15/2016	1	2	0	23200	271900	295100	101.49	290763	242500	119.90	4.1	Massey
201604319992177	31 006 8.159	31006	4/27/2016	1	2	0	51200	210200	261400	92.63	282196	274000	102.99	4.1	Etienne
201610089986581	31 012 10.133.1	31012	11/3/2016	1	2	0	28300	234500	262800	98.51	266765	300000	88.92	4.1	Kratz
201405029906170	31 012 16.166	31012	5/16/2014	1	2	0	60900	192100	253000	102.44	246981	240000	102.91	4.2	Laurent
201605239953490	31 018 16.093	31018	6/17/2016	1	2	0	33500	69500	103000	105.74	97408	127000	76.70	4.3	Holochwost
201501029927931	31 016 5.05 T23N	31016	1/30/2015	1	2	0	36400	93700	130100	101.82	127776	140000	91.27	4.3	Holmes
201611129953974	31 002 8.08	31002	10/26/2016	1	2	0	24400	111100	135500	101.49	133509	158500	84.23	4.4	Buechner & Miner
201604139955425	31 012 13.0611	31012	4/15/2016	1	2	0	15900	130000	145900	98.51	148101	167000	88.68	4.5	Stodola
201606089992887	31 012 13.068	31012	6/30/2016	1	2	0	14500	140700	155200	98.51	157542	176000	89.51	4.5	Christoph
201606069986411	31 012 14.044	31012	6/29/2016	1	2	0	14400	190900	205300	98.51	208397	235000	88.68	4.6	Phillips
201409289935908	31 012 10.134	31012	9/19/2014	1	2	0	33200	205100	238300	102.44	232630	235000	98.99	5.0	Seidl
201500309923130	31 018 19.162	31018	1/27/2015	1	2	0	27500	94100	121600	107.95	112645	102000	110.44	5.3	Shallow
201504279985926	31 004 29.082	31004	5/21/2015	1	2	0	7100	40900	48000	106.12	45231	60000	75.39	5.4	Ruatti
201602149911048	31 004 29.091	31004	3/11/2016	1	2	0	12900	95900	108800	103.03	105601	90000	117.33	5.4	Miller
201606089993051	31 018 30.062	31018	7/8/2016	1	2	0	39500	183400	222900	105.74	210798	215000	98.05	5.4	Cherney
201606059981369	31 014 14.101	31014	6/24/2016	1	2	0	28300	253700	282000	97.16	290232	320000	90.7	5.5	Winnekens
201503069990134	31 018 8.101	31018	3/31/2015	1	1	0	50700	0	50700	107.95	46966	59000	79.60	5.6	Mancheski
201403249912828	31 004 31.162	31004	4/11/2014	1	2	0	6400	92000	98400	108.25	90901	117600	77.3	5.6	Cook
201605039904710	31 004 31.162	31004	6/1/2016	1	2	0	6400	92000	98400	103.03	95507	138000	69.21	5.6	Seidl
201510179913807	31 018 18.022	31018	11/12/2015	1	2	0	27000	153100	180100	107.95	166836	172500	96.72	5.6	DeJardin
201511189969799	31 018 18.013	31018	12/15/2015	1	2	0	27000	168000	195000	107.95	180639	174000	103.82	5.6	Baierl
201506069969249	31 018 17.063 & 18.011	31018	6/25/2015	1	2	0	54300	170600	224900	107.95	208337	180000	115.74	5.6	Englebert
201406149903672	31 018 8.102	31018	7/11/2014	1	2	0	58400	237600	296000	108.05	273937	240000	114.14	5.6	Kostichka
201600199920037	31 018 8.118	31018	1/14/2016	1	1	0	28900	0	28900	105.74	27331	30000	91.10	5.8	Zla Tohlavek

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	Price	Equated Sales Ratio	Miles from Large CAFO	Purchaser
201605069909285	31 014 23.162	31014	6/3/2016	1	1	0	33600	0	33600	97.16	34581	57500	60.14	5.8	Connor
201405209946171	31 014 15.152	31014	5/22/2014	1	2	0	10500	71200	81700	101.26	80684	85000	94.92	5.8	Drewiske
201600149912986	31 014 10.131	31014	12/14/2015	1	2	0	36600	92800	129400	100.20	129143	85000	151.93	5.8	Christoph
201611289988099	31 014 10.131	31014	7/14/2016	1	2	0	36600	92800	129400	97.16	133177	85000	156.68	5.8	Vanderkelen
201502309952881	31 014 10.032	31014	3/24/2015	1	2	0	28500	133800	162300	100.20	161978	160000	101.24	5.8	Bergwin
201407149974884	31 014 15.021	31014	8/13/2014	1	2	0	23500	54000	77500	101.26	76536	85000	90.04	6.0	Rodrian
201401179971133	31 008 13.162	31008	2/10/2014	1	2	0	17000	109800	126800	104.67	121140	124900	96.99	6.0	Sinkula
201505019906306	31 014 23.103	31014	5/28/2015	1	2	0	16600	102100	118700	100.2	118464	132000	89.75	6.00	Bertrand
201407149974889	31 014 26.103	31014	8/13/2014	1	2	0	37200	102800	140000	101.26	138258	150000	92.17	6.00	Prusik
201405259958571	31 014 15.153	31014	6/20/2014	1	2	0	26800	161300	188100	101.26	185760	188000	98.81	6.0	Engebose
201405039908439	31 014 20.062	31014	5/30/2014	1	2	0	14500	206100	220600	101.26	217855	195000	111.72	6.0	Salm
201611299992245	31 014 35.131	31014	12/15/2016	1	2	0	14500	197900	212400	97.16	218600	199900	109.35	6.0	Slaby
201601019940315	31 014 21.123	31014	1/29/2016	1	2	0	23500	17900	41400	97.16	42608	40000	106.52	6.2	Paplham Welding & Fabricating
201506169918282	31 018 1ASR 29.7	31018	6/26/2015	1	1	0	43800	0	43800	107.95	40574	45000	90.16	6.2	Borak
201610189909619	31 018 1ASR 67	31018	11/3/2016	1	2	0	21600	97500	119100	105.74	112633	110000	102.39	6.2	Guilette
201609139926527	31 008 SHP 13	31008	9/7/2016	1	2	0	36300	95700	132000	100.54	131291	132000	99.46	6.20	Schram
201405239949344	31 018 BVC 2	31018	6/5/2014	1	2	0	27000	136800	163800	108.05	151591	149900	101.13	6.2	Hollich
201510099998525	31 018 BVC 5	31018	10/13/2015	1	2	0	27000	137400	164400	107.95	152292	165000	92.30	6.2	Waldera
201407049952367	31 018 1ASR 79	31018	7/23/2014	1	2	0	108200	41600	149800	108.05	138635	170000	81.55	6.2	Larson
201508289913082	31 018 BVC 4	31018	8/27/2015	1	2	0	27000	138300	165300	107.95	153126	173000	88.51	6.2	Damery
201505019906243	31 018 1ASR 46	31018	5/8/2015	1	2	0	183400	107100	290500	107.95	269106	249000	108.07	6.2	Lenhard
201608029932235	31 018 1ASR 18	31018	8/17/2016	1	2	0	117200	265300	382500	105.74	361732	339900	106.42	6.2	Peters
201607249907729	31 018 1ASR 26	31018	6/23/2016	1	2	0	93000	204100	297100	105.74	280969	349000	80.51	6.2	Linzmeier/Metzler Trust

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	Price	Equated Sales Ratio	Miles from Large CAFO	Purchaser
201508039967596	31 018 1ASR 134	31018	8/21/2015	1	2	0	185900	234000	419900	107.95	388976	396000	98.23	6.2	Crabill
201600119907006	31 004 32.113	31004	12/18/2015	1	2	0	2700	55200	57900	106.12	54560	56000	97.43	6.7	Niemojuski
201511229975335	31 004 32.1120	31004	12/21/2015	1	2	0	5900	67400	73300	106.12	69072	60000	115.12	6.7	Buresh
201606149906857	31 004 32.114	31004	6/29/2016	1	2	0	5300	96500	101800	103.03	98807	100000	98.81	6.7	Detampel
201610079983434	31 004 32.104	31004	10/31/2016	1	2	0	33500	135900	169400	103.03	164419	165000	99.65	6.7	Wilda & Homeyer
201408269907194	31 008 25.032	31008	9/24/2014	1	2	0	28900	288500	317400	104.67	303232	290000	104.56	6.7	Wilde
201606119996869	31 008 2.1113	31008	7/7/2016	1	2	0	7100	80000	87100	100.54	86632	96900	89.40	6.9	Seibert
201611099952799	31 008 2.1115	31008	12/7/2016	1	2	0	7800	100000	107800	100.54	107221	121500	88.25	6.9	Falat
201611169965708	31 008 2.114	31008	12/12/2016	1	2	0	9700	140000	149700	100.54	148895	147892	100.68	6.9	Kropp
201504189948996	31 012 4.048	31012	5/4/2015	1	1	0	30000	0	30000	101.44	29573	30000	98.58	7.0	Gloshen
201404149965180	31 008 10.014	31008	5/2/2014	1	2	0	7500	61500	69000	104.67	65920	35000	188.34	7.0	Lemke
201608269982146	31 004 31.153	31004	8/31/2016	1	2	0	9000	49200	58200	103.03	56489	41000	137.78	7.0	Hasselman
201605069909240	31 008 10.041	31008	5/31/2016	1	2	0	18500	63300	81800	100.54	81360	65000	125.17	7.0	Leschensky
201506279965341	31 008 11.068	31008	7/17/2015	1	2	0	4300	59200	63500	103.57	61310	68000	90.16	7.0	Reckelberg
201509309981870	31 012 33.122	31012	10/26/2015	1	2	0	22600	90200	112800	101.44	111194	116000	95.86	7.0	Nemetz
201608159959475	31 012 28.132	31012	8/26/2016	1	2	0	14500	92100	106600	98.51	108208	130000	83.24	7.00	Salentine
201508249907204	31 008 11.072	31008	9/18/2015	1	2	0	17000	105800	122800	103.57	118566	130000	91.20	7.0	Lensmire
201607189993256	31 018 31.033	31018	6/20/2016	1	2	0	51000	126600	177600	105.74	167957	138200	121.53	7.00	Abts
201511319989953	31 014 5.072	31014	12/28/2015	1	2	0	14500	147000	161500	100.2	161179	165500	97.39	7.0	Jurczykowski
201503289957463	31 002 2.041	31002	4/20/2015	1	2	0	13100	95200	108300	104.58	103558	95000	109.01	7.6	Massart
201407289904317	31 014 29.071	31014	8/11/2014	1	2	0	38500	211700	250200	101.26	247087	235500	104.92	7.9	Kulhanek
201408029909931	31 012 19.162	31012	8/22/2014	1	2	0	17600	109700	127300	102.44	124271	126000	98.63	8.0	Peot
201509139945625	31 012 32.154	31012	9/17/2015	1	2	0	17800	116200	134000	101.44	132092	150000	88.06	8.0	Kraynik

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	Price	Equated Sales Ratio	Miles from Large CAFO	Purchaser
201603049953653	31 014 19.164	31014	4/1/2016	1	2	0	24500	116800	141300	97.16	145425	180000	80.79	8.1	Ledvina
201608129949178	31 008 21.152	31008	8/11/2016	1	2	0	55200	168600	223800	100.54	222597	339000	65.66	9.2	Kownig (Shea Lk)
201408269907179	31 008 32.061	31008	9/24/2014	1	2	0	36500	141800	178300	104.67	170341	172900	98.52	10.3	Jensen
201506309980305	31 008 29.061	31008	7/27/2015	1	2	0	56300	142400	198700	103.57	191849	226000	84.89	10.4	Denor
201404299900583	31 008 29.061.1	31008	5/23/2014	1	2	0	58700	229000	287700	104.67	274857	350000	78.53	11.0	Wotachek
201608169963758	31 008 30.13	31008	9/12/2016	1	2	0	32500	99800	132300	100.54	131589	169500	77.63	11.7	Fischer
201400239925923	31 016 16.GL 3.3	31016	1/22/2014	1	1	1	56600	0	56600	100.87	56114	55500	101.11	0.40	McDonald (Lk Mich)
201507079902182	31 016 16.GL 2	31016	7/22/2015	1	2	1	61200	147500	208700	101.82	204973	210000	97.61	0.50	Shorter (Lk Mich)
201409319943864	31 016 16.GL 1.5	31016	10/22/2014	1	2	1	100000	97900	197900	100.87	196202	205000	95.71	0.58	Simons (Lk Mich)
201605309972428	31 016 32.GL 1.5	31016	6/8/2016	1	2	1	171000	170100	341100	100.85	338231	342000	98.90	0.58	Spence (Lk Mich)
201611029936641	31 016 3.GL 1.12	31016	12/1/2016	1	2	1	11700	75000	86700	100.85	85971	76500	112.38	0.6	Swanson (Lk Mich)
201610149998001	31 004 6.GL1.6 R25E	31004	10/20/2016	1	2	1	140000	11400	151400	103.03	146948	148000	99.29	0.80	Grabowski (Lk Mich)
201405139931737	31 016 9.GL 1.7	31016	6/9/2014	1	2	1	93900	143600	237500	100.87	235463	255000	92.34	0.86	Hammerling (Lk Mich)
201508249907217	31 016 17.124	31016	9/22/2015	1	2	1	52600	143300	195900	101.82	192401	187000	102.89	0.95	Malingowski (Alaska Lk)
201508189997195	31 016 17.106	31016	9/18/2015	1	1	1	39600	0	39600	101.82	38893	65000	59.84	1.0	Slapp (Alaska L)
201604029919392	31 020 31GL4.3 R25E	31020	4/28/2016	1	1	1	110000	0	110000	101.53	108342	100000	108.34	1.2	Romenesko (Lk Mich)
201406229921896	31 016 20.066	31016	7/15/2014	1	2	1	10400	50500	60900	100.87	60378	61800	97.70	1.30	Huber (Alaska Lk)
201503209923901	31 016 19.017	31016	3/6/2015	1	2	1	19100	72400	91500	101.82	89866	72000	124.81	1.3	Norton (Alaska L)
201603189984201	31 016 19.032	31016	3/30/2016	1	2	1	34000	157000	191000	100.85	189393	210000	90.19	1.7	Baird (Alaska L)
201700059905694	31 016 3.GL 3.5	31016	12/29/2016	1	2	1	81100	63300	144400	100.85	143185	165000	86.78	2.0	Coleman (Lk Mich)
201511289981929	31 016 3.GL 3.6	31016	12/21/2015	1	2	1	91200	189800	281000	101.82	275981	320000	86.24	2.0	Storm (Lk Mich)
201405039910539	31 016 29.GL 1.3	31016	6/2/2014	1	1	1	108300	0	108300	100.87	107371	100000	107.37	2.4	Konz (Lk Mich)
201700129919664	31 018 1ASR 63	31018	12/27/2016	1	2	1	105200	87100	192300	105.74	181859	145000	125.42	6.2	Walczyk (GB)

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	Price	Equated Sales Ratio	Miles from Large CAFO	Purchaser
201505159970904	31 018 1ASR44	31018	5/15/2015	1	2	1	101100	231000	332100	107.95	307642	329000	93.51	6.2	DeWolfe (GB)
201402059906301	31 018 1ASR 36	31018	2/14/2014	1	2	1	106400	312600	419000	108.05	387769	385000	100.72	6.2	Vogel Fam. Tr. (GB)
201505159970777	31 018 DB 22	31018	6/10/2015	1	2	1	106800	83100	189900	107.95	175914	170000	103.48	6.4	Lenss
201606019976240	31 018 DB 13	31018	6/30/2016	1	2	1	119100	77300	196400	105.74	185736	170000	109.26	6.4	Miller (GB)
201408059931523	31 002 6.GL3.03 R26E	31002	7/28/2014	1	2	1	121900	60300	182200	103.00	176897	190000	93.10	8.6	Pisula (Lk Mich)
201607159983257	31 016 17.129	31016	8/5/2016	1	1	2	30000	0	30000	100.85	29748	45000	66.11	0.77	Neumann (Alaska Lk)
201409249927881	31 018 1ASR 114.1	31018	10/20/2014	1	2	2	99100	84700	183800	108.05	170100	160000	106.31	6.2	Sherman
201508309919709	31 018 1ASR 146	31018	9/28/2015	1	2	3	205800	295400	501200	107.95	464288	295000	157.39	6.2	Charles (GB)
201401049947567	31 002 5.028	31002	1/31/2014	1	1	5	58900	0	58900	103.00	57186	50000	114.37	4.6	Balch (Ahnapee R)
201409109981173	31 002 5.027	31002	10/3/2014	1	1	5	63500	0	63500	103.00	61652	59900	102.92	4.6	Balch (Ahnapee R)

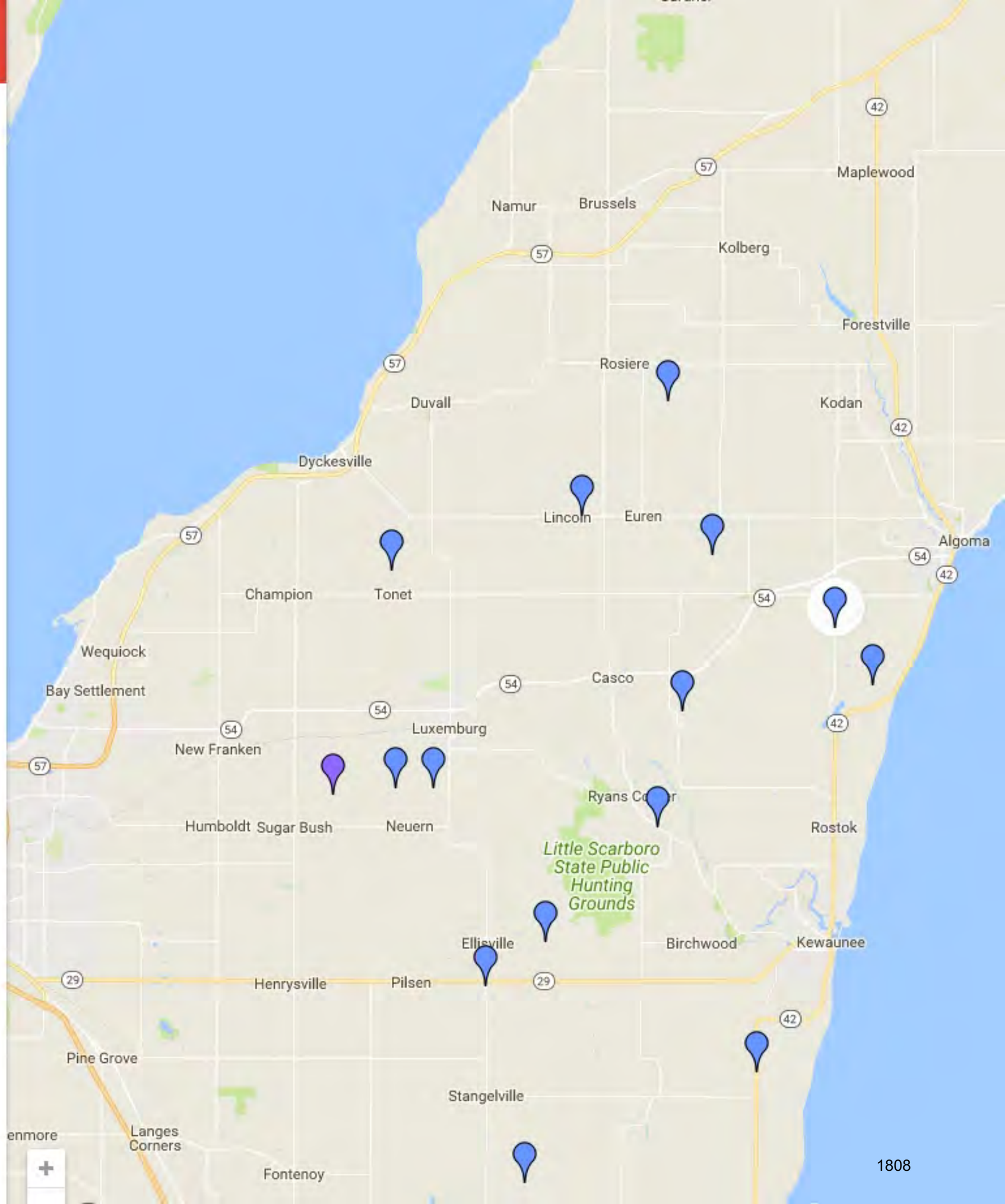
Ebert Dairy Enterprises LL...

name

Ebert Dairy Enterprises LLC (0062235)

description

N6939 County Road D, Algoma, WI
4,452/8,642 AU
Exp:12/31/2018



Wisconsin CAFO Permittees - Kewaunee County

Permit Number	Permittee Name	Permit Reissuance Number	Facility ID (FIN)	County	DNR Region	Address	Status	Issued Date	Effective Date	Expiration Date	Animal Type	Number of Animal Units	Anial Unit Date	Proposed Number of Animal Units	Date of Proposed Animal Units	Township	Range	Section	Q	QQ	QQQ
0062235	Ebert Dairy Enterprises LLC	03	21912	Kewaunee	NE	N6939 Cty Hwy D, Algoma, WI 54201	Current	1/8/2014	10/1/2015	12/31/2018	Dairy	6827	1/31/2015	8642	12/19/2012	24	25 E	6	SE	SE	
0059374	Pagels Ponderosa Dairy	04	14141	Kewaunee	NE	N4893 Hwy C, Kewaunee, WI 54216	Current	4/4/2016	4/1/2016	3/31/2021	Dairy	8340	3/15/2013	0	7/23/2010	23	24 E	4	NW	NW	
0062057	Dairy Dreams LLC	03	20199	Kewaunee	NE	E3576 Cardinal Rd, Casco, WI 54205	Expired	4/3/2012	5/1/2012	4/30/2017	Dairy	5458	1/31/2017	0		25	24 E	4	SE	SE	
0063673	Wakker Dairy Farm Inc	02	36484	Kewaunee	NE	N2348 Hwy 42, Kewaunee, WI 54216	Current	12/10/2012	12/1/2012	11/30/2017	Dairy	4748	1/31/2017	4576	5/1/2014	22	24 E	1	NW	SW	
0059536	Kinnard Farms Inc	03	15051	Kewaunee	NE	E2675 County Hwy S, Casco, WI 54205	Expired	8/16/2012	9/1/2012	8/31/2017	Dairy	10060	1/31/2017	8710	2/1/2013	25	24 E	30	NW	NE	
0063274	Augustian Farms LLC	01	52058	Kewaunee	NE	E4361 County Road G, Kewaunee, WI 54216	Expired	4/4/2011	9/1/2015	3/31/2016	Dairy	776	4/14/2015	1669	6/1/2015	22	24 E	23	NW	NE	
0062707	Rolling Hills Dairy Farm	02	25828	Kewaunee	NE	N3265 County Rd AB, Luxemburg, WI 54217	Expired	2/28/2012	3/1/2012	2/28/2017	Dairy	2745	3/20/2015	2994		23	23 E	27	NE	NE	
0063061	El Na Farms LLC	03	31548	Kewaunee	NE	E4029 Pheasant Rd, Algoma, WI 54201	Current	7/28/2017	8/1/2017	7/31/2022	Dairy	2675	7/1/2017	5970		25	24 E	34	NE	NE	
0063789	Deer Run Dairy LLC	02	37747	Kewaunee	NE	N1215 Sleepy Hollow Rd, Kewaunee, WI 54216	Current	6/26/2013	7/1/2013	6/30/2018	Dairy	2417	3/20/2017	4627	9/1/2016	22	23 E	23	NE	NE	
0059579	Da Ran Dairy LLC	04	14768	Kewaunee	NE	5232 BK line Rd, Luxemburg, WI 54217	Current	2/1/2017	2/1/2017	1/31/2022	Dairy	2339	2/6/2013	2907	1/31/2017	24	23 E	31	NW	NW	
0061999	Stahl Bros Dairy LLC	03	19043	Kewaunee	NE	N7518 Tonet Rd, Luxemburg, WI 54217	Expired	8/28/2012	9/1/2012	8/31/2017	Dairy	2060	1/31/2017	2140	8/1/2012	25	23 E	32	NW	SE	
0065013	Halls Calf Ranch	01	37120	Kewaunee	NE	E2304 County Hwy F, Kewaunee, WI 54216	Current	2/28/2013	3/1/2013	2/28/2018	Dairy	1700	1/31/2017	1360	6/30/2013	23	23 E	13	SE	SW	
0063665	Seidls Mountain View Dairy LLC	02	36343	Kewaunee	NE	E745 Luxemburg Rd, Luxemburg, WI 54217	Expired	9/13/2012	10/1/2012	9/30/2017	Dairy	1606	1/31/2015	0		24	23 E	29	SE	NW	
0064131	Heims Hillcrest Dairy LLC	02	40703	Kewaunee	NE	E3730 Rockledge Rd, Algoma, WI 54201	Current	3/30/2016	4/1/2016	3/31/2021	Dairy	1238	1/31/2017	2358	5/1/2012	24	24 E	22	NW	NW	

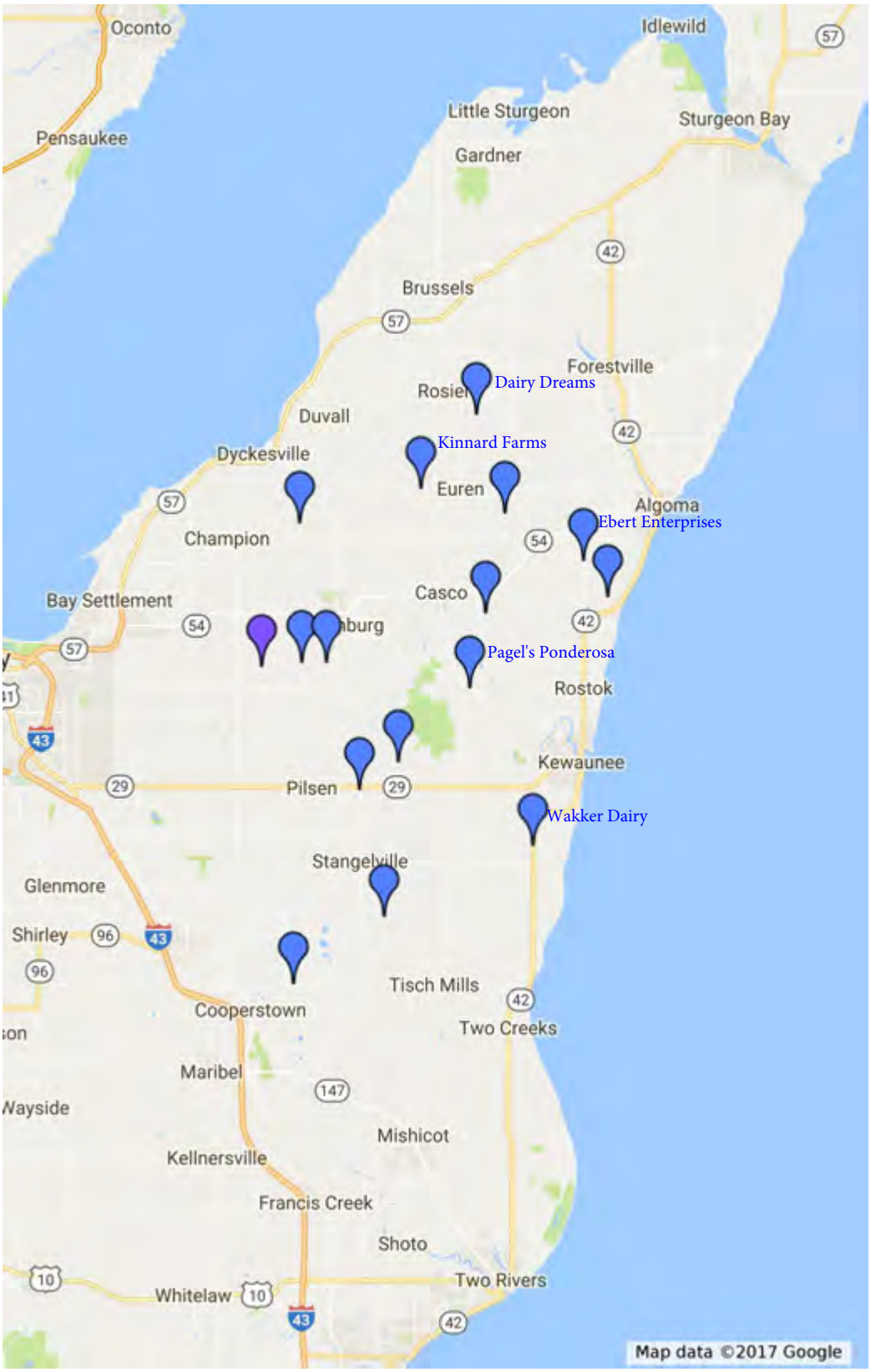
* Animal unit numbers are reported to the DNR only at the time of each permit issuance, which occurs every five years. The number of animal units on any given operation may increase or fluctuate significantly during the course of the permit term.

Wisconsin Department of Natual Resources

Kewaunee County CAFO Map

Untitled layer

- Da-Ran Dairy LLC (0059579)
- Dairy Dreams LLC (0062057)
- Deer Run Dairy LLC (0063789)
- Ebert Dairy Enterprises LLC (formerly Duescher's)
- Ebert Dairy Enterprises LLC (0062235)
- El-Na Farms LLC (0063061)
- Halls Calf Ranch (006503)
- Heims Hillcrest Dairy LLC (0064131)
- Kinnard Farms Inc. (0059536)
- Pagel's Ponderosa LLC (0059374)
- Rolling Hills Dairy Farm (0062707)
- Seidl's Mountain View Dairy LLC (0063665)
- Skyline Blue Acres (0063410)
- Stahl Bros Dairy LLC (0061999)
- Stahl Farms (0062332)
- Wakker Dairy Farm Inc. (0063673)



This map shows the locations of Concentrated Animal Feeding Operations in Kewaunee County, WI.

Forestville Forestville
Dairy Dreams
Duvall Duvall
yckesville Dyckesville
Kinnard
Algoma Algoma
Ebert Dairy
Casco Casco
Dairyland Farm
Luxemburg Luxemburg
nken
nken
Kewaunee
Pagels Ponderosa
Kewaunee Kewaunee
29
Pilsen Pilsen
Wakker Dairy
Corners
ark
Curran Curran
Image © 2017 TerraMetrics
© 2017 Google
1811

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	Price	Equated Sales Ratio	Miles from Large CAFO	CAFO Purchase	CAFO #
2016061199966678	31 010 19.124	31010	6/30/2016	1	2	0	10000	58500	68500	104.67	65442	40000	163.61	0.0	1	1
2015101299905607	31 010 3.11	31010	11/6/2015	1	2	0	25500	92900	118400	107.98	109647	65000	168.69	0.0	0	3
2016042599983130	31 010 19.153	31010	5/23/2016	1	2	0	14200	126000	140200	104.67	133941	125000	107.15	0.0	1	1
2016092899961951	31 010 4.133	31010	10/21/2016	1	2	0	14000	78200	92200	104.67	88084	82000	107.42	0.10	1	3
2015042099959315	31 010 4.131	31010	5/18/2015	1	2	0	14800	95900	110700	107.98	102516	107500	95.36	0.20	0	3
2017022999956046	31 016 5.112	31016	2/17/2017	1	2	0	10500	118800	129300	91.41	139754	120000	117.88	0.2	0	4
2015051699975334	31 016 7.012	31016	6/12/2015	1	2	0	17500	134500	152000	101.82	149285	147500	101.21	0.20	0	4
2015052599923018	31 006 28.132	31006	5/27/2015	1	2	0	14400	57000	71400	92.53	77162	60000	128.60	0.30	1	2
2016082699982083	31 016 5.123	31016	7/19/2016	1	2	0	37900	78900	116800	100.85	115818	149700	77.37	0.30	0	4
2016032699902969	31 006 33.164	31006	4/22/2016	1	2	0	44400	135200	179600	92.63	193888	232000	83.57	0.30	0	2
2015082499907495	31 010 29.071	31010	8/18/2015	1	2	0	23500	253000	276500	107.98	256058	300000	85.35	0.30	0	1
2015062299947260	31 016 16.GL 3.13	31016	7/17/2015	1	2	0	8000	72800	80800	101.82	79357	78000	101.74	0.40	0	4
2014032899922184	31 016 16.GL 3.11	31016	4/11/2014	1	2	0	10000	98400	108400	100.87	107470	95000	113.13	0.40	0	4
2016022899935889	31 016 16.GL 3.11	31016	3/18/2016	1	2	0	10000	98400	108400	100.85	107488	101500	105.90	0.40	0	4
2016031499977223	31 018 25.012	31018	4/8/2016	1	2	0	26500	130500	157000	105.74	148476	144500	102.75	0.40	0	1
2016102199913961	31 004 12.062	31004	11/18/2016	1	2	0	11800	126600	138400	103.03	134330	100000	134.33	0.50	0	5
2014090399944983	31 004 1.112	31004	10/1/2014	1	2	0	13000	151400	164400	108.25	151870	142500	106.58	0.50	0	5
2015111899968358	31 010 19.012	31010	12/15/2015	1	2	0	39300	157100	196400	107.98	181880	255000	71.33	0.50	0	1
2016042599983089	31 010 20.1613	31010	2/26/2016	1	2	0	13000	36000	49000	104.67	46813	49000	95.54	0.60	0	1
2015031099900624	31 006 28.017	31006	4/1/2015	1	2	0	20700	69600	90300	92.53	97587	85000	114.81	0.60	1	2
2016080699936178	31 010 9.072	31010	9/2/2016	1	2	0	13100	106500	119600	104.67	114261	126000	90.68	0.60	0	3
2014042899996372	31 016 17.126	31016	4/30/2014	1	2	0	18400	177500	195900	100.87	194220	171000	113.58	0.70	0	4
2016062599931576	31 016 17.129.1	31016	7/18/2016	1	2	0	24500	196300	220800	100.85	218943	223000	98.18	0.75	0	4
2015061599911609	31 010 29.043	31010	5/15/2015	1	2	0	19500	150300	169800	107.98	157247	175000	89.86	0.80	1	1
2016012299972506	31 018 24.012	31018	2/1/2016	1	2	0	23000	82200	105200	105.74	99488	89900	110.67	0.85	0	1
2014062199919304	31 010 17.108	31010	7/1/2014	1	2	0	20500	275500	296000	106.93	276818	248500	111.40	0.90	0	1
2016050199998047	31 020 36.03	31020	5/31/2016	1	2	0	13800	97000	110800	101.53	109130	120000	90.94	1.1	0	5
2016052099943585	31 010 15.143	31010	3/10/2016	1	2	0	16600	98800	115400	104.67	110248	69100	159.55	1.5	0	3
2014060399986276	31 004 11.162	31004	6/27/2014	1	2	0	16500	142000	158500	108.25	146420	158500	92.38	1.5	0	5
2014083099919199	31 020 2.062	31020	9/29/2014	1	2	0	19500	129700	149200	100.66	148224	167000	88.76	1.5	0	2
2014062299921837	31 020 31GL2.3 R25E	31020	7/15/2014	1	1	0	17900	0	17900	100.66	17783	32000	55.57	1.7	2	5
2015012399958145	31 020 10.142	31020	2/13/2015	1	2	0	13100	70500	83600	99.62	83921	85000	98.73	1.7	0	2
2014052599958541	31 020 2.112	31020	6/20/2014	1	2	0	11600	77700	89300	100.66	88716	110000	80.65	1.9	0	2
2015040699900262	31 006 29.011	31006	5/1/2015	1	2	0	17000	117400	134400	92.53	145246	153000	94.93	2.0	0	2
2016042999919404	31 006 9.141	31006	4/29/2016	1	2	0	31800	152900	184700	92.63	199394	220000	90.63	2.0	1	1
2015110499942794	31 002 29.105	31002	11/11/2015	1	2	0	46700	276600	323300	104.58	309144	300000	103.05	2.0	0	4
2015041499932161	31 002 33.165	31002	4/1/2015	1	2	0	9800	12900	22700	104.58	21706	14000	155.04	2.1	0	4
2014070499952170	31 010 22.121	31010	7/28/2014	1	2	0	23400	82900	106300	106.93	99411	75000	132.55	2.2	0	1
2015052499917936	31 020 30GL2.4 R25E	31020	5/8/2015	1	2	0	10900	139400	150300	99.62	150876	118500	127.32	2.2	0	5
2016032699902956	31 016 30.041	31016	4/22/2016	1	2	0	33500	131300	164800	100.85	163414	179200	91.19	2.2	0	4
2014032199902249	31 012 19.053	31012	4/11/2014	1	2	0	15600	125300	140900	102.44	137548	125000	110.04	2.3	0	B1
2015111079945968	31 020 17.16	31020	11/27/2015	1	2	0	25500	149700	175200	99.62	175872	166500	105.63	2.3	0	2
2014022899952726	31 004 4.153	31004	2/19/2014	1	2	0	5400	76300	81700	108.25	75473	76000	99.31	2.4	0	5
2016000499992167	31 006 30.057	31006	10/21/2015	1	2	0	21700	123000	144700	92.53	156377	172500	90.65	2.4	0	2
2015111079945945	31 006 30.052	31006	11/30/2015	1	2	0	21800	145400	167200	92.53	180693	195000	92.66	2.4	0	2
2014060299982917	31 018 22.133	31018	6/30/2014	1	2	0	41000	282000	323000	108.05	298925	400000	74.73	2.4	0	1
2016011699963139	31 020 11.011	31020	1/21/2016	1	2	0	19600	39300	58900	101.53	58012	75000	77.35	2.6	0	2
2015061699917466	31 020 2.132	31020	7/10/2015	1	2	0	12800	102700	115500	99.62	115943	108500	106.86	2.6	0	2
2016111299953971	31 006 WP 6	31006	10/5/2016	1	2	0	38600	158800	197400	92.63	213104	240000	88.79	2.6	0	2
2014072799901728	31 012 25.050	31012	8/25/2014	1	2	0	38700	260200	298900	102.44	291788	294000	99.25	2.6	0	2
2015030699991821	31 006 WP 10	31006	4/2/2015	1	2	0	45000	203700	248700	92.53	268770	309900	86.73	2.6	0	2
2016071099974240	31 012 25.0410	31012	7/7/2016	1	2	0	47400	263300	310700	98.51	315388	379000	83.22	2.6	0	2
2014071999884849	31 012 25.046	31012	7/31/2014	1	2	0	31600	146100	177700	102.44	173472	153500	113.01	2.7	0	2
2016111499959847	31 002 19.161	31002	9/30/2016	1	2	0	35000	122500	157500	101.49	155185	160000	96.99	2.7	0	4
2015073199957445	31 006 25.014	31006	8/28/2015	1	2	0	17000	145600	162600	92.53	175722	172500	101.87	2.7	0	4
2014071899983232	31 010 23.042	31010	7/24/2014	1	2	0	13200	23700	36900	106.93	34509	18000	191.72	2.8	0	3
2016091799931433	31 010 34.114	31010	9/1/2016	1	2	0	17600	27700	45300	104.67	43278	36000	120.22	2.8	0	1
2014092499924423	31 002 20.122	31002	10/2/2014	1	2	0	13200	64300	77500	103.00	75244	65000	115.76	2.8	0	4
2014081999978312	31 004 9.023	31004	9/12/2014	1	2	0	6400	98400	104800	108.25	96813	110000	88.01	2.8	0	5
2016021199909047	31 020 12.052	31020	2/29/2016	1	2	0	27200	114800	142000	101.53	139860	160000	87.41	2.8	0	2
2016111299991643	31 018 27.082	31018	12/22/2016	1	2	0	23400	132500	155900	105.74	147435	177500	83.06	2.8	0	1
2016100399976915	31 012 25.013	31012	9/22/2016	1	2	0	31600	190200	221800	98.51	225146	254900	88.33	2.8	0	2
2016100399976702	31 012 25.112	31012	11/1/2016	1	2	0	20700	248500	269200	98.51	273262	265000	103.12	2.8	0	2
2016010899951385	31 012 25.017	31012	1/20/2016	1	2	0	30400	294000	324400	98.51	329294	371000	88.76	2.8	0	2
2016082699982581	31 016 31.011	31016	9/20/2016	1	2	0	27500	177800	205300	100.85	203573	230000	88.51	2.9	0	4
2014072299993813	31 004 5.012	31004	8/21/2014	1	2	0	7100	54000	61100	108.25	56443	57500	98.16	3.0	0	5
2016000599996989	31 020 28.064	31020	12/31/2015	1	2	0	13700	45000	58700	99.62	58925	60000	98.21	3.0	1	2
2015072099935022	31 014 6.102	31014	8/14/2015	1	2	0	28500	150200	178700	100.20	178345	133500	133.59	3.0	0	B1
2015090199922444	31 020 33.071	31020	8/18/2015	1	1	0	72000	0	72000	99.62	72276	140175	51.56	3.0	2	5
2016061499907251	31 002 21.125	31002	6/30/2016	1	2	0	15400	114600	130000	101.49	128089	145000	88.34	3.0	0	4

Research Testing Groups

	>2.95 miles	1.95 to 2.95 miles	.95 to 1.95 miles	.55 to .95 miles	.30 to .55 miles	< .30 miles
	(119)	(32)	(7)	(8)	(11)	(7)
	51.56	74.73	55.57	89.86	71.33	95.36
	60.14	77.35	80.65	90.68	77.37	101.21
	64.89	83.06	88.76	95.54	83.57	107.15
	65.66	83.22	90.94	98.18	85.35	107.42
	66.20	86.73	92.38	110.67	101.74	117.88
	69.21	87.41	98.73	111.40	102.75	163.61
	74.49	88.01	159.55	113.58	105.90	168.69
	74.97	88.33		114.81	106.58	
	75.39	88.51			113.13	
	76.70	88.76			128.60	
	77.14	88.79			134.33	
	77.3	90.63				
	77.63	90.65				
	78.22	91.19				
	78.53	92.66				
	79.60	94.93				
	79.63	96.99				
	80.51	99.25				
	80.79	99.31				
	81.55	101.87				
	83.24	103.05				
	84.23	103.12				
	84.76	105.63				
	84.89	106.86				
	86.36	110.04				
	87.87	113.01				
	87.88	115.76				
	88.06	120.22				
	88.17	127.32				
	88.25	132.55				
	88.34	155.04				
	88.34	191.72				
	88.45					
	88.51					
	88.68					
	88.68					
	88.92					
	89.40					
	89.51					
	89.75					
	90.04					
	90.16					
	90.16					
	90.16					
	90.7					
	90.91					
	91.10					
	91.20					
	91.27					
	91.34					
	91.92					
	92.17					
	92.30					
	92.49					
	93.51					
	94.20					
	94.40					
	94.61					
	94.92					
	95.86					
	96.23					
	96.72					
	96.99					
	97.39					
	97.43					

Mean-Aggregate-Median

97.38	Mean Equated Sale Ratio parcels >2.95 miles from LARGE CAFO
95.20	Aggregate Equated Sale Ratio parcels >2.95 miles from LARGE CAFO
95.86	Median Equated Sale Ratio parcels >2.95 miles from LARGE CAFO
102.40	Mean Equated Sale Ratio parcels 1.95 to 2.95 miles from LARGE CAFO
94.38	Aggregate Equated Sale Ratio parcels 1.95 to 2.95 miles from LARGE CAFO
95.96	Median Equated Sale Ratio parcels 1.95 to 2.95 miles from LARGE CAFO
95.23	Mean Equated Sale Ratio parcels .95 to 1.95 miles from LARGE CAFO
94.99	Aggregate Equated Sale Ratio parcels .95 to 1.95 miles from LARGE CAFO
90.94	Median Equated Sale Ratio parcels .95 to 1.95 miles from LARGE CAFO
103.09	Mean Equated Sale Ratio parcels .55 to .95 mile from LARGE CAFO
103.25	Aggregate Equated Sale Ratio parcels .55 to .95 mile from LARGE CAFO
104.43	Median Equated Sale Ratio parcels .55 to .95 mile from LARGE CAFO
100.97	Mean Equated Sale Ratio parcels .30 to .55 miles from Large CAFO
93.70	Aggreagte Equated Sale Ratio parcels .30 to .55 miles from Large CAFO
102.75	Median Equated Sale Ratio parcels .30 to .55 miles from Large CAFO
123.05	Mean Equated Sale Ratio parcels < .30 miles from Large CAFO
114.80	Aggregate Equated Sale Ratio parcels < .30 miles from Large CAFO
107.42	Median Equated Sale Ratio parcels < .30 miles from LARGE CAFO

Conclusion Median Ratios

	<or =.95 miles	.95 to 1.95 miles	.30 to .95 miles	greater than .95 miles	Ratio
	(26)	(7)	(19)	(158)	
>.95 miles	95.40				
.30 to .95 miles	102.75				
<.30 miles	107.42				
	83.57	88.76	83.57	60.14	
	85.35	90.94	85.35	64.89	
	89.86	92.38	89.86	65.66	
	90.68	98.73	90.68	66.20	
	95.36	159.55	95.54	69.21	
	95.54		98.18	74.49	
	98.54		101.74	74.73	
	101.21		102.75	74.97	
	101.74		105.90	75.39	
	102.75		106.58	76.70	
	105.90	=106.24	110.67	77.14	
	106.58		111.40	77.3	
	107.15		113.13	77.35	
	107.42		113.58	77.63	
	110.67		114.81	78.22	
	111.40		128.60	78.53	
	113.13		134.33	79.60	
	113.58			79.63	
	114.81			80.51	
				80.65	
				80.79	
				81.55	
				83.06	
				83.22	
				83.24	
				84.23	
				84.76	
				84.89	
				86.36	
				86.73	
				87.41	
				87.87	
				87.88	
				88.01	
				88.06	
				88.17	
				88.25	
				88.33	
				88.34	
				88.34	
				88.45	
				88.51	
				88.68	
				88.76	
				88.76	
				88.79	
				88.92	
				89.40	
				89.51	
				89.75	
				90.04	
				90.16	
				90.16	
				90.16	
				90.63	
				90.65	
				90.7	
				90.91	
				90.94	
				91.10	
				91.19	

CAFO#

1	Kinnard	116.46
2	Pagel	128.60
3	Dairy Dreams	134.33
4	Ebert Dairy	163.61
5	Wakker Dairy	168.69
B1	Dairyland Farms	

201407159978396	31 020 33.063	31020	8/15/2014	1	2	0	18100	143800	161900	100.66	160841	172000	93.51	3.0	1 5	98.05		91.20
201505019906314	31 020 33.103	31020	5/29/2015	1	2	0	30500	207500	238000	99.62	238913	265000	90.16	3.0	0 5	98.15		91.27
201408129954227	31 006 20.069	31006	9/11/2014	1	1	0	18400	0	18400	93.41	19699	22300	88.34	3.1	0 2	98.16		91.34
201500209999295	31 020 32.132	31020	1/5/2015	1	2	0	17400	109000	126400	99.62	126885	99000	128.17	3.1	0 5	98.21		91.92
201403159989840	31 012 ZS 6	31012	4/14/2014	1	2	0	20500	145400	165900	102.44	161953	165000	98.15	3.1	0 2	98.23		92.17
201600149913628	31 012 ZS 20	31012	1/8/2016	1	2	0	25000	159300	184300	98.51	187081	177000	105.70	3.1	0 2	98.52		92.30
201509089938094	31 012 24.123	31012	9/30/2015	1	2	0	16900	160500	177400	101.44	174875	202500	86.36	3.1	0 2	98.58		92.38
201608299992795	31 002 21.103	31002	9/28/2016	1	2	0	13000	83100	96100	101.49	94688	93500	101.27	3.2	0 4	98.63		92.49
201406189916610	31 004 22.063	31004	7/18/2014	1	2	0	20900	160900	181800	108.25	167944	144200	116.47	3.2	0 5	98.81		92.66
201507129915378	31 006 19.014	31006	7/30/2015	1	2	0	17000	62500	79500	92.53	85916	69000	124.52	3.3	0 2	98.81		93.51
201506169917473	31 020 14.143	31020	7/15/2015	1	2	0	7600	75900	83500	99.62	83820	77000	108.86	3.3	0 2	98.99		94.20
201607169987094	31 020 1.013	31020	8/11/2016	1	2	0	10400	120300	130700	101.53	128730	146500	87.87	3.4	0 2	99.22		94.40
201608029932622	31 006 17.121.8	31006	8/24/2016	1	2	0	18400	82900	101300	92.63	109359	110000	99.42	3.5	0 2	99.42		94.61
201408309918484	31 012 17.153	31012	9/26/2014	1	2	0	17500	110400	127900	102.44	124857	135000	92.49	3.5	0 B1	99.46		94.92
201410249917405	31 012 26.152	31012	11/14/2014	1	2	0	14500	127800	142300	102.44	138914	140000	99.22	3.5	0 2	99.65	=95.40	94.93
201506029959321	31 012 17.123	31012	6/30/2015	1	2	0	21200	131700	152900	101.44	150723	160000	94.20	3.5	0 B1	99.77		95.86
201404289996344	31 006 17.141.7	31006	5/15/2014	1	2	0	21000	139000	160000	93.41	171294	178000	96.23	3.5	0 2	100.34		96.23
201503179916304	31 006 17.042	31006	4/15/2015	1	2	0	18700	141500	160200	92.53	173128	183000	94.61	3.5	0 2	100.68		96.72
201609059907248	31 006 17.141.7	31006	9/29/2016	1	2	0	21000	139000	160000	92.63	172729	190000	90.91	3.5	0 2	101.13		96.99
201610289923561	31 006 17.141.10	31006	11/21/2016	1	2	0	21100	236900	258000	92.63	278526	314900	88.45	3.5	0 2	101.24		96.99
201507109909335	31 006 17.034	31006	7/31/2015	1	1	0	22600	0	22600	92.53	24424	27700	88.17	3.6	0 2	101.27		97.39
201505119961412	31 018 3.162	31018	5/28/2015	1	2	0	25700	127100	152800	107.95	141547	137000	103.32	3.7	0 1	102.39		97.43
201609119919657	31 002 1ASR 8	31002	9/30/2016	1	2	0	13800	76100	89900	101.49	88579	104500	84.76	3.8	0 4	102.91		98.05
201609129922490	31 006 18.11	31006	10/10/2016	1	2	0	47900	169700	217600	92.63	234912	295000	79.63	3.8	0 2	102.99		98.15
201505249915741	31 012 4.0412	31012	6/22/2015	1	1	0	31900	0	31900	101.44	31446	47500	66.20	3.9	0 1	103.32		98.16
201604189966285	31 012 4.0412	31012	5/16/2016	1	1	0	31900	0	31900	98.51	32381	49900	64.89	3.9	0 1	103.82		98.21
201605039904248	31 002 1ASR 19	31002	5/12/2016	1	2	0	14600	98400	113000	101.49	111339	121900	91.34	3.9	0 4	104.56		98.23
201608089942815	31 016 31.15	31016	8/31/2016	1	2	0	24500	127200	151700	100.85	150424	195000	77.14	3.9	0 4	104.92		98.52
201507149924260	31 004 17.165	31004	7/29/2015	1	2	0	3200	63500	66700	106.12	62853	63000	99.77	4.0	0 5	105.70		98.58
201609129922879	31 004 5.063	31004	9/23/2016	1	2	0	9100	83000	92100	103.03	89392	120000	74.49	4.0	0 5	106.42		98.63
201606089992641	31 018 33.052	31018	6/10/2016	1	2	0	28000	120800	148800	105.74	140721	179900	78.22	4.0	0 1	106.52		98.73
201611059939452	31 002 22.163	31002	12/1/2016	1	1	0	33300	0	33300	101.49	32811	26000	126.20	4.1	0 4	108.07		98.81
201401139964919	31 006 9.151	31006	2/7/2014	1	2	0	20000	54300	74300	93.41	79545	50000	159.09	4.1	0 2	108.86		98.81
201408199978626	31 018 16.093	31018	9/5/2014	1	2	0	33500	69500	103000	108.05	95323	95000	100.34	4.1	0 1	109.01		98.99
201609049902957	31 012 10.164	31012	9/30/2016	1	2	0	28000	123400	151400	98.51	153684	205000	74.97	4.1	0 1	109.35		99.22
201604169957310	31 002 22.167	31002	4/15/2016	1	2	0	23200	271900	295100	101.49	290763	242500	119.90	4.1	0 4	110.44		99.25
201604319992177	31 006 8.159	31006	4/27/2016	1	2	0	51200	210200	261400	92.63	282196	274000	102.99	4.1	0 2	111.72		99.31
201610089986581	31 012 10.133.1	31012	11/3/2016	1	2	0	28300	234500	262800	98.51	266765	300000	88.92	4.1	0 1	114.14		99.42
201405029906170	31 012 16.166	31012	5/16/2014	1	2	0	60900	192100	253000	102.44	246981	240000	102.91	4.2	0 B1	115.12		99.46
201605239953490	31 018 16.093	31018	6/17/2016	1	2	0	33500	69500	103000	105.74	97408	127000	76.70	4.3	0 1	115.74		99.65
201501029927931	31 016 5.05 T23N	31016	1/30/2015	1	2	0	36400	93700	130100	101.82	127776	140000	91.27	4.3	0 4	116.47		99.77
201611129953974	31 002 8.08	31002	10/26/2016	1	2	0	24400	111100	135500	101.49	133509	158500	84.23	4.4	0 3	117.33		100.34
201604139955425	31 012 13.0611	31012	4/15/2016	1	2	0	15900	130000	145900	98.51	148101	167000	88.68	4.5	0 1	119.90		100.68
201606089992887	31 012 13.068	31012	6/30/2016	1	2	0	14500	140700	155200	98.51	157542	176000	89.51	4.5	0 1	121.53		101.13
201606069986411	31 012 14.044	31012	6/29/2016	1	2	0	14400	190900	205300	98.51	208397	235000	88.68	4.6	0 1	124.52		101.24
201409289935908	31 012 10.134	31012	9/19/2014	1	2	0	33200	205100	238300	102.44	232630	235000	98.99	5.0	1 1	125.17		101.27
201500309923130	31 018 19.162	31018	1/27/2015	1	2	0	27500	94100	121600	107.95	112645	102000	110.44	5.3	0 1	126.20		101.87
201504279985926	31 004 29.082	31004	5/21/2015	1	2	0	7100	40900	48000	106.12	45231	60000	75.39	5.4	0 5	128.17		102.39
201602149911048	31 004 29.091	31004	3/11/2016	1	2	0	12900	95900	108800	103.03	105601	90000	117.33	5.4	0 5	133.59		102.91
201606089993051	31 018 30.062	31018	7/8/2016	1	2	0	39500	183400	222900	105.74	210798	215000	98.05	5.4	0 1	137.78		102.99
201606059981369	31 014 14.101	31014	6/24/2016	1	2	0	28300	253700	282000	97.16	290232	320000	90.7	5.5	0 2	151.93		103.05
201503069990134	31 018 8.101	31018	3/31/2015	1	1	0	50700	0	50700	107.95	46966	59000	79.60	5.6	0 1	156.68		103.12
201403249912828	31 004 31.162	31004	4/11/2014	1	2	0	6400	92000	98400	108.25	90901	117600	77.3	5.6	0 5	159.09		103.32
201605039904710	31 004 31.162	31004	6/1/2016	1	2	0	6400	92000	98400	103.03	95507	138000	69.21	5.6	1 5	188.34		103.82
201510179913807	31 018 18.022	31018	11/12/2015	1	2	0	27000	153100	180100	107.95	166836	172500	96.72	5.6	0 1			104.56
201511189969799	31 018 18.013	31018	12/15/2015	1	2	0	27000	168000	195000	107.95	180639	174000	103.82	5.6	0 1			104.92
201506069969249	31 018 17.063 & 18.011	31018	6/25/2015	1	2	0	54300	170600	224900	107.95	208337	180000	115.74	5.6	0 1			105.63
201406149903672	31 018 8.102	31018	7/11/2014	1	2	0	58400	237600	296000	108.05	273937	240000	114.14	5.6	0 1			105.70
201600199920037	31 018 8.118	31018	1/14/2016	1	1	0	28900	0	28900	105.74	27331	30000	91.10	5.8	0 1			106.42
201602289936464	31 018 8.111	31018	3/25/2016	1	1	0	38100	0	38100	105.74	36031	41000	87.88	5.8	0 1			106.52
201605069909285	31 014 23.162	31014	6/3/2016	1	1	0	33600	0	33600	97.16	34581	57500	60.14	5.8	2 2			106.86
201405209946171	31 014 15.152	31014	5/22/2014	1	2	0	10500	71200	81700	101.26	80684	85000	94.92	5.8	0 2			108.07
201600149912986	31 014 10.131	31014	12/14/2015	1	2	0	36600	92800	129400	100.20	129143	85000	151.93	5.8	0 2			108.86
201611289988099	31 014 10.131	31014	7/14/2016	1	2	0	36600	92800	129400	97.16	133177	85000	156.68	5.8	0 2			109.01
201502309952881	31 014 10.032	31014	3/24/2015	1	2	0	28500	133800	162300	100.20	161978	160000	101.24	5.8	0 2			109.35
201407149974884	31 014 15.021	31014	8/13/2014	1	2	0	23500	54000	77500	101.26	76536	85000	90.04	6.0	0 2			110.04
201401179971133	31 008 13.162	31008	2/10/2014	1	2	0	17000	109800	126800	104.67	121140	124900	96.99	6.0	0 5			110.44
201505019906306	31 014 23.103	31014	5/28/2015	1	2	0	16600	102100	118700	100.2	118464	132000	89.75	6.00	0 2			111.72
201407149974889	31 014 26.103	31014	8/13/2014	1	2	0	37200	102800	140000	101.26	138258	150000	92.17	6.00	0 5			113.01
201405259958571	31 014 15.153	31014	6/20/2014	1	2	0	26800	161300	188100	101.26	185760	188000	98.81	6.0	0 2			114.14
201405039908439	31 014 20.062	31014	5/30/2014	1	2	0	14500	206100	220600	101.26	217855	195000	111.72	6.0	0 2			115.12
201611299992245	31 014 35.131	31014	12/15/2016	1	2	0	14500	197900	212400	97.16	218600	199900	109.35	6.0	0 5			115.74
201601019940315	31 014 21.123	31014	1/29/2016	1	2	0	23500	17900	41400	97.16	42608	40000	106.52	6.2	0 2			115.76
201506169918282	31 018 1ASR 29.7	31018	6/26/2015	1	1	0	43800	0	43800	107.95	40574	45000	90.16	6.2	0 1			116.47
201610189909619	31 018 1ASR 67	31018	11/3/2016	1	2	0	21600	97500	119100	105.74	112633	110000	102.39	6.2	0 1			117.33
201609139926527	31 008 SHP 13	31008	9/7/2016	1	2	0	36300	95700	132000	100.54	131291	132000	99.46	6.20	0 5			119.90
201405239949344	31 018 BVC 2	31018	6/5/2014	1	2	0	27000	136800	163800	108.05	151591	149900	101.13	6.2	0 1			120.22
201510099998525	31 018 BVC 5	31018	10/13/2015	1	2	0	27000	137400	164400	107.95	152292	165000	92.30	6.2	0 1			121.53
201407049952367	31 018 1ASR 79	31018	7/23/2014	1	2	0	108200	41600	149800	108.05	138635	170000	81.55	6.2	0 1			124.52
201508289913082	31 018 BVC 4	31018	8/27/2015	1	2	0	27000	138300	165300	107.95	153126	173000	88.51	6.2	0 1			125.17
201505019906243	31 018 1ASR 46	31018	5/8/2015	1	2	0	183400	107100	290500	107.95	269106	249000	108.07	6.2	0 1			126.20
201608029932235	31 018 1ASR 18	31018	8/17/2016	1	2	0	117200	265300	382500	105.74	361732	339900	106.42	6.2	0 1			127.32
201607249907729	31 018 1ASR 26	31018	6/23/2016	1	2	0	93000	204100	297100	105.74	280969	349000	80.51	6.2	0 1			128.17
201409289935983	31 018 1ASR 132.2	31018	9/2/2014	1	2	0	74200	322100	396300	108.05	366761	388500	94.40	6.2	0 1			132.55
201508039967596	31 018 1ASR 134	31018	8/21/2015	1	2	0	185900	234000	419900	107.95	388976	396000	98.23	6.2	0 1			133.59
201600119907006	31 004 32.113	31004	12/18/2015	1	2	0	2700	55200	57900	106.12	54560	56000	97.43	6.7	0 5			137.78
201511229975335	31 004 32.1120	31004	12/21/2015	1	2	0	5900	67400	73300	106.12	69072	60000	115.12	6.7	0 5			151.93
201606149906857	31 004 32.114	31004	6/29/2016	1	2	0	5300	96500	101800	103.03	98807	100000	98.81	6.7	0 5			155.04
201610079983434	31 004 32.104	31004	10/31/2016	1	2	0	33500	135900	169400	103.03	164419	165000	99.65	6.7	0 5			156.68
201408269907194	31 008 25.032	31008	9/24/2014	1	2	0	28900	288500	317400	104.67	303232	290000	104.56	6.7	0 5			159.09
201606119996869	31 008 2.1113	31008	7/7/2016	1	2	0	7100	80000	87100	100.54	86632	96900	89.40	6.9	0 5			159.55
201611099952799	31 008 2.1115	31008	12/7/2016	1	2	0	7800	100000	107800	100.54	107221	121500	88.25	6.9	0 5			188.34
201611169965708	31 008 2.114	31008	12/12/2016	1	2	0	9700	140000	149700	100.54	148895	147892	100.68	6.9	0 5			191.72

201504189948996	31 012 4.048	31012	5/4/2015	1	1	0	30000	0	30000	101.44	29573	30000	98.58	7.0	0	1
201404149965180	31 008 10.014	31008	5/2/2014	1	2	0	7500	61500	69000	104.67	65920	35000	188.34	7.0	0	5
201608269982146	31 004 31.153	31004	8/31/2016	1	2	0	9000	49200	58200	103.03	56489	41000	137.78	7.0	0	5
201605069909240	31 008 10.041	31008	5/31/2016	1	2	0	18500	63300	81800	100.54	81360	65000	125.17	7.0	0	5
201506279965341	31 008 11.068	31008	7/17/2015	1	2	0	4300	59200	63500	103.57	61310	68000	90.16	7.0	0	5
201509309981870	31 012 33.122	31012	10/26/2015	1	2	0	22600	90200	112800	101.44	111194	116000	95.86	7.0	0	2
201608159959475	31 012 28.132	31012	8/26/2016	1	2	0	14500	92100	106600	98.51	108208	130000	83.24	7.00	0	2
201508249907204	31 008 11.072	31008	9/18/2015	1	2	0	17000	105800	122800	103.57	118566	130000	91.20	7.0	0	5
201607189993256	31 018 31.033	31018	6/20/2016	1	2	0	51000	126600	177600	105.74	167957	138200	121.53	7.00	0	1
201511319989953	31 014 5.072	31014	12/28/2015	1	2	0	14500	147000	161500	100.2	161179	165500	97.39	7.0	0	2
201503289957463	31 002 2.041	31002	4/20/2015	1	2	0	13100	95200	108300	104.58	103558	95000	109.01	7.6	0	4
201407289904317	31 014 29.071	31014	8/11/2014	1	2	0	38500	211700	250200	101.26	247087	235500	104.92	7.9	0	2
201408029909931	31 012 19.162	31012	8/22/2014	1	2	0	17600	109700	127300	102.44	124271	126000	98.63	8.0	0	2
201509139945625	31 012 32.154	31012	9/17/2015	1	2	0	17800	116200	134000	101.44	132092	150000	88.06	8.0	0	2
201511319989948	31 012 19.164	31012	12/28/2015	1	2	0	20600	261000	281600	101.44	277591	302000	91.92	8.0	0	2
201603049953653	31 014 19.164	31014	4/1/2016	1	2	0	24500	116800	141300	97.16	145425	180000	80.79	8.1	0	2
201608129949178	31 008 21.152	31008	8/11/2016	1	2	0	55200	168600	223800	100.54	222597	339000	65.66	9.2	0	5
201408269907179	31 008 32.061	31008	9/24/2014	1	2	0	36500	141800	178300	104.67	170341	172900	98.52	10.3	0	5
201506309980305	31 008 29.061	31008	7/27/2015	1	2	0	56300	142400	198700	103.57	191849	226000	84.89	10.4	0	5
201404299900583	31 008 29.061.1	31008	5/23/2014	1	2	0	58700	229000	287700	104.67	274857	350000	78.53	11.0	0	5
201608169963758	31 008 30.13	31008	9/12/2016	1	2	0	32500	99800	132300	100.54	131589	169500	77.63	11.7	0	5

Charlotte Nagel

From: Sarah Burdette <sburdette@ledgeviewwisconsin.com>
Sent: Tuesday, May 22, 2018 2:53 PM
To: Charlotte Nagel
Subject: FW: Plunging Property Values determined by Wisconsin Department of Revenue Report
Attachments: image002.jpg; Untitled attachment 00544.htm; image003.jpg; Untitled attachment 00547.htm; image004.jpg; Untitled attachment 00550.htm; image005.jpg; Untitled attachment 00553.htm; image006.jpg; Untitled attachment 00556.htm; image007.jpg; Untitled attachment 00559.htm; 11_1_SRA 3 yr grid_LG_CAFO.pdf; Untitled attachment 00562.htm; 2017-81-01 Findings of Fact_Final.pdf; Untitled attachment 00565.htm; Adjustment Calculation.pdf; Untitled attachment 00568.htm; Base Data All CAFOs legal size.pdf; Untitled attachment 00571.htm; Base Data LG CAFOs legal size.pdf; Untitled attachment 00574.htm; Ebert_Locator map.jpeg; Untitled attachment 00577.htm; Kewaunee County CAFO by units.pdf; Untitled attachment 00580.htm; Large CAFO map_Kewaunee.pdf; Untitled attachment 00583.htm; Large CAFO-Satellite View.jpeg; Untitled attachment 00586.htm

Follow Up Flag: Follow up
Flag Status: Flagged

For the files.

Sarah K. Burdette
Administrator
Town of Ledgeview

Ledgeview
Set your sights high

3700 Dickinson Road
De Pere, WI 54115
Phone: 920.336.3360, ext. 108
Mobile: 920-639-6083
sburdette@ledgeviewwisconsin.com www.LedgeviewWisconsin.com

From: Phil Danen [mailto:pjdanen@ledgeviewwisconsin.com]
Sent: Tuesday, May 22, 2018 10:55 AM

To: sburdette@ledgeviewwisconsin.com
Subject: Fwd: Plunging Property Values determined by Wisconsin Department of Revenue Report

Phil Danen
Ledgeview Town Chairman

Sent from my iPad

Begin forwarded message:

From: Kurt Voss <kvoss@ameriluxinternational.com>
Date: May 18, 2018 at 2:55:33 PM CDT
To: "pjdanen@ledgeviewwisconsin.com" <pjdanen@ledgeviewwisconsin.com>
Subject: FW: Plunging Property Values determined by Wisconsin Department of Revenue Report

Phil,

There is some good information contained in these attachments for your information.

Subject: Plunging Property Values determined by Wisconsin Department of Revenue Report

This report was completed in November of 2017. The Determination from the Department of Revenue was that residences within a quarter mile radius of a large CAFO--had home values decrease by 13%. Homeowners within a mile of a CAFO suffered a 8% loss in home value. Articles were published in both the Green Bay Press Gazette and the Wisconsin State Journal on Deb and Scott Kliment's successful challenge of the loss of their home value due to proximity of CAFO.

CAFO's, Concentrated Animal Feeding Operations, threaten human health, may contaminate land, air & water, cause home values to plummet, destroy infrastructure, and have the ability to create serious quality of life issues, [among a myriad of other issues.]

2017 Appeal #2017-81-01
Findings of Fact section D-6

The Subject property is a single family residence with several utility buildings, located on a 14.41 acre parcel in eastern Kewaunee County. The parcel is mostly wooded except for the building sites. The appellant believes the value of the property is negatively impacted by a Concentrated Animal Feeding Operation (CAFO) located directly across the road from the subject. The Wisconsin Department of Natural Resources (DNR) defines a CAFO as "A Wisconsin animal feeding operation with 1,000 animal units or more". The DNR may designate a smaller-scale animal feeding operation (fewer than 1,000 animal units) as a CAFO if it has pollutant discharges to navigable waters or contaminates a well.

The Department of Revenue (DOR) found the appellant presented no definitive evidence to support their opinion of value. The assessor presented a comparable sales grid, but the total value adjustments were extensive, and show that the sales are not reasonably comparable, and cannot be used as a basis to establish value. Appraisals submitted to the BOR by the appellant, which were submitted to DOR by the assessor, ranged in date from 1995 to 2010 – which made them only relevant as historical data.

In the absence of a sale of the subject property and reasonably comparable properties, DOR completed a sales study of all recent (past three years) arms-length residential sales in Kewaunee County townships to test whether the proximity to a CAFO impacts property values and if so, to what extent. Because our study is countywide and each municipality assesses at a different percentage or market value, we equated the assessments of each sale to full value using the applicable municipal aggregate ratio, which allows us to compare assessed values between municipalities. This is a process DOR performs annually to analyze market value changes for purposes of adjusting the Equalized Value. Our study is based on rural sales, and excludes sales from the two villages and two cities in the County. Sales which are located on significant water bodies were not included in the ratio analysis, since waterfront sales typically form a unique marketplace. Residential sales purchased by area farmers were included in the ratio study since they were validated as arm's length transactions by the various municipal assessors.

The equated assessment ratios were graphed using the measured distance of each sale property from a CAFO. The CAFOs included in the study area were: Da-Ran Dairy LLC (0059579), Dairy Dreams LLC (0062057), Deer Run Dairy LLC (0093789), Ebert Dairy Enterprises LLC (formerly Duescher's), Ebert Dairy Enterprises LLC (0062235), El-Na Farms LLC (0063061), Halls Calf Ranch (006503), Heims Hillcrest Dairy LLC (0064131), Kinnard Farms Inc. (0059536), Pagel's Ponderosa LLC (0059536), Rolling Hills Dairy Farm (0062707), Seidl's Mountain View Dairy LLC (0063665), Skyline Blue Acres (0063410), Stahl Bros Dairy LLC (0061999), Stahl Farms (0062332), and Wakker Dairy Farm Inc. (0063673). The result of this study including all Kewaunee County CAFOs suggested the possibility of trends, but overall was inconclusive. See Figure 1 below. Therefore, the results of the study were further segregated by the size of the CAFO.

A more in-depth analysis of the data indicated the size of the CAFO is relevant to market trends. The ratio study was altered to graph the equated assessment ratios to the measured distance from each large CAFO. Large CAFOs (LG CAFOs) were determined to be operations with more than four thousand (4,000) units which included: Kinnard Farms Inc., Pagels Ponderosa Dairy, Dairy Dreams LLC, Ebert Dairy Enterprises LLC, and Wakker Dairy Farm Inc. all located in Kewaunee County; plus Dairyland Farm LLC (two miles west of the Brown/Kewaunee line) located in Brown County. One hundred eighty four (184) sales over the last three years were included in our study.

The sales ratios measure the relationship between the equated (full value) assessment and the sale price. A ratio above 100 indicates a sales price which is less than the equated assessment. A ratio below 100 indicates a sales price which is greater than the equated assessment. Equated sales ratios were taken from the sales ratio analysis blend group of the townships in Kewaunee County. Six groups were used in the analysis. The first mile was divided into three groups, as this would likely encompass the most intense effect from the LG CAFO. The second and third mile from a LG CAFO were groups and the last group included parcels greater than 2.95 miles from a LG CAFO. Distribution of these sales are listed below:

- 4% (7 sales) were < .30 miles from a LG CAFO
- 6% (11 sales) were .30 to .55 miles from a LG CAFO
- 4% (8 sales) were .55 to .95 miles from a LG CAFO
- 4% (7 sales) were .95 to 1.95 miles from a LG CAFO
- 17% (32 sales) were 1.95 to 2.95 miles from a LG CAFO
- 69% (119 sales) were > 2.95 miles from a LG CAFO

The analysis included measurement and study of each group in light of their mean, aggregate and median sales ratios. Comparison of the mean ratios (Figure 2) for the six groups showed a significantly higher ratio for the group less than .30 miles from a LG CAFO. Comparison of the aggregate ratios (Figure 3) for the six groups showed a significantly higher ratio for both the group less than .30 miles from a LG CAFO and the group from .55 to .95 miles from a LG CAFO. The aggregate ratio (Figure 4) for the group from .30 to .55 miles from a LG CAFO was influenced by several high dollar sales which is the weakness of the aggregate ratio measure where the group is relatively small. Comparison of the median ratios showed significantly higher ratios for the three groups .95 miles and less from a LG CAFO versus the three groups where parcels were one mile and further from a LG CAFO. All three measures of central tendency point to parcels closer to LG CAFOs having higher equated assessment to sale price ratios. The median ratio measures were found to be the most statistically sound measure for the study.

Based on analysis of the sales, we found that there was no identifiable impact to residences beyond one mile from the CAFO. We also found that properties within about ¼ mile were impacted the most. Additionally, sales between ¼ and 1 mile from the CAFOs were adversely impacted, but to a lesser degree. (Figure 5). The median ratio study results were applied to these three groups of sales looking at the ratio relationship to the distance from the nearest LG CAFO:

- >.95 miles Median Ratio 95.40%
- .30 to .95 miles Median Ratio 102.75%
- <.30 miles Median Ratio 107.42%

[(>.95 miles ratio minus <.30 miles ratio)/>.95 miles ratio] * 100 = percent change

[(95.40 – 107.42)/95.40] * 100 = - 13%

[(>.95 miles ratio minus .30 to .95 miles ratio)/>.95 miles ratio] * 100 = percent change

[(95.40 – 102.75)/95.40] * 100 = - 8%

As the subject parcel in this appeal is less than .30 miles from a LG CAFO, the results of the study show that an economic obsolescence factor of minus 13% should be applied to the unadjusted total local assessment. The reduction should be applied equally to the land and improvement assessments.

DOR considers this study to be appropriately extensive for application across Kewaunee County only. While the trends may be useful to consider in nearby, similar counties, it is not appropriate to apply beyond the immediate area. Kewaunee County is somewhat unique in that there are a significant number of LG CAFO's from which to gather data.

Summary of Findings:

- The value of property located more than one mile away from a CAFO is not impacted
- The value of property located within any distance from a CAFO that is smaller than 4,000 units is not impacted
- The value of property located within one quarter mile of a large CAFO (greater than 4,000 units) is reduced by 13%
- The value of property located between ¼ mile and one mile of a large CAFO is reduced by 8%

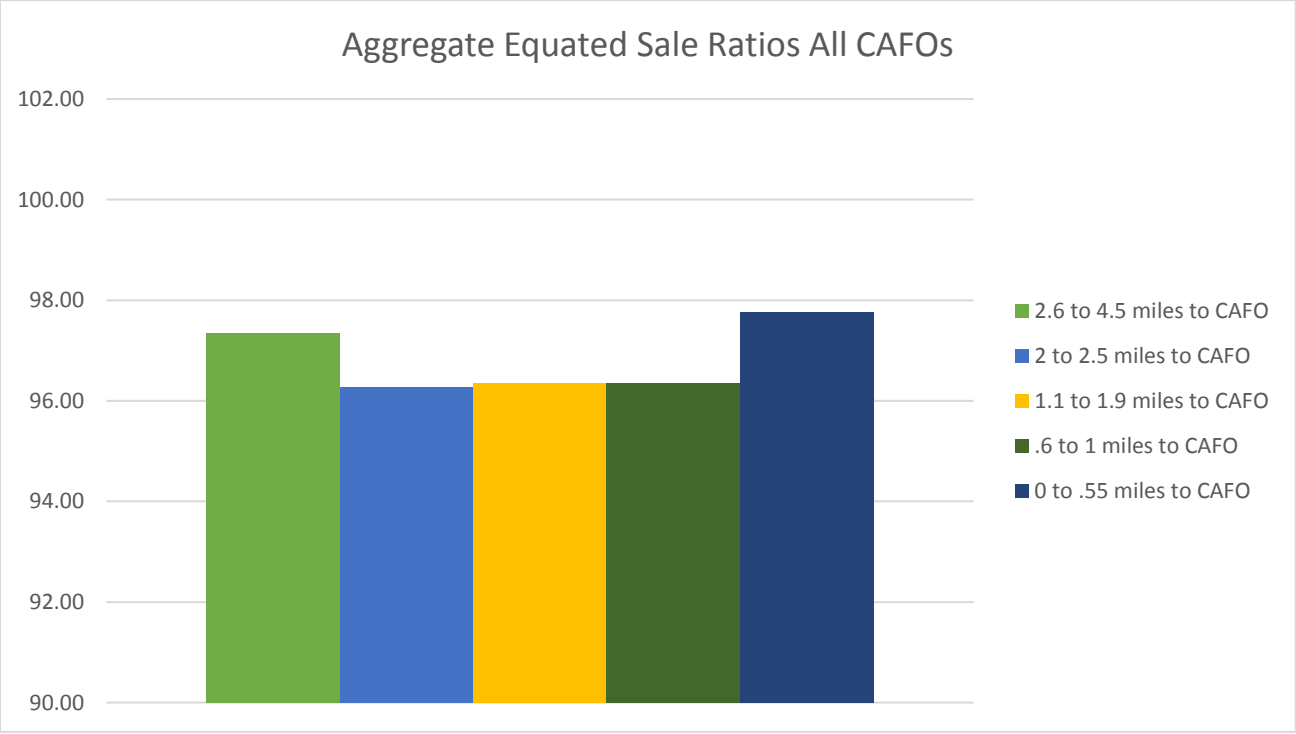


Figure 1

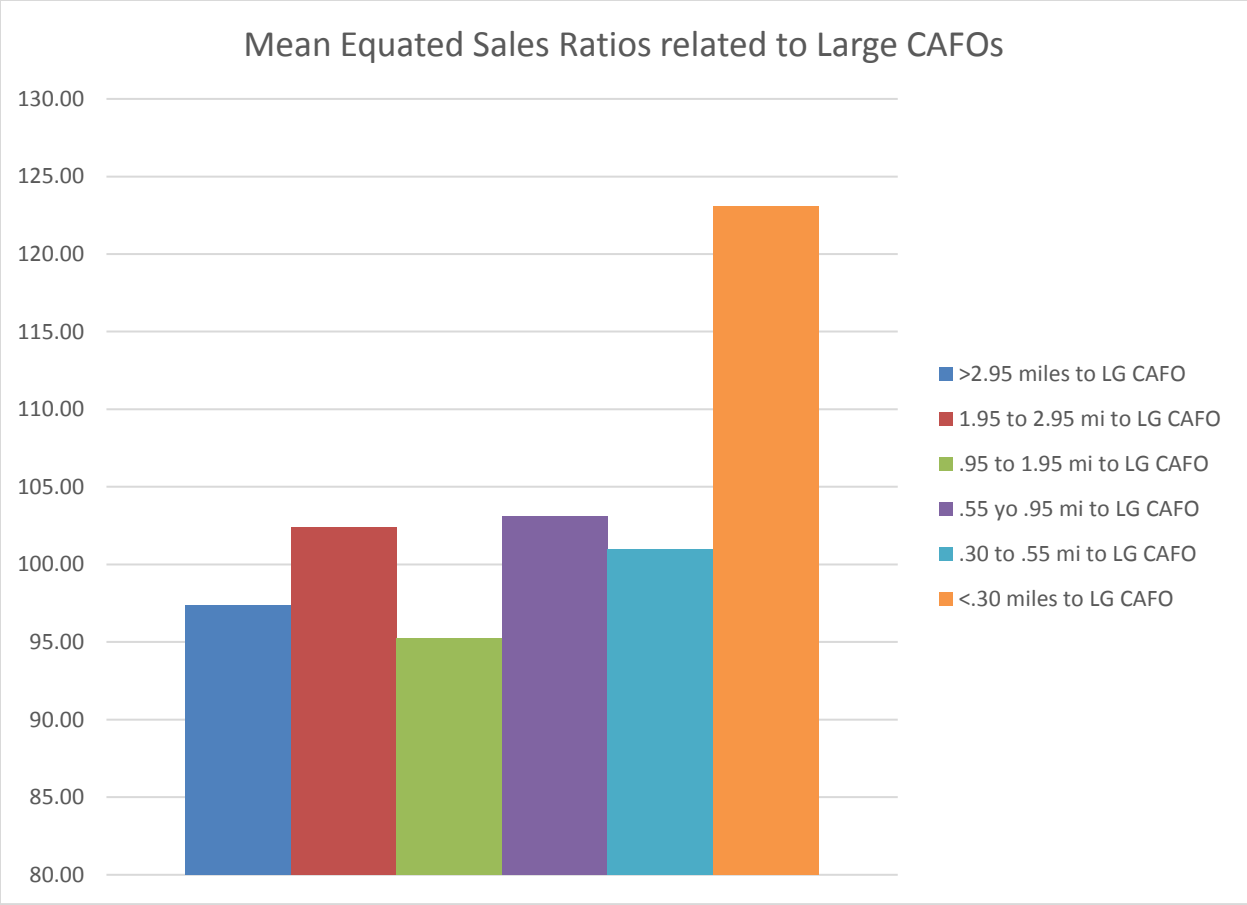

Mean Equated Sales Ratios related to Large CAFOs
130.00
125.00
120.00
115.00
110.00
105.00
100.00
95.00
90.00
85.00
80.00
>2.95 miles to LG CAFO
1.95 to 2.95 mi to LG CAFO
.95 to 1.95 mi to LG CAFO
.55 yo .95 mi to LG CAFO
.30 to .55 mi to LG CAFO
<.30 miles to LG CAFO

Figure 2

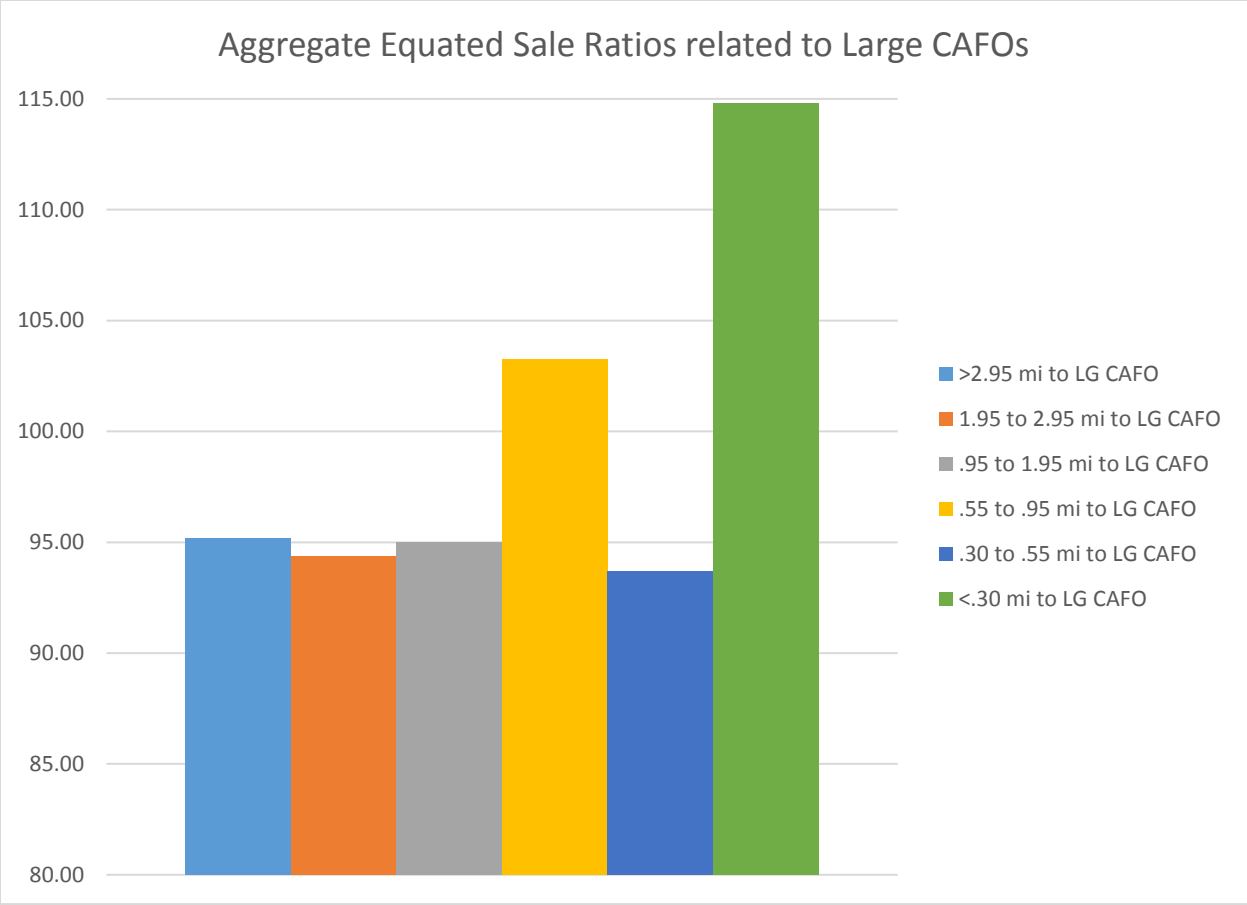

Aggregate Equated Sale Ratios related to Large CAFOs
115.00
110.00
105.00
100.00
95.00
90.00
85.00
80.00
>2.95 mi to LG CAFO
1.95 to 2.95 mi to LG CAFO
.95 to 1.95 mi to LG CAFO
.55 to .95 mi to LG CAFO
.30 to .55 mi to LG CAFO
<.30 mi to LG CAFO

Figure 3

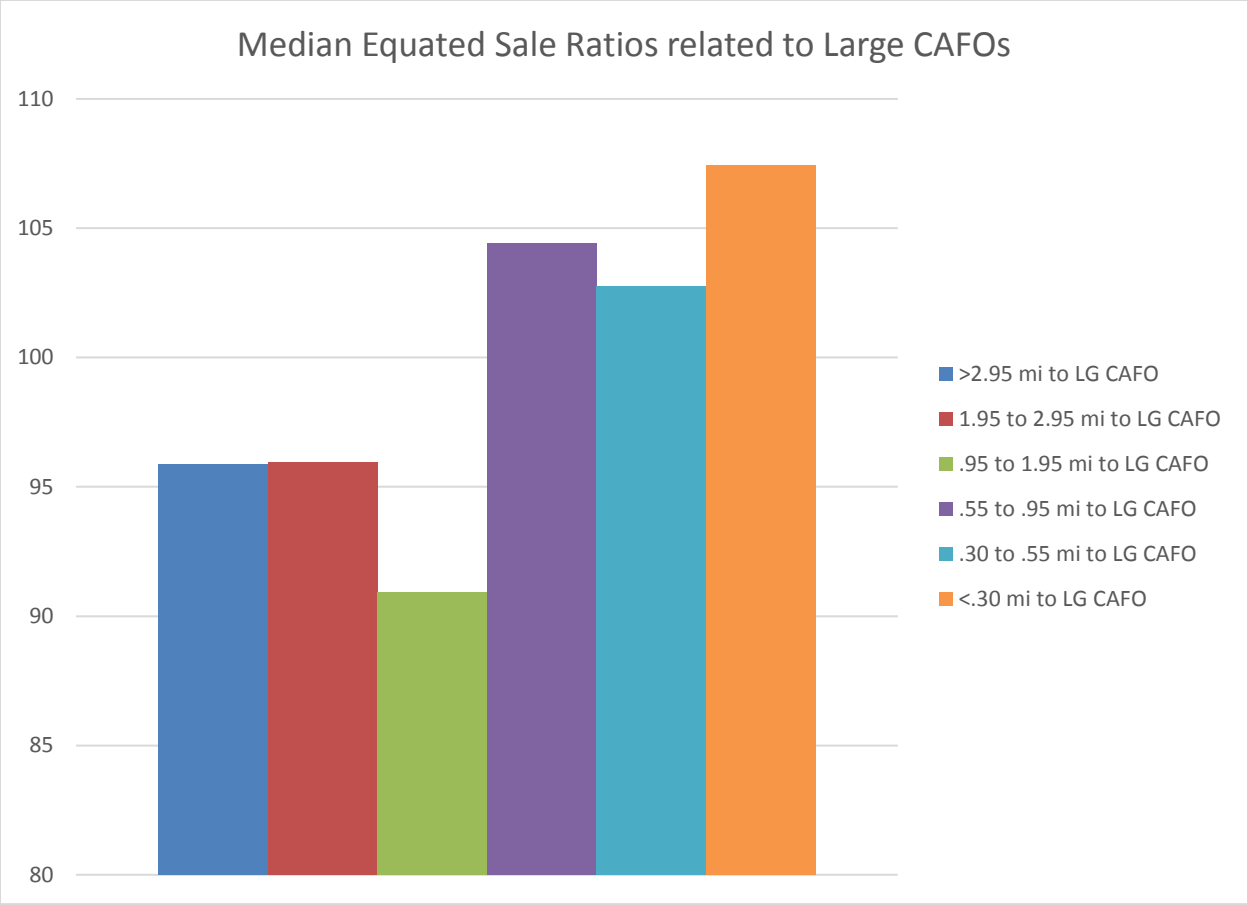

Median Equated Sale Ratios related to Large CAFOs
110
105
100
95
90
85
80
>2.95 mi to LG CAFO
1.95 to 2.95 mi to LG CAFO
.95 to 1.95 mi to LG CAFO
.55 to .95 mi to LG CAFO
.30 to .55 mi to LG CAFO
<.30 mi to LG CAFO

Figure 4

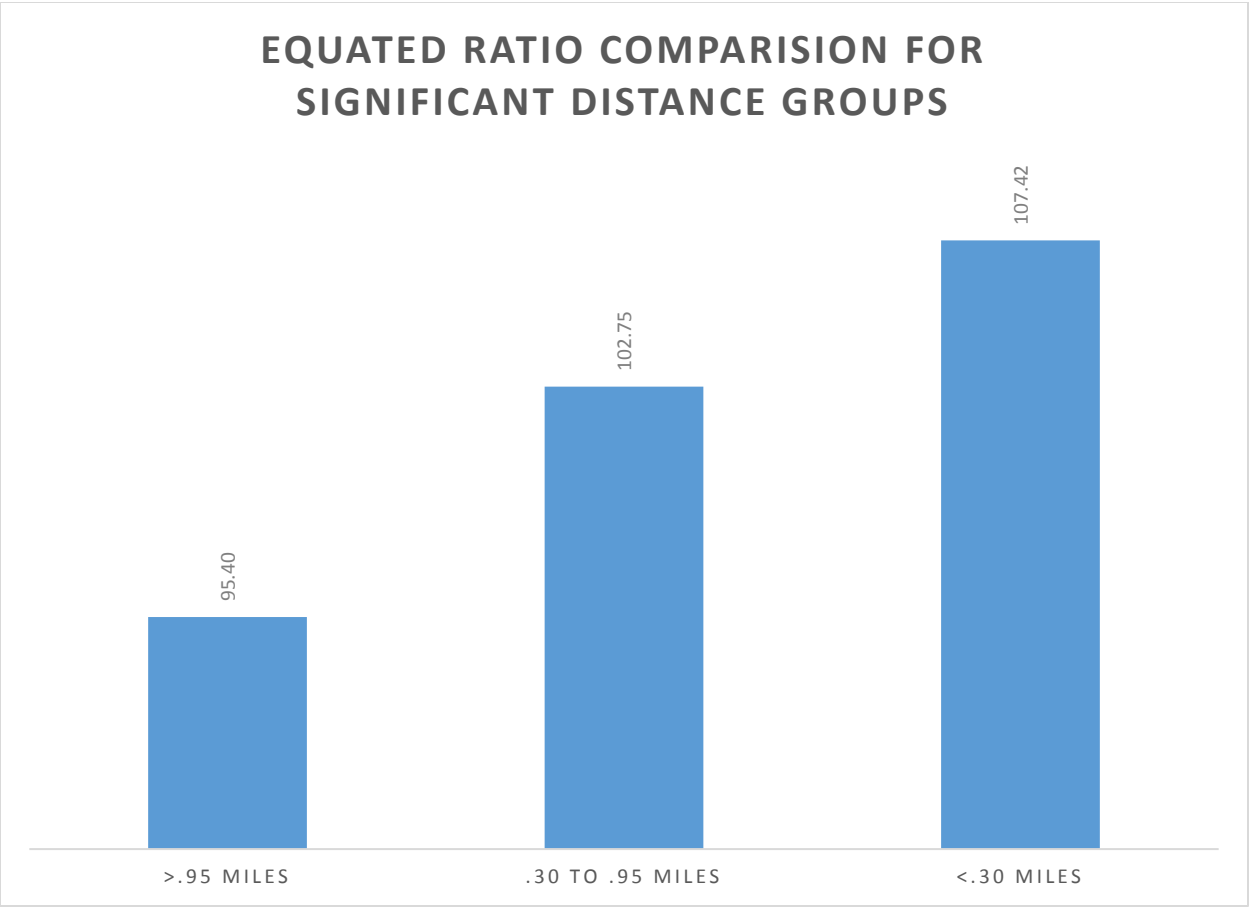

EQUATED RATIO COMPARISION FOR SIGNIFICANT DISTANCE GROUPS
95.40
102.75
107.42
>.95 MILES
.30 TO .95 MILES
<.30 MILES

Figure 5

Percent Change for Parcels Less Than One Mile from Large CAFO

- >.95 miles Median Ratio 95.40%
- .30 to .95 miles Median Ratio 102.75%
- <.30 miles Median Ratio 107.42%

[(>.95 miles ratio minus <.30 miles ratio)/>.95 miles ratio] * 100 = percent change

[(95.40 – 107.42)/95.40] * 100 = - 13%

[(>.95 miles ratio minus .30 to .95 miles ratio)/>.95 miles ratio] * 100 = percent change

[(95.40 – 102.75)/95.40] * 100 = - 8%

Base Data All CAFOs

RETR Number	Parcel Number	Municipality	Sale Date	Cla	Vacant or Improve	Water Frtg Cod	Land Assessmer	Improvement Assessment	Total Local Assessme	Equating Ratio	Equated Local Assessment	Price	Equated Sales Ratio	Miles from nearest CAFO	Purchaser
201611129953974	31 002 8.08	31002	5/23/2016	1	2	0	14200	126000	140200	104.67	133941	125000	107.15	0.00	Kinnard Farms Inc.
201609119919657	31 002 1ASR 8	31002	6/30/2016	1	2	0	10000	58500	68500	104.67	65442	40000	163.61	0.00	Kinnard Farms Inc.
201606149907251	31 002 21.125	31002	11/6/2015	1	2	0	25500	92900	118400	107.98	109647	65000	168.69	0.00	Nemetz
201605039904248	31 002 1ASR 19	31002	10/21/2016	1	2	0	14000	78200	92200	104.67	88084	82000	107.42	0.10	Dairy Dreams LLC
201408059931523	31 002 6.GL3.03 R26E	31002	5/28/2015	1	2	0	16600	102100	118700	100.2	118464	132000	89.75	0.20	Bertrand
201611149959847	31 002 19.161	31002	5/18/2015	1	2	0	14800	95900	110700	107.98	102516	107500	95.36	0.20	Joly
201608299992795	31 002 21103	31002	6/12/2015	1	2	0	17500	134500	152000	101.82	149285	147500	101.21	0.20	Paplham Welding & Fabricating
201409109981173	31 002 5.027	31002	7/19/2016	1	2	0	37900	78900	116800	100.85	115818	149700	77.37	0.25	Haen
201511049942794	31 002 29.105	31002	4/22/2016	1	2	0	44400	135200	179600	92.63	193888	232000	83.57	0.25	Vande Walle
201503289957463	31 002 2.041	31002	8/18/2015	1	2	0	23500	253000	276500	107.98	256058	300000	85.35	0.30	Cook
201401049947567	31 002 5.028	31002	9/2/2016	1	2	0	13100	106500	119600	104.67	114261	126000	90.68	0.30	Alberts
201409249924423	31 002 20.122	31002	5/27/2015	1	2	0	14400	57000	71400	92.53	77162	60000	128.60	0.30	Pagel's Pond. Dairy LLC
201604169957310	31 002 22.167	31002	12/15/2015	1	2	0	39300	157100	196400	107.98	181880	255000	71.33	0.35	Nowak
201611059939452	31 002 22.163	31002	3/18/2016	1	2	0	10000	98400	108400	100.85	107488	101500	105.90	0.35	Neubauer
201504149932161	31 002 33.165	31002	4/11/2014	1	2	0	10000	98400	108400	100.87	107470	95000	113.13	0.35	Grange
201605039904710	31 004 31.162	31004	8/13/2014	1	2	0	37200	102800	140000	101.26	138258	150000	92.17	0.40	Prusik
201609129922879	31 004 5.063	31004	7/17/2015	1	2	0	8000	72800	80800	101.82	79357	78000	101.74	0.40	Coggins
201504279985926	31 004 29.082	31004	4/8/2016	1	2	0	26500	130500	157000	105.74	148476	144500	102.75	0.40	Jergenson
201403249912828	31 004 31.162	31004	1/22/2014	1	1	1	56600	0	56600	100.87	56114	55500	101.11	0.50	McDonald
201408199978312	31 004 9.023	31004	10/1/2014	1	2	0	13000	151400	164400	108.25	151870	142500	106.58	0.50	Engel
201406039986276	31 004 11.162	31004	11/18/2016	1	2	0	11800	126600	138400	103.03	134330	100000	134.33	0.50	Robinson
201600119907006	31 004 32.113	31004	2/26/2016	1	2	0	13000	36000	49000	104.67	46813	49000	95.54	0.55	Sargent
201407229993813	31 004 5.012	31004	8/26/2016	1	2	0	14500	92100	106600	98.51	108208	130000	83.24	0.60	Salentine
201606149906857	31 004 32.114	31004	9/7/2016	1	2	0	36300	95700	132000	100.54	131291	132000	99.46	0.70	Schram

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	PricePRICE	Equated Sales Ratio	Miles from nearest CAFO	Purchaser
201610149998001	31 004 6.GL1.6 R25E	31004	4/30/2014	1	2	3	18400	177500	195900	100.87	194220	171000	113.58	0.70	Hoppe
201402289952726	31 004 4.153	31004	6/20/2016	1	2	0	51000	126600	177600	105.74	167957	138200	121.53	0.75	Abts
201610079983434	31 004 32.104	31004	5/15/2015	1	2	0	19500	150300	169800	107.98	157247	175000	89.86	0.80	Kinnard (Brian)
201507149924260	31 004 17.165	31004	7/18/2016	1	2	0	24500	196300	220800	100.85	218943	223000	98.18	0.80	Moore
201409039944983	31 004 1.112	31004	5/4/2015	1	1	0	30000	0	30000	101.44	29573	30000	98.58	0.80	Gloshen
201511229975335	31 004 32.1120	31004	10/20/2016	1	2	1	140000	11400	151400	103.03	146948	148000	99.29	0.80	Grabowski
201406189916610	31 004 22.063	31004	7/1/2014	1	2	0	20500	275500	296000	106.93	276818	248500	111.40	0.80	Kusniesz
201602149911048	31 004 29.091	31004	10/26/2015	1	2	0	22600	90200	112800	101.44	111194	116000	95.86	0.85	Nemetz
201610219913961	31 004 12.062	31004	2/1/2016	1	2	0	23000	82200	105200	105.74	99488	89900	110.67	0.85	Peot
201608269982146	31 004 31.153	31004	9/17/2015	1	2	0	17800	116200	134000	101.44	132092	150000	88.06	0.90	Kraynik
201609129922490	31 006 18.11	31006	7/15/2014	1	2	1	10400	50500	60900	100.87	60378	61800	97.70	0.90	Huber
201603269902969	31 006 33.164	31006	8/22/2014	1	2	0	17600	109700	127300	102.44	124271	126000	98.63	0.90	Peot
201503069991821	31 006 WP 10	31006	12/28/2015	1	2	0	20600	261000	281600	101.44	277591	302000	91.92	1.0	Ledvina
201507109909335	31 006 17.034	31006	2/10/2014	1	2	0	17000	109800	126800	104.67	121140	124900	96.99	1.0	Sinkula
201408129954227	31 006 20.069	31006	9/24/2014	1	2	0	36500	141800	178300	104.67	170341	172900	98.52	1.0	Jensen
201610289923561	31 006 17.141.10	31006	9/22/2015	1	2	1	52600	143300	195900	101.82	192401	187000	102.89	1.0	Malingowski
201611129953971	31 006 WP 6	31006	6/10/2016	1	2	0	28000	120800	148800	105.74	140721	179900	78.22	1.1	DeJardin
201604029919404	31 006 9.141	31006	5/31/2016	1	2	0	13800	97000	110800	101.53	109130	120000	90.94	1.1	Perry
201600049992167	31 006 30.057	31006	5/22/2014	1	2	0	10500	71200	81700	101.26	80684	85000	94.92	1.1	Drewiske
201609059907248	31 006 17.141.7	31006	12/28/2015	1	2	0	14500	147000	161500	100.2	161179	165500	97.39	1.1	Jurczykowski
201511079945945	31 006 30.052	31006	4/1/2015	1	2	0	20700	69600	90300	92.53	97587	85000	114.81	1.1	Baudhuin's Grandview Dairy LLC
201503179916304	31 006 17.042	31006	6/24/2016	1	2	0	28300	253700	282000	97.16	290232	320000	90.7	1.2	Winnekens
201504069900262	31 006 29.011	31006	7/28/2014	1	2	0	23400	82900	106300	106.93	99411	75000	132.55	1.2	Bovine Enterprises LLC
201404289996344	31 006 17.141.7	31006	6/20/2014	1	2	0	26800	161300	188100	101.26	185760	188000	98.81	1.3	Engebose

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	PricePRICE	Equated Sales Ratio	Miles from nearest CAFO	Purchaser
201608029932622	31 006 17.121.8	31006	5/16/2014	1	2	0	60900	192100	253000	102.44	246981	240000	102.91	1.3	Laurent
201507319957445	31 006 25.014	31006	9/24/2014	1	2	0	28900	288500	317400	104.67	303232	290000	104.56	1.3	Wilde
201604319992177	31 006 8.159	31006	1/29/2016	1	2	0	23500	17900	41400	97.16	42608	40000	106.52	1.3	Paplham Welding & Fabricating
201503109900624	31 006 28.017	31006	1/27/2015	1	2	0	27500	94100	121600	107.95	112645	102000	110.44	1.3	Shallow
201507129915378	31 006 19.014	31006	3/6/2015	1	2	1	19100	72400	91500	101.82	89866	72000	124.81	1.3	Norton
201505259923018	31 006 28.132	31006	2/7/2014	1	2	0	20000	54300	74300	93.41	79545	50000	159.09	1.3	Gruetzmacher
201401139964919	31 006 9.151	31006	7/31/2015	1	1	0	22600	0	22600	92.53	24424	27700	88.17	1.4	Dorner
201608129949178	31 008 21.152	31008	11/21/2016	1	2	0	21100	236900	258000	92.63	278526	314900	88.45	1.4	Werth
201608169963758	31 008 30.13	31008	4/27/2016	1	2	0	51200	210200	261400	92.63	282196	274000	102.99	1.4	Etienne
201404299900583	31 008 29.061.1	31008	9/12/2016	1	2	0	32500	99800	132300	100.54	131589	169500	77.63	1.5	Fischer
201506309980305	31 008 29.061	31008	9/29/2014	1	2	0	19500	129700	149200	100.66	148224	167000	88.76	1.5	Obry
201611099952799	31 008 2.1115	31008	9/29/2016	1	2	0	21000	139000	160000	92.63	172729	190000	90.91	1.5	Laak
201606119996869	31 008 2.1113	31008	6/27/2014	1	2	0	16500	142000	158500	108.25	146420	158500	92.38	1.5	Seiler
201506279965341	31 008 11.068	31008	5/15/2014	1	2	0	21000	139000	160000	93.41	171294	178000	96.23	1.5	Kratz
201508249907204	31 008 11.072	31008	9/1/2016	1	2	0	17600	27700	45300	104.67	43278	36000	120.22	1.5	Paral
201401179971133	31 008 13.162	31008	10/21/2015	1	2	0	21700	123000	144700	92.53	156377	172500	90.65	1.6	Diehm
201408269907179	31 008 32.061	31008	7/8/2016	1	2	0	39500	183400	222900	105.74	210798	215000	98.05	1.6	Cherney
201609139926527	31 008 SHP 13	31008	8/24/2016	1	2	0	18400	82900	101300	92.63	109359	110000	99.42	1.6	Roethle
201611169965708	31 008 2.114	31008	5/16/2016	1	1	0	31900	0	31900	98.51	32381	49900	64.89	1.7	Detampel
201408269907194	31 008 25.032	31008	6/22/2015	1	1	0	31900	0	31900	101.44	31446	47500	66.20	1.7	Process
201605069909240	31 008 10.041	31008	3/30/2016	1	2	1	34000	157000	191000	100.85	189393	210000	90.19	1.7	Baird
201404149965180	31 008 10.014	31008	11/30/2015	1	2	0	21800	145400	167200	92.53	180693	195000	92.66	1.7	Remiker
201511189968358	31 010 19.012	31010	4/15/2015	1	2	0	18700	141500	160200	92.53	173128	183000	94.61	1.7	Van Ess
201508249907495	31 010 29.071	31010	6/20/2014	1	2	0	11600	77700	89300	100.66	88716	110000	80.65	1.8	Riemer

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	PricePRICE	Equated Sales Ratio	Miles from nearest CAFO	Purchaser
201506159911609	31 010 29.043	31010	2/13/2015	1	2	0	13100	70500	83600	99.62	83921	85000	98.73	1.8	Koudelka
201608069936178	31 010 9.072	31010	11/14/2014	1	2	0	14500	127800	142300	102.44	138914	140000	99.22	1.8	Zeman
201504209959315	31 010 4.131	31010	7/29/2015	1	2	0	3200	63500	66700	106.12	62853	63000	99.77	1.8	Kinjerski
201604259983089	31 010 20.1613	31010	8/28/2015	1	2	0	17000	145600	162600	92.53	175722	172500	101.87	1.8	Rohr
201604259983130	31 010 19.153	31010	7/24/2014	1	2	0	13200	23700	36900	106.93	34509	18000	191.72	1.9	Frankowski
201609289961951	31 010 4.133	31010	5/23/2014	1	2	0	58700	229000	287700	104.67	274857	350000	78.53	2.0	Wotachek
201406219919304	31 010 17.108	31010	9/11/2014	1	1	0	18400	0	18400	93.41	19699	22300	88.34	2.0	Wisnicky
201609179931433	31 010 34.114	31010	8/13/2014	1	2	0	23500	54000	77500	101.26	76536	85000	90.04	2.0	Rodrian
201407049952170	31 010 22.121	31010	7/17/2015	1	2	0	4300	59200	63500	103.57	61310	68000	90.16	2.0	Reckelberg
201605209943585	31 010 15.143	31010	4/29/2016	1	2	0	31800	152900	184700	92.63	199394	220000	90.63	2.0	Kinnard (Collin)
201606119996678	31 010 19.124	31010	9/18/2015	1	2	0	17000	105800	122800	103.57	118566	130000	91.20	2.0	Lensmire
201510129905607	31 010 3.11	31010	9/26/2014	1	2	0	17500	110400	127900	102.44	124857	135000	92.49	2.0	Robertson
201407189983232	31 010 23.042	31010	6/30/2015	1	2	0	21200	131700	152900	101.44	150723	160000	94.20	2.0	Figlinski
201604189966285	31 012 4.0412	31012	5/1/2015	1	2	0	17000	117400	134400	92.53	145246	153000	94.93	2.0	Cherney
201505249915741	31 012 4.0412	31012	11/11/2015	1	2	0	46700	276600	323300	104.58	309144	300000	103.05	2.0	Petermann
201609049902957	31 012 10.164	31012	4/11/2014	1	2	0	15600	125300	140900	102.44	137548	125000	110.04	2.0	Roeser
201607109974240	31 012 25.0410	31012	3/11/2016	1	2	0	12900	95900	108800	103.03	105601	90000	117.33	2.0	Miller
201608159959475	31 012 28.132	31012	3/10/2016	1	2	0	16600	98800	115400	104.67	110248	69100	159.55	2.0	Brice-Georgel
201509089938094	31 012 24.123	31012	7/27/2015	1	2	0	56300	142400	198700	103.57	191849	226000	84.89	2.1	Denor
201509139945625	31 012 32.154	31012	7/7/2016	1	2	0	7100	80000	87100	100.54	86632	96900	89.40	2.1	Seibert
201610039976915	31 012 25.013	31012	7/30/2015	1	2	0	17000	62500	79500	92.53	85916	69000	124.52	2.1	Anderson Const. LLC
201604139955425	31 012 13.0611	31012	6/9/2014	1	2	1	93900	143600	237500	100.87	235463	255000	92.34	2.2	Hammerling
201606069986411	31 012 14.044	31012	12/12/2016	1	2	0	9700	140000	149700	100.54	148895	147892	100.68	2.2	Kropp
201601089951385	31 012 25.017	31012	11/27/2015	1	2	0	25500	149700	175200	99.62	175872	166500	105.63	2.2	Horst

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	PricePRICE	Equated Sales Ratio	Miles from nearest CAFO	Purchaser
201610089986581	31 012 10.133.1	31012	4/1/2015	1	2	0	9800	12900	22700	104.58	21706	14000	155.04	2.2	Jorgenson
201606089992887	31 012 13.068	31012	3/24/2015	1	2	0	28500	133800	162300	100.20	161978	160000	101.24	2.3	Bergwin
201511319989948	31 012 19.164	31012	5/31/2016	1	2	0	18500	63300	81800	100.54	81360	65000	125.17	2.3	Leschensky
201408309918484	31 012 17.153	31012	8/14/2015	1	2	0	28500	150200	178700	100.20	178345	133500	133.59	2.3	Dworak
201506029959321	31 012 17.123	31012	12/21/2015	1	2	1	91200	189800	281000	101.82	275981	320000	86.24	2.4	Storm
201509309981870	31 012 33.122	31012	12/29/2016	1	2	1	81100	63300	144400	100.85	143185	165000	86.78	2.4	Coleman
201403159989840	31 012 ZS 6	31012	8/11/2016	1	2	0	55200	168600	223800	100.54	222597	339000	65.66	2.5	Kownig
201504189948996	31 012 4.048	31012	6/30/2014	1	2	0	41000	282000	323000	108.05	298925	400000	74.73	2.5	Frisaue
201408029909931	31 012 19.162	31012	12/7/2016	1	2	0	7800	100000	107800	100.54	107221	121500	88.25	2.5	Falat
201409289935908	31 012 10.134	31012	10/22/2014	1	2	1	100000	97900	197900	100.87	196202	205000	95.71	2.5	Simons
201410249917405	31 012 26.152	31012	5/8/2015	1	2	0	10900	139400	150300	99.62	150876	118500	127.32	2.5	Neary
201407279901728	31 012 25050	31012	12/14/2015	1	2	0	36600	92800	129400	100.20	129143	85000	151.93	2.5	Christoph
201405029906170	31 012 16.166	31012	7/14/2016	1	2	0	36600	92800	129400	97.16	133177	85000	156.68	2.5	Vanderkelen
201610039976702	31 012 25.112	31012	5/2/2014	1	2	0	7500	61500	69000	104.67	65920	35000	188.34	2.5	Lemke
201600149913628	31 012 ZS 20	31012	1/21/2016	1	2	0	19600	39300	58900	101.53	58012	75000	77.35	2.6	Sinay
201403219902249	31 012 19.053	31012	7/22/2015	1	2	1	61200	147500	208700	101.82	204973	210000	97.61	2.6	Shorter
201407199984849	31 012 25.046	31012	6/8/2016	1	2	1	171000	170100	341100	100.85	338231	342000	98.90	2.6	Spence
201605069909285	31 014 23.162	31014	9/5/2014	1	2	0	33500	69500	103000	108.05	95323	95000	100.34	2.7	Holochwost
201603049953653	31 014 19.164	31014	7/10/2015	1	2	0	12800	102700	115500	99.62	115943	108500	106.86	2.7	Kuehl
201505019906306	31 014 23.103	31014	12/1/2016	1	2	0	11700	75000	86700	100.85	85971	76500	112.38	2.7	Swanson
201407149974884	31 014 15.021	31014	12/22/2016	1	2	0	23400	132500	155900	105.74	147435	177500	83.06	2.8	Bley
201606059981369	31 014 14.101	31014	4/2/2015	1	2	0	45000	203700	248700	92.53	268770	309900	86.73	2.8	Kuehl
201407149974889	31 014 26.103	31014	2/29/2016	1	2	0	27200	114800	142000	101.53	139860	160000	87.41	2.8	Hau
201405209946171	31 014 15.152	31014	10/5/2016	1	2	0	38600	158800	197400	92.63	213104	240000	88.79	2.8	Havel

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	PricePRICE	Equated Sales Ratio	Miles from nearest CAFO	Purchaser
201511319989953	31 014 5.072	31014	9/30/2016	1	2	0	35000	122500	157500	101.49	155185	160000	96.99	2.8	Berceau
201405259958571	31 014 15.153	31014	4/14/2014	1	2	0	20500	145400	165900	102.44	161953	165000	98.15	2.8	Agamaite
201502309952881	31 014 10.032	31014	1/8/2016	1	2	0	25000	159300	184300	98.51	187081	177000	105.70	2.8	Murphy
201407289904317	31 014 29.071	31014	6/2/2014	1	1	1	108300	0	108300	100.87	107371	100000	107.37	2.8	Konz
201601019940315	31 014 21.123	31014	5/21/2015	1	2	0	7100	40900	48000	106.12	45231	60000	75.39	3.0	Ruatti
201611299992245	31 014 35.131	31014	6/17/2016	1	2	0	33500	69500	103000	105.74	97408	127000	76.70	3.0	Holochwost
201405039908439	31 014 20.062	31014	4/11/2014	1	2	0	6400	92000	98400	108.25	90901	117600	77.3	3.0	Cook
201507209935022	31 014 6.102	31014	10/10/2016	1	2	0	47900	169700	217600	92.63	234912	295000	79.63	3.0	Magyar
201600149912986	31 014 10.131	31014	4/1/2016	1	2	0	24500	116800	141300	97.16	145425	180000	80.79	3.0	Ledvina
201611289988099	31 014 10.131	31014	7/7/2016	1	2	0	47400	263300	310700	98.51	315388	379000	83.22	3.0	Coad
201508189997195	31 016 17.106	31016	9/30/2015	1	2	0	16900	160500	177400	101.44	174875	202500	86.36	3.0	Pe
201607159983257	31 016 00017 0680	31016	9/12/2014	1	2	0	6400	98400	104800	108.25	96813	110000	88.01	3.0	Mardelle
201608089942815	31 016 31.15	31016	9/22/2016	1	2	0	31600	190200	221800	98.51	225146	254900	88.33	3.0	Warner
201608269982083	31 016 5.123	31016	1/20/2016	1	2	0	30400	294000	324400	98.51	329294	371000	88.76	3.0	Larson
201511289981929	31 016 3.GL 3.6	31016	8/15/2014	1	2	0	18100	143800	161900	100.66	160841	172000	93.51	3.0	Pagel
201700059905694	31 016 3.GL 3.5	31016	12/18/2015	1	2	0	2700	55200	57900	106.12	54560	56000	97.43	3.0	Niemojuski
201608269982581	31 016 31.011	31016	8/21/2014	1	2	0	7100	54000	61100	108.25	56443	57500	98.16	3.0	Brusky
201603189984201	31 016 19.032	31016	12/31/2015	1	2	0	13700	45000	58700	99.62	58925	60000	98.21	3.0	Pagel's Pond. Dairy LLC
201603269902956	31 016 30.041	31016	6/29/2016	1	2	0	5300	96500	101800	103.03	98807	100000	98.81	3.0	Detampel
201501029927931	31 016 5.05 T23N	31016	8/25/2014	1	2	0	38700	260200	298900	102.44	291788	294000	99.25	3.0	Sterns
201405139931737	31 016 9.GL 1.7	31016	2/19/2014	1	2	0	5400	76300	81700	108.25	75473	76000	99.31	3.0	Havlovitz
201409319943864	31 016 16.GL 1.5	31016	10/31/2016	1	2	0	33500	135900	169400	103.03	164419	165000	99.65	3.0	Wilda & Homeyer
201507079902182	31 016 16.GL 2	31016	11/1/2016	1	2	0	20700	248500	269200	98.51	273262	265000	103.12	3.0	Wilcox
201406229921896	31 016 20 066	31016	7/31/2014	1	2	0	31600	146100	177700	102.44	173472	153500	113.01	3.0	Walton

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	PricePRICE	Equated Sales Ratio	Miles from nearest CAFO	Purchaser
201606259931576	31 016 17.129.1	31016	12/21/2015	1	2	0	5900	67400	73300	106.12	69072	60000	115.12	3.0	Buresh
201605309972428	31 016 32.GL 1.5	31016	6/25/2015	1	2	0	54300	170600	224900	107.95	208337	180000	115.74	3.0	Englebert
201400239925923	31 016 16.GL 3.3	31016	1/5/2015	1	2	0	17400	109000	126400	99.62	126885	99000	128.17	3.0	Lemmens
201505169975334	31 016 7.012	31016	3/25/2016	1	1	0	38100	0	38100	105.74	36031	41000	87.88	3.1	Anschutz
201506229947260	31 016 16.GL 3.13	31016	1/14/2016	1	1	0	28900	0	28900	105.74	27331	30000	91.10	3.1	Zla Tohlavek
201508249907217	31 016 17.124	31016	11/12/2015	1	2	0	27000	153100	180100	107.95	166836	172500	96.72	3.1	DeJardin
201602289935889	31 016 16.GL 3.11	31016	12/15/2015	1	2	0	27000	168000	195000	107.95	180639	174000	103.82	3.1	Baierl
201405039910539	31 016 29.GL 1.3	31016	8/11/2014	1	2	0	38500	211700	250200	101.26	247087	235500	104.92	3.1	Kulhanek
201611029936641	31 016 3.GL 1.12	31016	10/2/2014	1	2	0	13200	64300	77500	103.00	75244	65000	115.76	3.1	Charles
201403289922184	31 016 16.GL 3.11	31016	8/27/2015	1	2	0	27000	138300	165300	107.95	153126	173000	88.51	3.2	Damery
201404289996372	31 016 17.126	31016	5/29/2015	1	2	0	30500	207500	238000	99.62	238913	265000	90.16	3.2	Paral
201503209923901	31 016 19.017	31016	10/13/2015	1	2	0	27000	137400	164400	107.95	152292	165000	92.30	3.2	Waldera
201406029982917	31 018 22.133	31018	8/21/2015	1	2	0	185900	234000	419900	107.95	388976	396000	98.23	3.2	Crabill
201605239953490	31 018 16.093	31018	2/14/2014	1	2	1	106400	312600	419000	108.05	387769	385000	100.72	3.2	Vogel Fam. Trust
201606089992641	31 018 33.052	31018	6/5/2014	1	2	0	27000	136800	163800	108.05	151591	149900	101.13	3.2	Hollich
201503069990134	31 018 8.101	31018	11/3/2016	1	2	0	21600	97500	119100	105.74	112633	110000	102.39	3.2	Guilette
201607249907729	31 018 1ASR 26	31018	6/10/2015	1	2	1	106800	83100	189900	107.95	175914	170000	103.48	3.2	Lenss
201407049952367	31 018 1ASR 79	31018	10/20/2014	1	2	2	99100	84700	183800	108.05	170100	160000	106.31	3.2	Sherman
201611299991643	31 018 27.082	31018	8/17/2016	1	2	0	117200	265300	382500	105.74	361732	339900	106.42	3.2	Peters
201602289936464	31 018 8.111	31018	5/8/2015	1	2	0	183400	107100	290500	107.95	269106	249000	108.07	3.2	Lenhard
201508289913082	31 018 BVC 4	31018	6/30/2016	1	2	0	119100	77300	196400	105.74	185736	170000	109.26	3.2	Miller
201506169918282	31 018 1ASR 29.7	31018	12/27/2016	1	2	1	105200	87100	192300	105.74	181859	145000	125.42	3.2	Walczyk
201600199920037	31 018 8.118	31018	9/28/2015	1	2	3	205800	295400	501200	107.95	464288	295000	157.39	3.2	Charles
201510099998525	31 018 BVC 5	31018	8/11/2016	1	2	0	10400	120300	130700	101.53	128730	146500	87.87	3.3	Kustka

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	PricePRICE	Equated Sales Ratio	Miles from nearest CAFO	Purchaser
201505159970904	31 018 1ASR44	31018	12/15/2016	1	2	0	14500	197900	212400	97.16	218600	199900	109.35	3.3	Slaby
201409289935983	31 018 1ASR 132.2	31018	7/11/2014	1	2	0	58400	237600	296000	108.05	273937	240000	114.14	3.3	Kostichka
201611289986125	31 018 1ASR 6	31018	9/19/2014	1	2	0	33200	205100	238300	102.44	232630	235000	98.99	3.4	Seidl
201510179913807	31 018 18.022	31018	7/15/2015	1	2	0	7600	75900	83500	99.62	83820	77000	108.86	3.4	Obry
201606089993051	31 018 30.062	31018	9/23/2016	1	2	0	9100	83000	92100	103.03	89392	120000	74.49	3.5	Conard
201508039967596	31 018 1ASR 134	31018	6/23/2016	1	2	0	93000	204100	297100	105.74	280969	349000	80.51	3.5	Linzmeier/Metzler Trust
201408199978626	31 018 16.093	31018	7/23/2014	1	2	0	108200	41600	149800	108.05	138635	170000	81.55	3.5	Larson
201402059906301	31 018 1ASR 36	31018	9/20/2016	1	2	0	27500	177800	205300	100.85	203573	230000	88.51	3.5	Szydel
201405239949344	31 018 BVC 2	31018	6/26/2015	1	1	1	43800	0	43800	107.95	40574	45000	90.16	3.5	Borak
201610189909619	31 018 1ASR 67	31018	5/15/2015	1	2	0	101100	231000	332100	107.95	307642	329000	93.51	3.5	DeWolfe
201603149977223	31 018 25.012	31018	9/2/2014	1	2	0	74200	322100	396300	108.05	366761	388500	94.40	3.5	Diedric
201505119961412	31 018 3.162	31018	12/15/2016	1	2	0	184600	64900	249500	105.74	235953	248000	95.14	3.5	Restmeester
201505159970777	31 018 DB 22	31018	5/30/2014	1	2	0	14500	206100	220600	101.26	217855	195000	111.72	3.5	Salm
201511189969799	31 018 18.013	31018	3/31/2015	1	1	0	50700	0	50700	107.95	46966	59000	79.60	3.8	Mancheski
201409249927881	31 018 1ASR 114.1	31018	5/28/2015	1	2	0	25700	127100	152800	107.95	141547	137000	103.32	3.8	Jauquet
201608029932235	31 018 1ASR 18	31018	4/15/2016	1	2	0	23200	271900	295100	101.49	290763	242500	119.90	3.9	Massey
201505019906243	31 018 1ASR 46	31018	12/1/2016	1	1	0	33300	0	33300	101.49	32811	26000	126.20	3.9	Benes
201606019976240	31 018 DB 13	31018	6/1/2016	1	2	0	6400	92000	98400	103.03	95507	138000	69.21	4.0	Seidl
201500309923130	31 018 19.162	31018	9/30/2016	1	2	0	28000	123400	151400	98.51	153684	205000	74.97	4.0	Zoppetti
201601229972506	31 018 24.012	31018	8/31/2016	1	2	0	24500	127200	151700	100.85	150424	195000	77.14	4.0	DeGrant
201406149903672	31 018 8.102	31018	9/28/2016	1	2	0	13000	83100	96100	101.49	94688	93500	101.27	4.0	DuQuaine
201506069969249	31 018 17.063	31018	7/18/2014	1	2	0	20900	160900	181800	108.25	167944	144200	116.47	4.0	Williams & Timreck
201607189993256	31 018 31.033	31018	8/31/2016	1	2	0	9000	49200	58200	103.03	56489	41000	137.78	4.0	Hasselman
201700129919664	31 018 1ASR 63	31018	1/30/2015	1	2	0	36400	93700	130100	101.82	127776	140000	91.27	4.1	Holmes

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	PricePRICE	Equated Sales Ratio	Miles from nearest CAFO	Purchaser
201508309919709	31 018 1ASR 146	31018	10/26/2016	1	2	0	24400	111100	135500	101.49	133509	158500	84.23	4.3	Buechner & Miner
201509019922444	31 020 33.071	31020	6/30/2016	1	2	0	15400	114600	130000	101.49	128089	145000	88.34	5.0	Salzsieder
201406229921837	31 020 31GL2.3 R25E	31020	4/15/2016	1	2	0	15900	130000	145900	98.51	148101	167000	88.68	5.0	Stodola
201601169963139	31 020 11.011	31020	6/29/2016	1	2	0	14400	190900	205300	98.51	208397	235000	88.68	5.0	Phillips
201405259958541	31 020 21.12	31020	6/30/2016	1	2	0	14500	140700	155200	98.51	157542	176000	89.51	5.0	Christoph
201602119909047	31 020 12.052	31020	4/22/2016	1	2	0	33500	131300	164800	100.85	163414	179200	91.19	5.0	Pribek
201607169987094	31 020 1.013	31020	11/3/2016	1	2	0	28300	234500	262800	98.51	266765	300000	88.92	5.5	Kratz
201408309919199	31 020 2.062	31020	9/30/2016	1	2	0	13800	76100	89900	101.49	88579	104500	84.76	6.2	Classon
201505019906314	31 020 33.103	31020	5/12/2016	1	2	0	14600	98400	113000	101.49	111339	121900	91.34	6.3	Pinchart
201605019998047	31 020 36.03	31020	4/20/2015	1	2	0	13100	95200	108300	104.58	103558	95000	109.01	7.2	Massart
201407159978396	31 020 33.063	31020	7/28/2014	1	2	1	121900	60300	182200	103.00	176897	190000	93.10	10.0	Pisula
201600059996989	31 020 28.064	31020	8/18/2015	1	1	0	72000	0	72000	99.62	72276	140175	51.56	V	Salentine
201501239958145	31 020 10.142	31020	7/15/2014	1	1	0	17900	0	17900	100.66	17783	32000	55.57	V	Crevcoure
201511079945968	31 020 17.16	31020	9/18/2015	1	1	1	39600	0	39600	101.82	38893	65000	59.84	V	Slapp
201506169917466	31 020 2.132	31020	6/3/2016	1	1	0	33600	0	33600	97.16	34581	57500	60.14	V	Connor
201604029919392	31 020 31GL4.3 R25E	31020	8/5/2016	1	1	2	30000	0	30000	100.85	29748	45000	66.11	V	Neumann
201506169917473	31 020 14143	31020	10/3/2014	1	1	5	63500	0	63500	103.00	61652	59900	102.92	V	Balch
201505249917936	31 020 30GL2.4 R25E	31020	4/28/2016	1	1	1	110000	0	110000	101.53	108342	100000	108.34	V	Romenesko
201500209999295	31 020 32.132	31020	1/31/2014	1	1	5	58900	0	58900	103.00	57186	50000	114.37	V	Balch

Base Data - Large CAFOs

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	Price	Equated Sales Ratio	Miles from Large CAFO	Purchaser
201606119996678	31 010 19.124	31010	6/30/2016	1	2	0	10000	58500	68500	104.67	65442	40000	163.61	0.0	Kinnard Farms Inc.
201510129905607	31 010 3.11	31010	11/6/2015	1	2	0	25500	92900	118400	107.98	109647	65000	168.69	0.0	Nemetz
201604259983130	31 010 19.153	31010	5/23/2016	1	2	0	14200	126000	140200	104.67	133941	125000	107.15	0.0	Kinnard Farms Inc.
201609289961951	31 010 4.133	31010	10/21/2016	1	2	0	14000	78200	92200	104.67	88084	82000	107.42	0.10	Dairy Dreams LLC
201504209959315	31 010 4.131	31010	5/18/2015	1	2	0	14800	95900	110700	107.98	102516	107500	95.36	0.20	Joly
201702299956046	31 016 5.112	31016	2/17/2017	1	2	0	10500	118800	129300	91.41	139754	120000	117.88	0.2	Parkos
201505169975334	31 016 7.012	31016	6/12/2015	1	2	0	17500	134500	152000	101.82	149285	147500	101.21	0.20	Paplham Welding & Fabricating
201505259923018	31 006 28.132	31006	5/27/2015	1	2	0	14400	57000	71400	92.53	77162	60000	128.60	0.30	Pagel's Pond. Dairy LLC
201608269982083	31 016 5.123	31016	7/19/2016	1	2	0	37900	78900	116800	100.85	115818	149700	77.37	0.30	Haen
201603269902969	31 006 33.164	31006	4/22/2016	1	2	0	44400	135200	179600	92.63	193888	232000	83.57	0.30	Vande Walle
201508249907495	31 010 29.071	31010	8/18/2015	1	2	0	23500	253000	276500	107.98	256058	300000	85.35	0.30	Cook
201506229947260	31 016 16.GL 3.13	31016	7/17/2015	1	2	0	8000	72800	80800	101.82	79357	78000	101.74	0.40	Coggins
201403289922184	31 016 16.GL 3.11	31016	4/11/2014	1	2	0	10000	98400	108400	100.87	107470	95000	113.13	0.40	Grange
201602289935889	31 016 16.GL 3.11	31016	3/18/2016	1	2	0	10000	98400	108400	100.85	107488	101500	105.90	0.40	Neubauer
201603149977223	31 018 25.012	31018	4/8/2016	1	2	0	26500	130500	157000	105.74	148476	144500	102.75	0.40	Jergenson
201610219913961	31 004 12.062	31004	11/18/2016	1	2	0	11800	126600	138400	103.03	134330	100000	134.33	0.50	Robinson

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	Price	Equated Sales Ratio	Miles from Large CAFO	Purchaser
201511189968358	31 010 19.012	31010	12/15/2015	1	2	0	39300	157100	196400	107.98	181880	255000	71.33	0.50	Nowak
201604259983089	31 010 20.1613	31010	2/26/2016	1	2	0	13000	36000	49000	104.67	46813	49000	95.54	0.60	Sargent
201503109900624	31 006 28.017	31006	4/1/2015	1	2	0	20700	69600	90300	92.53	97587	85000	114.81	0.60	Baudhuin's Grandview Dairy LLC
201608069936178	31 010 9.072	31010	9/2/2016	1	2	0	13100	106500	119600	104.67	114261	126000	90.68	0.60	Alberts
201404289996372	31 016 17.126	31016	4/30/2014	1	2	0	18400	177500	195900	100.87	194220	171000	113.58	0.70	Hoppe
201606259931576	31 016 17.129.1	31016	7/18/2016	1	2	0	24500	196300	220800	100.85	218943	223000	98.18	0.75	Moore
201506159911609	31 010 29.043	31010	5/15/2015	1	2	0	19500	150300	169800	107.98	157247	175000	89.86	0.80	Kinnard (Brian)
201601229972506	31 018 24.012	31018	2/1/2016	1	2	0	23000	82200	105200	105.74	99488	89900	110.67	0.85	Peot
201406219919304	31 010 17.108	31010	7/1/2014	1	2	0	20500	275500	296000	106.93	276818	248500	111.40	0.90	Kusniesz
201605019998047	31 020 36.03	31020	5/31/2016	1	2	0	13800	97000	110800	101.53	109130	120000	90.94	1.1	Perry
201605209943585	31 010 15.143	31010	3/10/2016	1	2	0	16600	98800	115400	104.67	110248	69100	159.55	1.5	Brice-Georgel
201406039986276	31 004 11.162	31004	6/27/2014	1	2	0	16500	142000	158500	108.25	146420	158500	92.38	1.5	Seiler
201408309919199	31 020 2.062	31020	9/29/2014	1	2	0	19500	129700	149200	100.66	148224	167000	88.76	1.5	Obry
201406229921837	31 020 31GL2.3 R25E	31020	7/15/2014	1	1	0	17900	0	17900	100.66	17783	32000	55.57	1.7	Crevcoure
201501239958145	31 020 10.142	31020	2/13/2015	1	2	0	13100	70500	83600	99.62	83921	85000	98.73	1.7	Koudelka
201405259958541	31 020 2.112	31020	6/20/2014	1	2	0	11600	77700	89300	100.66	88716	110000	80.65	1.9	Riemer
201504069900262	31 006 29.011	31006	5/1/2015	1	2	0	17000	117400	134400	92.53	145246	153000	94.93	2.0	Cherney
201604029919404	31 006 9.141	31006	4/29/2016	1	2	0	31800	152900	184700	92.63	199394	220000	90.63	2.0	Kinnard (Collin)
201511049942794	31 002 29.105	31002	11/11/2015	1	2	0	46700	276600	323300	104.58	309144	300000	103.05	2.0	Petermann

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	Price	Equated Sales Ratio	Miles from Large CAFO	Purchaser
201407049952170	31 010 22.121	31010	7/28/2014	1	2	0	23400	82900	106300	106.93	99411	75000	132.55	2.2	Bovine Enterprises LLC
201505249917936	31 020 30GL2.4 R25E	31020	5/8/2015	1	2	0	10900	139400	150300	99.62	150876	118500	127.32	2.2	Neary
201603269902956	31 016 30.041	31016	4/22/2016	1	2	0	33500	131300	164800	100.85	163414	179200	91.19	2.2	Pribek
201403219902249	31 012 19.053	31012	4/11/2014	1	2	0	15600	125300	140900	102.44	137548	125000	110.04	2.3	Roeser
201511079945968	31 020 17.16	31020	11/27/2015	1	2	0	25500	149700	175200	99.62	175872	166500	105.63	2.3	Horst
201402289952726	31 004 4.153	31004	2/19/2014	1	2	0	5400	76300	81700	108.25	75473	76000	99.31	2.4	Havlovitz
201600049992167	31 006 30.057	31006	10/21/2015	1	2	0	21700	123000	144700	92.53	156377	172500	90.65	2.4	Diehm
201511079945945	31 006 30.052	31006	11/30/2015	1	2	0	21800	145400	167200	92.53	180693	195000	92.66	2.4	Remiker
201406029982917	31 018 22.133	31018	6/30/2014	1	2	0	41000	282000	323000	108.05	298925	400000	74.73	2.4	Frisaue
201601169963139	31 020 11.011	31020	1/21/2016	1	2	0	19600	39300	58900	101.53	58012	75000	77.35	2.6	Sinay
201506169917466	31 020 2.132	31020	7/10/2015	1	2	0	12800	102700	115500	99.62	115943	108500	106.86	2.6	Kuehl
201611129953971	31 006 WP 6	31006	10/5/2016	1	2	0	38600	158800	197400	92.63	213104	240000	88.79	2.6	Havel
201407279901728	31 012 25.050	31012	8/25/2014	1	2	0	38700	260200	298900	102.44	291788	294000	99.25	2.6	Sterns
201503069991821	31 006 WP 10	31006	4/2/2015	1	2	0	45000	203700	248700	92.53	268770	309900	86.73	2.6	Kuehl
201607109974240	31 012 25.0410	31012	7/7/2016	1	2	0	47400	263300	310700	98.51	315388	379000	83.22	2.6	Coad
201407199984849	31 012 25.046	31012	7/31/2014	1	2	0	31600	146100	177700	102.44	173472	153500	113.01	2.7	Walton
201611149959847	31 002 19.161	31002	9/30/2016	1	2	0	35000	122500	157500	101.49	155185	160000	96.99	2.7	Berceau
201507319957445	31 006 25.014	31006	8/28/2015	1	2	0	17000	145600	162600	92.53	175722	172500	101.87	2.7	Rohr
201407189983232	31 010 23.042	31010	7/24/2014	1	2	0	13200	23700	36900	106.93	34509	18000	191.72	2.8	Frankowski
201609179931433	31 010 34.114	31010	9/1/2016	1	2	0	17600	27700	45300	104.67	43278	36000	120.22	2.8	Paral
201409249924423	31 002 20.122	31002	10/2/2014	1	2	0	13200	64300	77500	103.00	75244	65000	115.76	2.8	Charles
201408199978312	31 004 9.023	31004	9/12/2014	1	2	0	6400	98400	104800	108.25	96813	110000	88.01	2.8	Mardelle

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	Price	Equated Sales Ratio	Miles from Large CAFO	Purchaser
201611299991643	31 018 27.082	31018	12/22/2016	1	2	0	23400	132500	155900	105.74	147435	177500	83.06	2.8	Bley
201610039976915	31 012 25.013	31012	9/22/2016	1	2	0	31600	190200	221800	98.51	225146	254900	88.33	2.8	Warner
201610039976702	31 012 25.112	31012	11/1/2016	1	2	0	20700	248500	269200	98.51	273262	265000	103.12	2.8	Wilcox
201601089951385	31 012 25.017	31012	1/20/2016	1	2	0	30400	294000	324400	98.51	329294	371000	88.76	2.8	Larson
201608269982581	31 016 31.011	31016	9/20/2016	1	2	0	27500	177800	205300	100.85	203573	230000	88.51	2.9	Szydel
201407229993813	31 004 5.012	31004	8/21/2014	1	2	0	7100	54000	61100	108.25	56443	57500	98.16	3.0	Brusky
201600059996989	31 020 28.064	31020	12/31/2015	1	2	0	13700	45000	58700	99.62	58925	60000	98.21	3.0	Pagel's Pond. Dairy LLC
201507209935022	31 014 6.102	31014	8/14/2015	1	2	0	28500	150200	178700	100.20	178345	133500	133.59	3.0	Dworak
201509019922444	31 020 33.071	31020	8/18/2015	1	1	0	72000	0	72000	99.62	72276	140175	51.56	3.0	Salentine
201606149907251	31 002 21.125	31002	6/30/2016	1	2	0	15400	114600	130000	101.49	128089	145000	88.34	3.0	Salzsieder
201407159978396	31 020 33.063	31020	8/15/2014	1	2	0	18100	143800	161900	100.66	160841	172000	93.51	3.0	Pagel
201505019906314	31 020 33.103	31020	5/29/2015	1	2	0	30500	207500	238000	99.62	238913	265000	90.16	3.0	Paral
201408129954227	31 006 20.069	31006	9/11/2014	1	1	0	18400	0	18400	93.41	19699	22300	88.34	3.1	Wisnicky
201500209999295	31 020 32.132	31020	1/5/2015	1	2	0	17400	109000	126400	99.62	126885	99000	128.17	3.1	Lemmens
201403159989840	31 012 ZS 6	31012	4/14/2014	1	2	0	20500	145400	165900	102.44	161953	165000	98.15	3.1	Agamaite
201600149913628	31 012 ZS 20	31012	1/8/2016	1	2	0	25000	159300	184300	98.51	187081	177000	105.70	3.1	Murphy
201509089938094	31 012 24.123	31012	9/30/2015	1	2	0	16900	160500	177400	101.44	174875	202500	86.36	3.1	Pe
201608299992795	31 002 21.103	31002	9/28/2016	1	2	0	13000	83100	96100	101.49	94688	93500	101.27	3.2	DuQuaine
201406189916610	31 004 22.063	31004	7/18/2014	1	2	0	20900	160900	181800	108.25	167944	144200	116.47	3.2	Williams & Timreck
201507129915378	31 006 19.014	31006	7/30/2015	1	2	0	17000	62500	79500	92.53	85916	69000	124.52	3.3	Anderson Const. LLC
201506169917473	31 020 14.143	31020	7/15/2015	1	2	0	7600	75900	83500	99.62	83820	77000	108.86	3.3	Obry
201607169987094	31 020 1.013	31020	8/11/2016	1	2	0	10400	120300	130700	101.53	128730	146500	87.87	3.4	Kustka

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	Price	Equated Sales Ratio	Miles from Large CAFO	Purchaser
201408309918484	31 012 17.153	31012	9/26/2014	1	2	0	17500	110400	127900	102.44	124857	135000	92.49	3.5	Robertson
201410249917405	31 012 26.152	31012	11/14/2014	1	2	0	14500	127800	142300	102.44	138914	140000	99.22	3.5	Zeman
201506029959321	31 012 17.123	31012	6/30/2015	1	2	0	21200	131700	152900	101.44	150723	160000	94.20	3.5	Figlinski
201404289996344	31 006 17.141.7	31006	5/15/2014	1	2	0	21000	139000	160000	93.41	171294	178000	96.23	3.5	Kratz
201503179916304	31 006 17.042	31006	4/15/2015	1	2	0	18700	141500	160200	92.53	173128	183000	94.61	3.5	Van Ess
201609059907248	31 006 17.141.7	31006	9/29/2016	1	2	0	21000	139000	160000	92.63	172729	190000	90.91	3.5	Laak
201610289923561	31 006 17.141.10	31006	11/21/2016	1	2	0	21100	236900	258000	92.63	278526	314900	88.45	3.5	Werth
201507109909335	31 006 17.034	31006	7/31/2015	1	1	0	22600	0	22600	92.53	24424	27700	88.17	3.6	Dorner
201505119961412	31 018 3.162	31018	5/28/2015	1	2	0	25700	127100	152800	107.95	141547	137000	103.32	3.7	Jauquet
201609119919657	31 002 1ASR 8	31002	9/30/2016	1	2	0	13800	76100	89900	101.49	88579	104500	84.76	3.8	Classon
201609129922490	31 006 18.11	31006	10/10/2016	1	2	0	47900	169700	217600	92.63	234912	295000	79.63	3.8	Magyar
201505249915741	31 012 4.0412	31012	6/22/2015	1	1	0	31900	0	31900	101.44	31446	47500	66.20	3.9	Process
201604189966285	31 012 4.0412	31012	5/16/2016	1	1	0	31900	0	31900	98.51	32381	49900	64.89	3.9	Detampel
201605039904248	31 002 1ASR 19	31002	5/12/2016	1	2	0	14600	98400	113000	101.49	111339	121900	91.34	3.9	Pinchart
201608089942815	31 016 31.15	31016	8/31/2016	1	2	0	24500	127200	151700	100.85	150424	195000	77.14	3.9	DeGrant
201507149924260	31 004 17.165	31004	7/29/2015	1	2	0	3200	63500	66700	106.12	62853	63000	99.77	4.0	Kinjerski
201609129922879	31 004 5.063	31004	9/23/2016	1	2	0	9100	83000	92100	103.03	89392	120000	74.49	4.0	Conard
201606089992641	31 018 33.052	31018	6/10/2016	1	2	0	28000	120800	148800	105.74	140721	179900	78.22	4.0	DeJardin
201611059939452	31 002 22.163	31002	12/1/2016	1	1	0	33300	0	33300	101.49	32811	26000	126.20	4.1	Benes
201401139964919	31 006 9.151	31006	2/7/2014	1	2	0	20000	54300	74300	93.41	79545	50000	159.09	4.1	Gruetzmacher
201408199978626	31 018 16.093	31018	9/5/2014	1	2	0	33500	69500	103000	108.05	95323	95000	100.34	4.1	Holochwost

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	Price	Equated Sales Ratio	Miles from Large CAFO	Purchaser
201604169957310	31 002 22.167	31002	4/15/2016	1	2	0	23200	271900	295100	101.49	290763	242500	119.90	4.1	Massey
201604319992177	31 006 8.159	31006	4/27/2016	1	2	0	51200	210200	261400	92.63	282196	274000	102.99	4.1	Etienne
201610089986581	31 012 10.133.1	31012	11/3/2016	1	2	0	28300	234500	262800	98.51	266765	300000	88.92	4.1	Kratz
201405029906170	31 012 16.166	31012	5/16/2014	1	2	0	60900	192100	253000	102.44	246981	240000	102.91	4.2	Laurent
201605239953490	31 018 16.093	31018	6/17/2016	1	2	0	33500	69500	103000	105.74	97408	127000	76.70	4.3	Holochwost
201501029927931	31 016 5.05 T23N	31016	1/30/2015	1	2	0	36400	93700	130100	101.82	127776	140000	91.27	4.3	Holmes
201611129953974	31 002 8.08	31002	10/26/2016	1	2	0	24400	111100	135500	101.49	133509	158500	84.23	4.4	Buechner & Miner
201604139955425	31 012 13.0611	31012	4/15/2016	1	2	0	15900	130000	145900	98.51	148101	167000	88.68	4.5	Stodola
201606089992887	31 012 13.068	31012	6/30/2016	1	2	0	14500	140700	155200	98.51	157542	176000	89.51	4.5	Christoph
201606069986411	31 012 14.044	31012	6/29/2016	1	2	0	14400	190900	205300	98.51	208397	235000	88.68	4.6	Phillips
201409289935908	31 012 10.134	31012	9/19/2014	1	2	0	33200	205100	238300	102.44	232630	235000	98.99	5.0	Seidl
201500309923130	31 018 19.162	31018	1/27/2015	1	2	0	27500	94100	121600	107.95	112645	102000	110.44	5.3	Shallow
201504279985926	31 004 29.082	31004	5/21/2015	1	2	0	7100	40900	48000	106.12	45231	60000	75.39	5.4	Ruatti
201602149911048	31 004 29.091	31004	3/11/2016	1	2	0	12900	95900	108800	103.03	105601	90000	117.33	5.4	Miller
201606089993051	31 018 30.062	31018	7/8/2016	1	2	0	39500	183400	222900	105.74	210798	215000	98.05	5.4	Cherney
201606059981369	31 014 14.101	31014	6/24/2016	1	2	0	28300	253700	282000	97.16	290232	320000	90.7	5.5	Winnekens
201503069990134	31 018 8.101	31018	3/31/2015	1	1	0	50700	0	50700	107.95	46966	59000	79.60	5.6	Mancheski
201403249912828	31 004 31.162	31004	4/11/2014	1	2	0	6400	92000	98400	108.25	90901	117600	77.3	5.6	Cook
201605039904710	31 004 31.162	31004	6/1/2016	1	2	0	6400	92000	98400	103.03	95507	138000	69.21	5.6	Seidl
201510179913807	31 018 18.022	31018	11/12/2015	1	2	0	27000	153100	180100	107.95	166836	172500	96.72	5.6	DeJardin
201511189969799	31 018 18.013	31018	12/15/2015	1	2	0	27000	168000	195000	107.95	180639	174000	103.82	5.6	Baierl
201506069969249	31 018 17.063 & 18.011	31018	6/25/2015	1	2	0	54300	170600	224900	107.95	208337	180000	115.74	5.6	Englebert
201406149903672	31 018 8.102	31018	7/11/2014	1	2	0	58400	237600	296000	108.05	273937	240000	114.14	5.6	Kostichka
201600199920037	31 018 8.118	31018	1/14/2016	1	1	0	28900	0	28900	105.74	27331	30000	91.10	5.8	Zla Tohlavek

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	Price	Equated Sales Ratio	Miles from Large CAFO	Purchaser
201605069909285	31 014 23.162	31014	6/3/2016	1	1	0	33600	0	33600	97.16	34581	57500	60.14	5.8	Connor
201405209946171	31 014 15.152	31014	5/22/2014	1	2	0	10500	71200	81700	101.26	80684	85000	94.92	5.8	Drewiske
201600149912986	31 014 10.131	31014	12/14/2015	1	2	0	36600	92800	129400	100.20	129143	85000	151.93	5.8	Christoph
201611289988099	31 014 10.131	31014	7/14/2016	1	2	0	36600	92800	129400	97.16	133177	85000	156.68	5.8	Vanderkelen
201502309952881	31 014 10.032	31014	3/24/2015	1	2	0	28500	133800	162300	100.20	161978	160000	101.24	5.8	Bergwin
201407149974884	31 014 15.021	31014	8/13/2014	1	2	0	23500	54000	77500	101.26	76536	85000	90.04	6.0	Rodrian
201401179971133	31 008 13.162	31008	2/10/2014	1	2	0	17000	109800	126800	104.67	121140	124900	96.99	6.0	Sinkula
201505019906306	31 014 23.103	31014	5/28/2015	1	2	0	16600	102100	118700	100.2	118464	132000	89.75	6.00	Bertrand
201407149974889	31 014 26.103	31014	8/13/2014	1	2	0	37200	102800	140000	101.26	138258	150000	92.17	6.00	Prusik
201405259958571	31 014 15.153	31014	6/20/2014	1	2	0	26800	161300	188100	101.26	185760	188000	98.81	6.0	Engebose
201405039908439	31 014 20.062	31014	5/30/2014	1	2	0	14500	206100	220600	101.26	217855	195000	111.72	6.0	Salm
201611299992245	31 014 35.131	31014	12/15/2016	1	2	0	14500	197900	212400	97.16	218600	199900	109.35	6.0	Slaby
201601019940315	31 014 21.123	31014	1/29/2016	1	2	0	23500	17900	41400	97.16	42608	40000	106.52	6.2	Paplham Welding & Fabricating
201506169918282	31 018 1ASR 29.7	31018	6/26/2015	1	1	0	43800	0	43800	107.95	40574	45000	90.16	6.2	Borak
201610189909619	31 018 1ASR 67	31018	11/3/2016	1	2	0	21600	97500	119100	105.74	112633	110000	102.39	6.2	Guilette
201609139926527	31 008 SHP 13	31008	9/7/2016	1	2	0	36300	95700	132000	100.54	131291	132000	99.46	6.20	Schram
201405239949344	31 018 BVC 2	31018	6/5/2014	1	2	0	27000	136800	163800	108.05	151591	149900	101.13	6.2	Hollich
201510099998525	31 018 BVC 5	31018	10/13/2015	1	2	0	27000	137400	164400	107.95	152292	165000	92.30	6.2	Waldera
201407049952367	31 018 1ASR 79	31018	7/23/2014	1	2	0	108200	41600	149800	108.05	138635	170000	81.55	6.2	Larson
201508289913082	31 018 BVC 4	31018	8/27/2015	1	2	0	27000	138300	165300	107.95	153126	173000	88.51	6.2	Damery
201505019906243	31 018 1ASR 46	31018	5/8/2015	1	2	0	183400	107100	290500	107.95	269106	249000	108.07	6.2	Lenhard
201608029932235	31 018 1ASR 18	31018	8/17/2016	1	2	0	117200	265300	382500	105.74	361732	339900	106.42	6.2	Peters
201607249907729	31 018 1ASR 26	31018	6/23/2016	1	2	0	93000	204100	297100	105.74	280969	349000	80.51	6.2	Linzmeier/Metzler Trust

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	Price	Equated Sales Ratio	Miles from Large CAFO	Purchaser
201508039967596	31 018 1ASR 134	31018	8/21/2015	1	2	0	185900	234000	419900	107.95	388976	396000	98.23	6.2	Crabill
201600119907006	31 004 32.113	31004	12/18/2015	1	2	0	2700	55200	57900	106.12	54560	56000	97.43	6.7	Niemojuski
201511229975335	31 004 32.1120	31004	12/21/2015	1	2	0	5900	67400	73300	106.12	69072	60000	115.12	6.7	Buresh
201606149906857	31 004 32.114	31004	6/29/2016	1	2	0	5300	96500	101800	103.03	98807	100000	98.81	6.7	Detampel
201610079983434	31 004 32.104	31004	10/31/2016	1	2	0	33500	135900	169400	103.03	164419	165000	99.65	6.7	Wilda & Homeyer
201408269907194	31 008 25.032	31008	9/24/2014	1	2	0	28900	288500	317400	104.67	303232	290000	104.56	6.7	Wilde
201606119996869	31 008 2.1113	31008	7/7/2016	1	2	0	7100	80000	87100	100.54	86632	96900	89.40	6.9	Seibert
201611099952799	31 008 2.1115	31008	12/7/2016	1	2	0	7800	100000	107800	100.54	107221	121500	88.25	6.9	Falat
201611169965708	31 008 2.114	31008	12/12/2016	1	2	0	9700	140000	149700	100.54	148895	147892	100.68	6.9	Kropp
201504189948996	31 012 4.048	31012	5/4/2015	1	1	0	30000	0	30000	101.44	29573	30000	98.58	7.0	Gloshen
201404149965180	31 008 10.014	31008	5/2/2014	1	2	0	7500	61500	69000	104.67	65920	35000	188.34	7.0	Lemke
201608269982146	31 004 31.153	31004	8/31/2016	1	2	0	9000	49200	58200	103.03	56489	41000	137.78	7.0	Hasselman
201605069909240	31 008 10.041	31008	5/31/2016	1	2	0	18500	63300	81800	100.54	81360	65000	125.17	7.0	Leschensky
201506279965341	31 008 11.068	31008	7/17/2015	1	2	0	4300	59200	63500	103.57	61310	68000	90.16	7.0	Reckelberg
201509309981870	31 012 33.122	31012	10/26/2015	1	2	0	22600	90200	112800	101.44	111194	116000	95.86	7.0	Nemetz
201608159959475	31 012 28.132	31012	8/26/2016	1	2	0	14500	92100	106600	98.51	108208	130000	83.24	7.00	Salentine
201508249907204	31 008 11.072	31008	9/18/2015	1	2	0	17000	105800	122800	103.57	118566	130000	91.20	7.0	Lensmire
201607189993256	31 018 31.033	31018	6/20/2016	1	2	0	51000	126600	177600	105.74	167957	138200	121.53	7.00	Abts
201511319989953	31 014 5.072	31014	12/28/2015	1	2	0	14500	147000	161500	100.2	161179	165500	97.39	7.0	Jurczykowski
201503289957463	31 002 2.041	31002	4/20/2015	1	2	0	13100	95200	108300	104.58	103558	95000	109.01	7.6	Massart
201407289904317	31 014 29.071	31014	8/11/2014	1	2	0	38500	211700	250200	101.26	247087	235500	104.92	7.9	Kulhanek
201408029909931	31 012 19.162	31012	8/22/2014	1	2	0	17600	109700	127300	102.44	124271	126000	98.63	8.0	Peot
201509139945625	31 012 32.154	31012	9/17/2015	1	2	0	17800	116200	134000	101.44	132092	150000	88.06	8.0	Kraynik

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	Price	Equated Sales Ratio	Miles from Large CAFO	Purchaser
201603049953653	31 014 19.164	31014	4/1/2016	1	2	0	24500	116800	141300	97.16	145425	180000	80.79	8.1	Ledvina
201608129949178	31 008 21.152	31008	8/11/2016	1	2	0	55200	168600	223800	100.54	222597	339000	65.66	9.2	Kownig (Shea Lk)
201408269907179	31 008 32.061	31008	9/24/2014	1	2	0	36500	141800	178300	104.67	170341	172900	98.52	10.3	Jensen
201506309980305	31 008 29.061	31008	7/27/2015	1	2	0	56300	142400	198700	103.57	191849	226000	84.89	10.4	Denor
201404299900583	31 008 29.061.1	31008	5/23/2014	1	2	0	58700	229000	287700	104.67	274857	350000	78.53	11.0	Wotachek
201608169963758	31 008 30.13	31008	9/12/2016	1	2	0	32500	99800	132300	100.54	131589	169500	77.63	11.7	Fischer
201400239925923	31 016 16.GL 3.3	31016	1/22/2014	1	1	1	56600	0	56600	100.87	56114	55500	101.11	0.40	McDonald (Lk Mich)
201507079902182	31 016 16.GL 2	31016	7/22/2015	1	2	1	61200	147500	208700	101.82	204973	210000	97.61	0.50	Shorter (Lk Mich)
201409319943864	31 016 16.GL 1.5	31016	10/22/2014	1	2	1	100000	97900	197900	100.87	196202	205000	95.71	0.58	Simons (Lk Mich)
201605309972428	31 016 32.GL 1.5	31016	6/8/2016	1	2	1	171000	170100	341100	100.85	338231	342000	98.90	0.58	Spence (Lk Mich)
201611029936641	31 016 3.GL 1.12	31016	12/1/2016	1	2	1	11700	75000	86700	100.85	85971	76500	112.38	0.6	Swanson (Lk Mich)
201610149998001	31 004 6.GL1.6 R25E	31004	10/20/2016	1	2	1	140000	11400	151400	103.03	146948	148000	99.29	0.80	Grabowski (Lk Mich)
201405139931737	31 016 9.GL 1.7	31016	6/9/2014	1	2	1	93900	143600	237500	100.87	235463	255000	92.34	0.86	Hammerling (Lk Mich)
201508249907217	31 016 17.124	31016	9/22/2015	1	2	1	52600	143300	195900	101.82	192401	187000	102.89	0.95	Malingowski (Alaska Lk)
201508189997195	31 016 17.106	31016	9/18/2015	1	1	1	39600	0	39600	101.82	38893	65000	59.84	1.0	Slapp (Alaska L)
201604029919392	31 020 31GL4.3 R25E	31020	4/28/2016	1	1	1	110000	0	110000	101.53	108342	100000	108.34	1.2	Romenesko (Lk Mich)
201406229921896	31 016 20.066	31016	7/15/2014	1	2	1	10400	50500	60900	100.87	60378	61800	97.70	1.30	Huber (Alaska Lk)
201503209923901	31 016 19.017	31016	3/6/2015	1	2	1	19100	72400	91500	101.82	89866	72000	124.81	1.3	Norton (Alaska L)
201603189984201	31 016 19.032	31016	3/30/2016	1	2	1	34000	157000	191000	100.85	189393	210000	90.19	1.7	Baird (Alaska L)
201700059905694	31 016 3.GL 3.5	31016	12/29/2016	1	2	1	81100	63300	144400	100.85	143185	165000	86.78	2.0	Coleman (Lk Mich)
201511289981929	31 016 3.GL 3.6	31016	12/21/2015	1	2	1	91200	189800	281000	101.82	275981	320000	86.24	2.0	Storm (Lk Mich)
201405039910539	31 016 29.GL 1.3	31016	6/2/2014	1	1	1	108300	0	108300	100.87	107371	100000	107.37	2.4	Konz (Lk Mich)
201700129919664	31 018 1ASR 63	31018	12/27/2016	1	2	1	105200	87100	192300	105.74	181859	145000	125.42	6.2	Walczyk (GB)

RETR Number	Parcel Number	Municipality	Sale Date	Class	Vacant or Improved	Water Frtg Code	Land Assessment	Improvement Assessment	Total Local Assessment	Equating Ratio	Equated Local Assessment	Price	Equated Sales Ratio	Miles from Large CAFO	Purchaser
201505159970904	31 018 1ASR44	31018	5/15/2015	1	2	1	101100	231000	332100	107.95	307642	329000	93.51	6.2	DeWolfe (GB)
201402059906301	31 018 1ASR 36	31018	2/14/2014	1	2	1	106400	312600	419000	108.05	387769	385000	100.72	6.2	Vogel Fam. Tr. (GB)
201505159970777	31 018 DB 22	31018	6/10/2015	1	2	1	106800	83100	189900	107.95	175914	170000	103.48	6.4	Lenss
201606019976240	31 018 DB 13	31018	6/30/2016	1	2	1	119100	77300	196400	105.74	185736	170000	109.26	6.4	Miller (GB)
201408059931523	31 002 6.GL3.03 R26E	31002	7/28/2014	1	2	1	121900	60300	182200	103.00	176897	190000	93.10	8.6	Pisula (Lk Mich)
201607159983257	31 016 17.129	31016	8/5/2016	1	1	2	30000	0	30000	100.85	29748	45000	66.11	0.77	Neumann (Alaska Lk)
201409249927881	31 018 1ASR 114.1	31018	10/20/2014	1	2	2	99100	84700	183800	108.05	170100	160000	106.31	6.2	Sherman
201508309919709	31 018 1ASR 146	31018	9/28/2015	1	2	3	205800	295400	501200	107.95	464288	295000	157.39	6.2	Charles (GB)
201401049947567	31 002 5.028	31002	1/31/2014	1	1	5	58900	0	58900	103.00	57186	50000	114.37	4.6	Balch (Ahnapee R)
201409109981173	31 002 5.027	31002	10/3/2014	1	1	5	63500	0	63500	103.00	61652	59900	102.92	4.6	Balch (Ahnapee R)

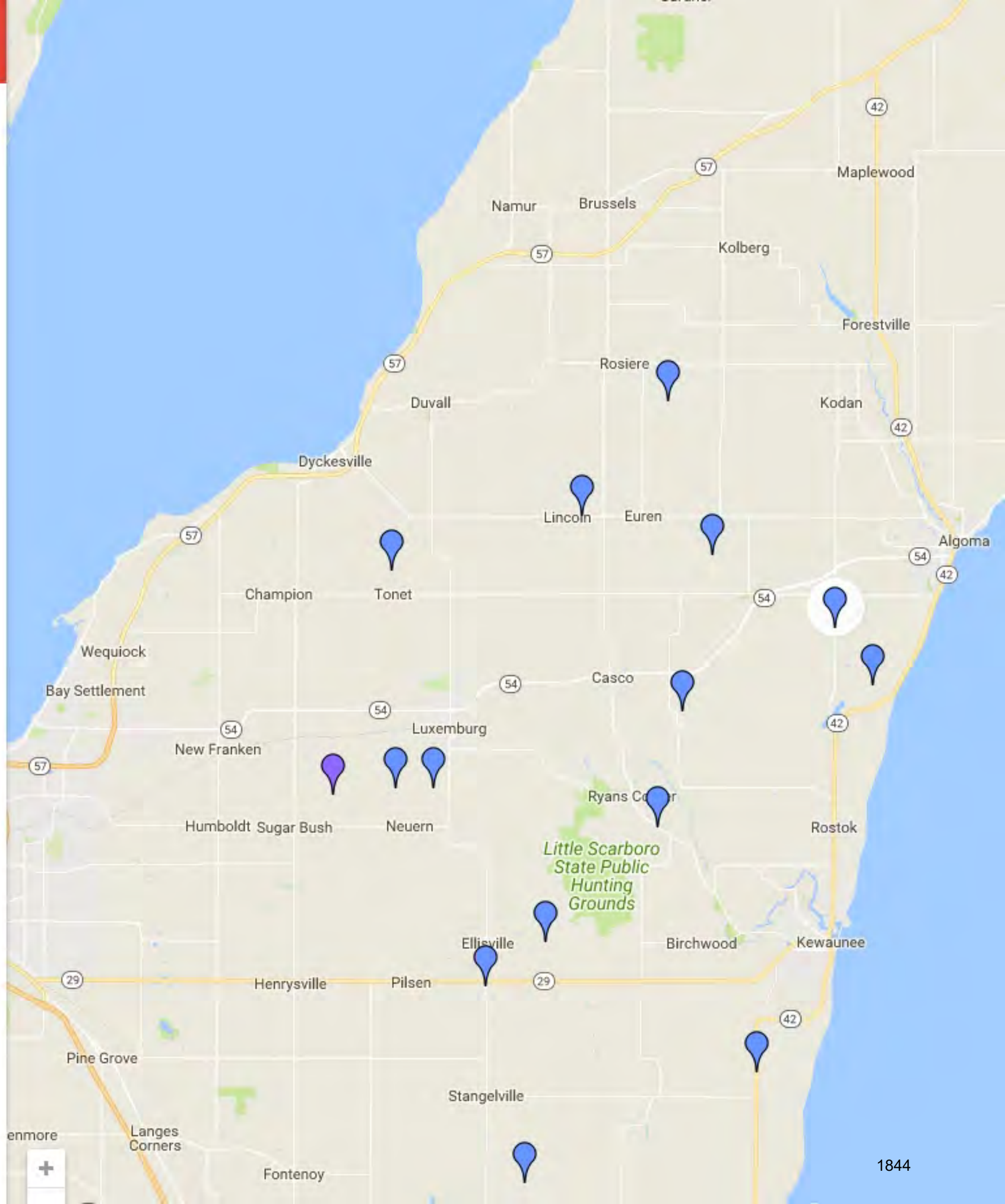
Ebert Dairy Enterprises LL...

name

Ebert Dairy Enterprises LLC (0062235)

description

N6939 County Road D, Algoma, WI
4,452/8,642 AU
Exp:12/31/2018



Wisconsin CAFO Permittees - Kewaunee County

Permit Number	Permittee Name	Permit Reissuance Number	Facility ID (FIN)	County	DNR Region	Address	Status	Issued Date	Effective Date	Expiration Date	Animal Type	Number of Animal Units	Anial Unit Date	Proposed Number of Animal Units	Date of Proposed Animal Units	Township	Range	Section	Q	QQ	QQQ
0062235	Ebert Dairy Enterprises LLC	03	21912	Kewaunee	NE	N6939 Cty Hwy D, Algoma, WI 54201	Current	1/8/2014	10/1/2015	12/31/2018	Dairy	6827	1/31/2015	8642	12/19/2012	24	25 E	6	SE	SE	
0059374	Pagels Ponderosa Dairy	04	14141	Kewaunee	NE	N4893 Hwy C, Kewaunee, WI 54216	Current	4/4/2016	4/1/2016	3/31/2021	Dairy	8340	3/15/2013	0	7/23/2010	23	24 E	4	NW	NW	
0062057	Dairy Dreams LLC	03	20199	Kewaunee	NE	E3576 Cardinal Rd, Casco, WI 54205	Expired	4/3/2012	5/1/2012	4/30/2017	Dairy	5458	1/31/2017	0		25	24 E	4	SE	SE	
0063673	Wakker Dairy Farm Inc	02	36484	Kewaunee	NE	N2348 Hwy 42, Kewaunee, WI 54216	Current	12/10/2012	12/1/2012	11/30/2017	Dairy	4748	1/31/2017	4576	5/1/2014	22	24 E	1	NW	SW	
0059536	Kinnard Farms Inc	03	15051	Kewaunee	NE	E2675 County Hwy S, Casco, WI 54205	Expired	8/16/2012	9/1/2012	8/31/2017	Dairy	10060	1/31/2017	8710	2/1/2013	25	24 E	30	NW	NE	
0063274	Augustian Farms LLC	01	52058	Kewaunee	NE	E4361 County Road G, Kewaunee, WI 54216	Expired	4/4/2011	9/1/2015	3/31/2016	Dairy	776	4/14/2015	1669	6/1/2015	22	24 E	23	NW	NE	
0062707	Rolling Hills Dairy Farm	02	25828	Kewaunee	NE	N3265 County Rd AB, Luxemburg, WI 54217	Expired	2/28/2012	3/1/2012	2/28/2017	Dairy	2745	3/20/2015	2994		23	23 E	27	NE	NE	
0063061	El Na Farms LLC	03	31548	Kewaunee	NE	E4029 Pheasant Rd, Algoma, WI 54201	Current	7/28/2017	8/1/2017	7/31/2022	Dairy	2675	7/1/2017	5970		25	24 E	34	NE	NE	
0063789	Deer Run Dairy LLC	02	37747	Kewaunee	NE	N1215 Sleepy Hollow Rd, Kewaunee, WI 54216	Current	6/26/2013	7/1/2013	6/30/2018	Dairy	2417	3/20/2017	4627	9/1/2016	22	23 E	23	NE	NE	
0059579	Da Ran Dairy LLC	04	14768	Kewaunee	NE	5232 BK line Rd, Luxemburg, WI 54217	Current	2/1/2017	2/1/2017	1/31/2022	Dairy	2339	2/6/2013	2907	1/31/2017	24	23 E	31	NW	NW	
0061999	Stahl Bros Dairy LLC	03	19043	Kewaunee	NE	N7518 Tonet Rd, Luxemburg, WI 54217	Expired	8/28/2012	9/1/2012	8/31/2017	Dairy	2060	1/31/2017	2140	8/1/2012	25	23 E	32	NW	SE	
0065013	Halls Calf Ranch	01	37120	Kewaunee	NE	E2304 County Hwy F, Kewaunee, WI 54216	Current	2/28/2013	3/1/2013	2/28/2018	Dairy	1700	1/31/2017	1360	6/30/2013	23	23 E	13	SE	SW	
0063665	Seidls Mountain View Dairy LLC	02	36343	Kewaunee	NE	E745 Luxemburg Rd, Luxemburg, WI 54217	Expired	9/13/2012	10/1/2012	9/30/2017	Dairy	1606	1/31/2015	0		24	23 E	29	SE	NW	
0064131	Heims Hillcrest Dairy LLC	02	40703	Kewaunee	NE	E3730 Rockledge Rd, Algoma, WI 54201	Current	3/30/2016	4/1/2016	3/31/2021	Dairy	1238	1/31/2017	2358	5/1/2012	24	24 E	22	NW	NW	

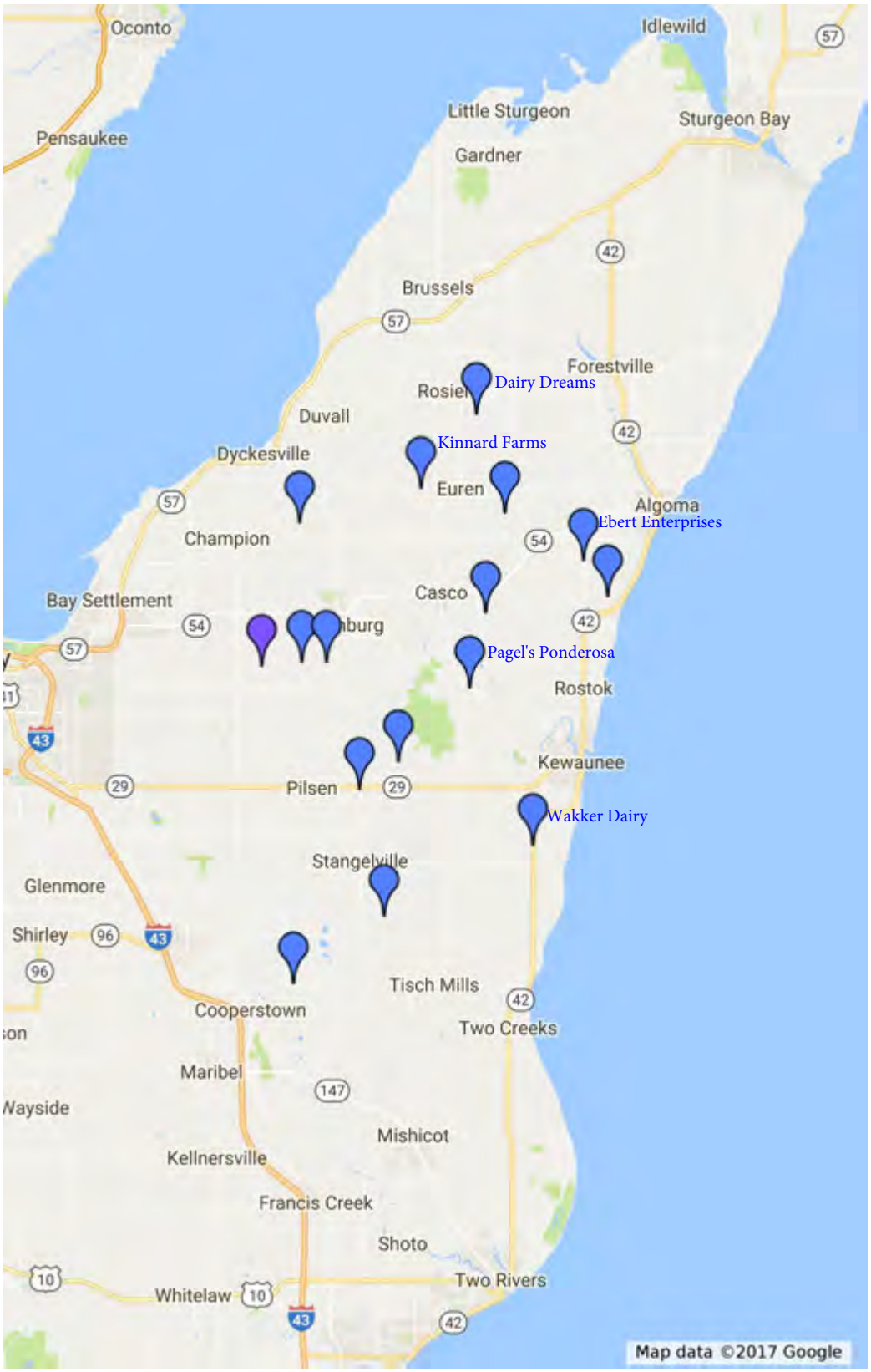
* Animal unit numbers are reported to the DNR only at the time of each permit issuance, which occurs every five years. The number of animal units on any given operation may increase or fluctuate significantly during the course of the permit term.

Wisconsin Department of Natual Resources

Kewaunee County CAFO Map

Untitled layer

- Da-Ran Dairy LLC (0059579)
- Dairy Dreams LLC (0062057)
- Deer Run Dairy LLC (0063789)
- Ebert Dairy Enterprises LLC (formerly Duescher's)
- Ebert Dairy Enterprises LLC (0062235)
- El-Na Farms LLC (0063061)
- Halls Calf Ranch (006503)
- Heims Hillcrest Dairy LLC (0064131)
- Kinnard Farms Inc. (0059536)
- Pagel's Ponderosa LLC (0059374)
- Rolling Hills Dairy Farm (0062707)
- Seidl's Mountain View Dairy LLC (0063665)
- Skyline Blue Acres (0063410)
- Stahl Bros Dairy LLC (0061999)
- Stahl Farms (0062332)
- Wakker Dairy Farm Inc. (0063673)



This map shows the locations of Concentrated Animal Feeding Operations in Kewaunee County, WI.

Forestville Forestville
Dairy Dreams
Duvall Duvall
yckesville Dyckesville
Kinnard
Algoma Algoma
Ebert Dairy
Casco Casco
Dairyland Farm
Luxemburg Luxemburg
nken
nken
Kewaunee
Pagels Ponderosa
Kewaunee Kewaunee
29
Pilsen Pilsen
Wakker Dairy
Corners
ark
Curran Curran
Image © 2017 TerraMetrics
© 2017 Google
1847

Charlotte Nagel

From: Phil Danen <pjdanen@ledgeviewwisconsin.com>
Sent: Monday, May 14, 2018 2:08 PM
To: sburdette@ledgeviewwisconsin.com
Subject: Fwd: Manure Pit Health Documents and Articles

Categories: Yellow Category

Phil Danen
Ledgeview Town Chairman

Sent from my iPad

Begin forwarded message:

> **From:** Nick Kolanko <nkolanko@gmail.com>
> **Date:** May 10, 2018 at 7:58:53 PM CDT
> **To:** pjdanen@ledgeviewwisconsin.com
> **Cc:** Kurt Voss <kvoss@ameriluxinternational.com>
> **Subject: Re: Manure Pit Health Documents and Articles**
>
> Another article from Yale School of Forestry and Environmental Sciences:
>
> https://e360.yale.edu/features/as_dairy_farms_grow_bigger_new_concerns_about_pollution
>
> On Thu, May 10, 2018 at 11:09 AM, Nick Kolanko <nkolanko@gmail.com> wrote:
>
> Dear Chairman Danen,
>
> My name is Nick Kolanko, and I reside at 3668 Beachmont Road in Ledgeview with my wife, Michele, and our two young sons. I was the physician who spoke at several of the Ledgeview Town Board meetings this past summer that led up to the Board passing the setback ordinance for manure pits and farming structures.
>
> Kurt Voss had mentioned that you were in need of documentation supporting the Board's decision, namely literature that elaborates on the deleterious health effects of manure pits. I am forwarding the literature that I compiled last summer that I found to succinctly address these issues. In your review of this material, you will observe that all of it is evidence-based, with many experts from the Penn State University College of Agricultural Sciences and Johns Hopkins University School of Public Health contributing their research findings to the data.

The data remains irrefutable that this is still a major public health hazard. I urge the board to deny Ledgeview Farms' formal permit to expand and construct a manure pit.

Best,

Nicholas Kolanko, MD

http://news.psu.edu/story/146221/2012/10/04/farm-safety-expert-beware-toxic-gases-manure-storages

Farm-safety expert: Beware of toxic gases from manure ...

news.psu.edu

A narrowly averted farm tragedy in September has a farm safety expert in Penn State's College of Agricultural Sciences renewing his warning about the dangers of toxic gases emanating from manure-storage facilities.

https://extension.psu.edu/programs/nutrient-management/news/2016/reoccurring-themes-of-manure-gas-deaths

Reoccurring Themes of Manure Gas Deaths (Pennsylvania ...

extension.psu.edu

Yesterday I received a call from Washington DC and an investigator from the Occupational Safety and Health Administration (OSHA) was on the line. Since OSHA does not routinely deal with agriculture I braced myself to hear what the call subject would be.

https://extension.psu.edu/confined-space-manure-storage-hazards

Confined Space Manure Storage Hazards - Penn State Extension

extension.psu.edu

Automated manure and waste water handling is most often accomplished by collecting and storing manure and waste in storages located directly beneath the animals or in a nearby containment structure.

https://doorcountypulse.com/letter-to-the-editor/american-lung-association-responds-to-kewaunee-cafo-situation/

PENINSULA pulse

American Lung Association Responds to Kewaunee CAFO ...

doorcountypulse.com

Here in the rural countryside of Kewaunee County, we currently have 16 CAFOs (concentrated animal feeding operations) that produce millions of gallons of waste. Our newest threat is farms here are now looking to spray irrigate manure, on top of the massive amount already land spread. These large ...

PennState

Farm-safety expert: Beware of toxic gases from manure storages

October 4, 2012

UNIVERSITY PARK, Pa. -- A narrowly averted farm tragedy in September has a farm safety expert in Penn State's College of Agricultural Sciences renewing his warning about the dangers of toxic gases emanating from manure-storage facilities.

The stark reminder of the serious hazards lurking around manure pits came to light once again Sept. 17 on a Montour County farm, explained Davis Hill, senior extension associate in the University's Agricultural Safety and Health Program.

Two brothers, ages 2 and 4, were found unresponsive next to the family farm's manure storage just minutes after their father and grandfather began agitating the manure in the tank. The brothers were riding their bikes on a roadway that runs next to the structure.

"Their dad explained that he had just started the tractor that operated the agitator," Hill said. "He checked the connections for leaks and then decided to walk around to the back of the structure so he could see into the top more easily to make sure it was mixing correctly. The back of the structure was buried in the ground with a roadway around the back which leads up to the barnyard.

"As he walked around the side toward the back, he found his two sons. The youngest was blue while the other one was very pale. Both were unresponsive. He immediately told his dad to shut down the agitator and call 911 while he moved both boys to fresh air. The older son revived quickly. The younger boy remained unconscious for nearly 20 minutes."

The manure-storage structure is 124 feet across and 12 feet deep, Hill noted. The tank was partially buried and partially above ground. It was nearly full and covered with the typical crust that forms on top of liquid-manure storages. It was the first day for agitating the storage.

"The first day of agitation or mixing of the manure is when we often see higher levels of manure gas," he said. "When you break up that crust and stir around the manure, gases that are contained below the crust are allowed to pour out of the storage."

The back side of the structure is mostly buried, with only a foot or so above ground level. The gases "boiled over" the wall and settled next to the structure, where the children were found.

"No one really would have suspected that until this incident happened, and now, it is very clear to see," Hill said. "Being heavier than air, the toxic gases would accumulate right where the children were riding their bikes."

There are four predominant toxic gases that are produced during manure storage and released during agitation. The most serious of these, from a health standpoint, is hydrogen sulfide. This gas is colorless and has a rotten egg smell at very low concentrations, but people are not able to detect this odor at high concentrations.

Hydrogen sulfide is heavier than air, which means it will stay close to the surface or settle in low areas. As the manure in this structure was being agitated and stirred, high levels of this toxic gas would have been released when the crust of the manure was broken, Hill pointed out. As the amount of gas built up on the surface of the manure, it likely spilled over the top of the wall and rolled to the ground.

"At high levels, this toxic gas can cause loss of consciousness and stopping or pausing of breathing and can lead to death," he said. "At extremely high levels, breathing will cease and death can occur within minutes."

Federal and state agriculture officials have raised concerns about the possibility of higher-than-usual levels of hydrogen sulfide gas being emitted from manure pits containing gypsum-based animal bedding, such as was used on this farm. Hill said he plans to work with the USDA Natural Resources Conservation Service and others on research to determine if there is a connection between gypsum bedding, elevated hydrogen sulfide levels and manure-pit incidents.

He is looking for farmers using gypsum bedding who are willing to participate in this research. Interested farmers can contact him at 814-865-2808 or by email at deh27@psu.edu.

Hill said carbon dioxide also is released during manure agitation. This gas, which is heavier than air, is also colorless and odorless. "Carbon dioxide displaces oxygen and, at high levels, can cause a person to quit breathing," he explained.

Ammonia, another manure gas, is lighter than air, which means it normally will rise once it's released, according to Hill. "This gas is colorless but has a very pungent odor which will get stronger at higher concentrations," he said. "This property will cause anyone exposed to this gas to vacate the area immediately."

Methane is the other gas people often relate with manure storages. This is another colorless and odorless gas. Like ammonia, it is lighter than air, which means it will dissipate outside.

This gas will asphyxiate, which means it will displace breathable oxygen in high enough concentration. This gas also is very flammable and explosive in the right concentration.

The recent incident should be a warning to other farmers that have manure storages where toxic gases can be released, Hill stressed. He offered the following recommendations regarding these structures:

-- Make sure everyone who needs to be near manure-storage structures understand the hazards, including how the various gases can affect them.

-- Make sure there is no access to low lying areas next to these structures during manure agitation. Consider a buffer zone of at least 20 feet around the structure during this time.

-- Especially keep children well away from all hazardous farm operations. Lower concentrations of toxic gases can have serious effects on them.

-- Bystanders and nonessential workers should stay away during agitation and manure pump-out operations.

-- When agitating manure storages located below animal living areas, realize that dangerous levels of toxic gases can be pushed up through slotted floors into the animal housing. Make sure these spaces are well ventilated before and during agitation. In some cases, people and animals should be removed before agitation of the manure.

-- If you must be near spaces that are being agitated, wearing a portable gas detector would offer an early warning if toxic gas is present. This device is relatively inexpensive and can measure a single gas (hydrogen sulfide is suggested) or multiple gases and can give warning by sounding an audible alarm when dangerous levels of gas are being released.

Other safety suggestions related to manure storages can be found at http://www.agsafety.psu.edu/.

MEDIA CONTACTS:

Jeff Mulhollem, jjm29@psu.edu
Work Phone: 814-863-2719

Last Updated October 04, 2012

Pennsylvania Nutrient Management Program

Act 38 Law and Regulations

Specialist Certification

Planning Tools

Planning Resources

Educational Materials

SCC Program Information

Manure Management Manual Program

Related Programs

Learn More...

Upcoming Trainings and Events

News

Nutrient Management Program Team

Directory

Contact Us

Nutrient Management Specialists Listing

Reoccurring Themes of Manure Gas Deaths

Yesterday I received a call from Washington DC and an investigator from the Occupational Safety and Health Administration (OSHA) was on the line. Since OSHA does not routinely deal with agriculture I braced myself to hear what the call subject would be. The call was prompted by the unfortunate death of a farm worker who was standing on top of a liquid manure spreader tank as it was filling up. The cause of death was asphyxiation associated with hydrogen sulfide gas. The representative was hoping to understand what normal manure handling equipment and practices are since she had not run into this type of accident in the past.

Considering the amount of time producers and professional manure handlers spend working with manure these incidents can be viewed as relatively infrequent occurrences. However, in working with the manure handling industry I have come to realize that many instances of loss of consciousness or livestock loss go unreported. In the Mid-Atlantic region, recent years have been thankfully quiet as far as headlines of manure handling deaths go. Perhaps, this could be attributed to greater industry awareness and education after several well-publicized tragedies in 2011-2012. Other regions were not so fortunate. In 2015, two pairs of co-working father and sons died when trying to remove or retrieve equipment from manure storage areas. One instance was in Wisconsin and the other in Iowa.

Similar situations occur worldwide. A recent article in the Journal of Agromedicine (Park, et.al., January 2016) reviewed incidents from 1998 to 2013 that involved gas exposure during manure handling at swine facilities in Korea. Thirty workers died from hydrogen sulfide

asphyxiation in 17 incidents. Of the thirty deaths, 10 were handling manure, 8 were performing maintenance and 12 were attempting to perform rescue without proper equipment.

An earlier article in the same journal (Beaver & Field, 2007), Purdue University researchers studied 91 deaths (7 from Pennsylvania) and 21 severe injuries related to manure-generated gas from 1974 to 2004. The researchers reported that with 34% of the deaths exposure occurred during repair or maintenance and 22% of deaths occurred to those attempting rescue. Disturbingly, 21% of the fatalities investigated in this study occurred to people under the age of 16. Witnesses listed thirteen of the victims as 'playing and discovered missing'. All of these were children.

Reoccurring themes are easily found in reports on this subject. I hope you can learn from these items that jump out at me:

- Hydrogen sulfide is our most dangerous gas and can cause immediate asphyxiation at high levels. Some of today's economic imports to the farm, such as distiller's grains or gypsum bedding, actually increase sulfur levels in manure. Microbial degradation of sulfur compounds in storage leaves hydrogen sulfide as a by-product.
- Repair and equipment retrieval is dangerous. It is tempting to enter a confined area for a quick job. Do not do that. Remove equipment for maintenance and retrieve dropped items with a magnet or hook.
- Rescuers are at risk. Rescuers often end up as victims. The recommendation of course is to never go in to try to retrieve someone without proper rescue equipment. That's easy to say, but perhaps harder to adhere to when a family member or co-worker is in trouble. In this situation it is better to be an unsung hero by operating in a manner that minimizes risk and avoids these situations in the first place. Don't become a statistic.
- Liquid manures are more dangerous than solid manures. Nonetheless, solid manure systems need respect. I know two local men who have lost consciousness while moving poultry broiler litter.

- It is unclear if dairy or swine farms present higher risk. The Field and Beaver report found that 55% of fatalities occurred in the dairy industry and 44% in the swine industry.
- Complacency kills. It is not unusual in fatality situations to hear things like, "He's gone in there to unclog that pump a hundred times". Make safety your routine.
- Anaerobic conditions present increase risk. The accumulation of manure volumes through the winter months can lead to anaerobic zones.
- Warmer weather increases risk. This makes sense since microbial populations will proliferate as temperatures increase.
- Make choices for children. Adults should take precautions to educate and protect children that live or visit a farm. This means providing kid-proof barricades to manure storage and handling areas.
- Ventilate! Keep air moving through confined spaces and animal housing areas. Agitation is like shaking a soda can. Agitation and movement of manure releases gas. Static manure situations can accumulate aqueous forms of gas that are released during disturbance. To demonstrate this in trainings I often shake one cola can and not shake another. I put these behind my back then hand a random can to a class participant. No one has opened the can yet.
- You can work yourself to death. Agricultural work ethics are unparalleled; however at any sign of gas exposure or dangerous gas levels clear all workers from suspect areas and take a break.
- Monitors. Gas monitors provide an alarm of invisible dangers. These can be worn on the belt. A number of vendors sell or rent reliable monitors.

Space constraints limit thorough coverage of risks and recommendations in this article. Penn State's Agricultural Safety and Health team offers great resources on Manure Pit Safety.

Contact Information

Robert Meinen
Senior Extension Associate

Email: rjm134@psu.edu
Phone: 814-865-5986

Confined Space Manure Storage Hazards

Automated manure and waste water handling is most often accomplished by collecting and storing manure and waste in storages located directly beneath the animals or in a nearby containment structure.

ARTICLES

Confined Space Manure Storage Hazards

The use of confinement systems for livestock and dairy production is a well established practice in American agriculture (see figures 1 & 2). Integral to many animal confinement systems is automated feeding and watering of the animals, barn ventilation, and manure and waste water handling. Automated manure and waste water handling is most often accomplished by collecting and storing manure and waste in storages located directly beneath the animals or in a nearby containment structure that may be located either below ground or at ground level. In many cases, the collection system usually involves a smaller below ground pit for pumping the manure to a longer-term storage structure or for pumping the manure directly into a manure spreader. While this method of manure handling is very efficient, it can create a unique set of hazards for both humans and animals. The purpose of this publication is to identify confined space manure storage hazards and methods for reducing risks when entering storages that are empty or nearly empty.

Figure 1. Slotted floors, like this example in a dairy barn, cover a manure storage that may be up to 10 feet deep, usually referred to as deep-pit storage.

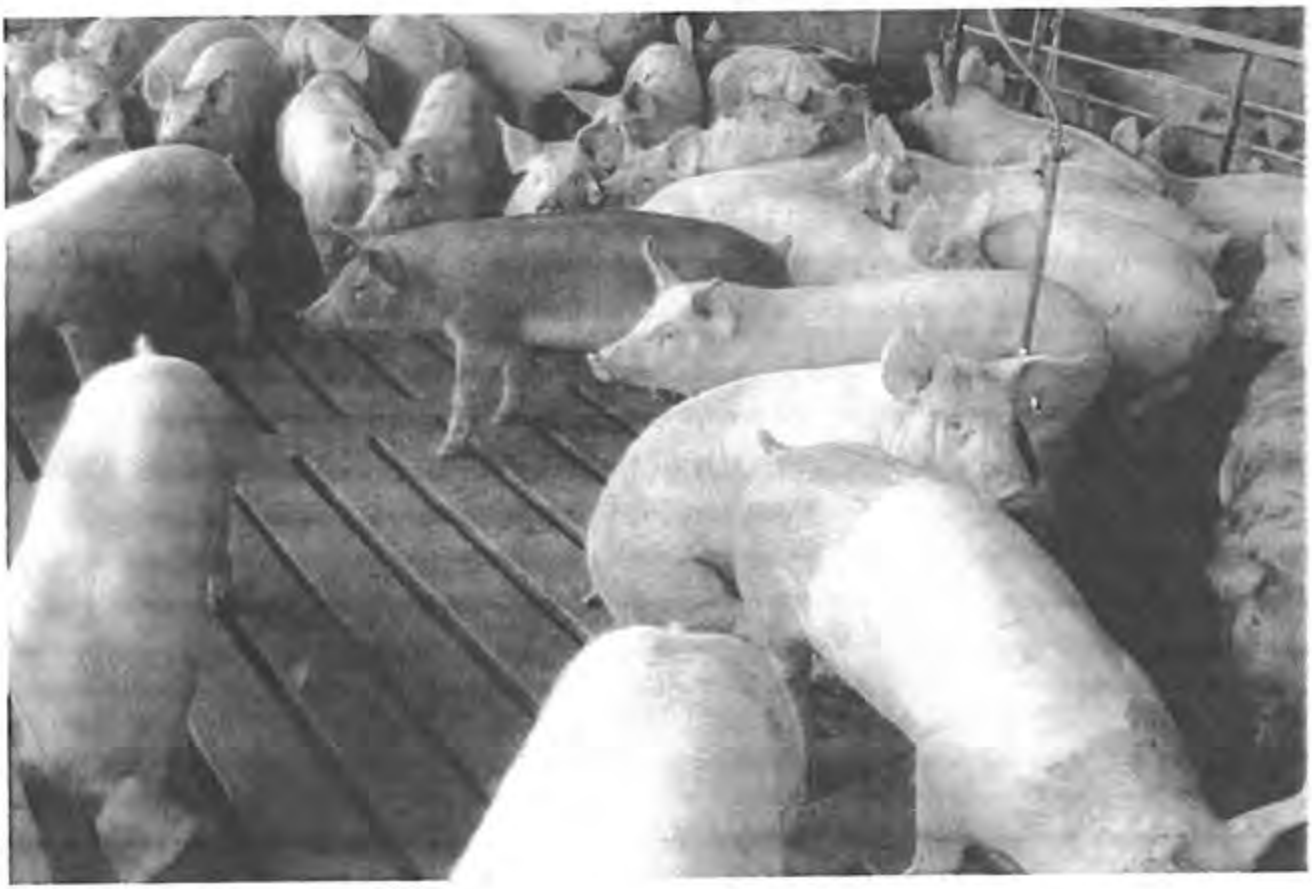


Figure 2. Slotted floors are also used extensively in swine facilities.

Manure Storages and Confined Spaces

Most below ground manure storages, above ground tanks and transfer structures (e.g., enclosed gravity flow ways to move manure between storages) meet the definition of a confined space. This means that it: 1) Is large enough and so configured that a worker can enter and perform work; (2) Has limited or restricted means for entry or exit; and (3) Is not designed for continuous human occupancy (OSHA, Confined Space Standard 1910.146). The hazards contained within a confined space manure storage may include a lack of oxygen, toxic and flammable gases, and exposure to drowning. Once a person has entered a confined space manure storage, it is often too late to mitigate the associated hazards. The human senses of smell and sight are not helpful since the gases being generated by the manure are colorless, may be odorless, and are easily masked by other common farm smells. For example, hydrogen sulfide, one of the most dangerous manure gases, has an odor but it is often not detectable above 100 parts per million (PPM) because it deadens the sense of smell. The characteristic colorless and odorless factors and undetected low oxygen levels often fool even the most experienced farmer.

Tragically, fatalities occur when workers enter facilities and are overcome by toxic manure gases or are exposed to an oxygen-deficient atmosphere. Between 1975 and 2004, 65 fatalities were reported across the U.S. when farmers, workers, family members and would-be rescuers unknowingly entered manure storages when dangerous levels of manure gas or a lack of oxygen were present (Beaver and Field, 2007). This report also showed that the rate of deaths per year in manure storages is increasing. Several of the multiple fatality incidents involved immediate family members who lived and worked on the farm. Later reports on the incidents indicated that the initial entry into the storage was to perform work in a manner that was typical on that farm.

Monitoring Gas Levels

Use of a hand-held gas detection monitor prior to and during any entry event is highly recommended. These monitors must be properly calibrated, maintained and used.

Hand-held, portable gas detection monitors are now available that not only provide a reliable digital read-out of the gas levels present but also have multiple warning alarms that activate (see figure 3). Many newer portable gas detectors have the option of measuring multiple gases, including oxygen, and can be borrowed, rented, or purchased.

Figure 3. Hand-held, portable multi-gas monitors measure most of the manure gases and oxygen levels.

Hand-held gas monitor costs generally start at about $250 for a single gas detector and range up to $1,400 for better quality multiple gas monitors. When using these detectors, it is important to periodically recalibrate them according to the owner's manual. Battery-powered units should be checked regularly to ensure they are fully charged.

Monitoring of manure gas levels can also be measured with gas detector tubes. These tubes contain a reactant that changes color based on the gases that are present and their concentration. The drawbacks for this type of gas monitoring are the delayed time in which the gas levels are displayed and the lack of an accurate measurement that can be as much as 25 percent different from the actual gas level. Manure gases, especially hydrogen sulfide, are particularly critical at higher levels and any delay in detecting or accurately measuring these dangerous levels is life-threatening. See publication *Confined Space Manure Gas Monitoring*for more gas monitoring details.

Table 1. Listing of manure gas properties and characteristics[1,2].

Hydrogen Sulfide (H_2S)	
Odor	Rotten egg odor below 100 ppm
Color	Colorless
Density	1.45 kg/m³@15°C (heavier than air)[3]
PPM	Health Effects/Precautions
10	Allowable exposure limit for humans for 8 hours (OSHA PEL)
100	Immediately Dangerous to Life and Health (IDLH)/deadens sense of smell
500	Nausea, excitement, insomnia
1,000	Unconsciousness, death
Carbon Dioxide (CO_2)	
Odor	Odorless
Color	Colorless
Density	1.87 kg/m³@15°C (heavier than air) [3]
PPM	Health Effects/Precautions
5,000	Allowable exposure limit for humans for 8 hours (OSHA PEL)
40,000	Immediately Dangerous to Life and Health (IDLH)
250,000	Death in a few hours
Ammonia (NH_3)	
Odor	Sharp, pungent, irritating
Color	Colorless
Density	0.73 kg/m³@15°C (lighter than air) [3]
PPM	Health Effects/Precautions

[1]Air Liquide, Gas Encyclopaedia. 2010.
[2]Fulhage, C. D. 1993.
[3]Density of air = 1.23 kg/m³@15°C

50	Allowable exposure limit for humans for 8 hours (OSHA PEL)
300	Immediately Dangerous to Life and Health (IDLH)
3,000	Asphyxiating
5,000	Could be fatal
Methane (CH_4)	
Odor	Odorless
Color	Colorless
Density	0.68 kg/m³@15°C (lighter than air)
PPM	Health Effects/Precautions
1,000	Allowable exposure limit for humans for 8 hours (OSHA PEL)
50,000	Lower Explosive Level (LEL)/no open flame or welding nearby
500,000	Headache, Asphyxiating
[1]Air Liquide, Gas Encyclopaedia. 2010. [2]Fulhage, C. D. 1993. [3]Density of air = 1.23 kg/m³@15°C	

Mechanical Ventilation Systems

A specially designed positive pressure mechanical forced air ventilation system is needed to reduce risks when entering most confined space manure storages. This type of ventilation system forces air into the storage to replenish oxygen levels and mitigate a buildup of dangerous levels of manure gas. Forcing fresh air through a fan into the storage reduces possible fire or damage from exposing electric fan motors to manure gases--as might happen with an exhaust type system. Fans of various capacities can be used; however, it is recommended that the ventilation fan should be capable of moving a volume of air equal to at least 0.5 times the volume of the empty manure facility every minute. The fan can be permanently installed or portable. It is recommended that new manure storages be designed with permanently installed positive pressure ventilation systems. All ventilation systems should be connected to a standby power system to

maintain ventilation in the event of a loss of electrical power during an entry event. The standby power system must be regularly maintained and tested. Recommendations and methods to calculate fan sizes and ventilation times can be found in ANSI/ASABE Standard S607, *Ventilating Manure Storages to Reduce Entry Risk* and *Confined Space Manure Storage Ventilation Systems*.

The ventilation system should run prior to entry for the time specified in ANSI/ASABE S607 and for the duration of the entry event. **Never** enter a manure storage when the manure is being agitated or while emptying it.

Ventilation efficiency is improved and ventilation time prior to entry is reduced when intake air is ducted from a fresh air source that is not contaminated by manure gases exhausted from the storage. Ventilation system ducting should be cleaned as needed to remove dust and other material. To prevent the fan from being clogged, it is recommended that the fan guard be removed periodically to clean the fan housing and blades. All fan guards should be reinstalled before activating the fan following the cleaning.

All confined space manure storages located away from but interconnected to animal living quarters, should use gas traps in transfer pipes to prevent gases from flowing back into the animal housing area.

Legal Considerations

Federal OSHA:

The Occupational Safety and Health Act (OSHA) is the primary regulation that governs occupational safety and health in the U.S. OSHA has a standard that governs entry into confined spaces (Standard 1910.146), but production agriculture has been specifically exempted from this standard.

One may think there is no reason for a farmer to be concerned about his or her confined space manure storage and the OSHA regulation, but this is not completely accurate. If a farm operator employs 11 or more hired workers and is inspected for any reason, OSHA can use its "general duty clause" to cite the employer for violation of easily recognized best safety practices. The OSHA general duty clause says that an employer must provide a place

of employment free of recognized hazards. The hazards of manure storages are well-documented. Allowing a hired worker to enter a manure storage without an adequate supply of contaminant-free air, without a safety harness with a lifeline attached to a rescue lifting device, or without using atmospheric testing devices, violates best safety practices for entering manure storages.

State OSHA:

Several states have their own state Occupational Safety and Health standard. One provision in federal OSHA is that if a state adopts a state OSHA plan it has to be at least as strict as the federal regulation. This means that in states with their own OSHA plan, farm operations may not have the same exemptions from standards or enforcement of standards as exists in states where only federal OSHA is in effect. Farmers should know if their state has a state OSHA plan and how those regulations may differ from federal OSHA regulations.

Agricultural Child Labor Regulations:

The U.S. Department of Labor's Hazardous Occupations in Agriculture (AgHO) regulations relate to employment restrictions of youth in hazardous occupations in agriculture. These employment restrictions do not apply to youths employed on farms owned or operated by their parents or legal guardian (US Department of Labor, 2004). But for all other youths employed on a farm, the regulations prohibit working in, around, or with a number of potentially hazardous farm work activities unless exempted by special training such as training that exists for tractors and some machinery. There is no training exemption for working in manure storages; therefore, all youth under the age of 16 who are not the children or legally adopted children of the farm operator, are completely prohibited from working inside confined space manure storages. Not all states adhere to the AgHO regulations. Many states have their own regulations governing child labor that may be different from the AgHO. Check out your state regulations to be sure you understand what is and is not allowed in your state.

Even though there are numerous exemptions and restrictions from federal regulations that govern occupational safety and health, farm owners and operators should remember that any farm operation can be vulnerable to civil lawsuits resulting from incidents

associated with confined space entry. The long-standing recognition of the dangers of entering confined spaces, along with the widely published best practices for reducing risks when entering such spaces, provides ample standing for lawsuits once one or more persons die from unsafely entering a manure storage.

Planned Entry into A Confined Space Manure Storage

Entering a confined space manure storage will always entail some level of risk and should be avoided if possible. One way to avoid entering the storage is to remove the agitator pump and service it outside the storage rather than leaving it in place to service. If you must enter a storage, there are several actions you can take to reduce entry risks. These actions are applicable for entering storages that are currently being used or that may have been empty and not used for months or years:

1. Test from outside the storage for contaminant gas and oxygen levels before entry (see figure 4). The person entering the storage should be able to observe all pre-entry testing of the storage for hazardous gases and oxygen level.
2. Ventilate the manure storage with a positive ventilation system prior to and during the entry event. Use ANSI/ASABE S607 for guidance about ventilation capacity and ventilation time prior to and during entry.
3. The person entering should wear an adjustable body harness with a lifeline attached to a combined rescue and retrieval system. This person should also wear or carry a portable gas and oxygen monitor to protect against rapidly changing conditions.
4. A second person should be available and stationed at the entrance to the storage. This person should have the capability of using the rescue and retrieval system to lift the person out of the storage in case of emergency.
5. This second person should maintain either visual or verbal contact with the person in the storage. This person must also be mentally and emotionally strong enough to not enter the storage in case of emergency.

Figure 4. Always remain outside the manure storage facility when taking initial gas measurements.

Additional suggestions to reduce risks associated with manure storages include posting danger signs at all entrances to the storage, informing family members, employees, contractors and visitors about the dangers of confined space manure storages, and preparing a written confined space entry procedure. All of these recommended actions and suggestions are consistent with OSHA's permit-required confined space entry procedures. Type in, "OSHA confined space standard" in your web browser for more details on these procedures.

Additional details on monitoring for potentially hazardous atmospheres in manure storages can be reviewed in publication *Confined Space Manure Gas Monitoring*. More information about ventilating manure storages to reduce entry risk can be found in publication *Confined Space Manure Storage Ventilation Systems*. Finally, more information on protocols for entering manure storages is found in publication *Confined Space Manure Gas Monitoring*. It is also recommended to consult with industrial hygiene consulting services that advertise expertise in confined space entry procedures. They can be found in the yellow pages or through a web search.

References

- American Society of Agricultural and Biological Engineers (ASABE). 2010. ANSI/ASABE S607: Ventilating manure storages to reduce entry risk. St. Joseph, MI.: American Society of Agricultural and Biological Engineers.
- Beaver RL and Field WE. 2007. Summary of documented fatalities in livestock manure storage and handling facilities. Journal of Agromedicine 12(2): 3-23.
- Fulhage CD. 1993. Gases and odors from swine waste. Agricultural Publication G01880, Department of Agricultural Engineering, University of Missouri-Columbus, Columbus, MO.
- Gas Encyclopaedia, Air Liquide, Paris, France. 2010.
- Hill DE, Murphy DJ, Steel JS and Manbeck HB. 2011. Confined space manure storage emergencies. E 54. The Pennsylvania State University, College of Agricultural Sciences, Department of Agricultural and Biological Engineering, University Park, PA. 4 pp.
- Manbeck HB, Murphy DJ, Steel JS. 2011. Confined space manure storage ventilation systems. E 53. The Pennsylvania State University, College of Agricultural Sciences, Department of Agricultural and Biological Engineering, University Park, PA. 7 pp.
- Occupational Safety and Health Administration (OSHA). 2002. Application of the permit-required confined spaces (PRCS), 29 CFR 1910.146. Washington, D.C.: OSHA.
- Steel JS, Murphy DJ, Manbeck HB. 2011. Confined space manure gas monitoring. E 52. The Pennsylvania State University, College of Agricultural Sciences, Department of Agricultural and Biological Engineering, University Park, PA. 5 pp.
- US Department of Labor. 2004. Child Labor Requirements in Agricultural Occupations Under the Fair Labor standards Act. WH-1295. US Department of Labor, Employment standards Administration, Wage and Hour Division, Washington, DC.

Prepared by Joel S. Steel, Senior Research Associate, Dennis J. Murphy, Professor, and Harvey B. Manbeck, Professor Emeritus

LETTERS TO THE EDITOR

American Lung Association Responds to Kewaunee CAFO Situation

*By **NANCY UTESCH**, Kewaunee, WI, April 11th, 2013*

Here in the rural countryside of Kewaunee County, we currently have 16 CAFOs (concentrated animal feeding operations) that produce millions of gallons of waste. Our newest threat is farms here are now looking to spray irrigate manure, on top of the massive amount already land spread. These large farms have gone beyond the limits of what the people, and the land, can tolerate. The citizens are both concerned and troubled that this practice is being looked at and may be used in our community.

With what we now know about "superbugs" and "antibiotic resistant diseases," this is nothing short of reckless endangerment to the public at large. Here is how the American Lung Association weighed in on this issue:

The American Lung Association in Wisconsin has been contacted by a group of concerned citizens in Kewaunee County for assistance in an air quality issue that is of great concern to both the residents of those communities and to our organization. The issue is the proposed plan to spray liquid manure fertilizer. These residents are understandably upset at the prospect of being subjected to breathing liquid manure! I also have been informed that there have been several workgroup meetings to which residents of the communities affected were not invited to participate.

According to a report published by the National Association of Local Boards of Health animal manure contains 160 pathogens that are capable of causing disease or infection in animals or humans, affecting the respiratory and digestive systems, muscles and skin with chills and fever, itching and rashes, fatigue and weakness, nausea and vomiting, diarrhea and dehydration, headache, abdominal pain and cramping

and other debilitating symptoms and illnesses. These pathogens can be transmitted through the air and/or water, potentially leading to widespread outbreaks. Manure lagoons also contain antibiotics, hormones, pesticides, human and municipal and industrial wastes, all of which are potentially transferred to humans and animals at great distance from the spraying area.

In Kewanee County alone, there are currently 16 Concentrated Animal Feeding Operations (CAFOs), which are already spreading liquid manure directly to the land. To consider adding spraying of additional liquid manure increases the risk those residents already face.

The American Lung Association understands and respects the long tradition of agriculture and the important role it plays in our economy. Many of our own state authorities, however, have publicly recognized the potential negative health impacts of the center pivot sprinkler technology and have published recommendations to limit exposure. Whether these recommendations are adequate to protect these residents is still open for debate, especially in light of the very large potential applications being considered. Because of these facts, we are requesting that you reopen the work group with the inclusion of residents from the affected communities. We also respectfully request that you hold a public hearing in advance of issuing any permits, so that residents can be fully heard.

I know the residents are eager to work with state officials to find a solution that both helps our farms prosper while also protecting the people who live nearby. I hope to learn more about the permitting process and how we can assist you in finding a satisfactory resolution to this issue.

Dona Wininsky

Director of Public Policy and Communications, American Lung Association in Wisconsin

Nancy Utesch
Kewaunee, WI
April 11th, 2013

Email Address

The John Hopkins Center for a Livable Future
Bloomberg School of Public Health
615 North Wolfe Street, W7010
Baltimore, MD 21205

March 27, 2014

Kewaunee CARES
P.O. Box 84
Kewaunee, WI 54216

Disclaimer: The opinions expressed herein are our own and do not necessarily reflect the views of The Johns Hopkins University.

Re: Manure from intensive livestock operations: health and environmental concerns

To whom it may concern:

We are researchers at The Johns Hopkins Center for a Livable Future, based at the Bloomberg School of Public Health. The Center engages in research, policy analysis, education, advocacy, and other activities guided by an ecologic perspective that diet, food production, the environment, and public health are interwoven elements of a single complex system. We recognize the fundamental importance of food animal production in these issues as they relate to the U.S. food system.

We are writing to present some of the concerns associated with the generation and management of manure from intensive livestock operations, particularly regarding the health of Wisconsin's rural citizens. These health and environmental concerns include:

- The spread of infectious disease, including antibiotic-resistant bacteria, to nearby communities.
- Groundwater and surface water pollution, and associated health and ecological impacts.
- Air pollution, odors, and associated health and social impacts.

These are detailed below, with supporting evidence from the peer-reviewed scientific literature.

Background

According to the 2007 Census of Agriculture, Wisconsin is the second leading dairy-producing state in the country. The state is home to over 1.2 million milk cows, with an inventory of close to 3.4 million cattle and calves—the 9th largest in the nation. Wisconsin is also a significant contributor to U.S. pork, poultry and egg production (1,2).

Over half of Wisconsin's cattle and calves are on farms with reported inventories of over 200 head, and 27 percent are on farms with over 500 head (1). With regards to health and environmental concerns, it is critical to consider inventory size alongside other important factors such as feed inputs, stocking density, and the amount of available cropland for spreading manure.

Producing large numbers of animals over a relatively small land area presents the challenge of managing the quantities of manure they generate. A 1400 pound lactating cow, for example, produces an estimated 148 lbs of waste daily (3). Humans, by comparison, produce 2.5 lbs daily. An intensive dairy operation with several hundred animals, by extension, may produce as much excrement as a small city, concentrated over a tiny fraction of the land area and without the benefit of a wastewater treatment plant to eliminate biological and chemical contaminants. In large part because of these challenges, intensive livestock operations have emerged as a major source of pollution to ground and surface waters (4–9).

Any farmer can attest to the value of manure as a source of nutrients and organic matter for their soil. The quantity of manure generated at intensive operations, however, frequently exceeds the amount that can be utilized by surrounding cropland, and transporting manure further may not be economically feasible (10–12). When manure is over-applied, the excess—along with chemical (13–17) and microbial (4,18,19) contaminants associated with it—may be transported by runoff into surface waters and/or leach into groundwater. Results from a 2005 study, for example, suggest 71 percent of Wisconsin dairy farms generate manure in amounts that exceed the nutrient requirements of the cropland on which manure is applied (20). The potential health and ecological effects associated with these scenarios are detailed below.

Spread of infectious disease to nearby communities

Crowded conditions in intensive livestock operations present frequent opportunities for the transmission of viral and bacterial pathogens among animals, and between animals and humans. Many of these pathogens live in the digestive tracts of animals and may be passed in their waste (4,18,19).

The disease risks stemming from intensive livestock production are heightened by the potential for infection with antibiotic-resistant bacteria. The use of low doses of antibiotic drugs as a means to promote growth (often also called "disease prevention") in animals has become commonplace—an estimated 80 percent of antibiotics sold for human and animal uses in the U.S. are sold for use in food-producing animals (21). Administering antibiotics to animals at doses too low to treat disease fosters the proliferation of antibiotic-resistant pathogens, which can cause infections in humans. When a person is infected with antibiotic-resistant bacteria, these infections can be more difficult and expensive to treat (22).

A growing body of evidence points to the potential pathways by which pathogens (antibiotic-resistant or otherwise) might spread from intensive livestock operations into communities. Studies suggest, for example, that antibiotic-resistant pathogens may be transmitted by workers into their homes and communities (23,24), conveyed by runoff into ground and surface waters (19), blown out of ventilation systems (25–27), and spread to consumers via contaminated meat (28,29). Pathogens may also be transported by flies (30), wild birds (31,32), and animal transport vehicles (33). Further evidence for these pathways is documented in a 2013 study in which living closer to swine operations—and to fields where manure is spread—was significantly associated with elevated rates of infection with methicillin-resistant *Staphylococcus aureus* (MRSA), an antibiotic-resistant pathogen that can be challenging and expensive to treat (34). A similar study found similar associations between proximity to a swine operation and colonization with MRSA (35).

Health and ecological impacts of ground and surface water pollution

Manure from intensive livestock operations may introduce a range of waterborne contaminants into ground and/or surface waters, including nitrates (7,8), microbial pathogens (4,19,34), veterinary pharmaceuticals(14–18,36) and natural and synthetic hormones (37,38). Communities living downstream from these operations may be exposed to these agents via drinking or having skin contact with contaminated ground or surface waters.

Exposure to these waterborne contaminants can result in adverse health effects. Ingesting high levels of nitrate (naturally occurring in manure), for example, has been associated with increased risks for thyroid conditions (39,40), birth defects and other reproductive problems (39,41), diabetes (39), various cancers (39,42), and methemoglobinemia (blue baby syndrome), a potentially fatal condition among infants (43).

The risks of exposure to waterborne contaminants are particularly salient for the 70 percent of Wisconsin's population who depend on groundwater for their drinking water

supply—the state ranks fourth in the nation for the percentage of households on private wells (44). Adding to these concerns, much of southern and eastern Wisconsin has karst geology—a feature that can readily channel surface contaminants into groundwater sources (45). Private wells are not subject to federal drinking water regulations, and while some states have minimal requirements for private wells, state-level action is usually only triggered during property transfer and rarely requires periodic monitoring of water quality (46). Further, most water treatment systems for private wells are designed to deal with heavy metals and other more common drinking water contaminants, and are not suited for removal of drug residues and hormonally-active compounds.

Nutrient runoff into surface waters may also have consequences for marine ecosystems and the people who depend on them for recreation and economic activity. Intensive livestock operations are a major source of nutrient runoff (6,7,47), contributing to algal blooms and subsequent hypoxic "dead zones" that may result from algal decomposition. Aquatic regions exposed to long periods of hypoxia often see dramatic reductions in fisheries, among other health, ecological, and economic harms (48). Nutrient runoff has also been implicated in the growth of harmful algal blooms (49), which may pose health risks for people who swim or fish in recreational waters, or who consume contaminated seafood. Exposure to algal toxins has been linked to neurological impairments, liver damage, stomach illness, skin lesions, and other adverse health effects (50).

In more severe cases, manure storage facilities may rupture, leak, or overflow during extreme weather events, releasing their contents into surrounding waterways. For example, in 1995 a large swine waste holding lagoon in North Carolina ruptured due to faulty management. Close to 26 million gallons of manure emptied onto fields and lawns of adjacent homes before draining into a nearby river. The pollution load led to the proliferation of toxic algal blooms and widespread fish kills, and fecal bacteria were detected in river sediment at levels over 15,000 times higher than state standards (51).

Air pollution, odors, and associated health and social impacts

Intensive livestock operations release a range of airborne pollutants, including ammonia, hydrogen sulfide, and other gases emitted from animal waste; and airborne particulates, which may be comprised of dried feces, animal dander, fungal spores, and bacterial toxins (52). Results from a two-year air monitoring study, jointly sponsored by the U.S. Environmental Protection Agency and representatives of the pork, poultry, dairy and egg industries, suggest intensive livestock operations produce several of these pollutants at levels well above federal standards.(53)

Much of the research on the health effects associated with exposure to airborne pollutants from confinement operations has focused on workers. At least one in four workers in these operations are estimated to suffer from respiratory illness (54).

A growing body of evidence suggests residents living near intensive livestock operations may also be at greater risks of respiratory illness. Results from a study of industrial-scale dairy operations in Washington State, for example, suggest intensive dairy operations are a significant source of particulate matter among nearby rural communities (55). Another study detected high concentrations of particulate matter downwind from swine confinement operations, which was linked to wheezing, breathing difficulties, and eye, skin, and nasal irritation among residents of downwind communities (56). Indicators of air pollution from swine confinement operations have also been linked to asthma symptoms among students at nearby schools (57). Additional studies have illustrated relationships between proximity to intensive livestock operations and respiratory effects (58–61) among other adverse health outcomes.

Odors associated with air pollutants from intensive livestock operations have been known to interfere with daily activities, quality of life, social gatherings, and community cohesion (62,63). In addition to the stigma and social disruption they often generate, odors from swine confinement operations have been associated with physiological and psychological effects, including high blood pressure, depression, anxiety, and sleep disturbances (64–66).

Despite the above concerns, all but the largest livestock operations—those designated as "Large CAFOs" (concentrated animal feeding operations)—are required by federal law to report hazardous airborne emissions, and then only if the levels are above certain thresholds. Even in cases when operations report emissions, such information may not be available to the public. For these reasons, the relationships between intensive livestock operations, air quality, and the health of rural residents are poorly understood. These data gaps speak to the need for better methods of estimating emissions, including more stringent reporting requirements and air monitoring stations at intensive livestock operations and communities (67).

Conclusion

For thousands of years, manure has been valued by farmers for its roles in building soil quality and increasing crop yields. Producing livestock such that they generate more manure than can be utilized by nearby cropland is not only a waste of this important resource, it is also a public health and environmental problem. A growing body of evidence has implicated the generation and management of manure from intensive livestock operations in the spread of infectious disease (including antibiotic-resistant strains), the

introduction of microbial and chemical contaminants into ground and surface waters, impacts to air quality, and the wide range of adverse health, social, ecological and economic outcomes that result from these events.

We hope our letter is helpful in describing some of the public health and environmental concerns associated with the generation and management of manure from intensive livestock operations. Please do not hesitate to contact us if you have any questions.

Sincerely,

Robert S. Lawrence, MD, MACP, FACPM
The Center for a Livable Future Professor in Environmental Health Sciences
Professor, Departments of Environmental Health Sciences, Health Policy and Management, and International Health
Director, Johns Hopkins Center for a Livable Future

Keeve E. Nachman, PhD, MHS
Assistant Scientist, Departments of Environmental Health Sciences and Health Policy and Management
Program Director, Food Production and Public Health,
Johns Hopkins Center for a Livable Future

David C. Love, PhD
Assistant Scientist, Department of Environmental Health Sciences
Assistant Scientist, Public Health & Sustainable Aquaculture Project,
Johns Hopkins Center for a Livable Future

Robert P. Martin
Senior Lecturer, Department of Environmental Health Sciences
Program Director, Food System Policy Program,
Johns Hopkins Center for a Livable Future

Brent F. Kim, MHS
Program Officer, Food Production and Public Health,
Johns Hopkins Center for a Livable Future

Claire M. Fitch
Research Assistant, Food Production and Public Health,
Johns Hopkins Center for a Livable Future

References

1. USDA. 2007 U.S. Census of Agriculture. 2009.
2. USDA. 2007 Census of Agriculture: State Profile: Wisconsin. 2009.
3. Lorimor J, Powers W, Sutton A. Manure Characteristics MWPS-18 Manure Management Systems Series. Ames, Iowa; 2000.
4. Thurston-Enriquez JA, Gilley JE, Eghball B. Microbial quality of runoff following land application of cattle manure and swine slurry. J Water Health. 2005;3(2):157–71.
5. Graham JP, Nachman KE. Managing waste from confined animal feeding operations in the United States: the need for sanitary reform. J Water Heal. 2010;December:646–70.
6. Howarth R. Coastal nitrogen pollution: a review of sources and trends globally and regionally. Harmful Algae. 2008 Dec;8(1):14–20.
7. Mallin MA, Cahoon LB. Industrialized animal production — a major source of nutrient and microbial pollution to aquatic ecosystems. Popul Environ. 2003;24(5):369–85.
8. Burkholder J, Libra B, Weyer P, Heathcote S, Kolpin D, Thorne PS, et al. Impacts of waste from concentrated animal feeding operations on water quality. Environ Health Perspect. 2007 Feb;115(2):308–12.
9. U.S. Environmental Protection Agency. Literature Review of Contaminants in Livestock and Poultry Manure and Implications for Water Quality. 2013.
10. Bradford S a, Segal E, Zheng W, Wang Q, Hutchins SR. Reuse of concentrated animal feeding operation wastewater on agricultural lands. J Environ Qual. 2007;37(5 Suppl):S97–S115.
11. Weida WJ. Considering the Rationales for Factory Farming. Environmental Health Impacts of CAFOs: Anticipating Hazards - Searching for Solutions. Iowa City, IA; 2004. p. 1–45.
12. Weida WJ. A Short Analysis Of: Manure Management for Water Quality: Costs to Animal Feeding Operations of Applying Manure Nutrients to Land. Agricultural Economic Report 824. 2003.
13. Khan SJ, Roser DJ, Davies CM, Peters GM, Stuetz RM, Tucker R, et al. Chemical contaminants in feedlot wastes: concentrations, effects and attenuation. Environ Int. 2008 Aug;34(6):839–59.
14. Webster JP, Kover SC, Bryson RJ, Harter T, Mansell DS, Sedlak DL, et al. Occurrence of trenbolone acetate metabolites in simulated confined animal feeding operation (CAFO) runoff. Environ Sci Technol. 2012;46(7):3803–10.

15. Bartelt-Hunt S, Snow DD, Damon-Powell T, Miesbach D. Occurrence of steroid hormones and antibiotics in shallow groundwater impacted by livestock waste control facilities. J Contam Hydrol. 2011;123(3-4):94–103.

16. Kuchta SL, Cessna AJ. Fate of lincomycin in snowmelt runoff from manure-amended pasture. Chemosphere. Elsevier Ltd; 2009 Jul;76(4):439–46.

17. Batt AL, Snow DD, Aga DS. Occurrence of sulfonamide antimicrobials in private water wells in Washington County, Idaho, USA. Chemosphere. 2006 Sep;64(11):1963–71.

18. Chee-Sanford JC, Mackie RI, Koike S, Krapac IG, Lin Y-F, Yannarell AC, et al. Fate and transport of antibiotic residues and antibiotic resistance genes following land application of manure waste. J Environ Qual. 2009;38(3):1086–108.

19. Sapkota AR, Curriero FC, Gibson KE, Schwab KJ. Antibiotic-resistant enterococci and fecal indicators in surface water and groundwater impacted by a concentrated Swine feeding operation. Environ Health Perspect. 2007 Jul;115(7):1040–5.

20. Saam H, Mark Powell J, Jackson-Smith DB, Bland WL, Posner JL, Powell JM. Use of animal density to estimate manure nutrient recycling ability of Wisconsin dairy farms. Agric Syst. 2005 Jun;84(3):343–57.

21. U.S. Food and Drug Administration. Letter to The Honorable Louise M. Slaughter: Sales of Antibacterial Drugs in Kilograms. Washington D.C.; 2010.

22. Roberts RR, Hota B, Ahmad I, Scott RD, Foster SD, Abbasi F, et al. Hospital and societal costs of antimicrobial-resistant infections in a Chicago teaching hospital: implications for antibiotic stewardship. Clin Infect Dis An Off Publ Infect Dis Soc Am. 2009 Oct 15;49(8):1175–84.

23. Price LB, Graham JP, Lackey LG, Roess A, Vailes R, Silbergeld E. Elevated risk of carrying gentamicin-resistant Escherichia coli among U.S. poultry workers. Environ Health Perspect. 2007 Dec;115(12):1738–42.

24. Smith TC, Gebreyes W a, Abley MJ, Harper AL, Forshey BM, Male MJ, et al. Methicillin-Resistant Staphylococcus aureus in Pigs and Farm Workers on Conventional and Antibiotic-Free Swine Farms in the USA. PLoS One. 2013 Jan;8(5):e63704.

25. Schulz J, Friese A, Klees S, Tenhagen B a, Fetsch A, Rösler U, et al. Longitudinal study of the contamination of air and of soil surfaces in the vicinity of pig barns by livestock-associated methicillin-resistant Staphylococcus aureus. Appl Environ Microbiol. 2012 Aug;78(16):5666–71.

26. Gibbs SG, Green CF, Tarwater PM, Mota LC, Mena KD, Scarpino P V. Isolation of Antibiotic-Resistant Bacteria from the Air Plume Downwind of a Swine Confined or Concentrated Animal Feeding Operation. Environ Health Perspect. 2006 Mar 27;114(7):1032–7

27. Chapin A, Rule A, Gibson K, Buckley T, Schwab K. Airborne Multidrug-Resistant Bacteria Isolated from a Concentrated Swine Feeding Operation. Environ Health Perspect. 2005 May 1;113(2).

28. Hayes JR, English LL, Carter PJ, Proescholdt T, Lee KY, Wagner DD, et al. Prevalence and Antimicrobial Resistance of Enterococcus Species Isolated from Retail Meats. Appl Environ Microbiol. 2003;69(12):7153–60.

29. Donabedian SM, Thal LA, Hershberger E, Perri MB, Chow JW, Bartlett P, et al. Molecular Characterization of Gentamicin-Resistant Enterococci in the United States: Evidence of Spread from Animals to Humans through Food. J Clin Microbiol. 2003;41(3):1109–13.

30. Graham JP, Price LB, Evans SL, Graczyk TK, Silbergeld EK. Antibiotic resistant enterococci and staphylococci isolated from flies collected near confined poultry feeding operations. Sci Total Environ. Elsevier B.V.; 2009 Apr 1;407(8):2701–10.

31. Carlson JC, Franklin AB, Hyatt DR, Pettit SE, Linz GM. The role of starlings in the spread of Salmonella within concentrated animal feeding operations. J Appl Ecol. 2010;48(2):479–86.

32. Graham JP, Leibler JH, Price LB, Otte JM, Pfeiffer DU, Tiensin T, et al. The animal-human interface and infectious disease in industrial food animal production: rethinking biosecurity and biocontainment. Public Health Rep. 2008;123(3):282–99.

33. Rule AM, Evans SL, Silbergeld EK. Food animal transport: a potential source of community exposures to health hazards from industrial farming (CAFOs). J Infect Public Health. 2008 Jan;1(1):33–9.

34. Casey JA, Curriero FC, Cosgrove SE, Nachman KE, Schwartz BS. High-Density Livestock Operations, Crop Field Application of Manure, and Risk of Community-Associated Methicillin-Resistant Staphylococcus aureus Infection in Pennsylvania. JAMA Intern Med. 2013 Sep 16;21205(21):1980–90.

35. Carrel M, Schweizer ML, Sarrazin MV, Smith C, Perencevich EN, Smith TC. Residential Proximity to Large Numbers of Swine in Feeding Operations Is Associated with Increased Risk of Methicillin-Resistant Staphylococcus aureus Colonization at Time of Hospital Admission in Rural Iowa Veterans Residential Proximity to Large Numbers. 2014;6–10.

36. Chee-Sanford JC, Aminov RI, Krapac IJ, Garrigues-Jeanjean N, Mackie RI. Occurrence and Diversity of Tetracycline Resistance Genes in Lagoons and Groundwater Underlying Two Swine Production Facilities. Appl Environ Microbiol. American Society for Microbiology; 2001;67(4):1494–502.

37. Hanselman TA, Graetz DA, Wilkie AC. Manure-borne estrogens as potential environmental contaminants: a review. Environ Sci Technol. 2003;37(24):5471–8.

38. Shappell NW, Billey LO, Forbes D, Matheny TA, Poach ME, Reddy GB, et al. Estrogenic activity and steroid hormones in swine wastewater through a lagoon constructed-wetland system. Environ Sci Technol. 2007;41(2):444–50.

39. Ward MH. Too much of a good thing? Nitrate from nitrogen fertilizers and cancer. Rev Environ Heal. 2009;24(4):357–63.

40. Aschebrook-Kilfoy B, Heltshe SL, Nuckols JR, Sabra MM, Shuldiner AR, Mitchell BD, et al. Modeled nitrate levels in well water supplies and prevalence of abnormal thyroid conditions among the Old Order Amish in Pennsylvania. Environ Heal. 2012;11(1):6.

41. Manassaram DM, Backer LC, Moll DM. A Review of Nitrates in Drinking Water: Maternal Exposure and Adverse Reproductive and Developmental Outcomes. Environ Health Perspect. 2005 Nov 3;114(3):320–7.

42. Chiu H-F, Tsai S-S, Yang C-Y. Nitrate in drinking water and risk of death from bladder cancer: an ecological case-control study in Taiwan. J Toxicol Environ Health A. 2007 Jun;70(12):1000–4.

43. Knobeloch L, Salna B, Hogan A, Postle J, Anderson H. Blue babies and nitrate-contaminated well water. Environ Health Perspect. 2000;108(7):675–8.

44. Water Systems Council. Wisconsin Fact Sheet [Internet]. 2012. Available from: http://www.watersystemscouncil.org/documents/WI.pdf

45. Wisconsin Geological and Natural History Survey. Information about karst [Internet]. 2012. Available from: http://wisconsingeologicalsurvey.org/karst.htm

46. Rogan WJ, Brady MT. Drinking water from private wells and risks to children. Pediatrics. 2009;123(6):1599–605.

47. Castro MS, Driscoll CT, Jordan TE, Reay WG, Boynton WR. Sources of Nitrogen to Estuaries in the United States. Estuaries. 2003;26(3):803–14.

48. Diaz RJ, Rosenberg R. Spreading dead zones and consequences for marine ecosystems. Science. 2008 Aug 15;321(5891):926–9.

49. Anderson DM, Burkholder JM, Cochlan WP, Glibert PM, Gobler CJ, Heil CA, et al. Harmful algal blooms and eutrophication: Examining linkages from selected coastal regions of the United States. Harmful Algae. 2008;8(1):39–53.

50. Van Dolah FM. Marine algal toxins: origins, health effects, and their increased occurrence. Environ Health Perspect. National Institute of Environmental Health Science; 2000;108(Supplement 1):133.

51. Burkholder JM, Mallin MA, Glasgow HB, Larsen LM, McIver MR, Shank GC, et al. Impacts to a coastal river and estuary from rupture of a large swine waste holding lagoon. J Environ Qual. 1997;26(6):1451.

52. Heederik D, Sigsgaard T, Thorne PS, Kline JN, Avery R, Bønløkke JH, et al. Health effects of airborne exposures from concentrated animal feeding operations. Environ Health Perspect. 2007 Feb;115(2):298–302.

53. Environmental Integrity Project. Hazardous Pollution from Factory Farms: An Analysis of EPA's National Air Emissions Monitoring Study Data. 2011.

54. Donham K, Wing S, Osterberg D, Flora JL, Hodne C, Thu KM, et al. Community health and socioeconomic issues surrounding concentrated animal feeding operations. Environ Health Perspect. 2007 Feb;115(2):317–20.

55. Williams DL, Breysse PN, McCormack MC, Diette GB, McKenzie S, Geyh AS. Airborne cow allergen, ammonia and particulate matter at homes vary with distance to industrial scale dairy operations: an exposure assessment. Environ Health. BioMed Central Ltd; 2011 Jan;10(1):72.

56. Schinasi L, Horton RA, Guidry VT, Wing S, Marshall SW, Morland KB. Air pollution, lung function, and physical symptoms in communities near concentrated swine feeding operations. Epidemiology. 2011 Mar;22(2):208–15.

57. Mirabelli MC, Wing S, Marshall SW, Wilcosky TC. Asthma symptoms among adolescents who attend public schools that are located near confined swine feeding operations. Pediatrics. 2006 Jul;118(1):e66–75.

58. Radon K, Schulze A, Ehrenstein V, van Strien RT, Praml G, Nowak D. Environmental exposure to confined animal feeding operations and respiratory health of neighboring residents. Epidemiology. 2007 May;18(3):300–8.

59. Thu K, Donham K, Zigenhorn R, Reynolds S, Thorne PS, Subramanian P, et al. A control study of the physical and mental health of residents living near a large-scale swine operation. J Agric Saf Health. 1997;3(1):13–26.

60. Bullers S. Environmental Stressors, Perceived Control, and Health: The Case of Residents Near Large-Scale Hog Farms in Eastern North Carolina. Hum Ecol. 2005 Feb;33(1):1–16.

61. Merchant J a., Naleway AL, Svendsen ER, Kelly KM, Burmeister LF, Stromquist AM, et al. Asthma and Farm Exposures in a Cohort of Rural Iowa Children. Environ Health Perspect. 2004 Dec 7;113(3):350–6.

62. Donham KJ, Wing S, Osterberg D, Flora JL, Hodne C, Thu KM, et al. Community health and socioeconomic issues surrounding concentrated animal feeding operations. Environ Health Perspect. 2007 Feb;115(2):317–20.

63. Wing S, Wolf S. Intensive livestock operations, health, and quality of life among eastern North Carolina residents. Environ Health Perspect. 2000 Mar;108(3):233–8.

64. Wing S, Horton RA, Rose KM. Air pollution from industrial swine operations and blood pressure of neighboring residents. Environ Health Perspect. 2013 Jan;121(1):92–6.

65. Wing S, Horton RA, Marshall SW, Thu K, Tajik M, Schinasi L, et al. Air pollution and odor in communities near industrial swine operations. Environ Health Perspect. 2008 Oct;116(10):1362–8.

66. Horton RA, Wing S, Marshall SW, Brownley KA. Malodor as a trigger of stress and negative mood in neighbors of industrial hog operations. Am J Public Health. 2009 Nov;99 Suppl 3:S610–5.

67. Smith TJS, Rubenstein LS, Nachman KE. Availability of information about airborne hazardous releases from animal feeding operations. PLoS One. 2013 Jan;8(12):e85342.

Original Investigation

High-Density Livestock Operations, Crop Field Application of Manure, and Risk of Community-Associated Methicillin-Resistant *Staphylococcus aureus* Infection in Pennsylvania

Joan A. Casey, MA; Frank C. Curriero, PhD, MA; Sara E. Cosgrove, MD, MS; Keeve E. Nachman, PhD, MHS; Brian S. Schwartz, MD, MS

IMPORTANCE Nearly 80% of antibiotics in the United States are sold for use in livestock feeds. The manure produced by these animals contains antibiotic-resistant bacteria, resistance genes, and antibiotics and is subsequently applied to crop fields, where it may put community members at risk for antibiotic-resistant infections.

OBJECTIVE To assess the association between individual exposure to swine and dairy/veal industrial agriculture and risk of methicillin-resistant *Staphylococcus aureus* (MRSA) infection.

DESIGN, SETTING, AND PARTICIPANTS A population-based, nested case-control study of primary care patients from a single health care system in Pennsylvania from 2005 to 2010. Incident MRSA cases were identified using electronic health records, classified as community-associated MRSA or health care–associated MRSA, and frequency matched to randomly selected controls and patients with skin and soft-tissue infection. Nutrient management plans were used to create 2 exposure variables: seasonal crop field manure application and number of livestock animals at the operation. In a substudy, we collected 200 isolates from patients stratified by location of diagnosis and proximity to livestock operations.

MAIN OUTCOMES AND MEASURES Community-associated MRSA, health care–associated MRSA, and skin and soft-tissue infection status (with no history of MRSA) compared with controls.

RESULTS From a total population of 446 480 patients, 1539 community-associated MRSA, 1335 health care-associated MRSA, 2895 skin and soft-tissue infection cases, and 2914 controls were included. After adjustment for MRSA risk factors, the highest quartile of swine crop field exposure was significantly associated with community-associated MRSA, health care-associated MRSA, and skin and soft-tissue infection case status (adjusted odds ratios, 1.38 [95% CI, 1.13-1.69], 1.30 [95% CI, 1.05-1.61], and 1.37 [95% CI, 1.18-1.60], respectively); and there was a trend of increasing odds across quartiles for each outcome ($P \leq .01$ for trend in all comparisons). There were similar but weaker associations of swine operations with community-associated MRSA and skin and soft-tissue infection. Molecular testing of 200 isolates identified 31 unique *spa* types, none of which corresponded to CC398 (clonal complex 398), but some have been previously found in swine.

CONCLUSIONS AND RELEVANCE Proximity to swine manure application to crop fields and livestock operations each was associated with MRSA and skin and soft-tissue infection. These findings contribute to the growing concern about the potential public health impacts of high-density livestock production.

JAMA Intern Med. doi:10.1001/jamainternmed.2013.10408
Published online September 16, 2013.

Invited Commentary

Supplemental content at jamainternalmedicine.com

Author Affiliations: Author affiliations are listed at the end of this article.

Corresponding Author: Brian S. Schwartz, MD, MS, Department of Environmental Health Sciences, Johns Hopkins Bloomberg School of Public Health, 615 N Wolfe St, Room W7041, Baltimore, MD 21205 (bschwart@jhsph.edu).

The US Food and Drug Administration reports that 80% of antibiotics in the United States are used in food animals, mainly to promote growth of livestock in high-density production.[1,2] In this industrial model, thousands of livestock animals are housed together and fed subtherapeutic doses of antimicrobial agents.[3] This can select for antibiotic-resistant bacteria like methicillin-resistant *Staphylococcus aureus* (MRSA).[4] About 75% of administered antibiotics are not absorbed by the animal and end up in manure.[5] In addition to antibiotics, antibiotic-resistant bacteria and resistance genes have been isolated from manure and are known to persist in the environment.[6] Application of manure to crop fields close to human dwellings may lead to increased risk of antibiotic-resistant infections.[7]

High prevalence of MRSA colonization among pig farmers was first noted in the Netherlands in 2005.[8] Transmission of MRSA among cows, calves, and humans has also been reported.[9,10] A US study reported that 45% of swine workers were colonized, which is 30 times the national average.[11,12] Few studies have assessed risk of MRSA infection. A Danish case-control study (21 cases) found that living or working on a farm was a risk factor for MRSA infection.[13] Other studies of MRSA infection have described the spread of infection within pig farming families.[14,15] To our knowledge, the impact of proximity to high-density livestock production on risk of MRSA infection has not been evaluated. Two studies assessed community livestock density and found no association with MRSA colonization.[16,17] Most studies have implicated clonal complex 398 (CC398) as the most common variant harbored by swine.[9,12-15,17,18]

In the United States, community-associated MRSA (CA-MRSA) now accounts for more than half of all noninvasive MRSA infections.[19-22] CA-MRSA often occurs as a skin and soft-tissue infection (SSTI) in young, otherwise healthy individuals who lack common health care risk factors.[23-25] In contrast, health care–associated MRSA (HA-MRSA) generally occurs in older individuals with comorbidities. Now, the epidemiology and microbiology of 2 epidemics previously considered distinct are merging.[26-28]

The possible contribution of high-density livestock production to these epidemics has been inadequately studied.[29] US data are needed to evaluate which livestock species pose risk, what aspects of the operations and manure handling are involved, and the magnitude of the risk. We conducted a population-based, nested case-control study using electronic health record (EHR) data from the Geisinger Health System, an integrated health services organization with 4 hospitals and 41 outpatient clinics. We evaluated residential proximity to swine and dairy/veal high-density livestock operations and manure-applied crop fields in relation to CA-MRSA, HA-MRSA, and SSTI (without a history of MRSA infection or colonization) case status.

Methods

Data Sources

To select cases and controls, we used EHR data from January 1, 2005, to February 9, 2010, from 446 480 patients with a Geisinger primary care provider. Geisinger's primary care patients represent the general population in the region.[30] The study area comprised the health system's primary care market and bordering counties totaling 38 counties in Pennsylvania (**Figure 1**); approximately 3.8 million people resided in these counties according to the 2000 US Census. The study was approved by institutional review boards at the Geisinger Health System and the Johns Hopkins Bloomberg School of Public Health.

Pennsylvania Act 38 of 2005 requires high-density livestock operations to develop and implement nutrient management plans (NMPs) for manure handling. We defined *high-density livestock operations* as agricultural operations where animal density exceeded 2 animal equivalent units (AEUs, 1000 pounds of live weight) per acre and where total AEUs exceeded 8; or operations that exceeded 300 AEUs. When livestock operations have insufficient land for manure application, manure is exported to other areas and applied to crop fields. We focused on swine and dairy/veal operations because of previously identified links with MRSA.[8-10,13-15] The NMPs provided data on livestock operation location, animal type, livestock quantity (AEUs), amount of manure applied to crop fields by season, and crop field area and location. We obtained NMPs from the Pennsylvania Department of Environmental Protection and County Conservation Districts.

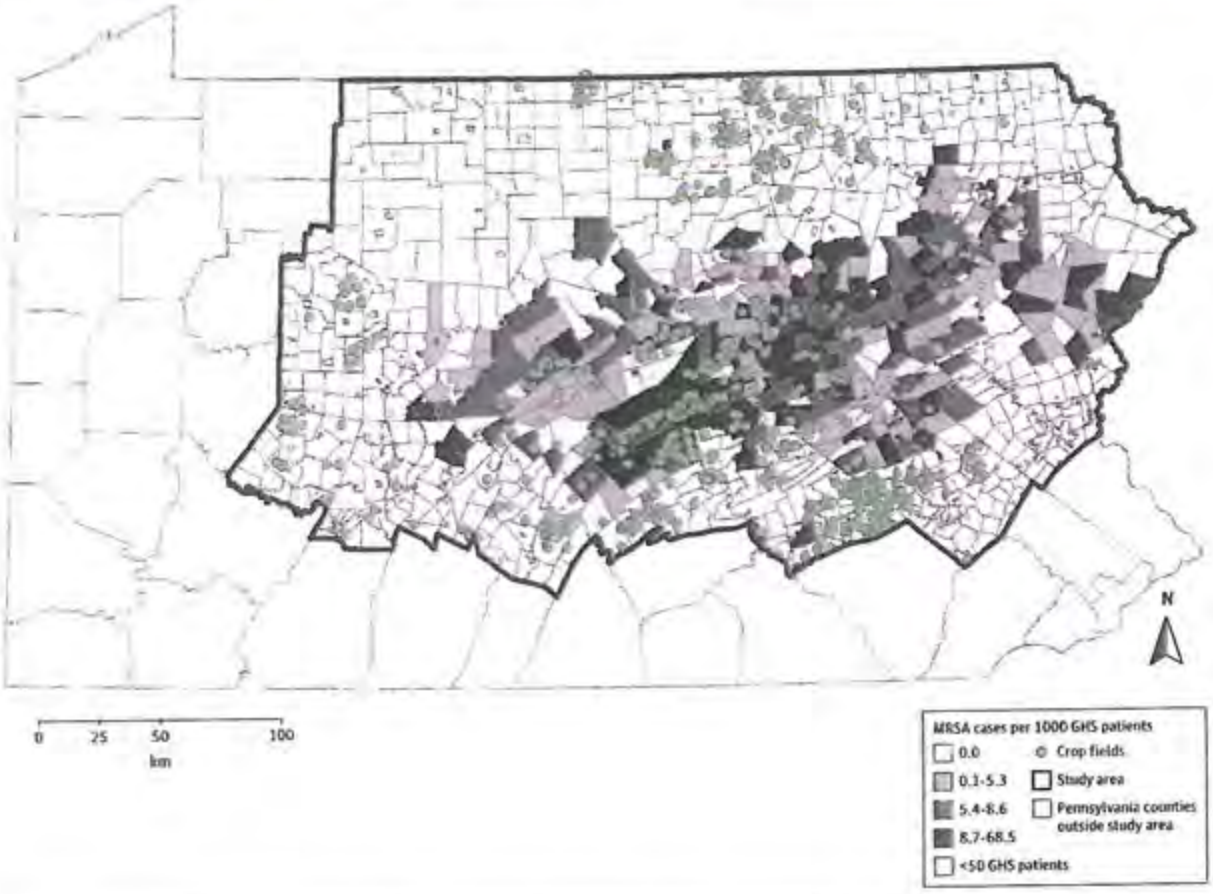
Case Ascertainment and Control Selection

Incident MRSA cases were identified primarily using laboratory cultures and secondarily by diagnosis codes (eg, *International Classification of Diseases, Ninth Revision* [*ICD-9*]) that indicated MRSA infection, as previously described.[22] Cases were then classified as either CA-MRSA or HA-MRSA based on presence of health care risk factors (eg, hospitalization, surgery, dialysis, nursing home residence, indwelling device)[22,31] or diagnosis more than 2 days after hospital admission using *ICD-9* codes[21,23,32] and *Current Procedural Terminology* codes. We then randomly selected patients with SSTI but no history of MRSA using 29 *ICD-9* codes (eg, carbuncle, furuncle, abscess)[22] and controls with no history of MRSA, and we frequency matched both groups with case patients by age (0-6, 7-18, 19-45, 46-62, 62-74, ≥75 years), sex, and diagnosis or an outpatient encounter in the same year as MRSA diagnosis. The SSTI cases were evaluated as a separate case group because some SSTIs occurring during the study period were likely to have been caused by MRSA but not diagnosed as such, and high-density livestock production could cause SSTIs from other bacteria. Therefore, we selected patients with SSTIs without reference to any specific pathogen. If a control had multiple outpatient encounters during the year, a single encounter was randomly selected as the date for exposure assignment.

Geographic Location of Patients, Livestock Operation, and Crop Fields

We identified the latitude and longitude of patient addresses using ArcGIS, version 10 (Esri),[33] and calculated MRSA rates by community (Figure 1). The latitude and lon-

Figure 1. Crop Field Locations and Methicillin-Resistant *Staphylococcus aureus* (MRSA) Rates



Crop field locations and rates of MRSA per 1000 Geisinger Health System (GHS) primary care patients in townships, boroughs, and cities. Rates in communities with fewer than 50 GHS patients were not estimated. The map demonstrates that crop fields were often located in areas with a range of human population densities.

gitude of livestock operation addresses were located using Google Earth with visual confirmation of the presence of a barn at the address. Three different methods were used to locate crop fields because 131 fields (17.3%) were missing address data (Figure 2). In the absence of an address, we used the county and community of the field from the NMP to locate the crop field.

Exposure Assessment

We estimated each individual's exposure to livestock operations and to manure-applied crop fields, for swine and dairy/veal, using an inverse distance-squared approach[34] in R, version 2.14.2 (R Foundation for Statistical Computing). For livestock operations, we used the equation

$$\text{Exposure for patient j} = \sum_{i=1}^{n} \frac{a_i}{d_{ij}^2}$$

where n is the number of operations, a_i is AEUs of livestock at operation I, and d_{ij}^2 is the squared distance (in meters) between operation centroid i and patient j. For crop field manure application during the season of diagnosis or visit, we used the equation

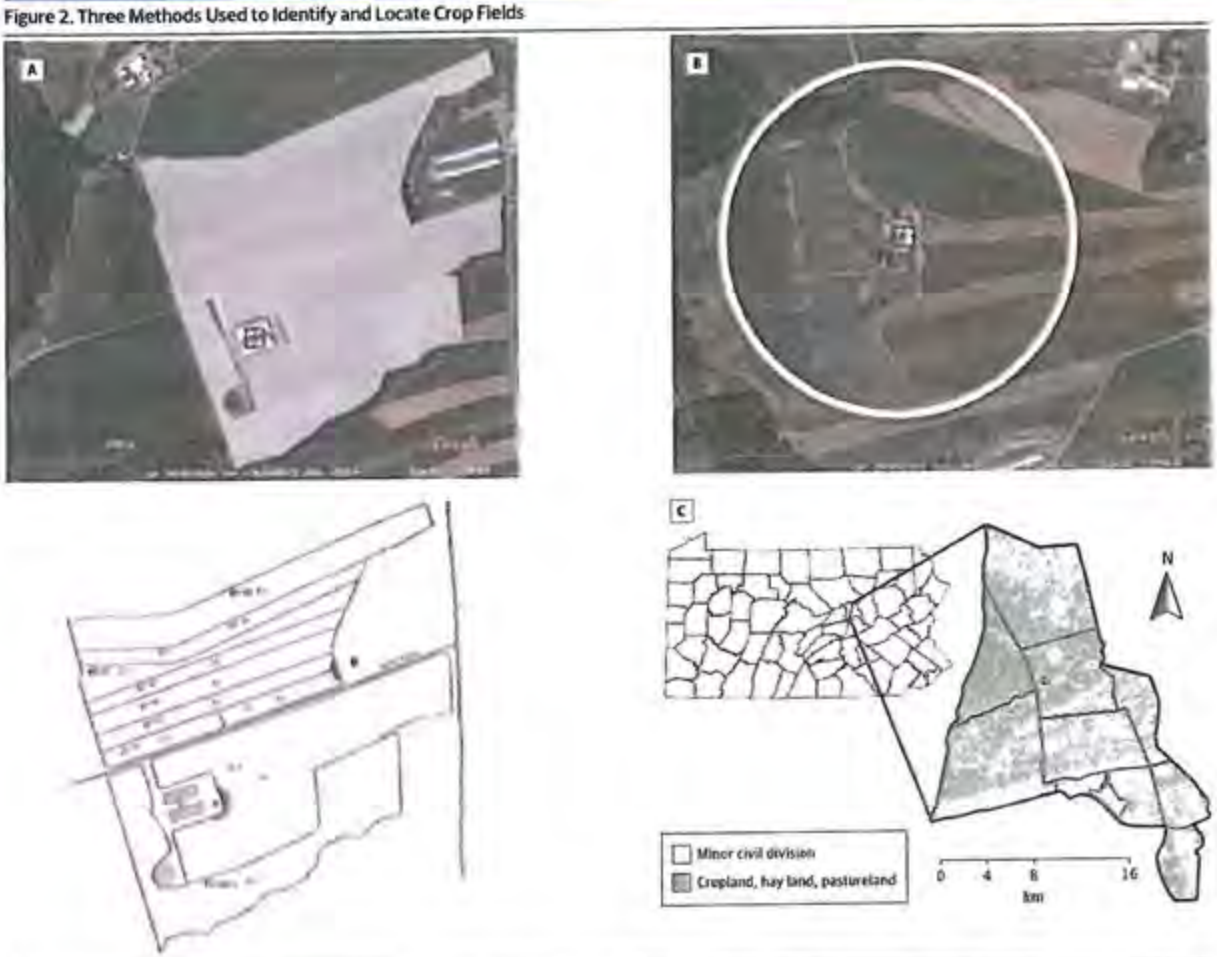
$$\text{Exposure for patient j} = \sum_{i=1}^{n} \frac{c_i}{d_{ij}^2}$$

where n is the number of crop fields, c_i is the concentration of manure (gallons per square meter) applied during the season of diagnosis or visit at field i, and d_{ij}^2 is the squared distance (in meters) between the crop field centroid i and patient j. This resulted in exposure units of gallons per quartic meter (m^4). For missing seasonal application data (40% of fields), we used the regional seasonal average. Exposure variables were modeled as quartiles because they were not normally distributed.

Genetic Typing of MRSA Isolates

In a prospective substudy that occurred from January to December 2012, we identified all primary care patients with a culture-confirmed MRSA infection. We then randomly selected

Figure 2. Three Methods Used to Identify and Locate Crop Fields



A, Aerial photograph (top) or map (bottom) were located using Google Earth (n = 135). B, Operation addresses known and located using ArcGIS, version 10 (Esri) (n = 420). C, County and township known and addresses were located by identifying cropland, hay land, and pastureland on a land use map and randomly selecting a point within the eligible land use types (n = 131).

isolates from patients stratified by location of diagnosis (inpatient or outpatient) and presence or absence of a livestock operation or crop field in their zip code of residence. We oversampled outpatient isolates from zip codes with high-density livestock production. All isolates were characterized by DNA sequence analysis of the protein A gene variable repeat region (*spa* typing).[35] The *spa* types were also assigned a Ridom StaphType, using the Ridom SpaServer database (available at http://www.spaserver.ridom.de).[36] Panton-Valentine leukocidin (*PVL*) genes were detected by polymerase chain reaction.[37]

Statistical Analysis

To compare the 4 study groups, we used Kruskal-Wallis tests for comparisons of means and χ^2 tests for comparisons of proportions. We used multilevel multinomial (2 MRSA groups and controls) and multilevel logistic regression (SSTI cases and controls) to assess the association between exposure and case status. We adjusted models for predictors obtained from the EHR: age, sex, race/ethnicity (non-Hispanic white, non-Hispanic black, Hispanic, and other); ever-smoking status using *ICD-9* codes[22]; antibiotic order in the 2 years preceding diagnosis; and Medical Assistance for health insurance, residential community (city, borough, or township), and community socioeconomic deprivation.[33] *Medical Assistance* is a means-tested program, which we used as a surrogate indicator for low socioeconomic status.[38,39] It was identified for each encounter by 1 of 24 codes and modeled as ever received (if received for >2 encounters) vs never received. The livestock operation model was additionally adjusted for season of infection or visit. Final models were selected based on associations reported in our group's earlier article,[22] and adequate model fit was confirmed using Pearson goodness-of-fit tests and likelihood ratio tests. Semivariograms were used to determine that spatial autocorrelation did not account for the results.[40] We used a 2-sided type 1 error rate of 0.05 as the threshold for statistical significance and made no adjustments for multiple comparisons. Logistic and multinomial logistic regression analyses were completed using Stata statistical software version 11.2 (StataCorp Inc) and the GLLAMM program (www.gllamm.org).

We calculated population attributable fraction (PAF) for CA-MRSA and SSTI cases by using the adjusted odds ratios (AORs) for the third and fourth quartile of crop field swine manure exposure obtained from the final multivariable logistic regression model using the formula PAF = (AOR − 1)/AOR × (proportion of cases exposed to risk factor).[43] The PAF for the third and fourth quartiles were summed to calculate the final PAF. Confidence intervals were computed using the delta method with the postestimation command *nlcom* in Stata.

We performed several sensitivity analyses. First, we evaluated 2 other time windows for crop field manure exposures: a 1-year and a 30-day window before either the date of MRSA diagnosis or the date of a preceding SSTI diagnosis. Second, models were repeated using different methods to identify crop fields (Figure 2). Third, we evaluated effect modification by community type and season. Fourth, analysis was performed to evaluate whether distance to nearest crop field, independent of manure application, was associated with disease outcomes. Finally, we repeated analyses using only culture-confirmed MRSA cases.

Results

Patients, Farms, and Crop Fields Included in the Study

A total of 1734 CA-MRSA and 1519 HA-MRSA cases were identified between January 2005 and February 2010. Most cases (72.3%) were identified by a positive MRSA culture. We frequency matched 3336 SSTIs and 3336 controls to the cases. Of the 9925 patients, we were able to identify latitude and longitude coordinates for home addresses for 87.5%. Thirty-one patients (0.35%) were excluded because they did not reside in counties for which we collected NMPs. This resulted in a total of 1539 CA-MRSA, 1335 HA-MRSA, and 2895 SSTI cases and 2914 controls with residences in 32 counties and 574 communities defined by *minor civil divisions*, ie, census-designated divisions of a county.

We collected NMPs and identified the location of 326 high-density livestock operations, 123 swine and 203 dairy/veal operations, in 27 counties and 168 townships. Ninety-eight of the swine operations (79.7%) and 71 of the dairy/veal farms (35.0%) exported at least a portion of their manure to a total of 424 crop fields. Crop fields were located in 29 counties, 8 boroughs, and 218 townships, for an average of 3.4 crop fields per township. A reported 637 266 595 gallons of manure was applied to crop fields annually. Among those in the highest quartiles of swine livestock operation exposure and swine crop field manure exposure, the median (IQR) distance to the nearest farm or field was 4.6 km (3.1-6.7 km) and 4.0 km (2.6-7.5 km), respectively. The Pearson *r* correlation between the individual-level exposure assignments from the 2 models was 0.59 (both log transformed).

Demographic Characteristics of Cases and Controls

There were no differences in demographic characteristics between patients included in the study and those excluded because we could not map their home address (n = 1211), except that patients with SSTIs who were included were significantly more likely to have ever smoked than were those who were excluded (eTable 1 in the Supplement). Compared with controls, patients in the CA-MRSA group were significantly younger; they were more likely to be black, to smoke, and to receive Medical Assistance; and they lived in communities with greater socioeconomic deprivation (**Table 1**). White race/ethnicity (95.3% of the study population) was associated with higher levels of swine and dairy/veal crop field manure exposure (**Table 2**). Exposures to manure were also the lowest among those who had not received an antibiotic prescription in the 2 years prior to diagnosis or visit, those who had received Medical Assistance, and those residing in cities.

Association of Crop Field Manure Exposure With Case Status

After adjusting for potential confounding variables, we found a significantly increased odds of CA-MRSA, HA-MRSA, and SSTI with higher swine manure exposure (fourth vs first quartile AORs, 1.38 [95% CI, 1.13-1.68], 1.30 [95% CI, 1.05-1.61], and 1.37 [95% CI, 1.18-1.60], respectively; $P = .01$, $P < .001$, and $P < .001$ for trend, respectively) (**Table 3**). The fourth quartile (vs first quartile) of dairy/veal exposure was also associated with increased odds of CA-MRSA (AOR, 1.24 [95% CI, 1.01-1.52]). The PAFs (95% CI) for the highest 2 quartiles of swine crop field manure exposure for CA-MRSA infection and SSTI were 10.7% (5.0-16.4%) and 11.5% (7.0-16.0%), respectively.

Association of High-Density Livestock Operations With Case Status

The fourth quartile vs first quartile of swine livestock operation exposure was associated with increased odds of CA-MRSA and SSTI (AORs, 1.25 [95% CI, 0.99-1.58] and 1.27 [95% CI, 1.08-1.50], respectively; $P = .04$ and $P = .002$, respectively) but not HA-MRSA (Table 3). No associations were seen with dairy/veal operations. Receipt of Medical Assistance remained independently associated with MRSA and SSTI outcomes in all adjusted analyses.

MRSA Isolate Substudy

A total of 200 isolates were randomly selected from 1128 patients with isolates (Table 4). Of these, 133 (66.5%) were common community strains (*spa* types t008, t024, t064, t206, t211); 33 (16.5%) were common health care strains (t002, t010, t062, t105); and the remainder were divided among 22 additional types. Notably, none was a *spa* type associated with CC398. A total of 27 community-onset isolates were *PVL*-negative.

Sensitivity Analyses

Evaluation of the 2 other time windows for manure application revealed slightly attenuated but otherwise similar results, except in the case of annual dairy/veal exposure, where the association strengthened for both CA-MRSA and SSTI cases (fourth vs first quartile AORs, 1.41 [95% CI, 1.13-1.77] and 1.26 [95% CI 1.08-1.48], respectively; $P = .01$ and $P = .02$, respectively) (eTable 2 in the Supplement). Exclusion of crop fields without aerial photographs and/or addresses, including interaction terms for community type or season, and restricting analysis to culture-confirmed MRSA cases did not alter results. Distance to nearest crop field, independent of manure application, was not associated with MRSA or SSTI.

Table 1. Patient Demographic and Clinical Characteristics

Characteristic	Study Participants, No. (%)			
	CA-MRSA (n = 1539)	HA-MRSA (n = 1335)	SSTI With No History of MRSA (n = 2895)[a]	Control (n = 2914)
Male	715 (46.5)	673 (50.4)	1412 (48.8)	1430 (49.1)
Age at infection or visit, median (IQR), y	23.5 (10-47)[b]	60.9 (39-77)[b]	41.5 (16-66)	41.9 (16-66)
Race/ethnicity[c]				
Non-Hispanic white	1446 (94.0)	1285 (96.5)	2772 (95.8)	2770 (95.1)
Non-Hispanic Black	49 (3.2)[d]	26 (2.0)	46 (1.6)	57 (2.0)
Hispanic	31 (2.0)	13 (1.0)[d]	52 (1.8)	52 (1.8)
Other	13 (0.8)	7 (0.5)[d]	25 (0.9)	34 (1.2)
Smoking[e]				
Never	1288 (83.7)[b]	952 (71.3)[b]	2334 (80.6)[b]	2649 (90.9)
Season of onset[f]				
Winter	352 (22.9)[b]	327 (24.5)	683 (23.6)[d]	786 (27.0)
Spring	269 (17.5)[b]	292 (21.9)	646 (22.3)	702 (24.1)
Summer	412 (26.8)[d]	342 (25.6)	819 (28.3)[b]	686 (23.5)
Fall	506 (32.9)[b]	374 (28.0)	747 (25.8)	740 (25.4)
Any antibiotic prescription in 2 years prior[g]	1125 (73.1)[b]	1024 (76.7)[b]	2018 (69.7)[b]	1499 (51.4)
Medical assistance[h]				
Never	1056 (68.6)[b]	1067 (79.9)[b]	2307 (79.7)[b]	2450 (84.1)
Community type				
City	250 (16.2)[b]	238 (17.8)[b]	371 (12.8)[d]	316 (10.8)
Borough	550 (35.7)[b]	393 (29.4)	870 (30.1)	839 (28.8)
Township	739 (48.0)[b]	704 (52.7)[b]	1654 (57.1)[b]	1759 (60.4)
Community socioeconomic deprivation[i]				
Quartile 1	347 (22.6)[b]	269 (20.1)[b]	723 (25.0)[b]	835 (28.7)
Quartile 2	392 (25.5)	316 (23.6)	741 (25.6)	725 (24.9)
Quartile 3	395 (25.7)	361 (27.0)[d]	722 (24.9)	691 (23.7)
Quartile 4	405 (26.3)[c]	389 (29.1)[b]	709 (24.5)	663 (22.8)

Abbreviations: CA-MRSA, community-associated methicillin-resistant *Staphylococcus aureus*; *CPT*, *Current Procedural Terminology*; HA-MRSA, health care-associated MRSA; *ICD-9*, *International Classification of Diseases, Ninth Revision*; IQR, interquartile range; SSTI, skin and soft-tissue infection.

[a] Based on 29 *ICD-9* codes: 680.0-680.9, 681.00-681.02, 681.9-681.11, 682.0-682.9, 035, 684, and 686.9.

[b] $P < .001$, vs control.

[c] Race/ethnicity was missing for 4 HA-MRSA cases and 1 control.

[d] $P < .05$ vs control.

[e] Based on presence of *ICD-9* codes 305.1 (tobacco use disorder), V15.82 (history of tobacco use), or 649.0 (tobacco use complicating pregnancy) or *CPT* codes 99406 or 99407 (smoking cessation counseling).

[f] Spring, March through May; summer, June through August; fall, September through November; and winter, December through February.

[g] $P < .01$, vs control.

[h] Indicates receipt of antibiotic prescription in the 730 to 14 days prior to diagnosis or visit.

[i] Based on the health insurance carrier for each encounter, identified with 24 separate codes, and "ever" was defined as more than 2 encounters with Medical Assistance.

[j] Community socioeconomic deprivation was assigned at the township, borough, or census tract level and was based on 6 indicators (all percentages) derived from US Census 2000 data: combined less than high school education, not in the labor force, in poverty, on public assistance, civilian unemployment, and does not own a car; a higher score represents a more deprived community; quartile 1 values, less than −2.22; quartile 2 values −2.23 through 0.46; quartile 3 values, 0.47 through 3.05; and quartile 4 values 3.06 or greater.

Discussion

High-density swine production was an independent risk factor for CA-MRSA and HA-MRSA infection and SSTI in patients without a history of MRSA. There was evidence that both a crop field manure application model that incorporated distance, swine manure volume, season of application, and field area, as well as a livestock operation model that incorporated distance and swine count, were each associated with increased risk of infection. Exposure assignments from these 2 models were moderately correlated, suggesting 2 independent sources of risk. Furthermore, while livestock operations are easily identifiable and fixed, manure-applied crop fields are not necessarily easily identifiable, are scattered, and may change from year to year. Associations with dairy/veal operations were less consistent and weaker than those for swine operations, which was not surprising, given the limited number studies on the topic. Our data also suggest that approximately 11% of CA-MRSA and SSTI cases in the study population could be attributed to crop field application of swine manure.

Table 2. Characteristics of CA-MRSA Group by Crop Field Manure Exposure Quartiles (n=1539)

Characteristic	Individual Seasonal Crop Field Exposure, gal/m^4, No. (%)									
	Swine Quartiles[a]					Dairy/Veal Quartiles[b]				
	1	2	3	4	P Value[c]	1	2	3	4	P Value[c]
Sex										
Female	185 (51.0)	217 (55.8)	205 (54.1)	217 (53.2)	.61	176 (49.3)	206 (56.1)	203 (55.2)	239 (53.5)	.27
Male	178 (49.0)	172 (44.2)	174 (45.9)	191 (46.8)		181 (50.7)	161 (43.9)	165 (44.8)	208 (46.5)	
Race/ethnicity										
Non-Hispanic white	336 (92.6)	353 (90.8)	367 (96.8)	390 (95.6)	<.001	322 (90.2)	347 (94.6)	345 (93.8)	432 (96.6)	.005
Non-Hispanic black	17 (4.7)	18 (4.6)	5 (1.3)	9 (2.2)		21 (5.9)	9 (2.5)	8 (2.2)	11 (2.5)	
Hispanic	6 (1.7)	17 (4.4)	5 (1.3)	3 (0.7)		11 (3.1)	9 (2.5)	9 (2.5)	2 (0.5)	
Other	4 (1.1)	1 (0.3)	2 (0.5)	6 (1.5)		3 (0.8)	2 (0.5)	6 (1.6)	2 (0.5)	
Smoking[d]										
Never	291 (80.2)	326 (83.8)	320 (84.4)	351 (86.0)	.17	303 (84.9)	308 (83.9)	296 (80.4)	381 (85.2)	.26
Ever	72 (19.8)	63 (16.2)	59 (15.6)	57 (14.0)		54 (15.1)	59 (16.1)	72 (19.6)	66 (14.8)	
Age group, y										
<25	174 (47.9)	216 (55.5)	186 (49.1)	217 (53.2)	.13	198 (55.5)	187 (51.0)	198 (53.8)	210 (47.0)	.08
≥25	189 (52.1)	173 (44.5)	193 (50.9)	191 (46.8)		159 (44.5)	180 (49.1)	170 (46.2)	237 (53.0)	
Antibiotic order in prior 2 years										
No	108 (29.8)	120 (30.9)	102 (26.9)	84 (20.6)	.005	115 (32.2)	108 (29.4)	92 (25.0)	99 (22.2)	.007
Yes	255 (70.3)	269 (69.2)	277 (73.1)	324 (79.4)		242 (67.8)	259 (70.6)	276 (75.0)	348 (77.9)	
Medical Assistance[e]										
Never	245 (67.5)	246 (63.2)	278 (73.4)	287 (70.3)	.02	235 (65.8)	260 (70.8)	239 (65.0)	322 (72.0)	.08
Ever	118 (32.5)	143 (36.8)	101 (26.7)	121 (29.7)		122 (34.2)	107 (29.2)	129 (35.1)	125 (28.0)	
Community										
City	90 (24.8)	75 (19.3)	53 (14.0)	32 (7.8)	<.001	75 (21.0)	66 (18.0)	66 (17.9)	43 (9.6)	<.001
Borough	121 (33.3)	151 (38.8)	131 (34.6)	147 (36.0)		136 (38.1)	123 (33.5)	153 (41.6)	138 (30.9)	
Township	152 (41.9)	163 (41.9)	195 (51.5)	229 (56.1)		146 (40.9)	178 (48.5)	149 (40.5)	266 (59.5)	
Community socioeconomic deprivation[f]										
Quartile 1	75 (20.7)	64 (16.5)	105 (27.7)	103 (25.3)	.001	61 (17.1)	93 (25.3)	74 (20.1)	119 (26.6)	<.001
Quartile 2	99 (27.3)	91 (23.4)	95 (25.1)	107 (26.2)		73 (20.5)	99 (27.0)	84 (22.8)	136 (30.4)	
Quartile 3	108 (29.8)	117 (30.1)	83 (21.9)	87 (21.3)		111 (31.1)	90 (24.5)	95 (25.8)	99 (22.2)	
Quartile 4	81 (22.3)	117 (30.1)	96 (25.3)	111 (27.2)		112 (31.4)	85 (23.2)	115 (31.3)	93 (20.8)	

Abbreviations: CA-MRSA, community-associated methicillin-resistant *Staphylococcus aureus*; *CPT*, *Current Procedural Terminology*; *ICD-9*, *International Classification of Diseases, Ninth Revision*; IQR, interquartile range; m^4, quartic meters; SSTI, skin and soft-tissue infection.

[a] Quartile 1 values, less than 7549 gal/m^2/km^2; quartile 2 values, 7650 through 18 846 gal/m^2/km^2; quartile 3 values, 18 847 through 39 047 gal/m^2/km^2; quartile 4 values, 39048 gal/m^2/km^2 or greater.

[b] Quartile 1 values, less than 29 205 gal/m^2/km^2; quartile 2 values, 29 206 through 60 623 gal/m^2/km^2; quartile 3 values, 60 624-104 717 gal/m^2/km^2; quartile 4 values, 104 718 gal/m^2/km^2 or greater.

[c] Calculated using χ^2 test.

[d] Based on presence of *ICD-9* codes 305.1 (tobacco use disorder), V15.82 (history of tobacco use), or 649.0 (tobacco use complicating pregnancy) or *CPT* codes 99406 or 99407 (smoking cessation counseling).

[e] Based on the health insurance carrier for each encounter; identified with 24 separate codes, and "ever" was defined as more than 2 encounters with Medical Assistance.

[f] Community socioeconomic deprivation was assigned at the township, borough, or census tract level and was based on 6 indicators (all percentages) derived from US Census 2000 data: combined less than high school education, not in the labor force, in poverty, on public assistance, civilian unemployment, and does not own a car; a higher score represents a more deprived community: quartile 1 values, less than −2.22; quartile 2 values, −2.23 through 0.46; quartile 3 values, 0.47 through 3.05; quartile 4 values, 3.06 or higher.

The association with SSTIs is notable because there were more than 50 000 such cases, compared with 4000 MRSA cases, in the region since 2001.[23] Crop field manure application may lead to SSTI either by causing MRSA infection that goes undiagnosed as such or by exposure to other bacteria that cause SSTI. We cannot attribute these infections to any single pathogen. Subanalysis of 258 SSTI cases (9%) identified from culture data as methicillin-susceptible *S aureus* (MSSA) revealed an association with swine livestock exposure (AOR, 1.70 [95% CI, 1.15-2.52]) that was stronger than for all SSTIs together. The public health burden of SSTIs[25,42] warrants future study of links to high-density livestock production. Concerning the association with HA-MRSA, this finding does not imply that livestock-associated strains are in hospitals. Rather, these older patients may have been colonized in the community with livestock strains and then had health care contact (eg, hospitalization, surgery, dialysis, indwelling device) before infection.

Table 3. Association of Seasonal Crop Field Manure Exposure and Livestock Operation Exposure With CA-MRSA, HA-MRSA, and SSTI From Full Multilevel Multivariate Model[a]

	Odd Ratio (95% CI)					
	CA-MRSA		HA-MRSA		SSTI	
Characteristic	Univariate	Adjusted	Univariate	Adjusted	Univariate	Adjusted
Seasonal Crop Field Manure Exposure						
Swine[b]						
Quartile 1	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
Quartile 2	1.11 (0.93-1.32)	1.09 (0.90-1.31)	1.15 (0.96-1.38)	1.21 (0.98-1.48)	1.03 (0.89-1.20)	1.03 (0.88-1.20)
Quartile 3	1.12 (0.94-1.33)	1.26 (1.04-1.52)	1.09 (0.90-1.31)	1.27 (1.03-1.57)	1.15 (1.00-1.33)	1.22 (1.05-1.41)
Quartile 4	1.34 (1.13-1.60)	1.38 (1.13-1.69)	1.26 (1.05-1.51)	1.30 (1.05-1.61)	1.34 (1.16-1.55)	1.37 (1.18-1.60)
P value[c]	.002	<.001	.04	.01	<.001	<.001
Dairy/veal[d]						
Quartile 1	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
Quartile 2	0.93 (0.78-1.12)	0.95 (0.78-1.16)	0.76 (0.64-0.92)	0.82 (0.67-1.02)	0.90 (0.78-1.04)	0.90 (0.77-1.05)
Quartile 3	0.94 (0.79-1.13)	0.90 (0.74-1.09)	0.94 (0.79-1.12)	0.92 (0.76-1.13)	0.84 (0.72-0.97)	0.85 (0.73-0.99)
Quartile 4	1.25 (1.05-1.48)	1.24 (1.01-1.52)	0.74 (0.62-0.90)	0.78 (0.62-0.98)	1.02 (0.88-1.18)	1.01 (0.87-1.19)
P value[c]	.01	.06	.03	.08	.96	.92
Livestock Operation Exposure						
Swine[e]						
Quartile 1	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
Quartile 2	0.85 (0.72-1.02)	0.96 (0.77-1.20)	0.78 (0.65-0.94)	0.96 (0.76-1.21)	0.91 (0.79-1.06)	1.00 (0.85-1.18)
Quartile 3	0.91 (0.77-1.09)	1.05 (0.84-1.32)	0.83 (0.69-0.99)	0.88 (0.70-1.12)	0.95 (0.82-1.10)	1.05 (0.89-1.23)
Quartile 4	1.03 (0.87-1.23)	1.25 (0.99-1.58)	1.04 (0.87-1.25)	1.18 (0.93-1.50)	1.19 (1.03-1.38)	1.27 (1.08-1.50)
P value[c]	.60	.04	.57	.19	.01	.002
Dairy/veal[f]						
Quartile 1	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
Quartile 2	0.80 (0.67-0.95)	0.90 (0.72-1.12)	0.79 (0.66-0.94)	0.83 (0.66-1.05)	1.02 (0.88-1.18)	1.10 (0.93-1.30)
Quartile 3	1.04 (0.88-1.24)	1.18 (0.94-1.48)	0.95 (0.79-1.13)	1.00 (0.79-1.26)	1.07 (0.92-1.24)	1.17 (0.99-1.39)
Quartile 4	0.86 (0.73-1.03)	1.07 (0.85-1.35)	0.62 (0.52-0.75)	0.80 (0.62-1.02)	0.99 (0.87-1.15)	1.12 (0.95-1.32)
P value[c]	.51	.21	<.001	.24	.97	.18

Abbreviations: AEU, animal equivalent unit; CA-MRSA, community-associated methicillin-resistant *Staphylococcus aureus*; HA-MRSA, health care-associated MRSA; SSTI, skin and soft-tissue infection.

[a] For multinomial models, n = 5783, and for binomial model, n = 5808; crop field model adjusted for sex, age, race/ethnicity, ever-smoking status, antibiotic prescription in the prior 2 years, receipt of Medical Assistance, residential minor civil division, and community socioeconomic deprivation; livestock model further adjusted for season of infection or visit.

[b] Quartile 1 values, less than 7549 gal/m^2/km^2; quartile 2 values, 7650 through 18 846 gal/m^2/km^2; quartile 3 values, 18 847 through 39 047 gal/m^2/km^2; quartile 4 values, 39 048 gal/m^2/km^2 or greater.

[c] *P* value for linear trend (quartiles included as a single variable with values 1, 2, 3, and 4).

[d] Quartile 1 values, less than 29 205 gal/m^2/km^2; quartile 2 values, 29 206 through 60 623 gal/m^2/km^2; quartile 3 values, 60 624 through 104 717 gal/m^2/km^2; quartile 4 values, 104 718 gal/m^2/km^2 or greater.

[e] Quartile 1 values, less than 6.3 AEU/km^2; quartile 2 values, 6.4 through 7.8 AEU/km^2; quartile 3 values, 17.9-34.7 AEU/km^2; quartile 4 values, 34.8 AEU/km^2 or greater.

[f] Quartile 1 values, less than 7.1 AEU/km^2; quartile 2 values, 7.2 through 21.0 AEU/km^2; quartile 3 values, 21.1 through 44.9 AEU/km^2; quartile 4 values, 44.9 AEU/km^2 or greater.

To our knowledge, no studies have examined the association between high-density livestock operations and MRSA infection in the community, and only 2 studies have assessed risk of colonization.[16,17] Study of colonization may not be useful when evaluating the risk of MRSA infection associated with industrial agriculture because, first, environmental exposure or direct contact may more often lead to CA-MRSA infection than does colonization[43] and second, MRSA colonization may not persist for more than 24 hours after livestock exposure.[44] Prior studies limited their ability to identify risk from high-density livestock exposure by including only patients with CC398,[13,45] by studying only people who lived or worked on farms,[9,12,46-48] and by not including crop field manure exposure.

A unique aspect of this study is the consideration of risk from manure application to crop fields. Sensitivity analyses across time (eg, annual, seasonal, and 30-day exposure) and across space (eg, restricting analysis to fields with aerial photographs or maps) did not substantively change results. Our findings are likely not an artifact of rural residents in the study population because, while manure-applied crop fields were associated with risk, residence in a township (where 98.5% of crop fields are located) and distance to nearest crop field independent of manure application were not associated with the 3 outcomes.

Previous studies have used community-level livestock density as a marker of livestock exposure.[16,17,45] We estimated ex-

Table 4. Summary of MRSA Genetics

Characteristic	*spa* Types, No. (%)		Other Types, No (%)	P Value
	Community (n = 133)[a]	Healthcare (n = 33)[b]	(n = 34)[c]	
Age at infection, median (IQR), y	29 (13-48)	65 (45-77)	46 (14-61)	<.001
Location of onset				
Inpatient[d]	8 (6.0)	20 (60.1)	7 (20.6)	<.001
Outpatient[e]	125 (94.0)	13 (39.9)	27 (79.4)	
Community type				
City	18 (13.5)	1 (3.0)	5 (14.7)	
Borough	34 (25.6)	13 (39.4)	12 (35.3)	.25
Township	81 (60.9)	19 (57.6)	17 (50.0)	
PVL-positive	131 (98.5)	1 (3.0)	17 (50.0)	<.001
Swine operation exposure, fourth quartile[f]	27 (20.3)	10 (30.3)	13 (38.2)	.36

Abbreviations: AEU, animal equivalent unit; IQR, interquartile range; MRSA, methicillin-resistant *Staphylococcus aureus*; PVL, Panton-Valentine leukocidin genes.

[a] Includes *spa* types t008 (n = 123), t024 (n = 7), t064, t206, and t211.

[b] Includes *spa* types t002 (n = 27), t105 (n = 3), t010 (n = 2), and t062.

[c] Includes *spa* types t121 (n = 4), novel varieties (n = 3), t088 (n = 3), t622 (n = 3), t045 (n = 2), t068 (n = 2), t012, t125, t216, t304, t306, t316, t437, t539, t681, t692, t856, t948, t1154, t1610, t6614, t9964, and unknown.

[d] Inpatient isolates collected more than 2 days after hospital admission.

[e] Isolates collected in the outpatient setting or within the first 2 days of hospitalization.

[f] Quartile 4 values, 33.4 AEU/km^2 or greater.

posure at the individual level, incorporating several features of these operations and fields. Operation and field sites were confirmed using Google Earth rather than physical inspection of the area, which may have led to some misclassification. Additional exposure misclassification may have occurred since the exposure assessment did not capture all smaller farms. In Pennsylvania, only large operations, specifically concentrated animal feeding operations, or operations with greater than 2 AEUs per acre are required to produce NMPs. The 2007 US Census of Agriculture revealed that our exposure models included 89% of swine AEUs present in the study area. Because characteristics of high-density livestock practices differ by and within states, our results may not apply in full to other areas with these operations.

A limitation of this study is that we did not measure how livestock-associated pathogens may reach individuals in a community, but several ways have been considered in prior studies. Aerosolized MRSA has been isolated from the air up to 150 m downwind and from the soil up to 300 m downwind of swine operations.[49,50] Studies have also reported that tetracycline, the most commonly used antimicrobial agent used in food-producing animals in the United States,[3] was found at concentrations sufficient to select for resistant bacteria in both swine manure and manure-fertilized soil.[51] These studies provide biologic plausibility for our findings, but more research is needed to establish sources, media, routes, and behaviors that may lead to infection. Other animals,[52] slaughterhouses,[53] and meat consumption[54] may be involved.

We did not find any *spa* types associated with clonal complex CC398. Most MRSA found on farms or in farmers has been characterized as CC398, though other types have been identified.[9,12,13,45,55,56] However, few studies have assessed MRSA infection, instead focusing on MRSA carriage, and those that do come from Europe[14,15,57,58] and/or deal exclusively with CC398 MRSA.[58-60] The most common strains on US farms are not well known. In Ohio, the closest state to Pennsylvania for which there are data, common health care strains were most often isolated from swine; CC398 was secondary.[53] We were limited in that genetic data did not come from the same time period as the main study, and isolate strains could have changed over time.

We used *ICD-9* codes to classify MRSA cases as CA or HA and to derive the predictor variables used in the analysis. The primary HA epidemiologic factors[31] are well captured by the EHR. Ever-smoking status can also be effectively obtained using *ICD-9* codes.[61] Unfortunately, the EHR did not directly capture data on individual-level socioeconomic status or occupation, so our results could have been due to these variables. To evaluate this potential confounding, we adjusted the final models for 2 surrogates for socioeconomic status: Medical Assistance at the individual level and community socioeconomic deprivation at the community level. As expected, patients with CA-MRSA were more likely to receive Medical Assistance and more likely to live in more deprived communities than controls, associations that persisted in the adjusted models.[62,63] Previous literature has suggested increased prevalence of MRSA colonization in livestock workers.[8] However, given the low prevalence of this employment (1% of population in any agricultural work, according to US Census data) even in townships and boroughs in the study area, it seems unlikely that farming occupation could account for the reported associations. Moreover, inclusion of community-level percentage of agricultural workers in the multilevel model did not change associations.

In conclusion, proximity to and size of high-density livestock production were associated MRSA infection and SSTI, and the population-attributable fraction of crop field manure application exceeded 10% for CA-MRSA and SSTI. The findings contribute to the growing concern about the potential public health impacts of high-density livestock production.

ARTICLE INFORMATION

Accepted for Publication: June 11, 2013.

Published Online: September 16, 2013. doi:10.1001/jamainternmed.2013.10408.

Author Affiliations: Department of Environmental Health Sciences, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland (Casey, Curriero, Nachman, Schwartz); Johns Hopkins School of Medicine, Baltimore, Maryland (Casey, Cosgrove, Schwartz); Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland (Curriero); Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland (Cosgrove); Department of Health Policy & Management, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland (Nachman); Johns Hopkins Center for a Livable Future, Baltimore, Maryland (Nachman); Geisinger Health System, Danville, Pennsylvania (Schwartz).

Author Contributions: Ms Casey and Dr Schwartz had full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis.

Study concept and design: Casey, Curriero, Nachman, Schwartz.

Acquisition of data: Casey, Schwartz.
Analysis and interpretation of data: Casey, Curriero, Cosgrove, Nachman, Schwartz.
Drafting of the manuscript: Casey.
Critical revision of the manuscript for important intellectual content: Casey, Curriero, Cosgrove, Nachman, Schwartz.
Statistical analysis: Casey, Curriero.
Obtained funding: Casey, Nachman, Schwartz.
Administrative, technical, or material support: Schwartz.
Study supervision: Cosgrove.

Conflict of Interest Disclosures: None reported.

Funding/Support: This study was jointly funded by the New York University-Geisinger Seed Grant Program and by the Johns Hopkins Center for a Livable Future. Additional support was provided by the Johns Hopkins Sommer Scholarship and the National Institute of Environmental Health Sciences Training Grant ES07141 (J Casey).

Role of the Sponsor: The sponsors had no role in the design and conduct of the study; collection, management, analysis, and interpretation of the data; preparation, review, or approval of the manuscript; and decision to submit the manuscript for publication.

Additional Contributions: We thank Dione G. Mercer, BS, BA, for study management; Joseph J. DeWalle, BS, for assistance with patient geocoding; Sy H. Brandau, AAS, for isolate acquisition, handling, and shipping; and Bo Shopsin, MD, PhD, and Hannah R. Rose, BA, for microbiologic testing of isolates. These individuals received compensation from the study sponsors for their contributions.

REFERENCES

1. Love DC, Davis MF, Bassett A, Gunther A, Nachman KE. Dose imprecision and resistance: free-choice medicated feeds in industrial food animal production in the United States. *Environ Health Perspect*. 2011;119(3):279-283.

2. Slaughter LM. PAMTA. http://www.louise.house.gov/index.php?option=com_content&id=1315&Itemid=138. Accessed February 16, 2013.

3. Marshall BM, Levy SB. Food animals and antimicrobials: impacts on human health. *Clin Microbiol Rev*. 2011;24(4):718-733.

4. Silbergeld EK, Graham J, Price LB. Industrial food animal production, antimicrobial resistance, and human health. *Annu Rev Public Health*. 2008;29(1):151-169.

5. Elmund GK, Morrison SM, Grant DW, Nevins SM. Role of excreted chlortetracycline in modifying the decomposition process in feedlot waste. *Bull Environ Contam Toxicol*. 1971;6(2):129-132.

6. Chee-Sanford JC, Mackie RI, Koike S, et al. Fate and transport of antibiotic residues and antibiotic resistance genes following land application of manure waste. *J Environ Qual*. 2009;38(3):1086-1108.

7. Kumar K, Gupta SC, Chander Y, Singh AK. Antibiotic use in agriculture and its impact on the terrestrial environment. *Adv Agron*. 2005;87:1-54.

8. Voss A, Loeffen F, Bakker J, Klaassen C, Wulf M. Methicillin-resistant *Staphylococcus aureus* in pig farming. *Emerg Infect Dis*. 2005;11(12):1965-1966.

9. Graveland H, Wagenaar JA, Heesterbeek H, Mevius D, van Duijkeren E, Heederik D. Methicillin-resistant *Staphylococcus aureus* ST398 in veal calf farming: human MRSA carriage related with animal antimicrobial usage and farm hygiene. *PLoS One*. 2010;5(6):e10990.

10. Juhász-Kaszanyitzky E, Jánosi S, Somogyi P, et al. MRSA transmission between cows and humans. *Emerg Infect Dis*. 2007;13(4):630-632.

11. Gorwitz RJ, Kruszon-Moran D, McAllister SK, et al. Changes in the prevalence of nasal colonization with *Staphylococcus aureus* in the United States, 2001-2004. *J Infect Dis*. 2008;197(9):1226-1234.

12. Smith TC, Male MJ, Harper AL, et al. Methicillin-resistant *Staphylococcus aureus* (MRSA) strain ST398 is present in midwestern U.S. swine and swine workers. *PLoS One*. 2009;4(1):e4258.

13. Lewis HC, Mølbak K, Reese C, et al. Pigs as source of methicillin-resistant *Staphylococcus aureus* CC398 infections in humans, Denmark. *Emerg Infect Dis*. 2008;14(9):1383-1389.

14. Hartmeyer GN, Gahrn-Hansen B, Skov RL, Kolmos HJ. Pig-associated methicillin-resistant *Staphylococcus aureus*: family transmission and severe pneumonia in a newborn. *Scand J Infect Dis*. 2010;42(4):318-320.

15. Huijsdens XW, van Dijke BJ, Spalburg E, et al. Community-acquired MRSA and pig farming. *Ann Clin Microbiol Antimicrob*. 2006;5:26.

16. Bisdorff B, Scholhölter JL, Claußen K, Pulz M, Nowak D, Radon K. MRSA-ST398 in livestock farmers and neighbouring residents in a rural area in Germany. *Epidemiol Infect*. 2012;140(10):1800-1808.

17. van Cleef BA, Verkade EJ, Wulf MW, et al. Prevalence of livestock-associated MRSA in communities with high pig-densities in the Netherlands. *PLoS One*. 2010;5(2):e9385.

18. Price LB, Stegger M, Hasman H, et al. *Staphylococcus aureus* CC398: host adaptation and emergence of methicillin resistance in livestock. *MBio*. 2012;3(1):e00305-e00311.

19. Crum NF, Lee RU, Thornton SA, et al. Fifteen-year study of the changing epidemiology of methicillin-resistant *Staphylococcus aureus*. *Am J Med*. 2006;119(11):943-951.

20. Liu C, Graber CJ, Karr M, et al. A population-based study of the incidence and molecular epidemiology of methicillin-resistant *Staphylococcus aureus* disease in San Francisco, 2004-2005. *Clin Infect Dis*. 2008;46(11):1637-1646.

21. Tracy LA, Furuno JP, Harris AD, Singer M, Langenberg P, Roghmann MC. *Staphylococcus aureus* infections in US veterans, Maryland, USA, 1999-2008. *Emerg Infect Dis*. 2011;17(3):441-448.

22. Casey JA, Cosgrove SE, Stewart WF, Pollak J, Schwartz BS. A population-based study of the epidemiology and clinical features of methicillin-resistant *Staphylococcus aureus* infection in Pennsylvania, 2001-2010. *Epidemiol Infect*. 2013;141(6):1166-1179.

23. Fridkin SK, Hageman JC, Morrison M, et al; Active Bacterial Core Surveillance Program of the Emerging Infections Program Network. Methicillin-resistant *Staphylococcus aureus* disease in three communities. *N Engl J Med*. 2005;352(14):1436-1444.

24. David MZ, Daum RS. Community-associated methicillin-resistant *Staphylococcus aureus*: epidemiology and clinical consequences of an emerging epidemic. *Clin Microbiol Rev*. 2010;23(3):616-687.

25. Landrum ML, Neumann C, Cook C, et al. Epidemiology of *Staphylococcus aureus* blood and skin and soft tissue infections in the US military health system, 2005-2010. *JAMA*. 2012;308(1):50-59.

26. Klevens RM, Morrison MA, Fridkin SK, et al; Active Bacterial Core Surveillance of the Emerging Infections Program Network. Community-associated methicillin-resistant *Staphylococcus aureus* and healthcare risk factors. *Emerg Infect Dis*. 2006;12(12):1991-1993.

27. Maree CL, Daum RS, Boyle-Vavra S, Matayoshi K, Miller LG. Community-associated methicillin-resistant *Staphylococcus aureus* isolates causing healthcare-associated infections. *Emerg Infect Dis*. 2007;13(2):236-242.

28. Tattevin P, Schwartz BS, Graber CJ, et al. Concurrent epidemics of skin and soft tissue infection and bloodstream infection due to community-associated methicillin-resistant *Staphylococcus aureus*. *Clin Infect Dis*. 2012;55(6):781-788.

29. Fitzgerald JR. Livestock-associated *Staphylococcus aureus*: origin, evolution and public health threat. *Trends Microbiol*. 2012;20(4):192-198.

30. Liu AY, Curriero FC, Glass TA, Stewart WF, Schwartz BS. The contextual influence of coal abandoned mine lands: in communities and type 2 diabetes in Pennsylvania. *Health Place*. 2013;22:115-122.

31. Morrison MA, Hageman JC, Klevens RM. Case definition for community-associated methicillin-resistant *Staphylococcus aureus*. *J Hosp Infect*. 2006;62(2):241.

32. Klevens RM, Morrison MA, Nadle J, et al; Active Bacterial Core surveillance (ABCs) MRSA Investigators. Invasive methicillin-resistant *Staphylococcus aureus* infections in the United States. *JAMA*. 2007;298(15):1763-1771.

33. Schwartz BS, Stewart WF, Godby S, et al. Body mass index and the built and social environments in children and adolescents using electronic health records. *Am J Prev Med*. 2011;41(4):e17-e28.

34. Talen E, Anselin L. Assessing spatial equity: an evaluation of measures of accessibility to public playgrounds. *Environ Plan A*. 1998;30(4):595-613.

35. Mathema B, Mediavilla J, Kreiswirth BN. Sequence analysis of the variable number tandem repeat in *Staphylococcus aureus* protein A gene: *spa* typing. In: DeLeo F, Otto M, eds. *Methods in Molecular Biology: Bacterial Pathogenesis*. Vol 431. Totowa, NJ: Humana Press; 2008:285-305.

36. Harmsen D, Claus H, Witte W, et al. Typing of methicillin-resistant *Staphylococcus aureus* in a university hospital setting by using novel software for *spa* repeat determination and database management. *J Clin Microbiol*. 2003;41(12):5442-5448.

37. Lina G, Piémont Y, Godail-Gamot F, et al. Involvement of Panton-Valentine leukocidin-producing *Staphylococcus aureus* in primary skin infections and pneumonia. *Clin Infect Dis*. 1999;29(5):1128-1132.

38. Grineski SE, Staniswalis JG, Bulathsinhala P, Peng Y, Gill TE. Hospital admissions for asthma and acute bronchitis in El Paso, Texas: do age, sex, and insurance status modify the effects of dust and low wind events? *Environ Res*. 2011;111(8):1148-1155.

39. Ayanian JZ, Kohler BA, Abe T, Epstein AM. The relation between health insurance coverage and clinical outcomes among women with breast cancer. *N Engl J Med*. 1993;329(5):326-331.

40. Waller L, Gotway C. *Applied Spatial Statistics for Public Health Data*. Hoboken, NJ: John Wiley & Sons Inc; 2004.

41. Rockhill B, Newman B, Weinberg C. Use and misuse of population attributable fractions. *Am J Public Health*. 1998;88(1):15-19.

42. Pallin DJ, Espinola JA, Leung DY, Hooper DC, Camargo CA Jr. Epidemiology of dermatitis and skin infections in United States physicians' offices, 1993-2005. *Clin Infect Dis*. 2009;49(6):901-907.

43. Yang ES, Tan J, Eells S, Rieg G, Tagudar G, Miller LG. Body site colonization in patients with community-associated methicillin-resistant *Staphylococcus aureus* and other types of *S. aureus* skin infections. *Clin Microbiol Infect*. 2010;16(5):425-431.

44. van Cleef BA, Graveland H, Haenen AP, et al. Persistence of livestock-associated methicillin-resistant *Staphylococcus aureus* in field workers after short-term occupational exposure to pigs and veal calves. *J Clin Microbiol*. 2011;49(3):1030-1033.

45. Feingold BJ, Silbergeld EK, Curriero FC, van Cleef BA, Heck ME, Kluytmans JA. Livestock density as risk factor for livestock-associated methicillin-resistant *Staphylococcus aureus*, the Netherlands. *Emerg Infect Dis*. 2012;18(11):1841-1849.

46. Cuny C, Nathaus R, Layer F, Strommenger B, Altmann D, Witte W. Nasal colonization of humans with methicillin-resistant *Staphylococcus aureus* (MRSA) CC398 with and without exposure to pigs. *PLoS One*. 2009;4(8):e6800.

47. Köck R, Harlizius J, Bressan N, et al. Prevalence and molecular characteristics of methicillin-resistant *Staphylococcus aureus* (MRSA) among pigs on German farms and import of livestock-related MRSA into hospitals. *Eur J Clin Microbiol Infect Dis*. 2009;28(11):1375-1382.

48. Neela V, Mohd Zafrul A, Mariana NS, van Belkum A, Liew YK, Rad EG. Prevalence of ST9 methicillin-resistant *Staphylococcus aureus* among pigs and pig handlers in Malaysia. *J Clin Microbiol*. 2009;47(12):4138-4140.

49. Gibbs SG, Green CF, Tarwater PM, Mota LC, Mena KD, Scarpino PV. Isolation of antibiotic-resistant bacteria from the air plume downwind of a swine confined or concentrated animal feeding operation. *Environ Health Perspect*. 2006;114(7):1032-1037.

50. Schulz J, Friese A, Klees S, et al. Longitudinal study of the contamination of air and of soil surfaces in the vicinity of pig barns by livestock-associated methicillin-resistant *Staphylococcus aureus*. *Appl Environ Microbiol*. 2012;78(16):5666-5671.

51. Hamscher G, Sczesny S, Höper H, Nau H. Determination of persistent tetracycline residues in soil fertilized with liquid manure by high-performance liquid chromatography with electrospray ionization tandem mass spectrometry. *Anal Chem*. 2002;74(7):1509-1518.

52. Geenen PL, Graat EA, Haenen A, et al. Prevalence of livestock-associated MRSA on Dutch broiler farms and in people living and/or working on these farms. *Epidemiol Infect*. 2013;141(5):1099-1108.

53. Molla B, Byrne M, Abley M, et al. Epidemiology and genotypic characteristics of methicillin-resistant *Staphylococcus aureus* strains of porcine origin. *J Clin Microbiol*. 2012;50(11):3687-3693.

54. Waters AE, Contente-Cuomo T, Buchhagen J, et al. Multidrug-resistant *Staphylococcus aureus* in US meat and poultry. *Clin Infect Dis*. 2011;52(10):1227-1230.

55. Khanna T, Friendship R, Dewey C, Weese JS. Methicillin resistant *Staphylococcus aureus* colonization in pigs and pig farmers. *Vet Microbiol*. 2008;128(3-4):298-303.

56. Wulf MW, Sorum M, van Nes A, et al. Prevalence of methicillin-resistant *Staphylococcus aureus* among veterinarians: an international study. *Clin Microbiol Infect*. 2008;14(1):29-34.

57. Wulf MW, Verduin CM, van Nes A, Huijsdens X, Voss A. Infection and colonization with methicillin resistant *Staphylococcus aureus* ST398 versus other MRSA in an area with a high density of pig farms. *Eur J Clin Microbiol Infect Dis*. 2012;31(1):61-65.

58. Salmenlinna S, Lyytikäinen O, Vainio A, et al. Human cases of methicillin-resistant *Staphylococcus aureus* CC398, Finland. *Emerg Infect Dis*. 2010;16(10):1626-1629.

59. Golding GR, Bryden L, Levett PN, et al. Livestock-associated methicillin-resistant *Staphylococcus aureus* sequence type 398 in humans, Canada. *Emerg Infect Dis*. 2010;16(4):587-594.

60. Witte W, Strommenger B, Stanek C, Cuny C. Methicillin-resistant *Staphylococcus aureus* ST398 in humans and animals, Central Europe. *Emerg Infect Dis*. 2007;13(2):255-258.

61. Wiley LK, Shah A, Xu H, Bush WS. ICD-9 tobacco use codes are effective identifiers of smoking status. *J Am Med Inform Assoc*. 2013;20(4):652-658.

62. Bagger JP, Zindrou D, Taylor KM. Postoperative infection with methicillin-resistant *Staphylococcus aureus* and socioeconomic background. *Lancet*. 2004;363(9410):706-708.

63. Bratu S, Landman D, Gupta J, Trehan M, Panwar M, Quale J. A population-based study examining the emergence of community-associated methicillin-resistant *Staphylococcus aureus* USA300 in New York City. *Ann Clin Microbiol Antimicrob*. 2006;5:29.

Yale Environment 360

As Dairy Farms Grow Bigger, New Concerns About Pollution

Dairy operations in the U.S. are consolidating, with ever-larger numbers of cows concentrated on single farms. In states like Wisconsin, opposition to some large operations is growing after manure spills and improper handling of waste have contaminated waterways and aquifers.

BY ELIZABETH GROSSMAN • MAY 27, 2014

The slogan on Wisconsin's license plate – "America's Dairyland" – celebrates the state's number one agricultural activity and iconic status as a milk and cheese producer. What it doesn't reveal is how dramatically the dairy industry in Wisconsin and in other parts of the United States has been changing, or the environmental concerns those changes pose.

While milk carton imagery pictures bucolic, small farms, more than 50 percent of U.S. milk is now produced by just 3 percent of the country's dairies – those with more than 1,000 cows, according to the U.S. Department of Agriculture (USDA). The very largest U.S. dairies now have 15,000 or more cows.

With this increased concentration of milking cows comes a corresponding concentration of manure production. And what happens to this manure is at the heart of the pollution issues surrounding the dairy industry.

More than half of U.S. milk is produced by 3 percent of dairies. DAVID SILVERMAN/GETTY IMAGES

In Wisconsin, several dairy operations are now facing opposition to plans to expand their herds. Porous karst soils in the parts of Wisconsin where a significant portion of dairy expansion is occurring present some unique environmental issues. Run-off from dairy farms and other agricultural activities has seeped into aquifers and elevated levels of nitrogen, in some instances to unsafe concentrations; in one recent case, the Wisconsin Department of Justice levied a $65,000 fine against a dairy operation for contaminating groundwater.

Neighbors of Kinnard Farms dairy, located in the Kewaunee County town of Lincoln – an area of karst soils – are now in court challenging the state's approval of a permit that would allow the dairy to expand its herd from 4,000 to more than 6,000 milking cows. About 50 percent of the town's private wells currently have water that exceeds bacteria or nitrate safety standards. Residents opposing the DNR permit contend that it lacks sufficient information about how the dairy will manage the tens of millions of gallons of liquid manure its cows will produce.

The number of U.S. dairy operations with 2,000 or more cows has grown faster than those of any other size.

U.S. farm consolidation is nothing new, but recent changes in the dairy industry are transforming the business in ways that are increasingly worrisome to regulators, residents, and environmental groups. Wisconsin embodies this consolidation trend. State Department of Natural Resources (DNR) figures show the number of Wisconsin dairy farms with more than 500 cows grew by about 150 percent in the past decade. At the same time, the overall number of dairy farms dropped by about a third, just as they have nationwide. The number of U.S. dairy operations with 2,000 or more cows has grown faster than those of any other size as milk production has increased about 20 percent.

According to the EPA, a 2,000-cow dairy generates more than 240,000 pounds of manure daily or nearly 90 million pounds a year. The USDA estimates that the manure from 200 milking cows produces as much nitrogen as sewage from a community of 5,000 to 10,000 people.

This year and last, Wisconsin has fined several dairy operations for manure spills and manure runoff. According to an analysis by the *Milwaukee Journal Sentinel*, in 2013 a record number of manure spills – more than 1 million gallons worth – were recorded in Wisconsin. The newspaper reported that from 2007 to 2013, the state experienced an average of 15 manure spills annually from dairy farms. Roughly a third of those spills came from large Concentrated Animal Feeding Operations, or CAFOs.

"Wisconsin," says Clean Wisconsin staff attorney Elizabeth Wheeler, "has a nitrate problem."

Wisconsin is hardly alone in grappling with this problem. Similar pollution issues – primarily from spills related to manure storage – have been cropping up across the country. Some recent cases include:

- In February, in Michigan's Allegan County, a stormwater system failure at a dairy with a 1-million-gallon manure lagoon spilled manure into nearby waterways, creating a visible plume five miles long.
- In Yakima, Washington, the Community Association for Restoration of the Environment and the Center for Food Safety allege in an ongoing lawsuit now in federal court that manure spreading by five large dairies has caused nitrate and other contamination of groundwater and violates the federal Resource Conservation and Recovery Act (RCRA). The plaintiffs contend that the way the manure is being applied is the equivalent of dumping solid waste, an activity covered by RCRA that has not previously been applied to manure spreading. The dairies filed a motion this month to dismiss the charges.
- In Canton, Minnesota, a wall on an above-ground manure storage tank broke last April, spilling roughly 1 million gallons of manure.

In one of the larger cases of manure pollution in recent years, an estimated 15 million gallons of manure, water, and other matter spilled in 2010 into a slough that drains into the Snohomish River in Washington state, when a berm on a dairy farm's manure lagoon failed.

Erin Fitzgerald, senior vice president for sustainability at the Innovation Center for US Dairy, a trade group, says a dairy's size does not determine how well its environmental impacts are managed. William Matthews, Oregon Department of Agriculture CAFO program manager, concurs. "There are stellar operators of all sizes," he says.

An industry spokesman says a dairy's size does not determine how well its environmental impacts are managed.

Fitzgerald's organization stresses the need for nutrient and water quality management plans tailored for each operation, and says dairy is "one of the most regulated and inspected industries in agriculture." She also touts the industry's voluntary commitment to "best practices" and improving its environmental footprint, including its 2008 commitment to reduce greenhouse gas emissions 25 percent.

Milking cows, explains the US Environmental Protection Agency (EPA), produce more manure than beef cattle and the Holsteins that dominate the U.S. dairy industry produce almost twice as much manure as Jerseys. Cows that give more milk per cow also produce more manure and per-cow milk production has almost doubled since the 1970s.

Historically, dairies dealt with manure by applying it to fields as fertilizer, as many do today. But as dairy herds have grown, a single farm often has more manure than it can use at any one time. Excess is typically stored in lagoons. "When it comes to the environmental impacts of concentrated dairy operations, it all comes down to manure management," says Kendra Kimbirauskas, board director of Friends of Family Farmers.

Questions about manure management have prompted opposition to a number of Wisconsin dairy operations' plans for large or expanded herds. One of these farms is Burr Oak Heifers, located in Wisconsin's Central Sands region, an area known for its porous souls. Burr Oak Heifers is seeking a Wisconsin DNR permit to house 3,100 cows, which are expected to produce an estimated 3.32 million gallons of liquid manure and 45,900 tons of solid manure annually. In 2013, the farm, operating under a different business name, was fined $65,000 by the state for contaminating groundwater, including private well water. The permit now up for approval would grant the farm an exception to Wisconsin's groundwater nitrate concentration limit of 10 parts per million (ppm) and permit its nitrate discharge at 28 ppm.

"We've kind of taken Mother Nature out of the picture," says the manager of a large dairy farm.

Clean Wisconsin's Wheeler calls the proposed nitrate discharge exemption "unprecedented." The DNR explains that the exemption is based on background levels of nitrate present in groundwater coming onto the site

from other sources, and that the permit will require groundwater monitoring and a "nutrient management plan" designed to control manure storage and how and when manure is spread on fields. The goal of such plans include preventing application of more nutrients than a farm's soil can absorb and making sure it's applied when it won't easily run off, as in winter when the ground is frozen.

Wheeler notes that dairies have typically spread manure on their own fields to fertilize forage and other crops or contracted with other farms to do so. On small farms, the ratio of cows to pasture land generally allows for a sustainable nitrogen balance. But the majority of U.S. dairy herds are confined to barns throughout their entire lives and shuttle between stalls and milking parlors in enclosed corrals and corridors and eat silage and grain grown elsewhere. "We've kind of taken Mother Nature out of the picture," says John Haarsma, manager of Rickreall Dairy, an Oregon operation with 3,500 cows.

In excess, manure's nutrients – largely nitrogen and phosphorus – can create problems. Too much in surface water can create algae blooms that result in hypoxic or oxygen-deprived dead zones According to the EPA, excess nutrients from agriculture, including chemical fertilizers and dairy manure, are a major source of water pollution across the US.

Lack of measures to prevent manure spills is one reason a New York group opposes easing regulations.

In Wisconsin, explains DNR hydrogeologist Bill Phelps, about 10 percent of all private wells exceed the state's nitrate water quality standard. In areas of high agricultural activity where fertilizer use is high, this percentage rises to about 30 percent, said Phelps.

Manure also contains pathogens that may include E.coli and other fecal coliforms. In addition, manure often contains pharmaceuticals – antibacterials and hormones – given to many dairy cows to fight disease and promote growth. Some of Kewaunee County's wells have tested positively for estrogenic, endocrine disrupting compounds. The source has not been

pinpointed, but numerous studies suggest that CAFOs, through their use of pesticides and hormones, are a source of some estrogenic compounds that enter U.S. drinking water.

In New York, now the country's third-largest milk producing state, dairy expansion has also become an environmental issue. An ongoing lawsuit is challenging a 2013 regulation change that would increase the size of dairies allowed to operate without a nutrient management plan from 199 to 299 cows. Environmental advocates say the New York Department of Environmental Conservation failed to consider environmental impacts. "It was made for economic reasons," to support the state's booming Greek yogurt industry, says Rivekeeper staff attorney Michael Dulong.

MORE FROM YALE e360

How Industrial Agriculture Has Thwarted Factory Farm Reforms

In an interview with Yale Environment 360, Robert Martin, co-author of a recent study on industrial farm animal production, explains how a powerful and intransigent agriculture lobby has successfully fought off attempts to reduce the harmful environmental and health impacts of mass livestock production.

READ MORE

Lack of measures to prevent catastrophic manure spills is among the reasons Environmental Advocates of New York policy director Katherine Nadeau gives for her organization's opposition to this regulation change. She cites a 2005 incident in which 3 million gallons of manure spilled from a New York dairy into a nearby river, killing thousands of fish.

One day this winter, I visited one of the dwindling number of smaller U.S. dairies –Double J Jerseys, a 200-cow dairy operation in Oregon's Willamette Valley. As I arrived cows munched clover in the barnyard, near the Bansens' front door. Jon Bansen, a third-generation dairy farmer who produces milk for the Organic Valley co-op, said that the ratio of cows to pasture on smaller farms leads to a sustainable nitrogen balance. The steady rise of large-scale

dairy operations, he said, has been "fueled by cheap fuel and cheap feed," adding, "More is not always better."

Elizabeth Grossman is the author of *Chasing Molecules: Poisonous Products, Human Health, and the Promise of Green Chemistry*, *High Tech Trash: Digital Devices, Hidden Toxics, and Human Health*, and other books. Her work has appeared in *Scientific American*, *Salon*, *The Washington Post*, *The Nation*, *Mother Jones*, *Grist*, and other publications. **MORE →**

Charlotte Nagel

From: Mark Danen <mdanen@ledgeviewwisconsin.com>
Sent: Thursday, May 17, 2018 8:37 PM
To: cnagel@ledgeviewwisconsin.com
Subject: Fwd: Oppose Manure Pit

2 of 2

Sent from my iPad

Begin forwarded message:

From: Terence Edgar <tedgar@sbcglobal.net>
Date: May 17, 2018 at 11:48:48 AM CDT
To: mdanen@ledgeviewwisconsin.com
Subject: Oppose Manure Pit

Dear Mr Van Danen,
We strongly oppose the manure pit.
We expect you to look out for the safety of our community.
Sincerely,
Terence and Angelika Edgar
657 marble Rock Circle

Charlotte Nagel

From: Mark Danen <mdanen@ledgeviewwisconsin.com>
Sent: Thursday, May 17, 2018 8:37 PM
To: Charlotte Nagel
Subject: Fwd: Application by Ledgeview Farms

Char,

I believe you wanted me to forward any emails I received in this topic. This is the first of 2.

Additionally, should I refrain from responding? Thanks. Mark

Sent from my iPad

Begin forwarded message:

> **From:** Steve Harty <steve.harty@greenbayymca.org>
> **Date:** May 17, 2018 at 12:06:16 PM CDT
> **To:** "mdanen@ledgeviewwisconsin.com" <mdanen@ledgeviewwisconsin.com>
> **Subject: Application by Ledgeview Farms**
>
> Mr. Danen,
>
> Please accept this email as our **strong** opposition to approve the application from Ledgeview Farms to expand their herd of cattle and specifically, build two manure pits in the middle of residential neighbors. I recognize that this is a very complex issue, however, I would urge the Town Board to use basic common sense and good judgement in determine the best outcome. I am sure you have seen and will continue to see the credible research on the negative effects of open manure pits on the health and wellbeing of people, especially children who live in near proximity, so I won't deluge you with that information (if you haven't seen it, I will be happy to forward you this information). There can be very little question that if the Town is unable to halt this application and any plans in the future for an open manure pit near single family homes, that the future of growth and its tax base in the Town of Ledgeview will come to a screaming halt. As you are well aware, Ledgeview Farms has a horrible record of past violations regarding farming practices and regulations. What makes us think this will change in the future? I do believe that there can be a win-win solution that allows the farm to grow and effectively deal with its manure without negatively affecting existing and future single family homes- that should be the focus of all conversations.
>
> Please, please do everything in your power as our elected official to make certain that our community continues to thrive and grow.
>
> Thank you,
>
> Steve and Kristin Harty
> 739 Iron Horse Way

Charlotte Nagel

From: Phil Danen <pjdanen@ledgeviewwisconsin.com>
Sent: Wednesday, May 30, 2018 2:06 PM
To: Lee Adams
Cc: kgeurts@ledgeviewwisconsin.com; sburdette@ledgeviewwisconsin.com; cnagel@ledgeviewwisconsin.com
Subject: Re: Follow up from Ledgeview Farms Meeting

Thanks for your input. Your email will be entered into the record and we will have a decision at our next meeting on Monday. We're doing everything we can.

Phil Danen
Ledgeview Town Chairman

Sent from my iPad

On May 30, 2018, at 10:34 AM, Lee Adams <lee.adams82@gmail.com> wrote:

> (resending due to typo in email addresses)
>
> Dear Chairman Danen and Supervisors Van Rossum, Geurts, Peltier, and Danen -
>
> I attended last night's meeting and thought it was both educational and informative. Although, I previously stood in clear opposition to the proposed manure pit and herd expansion plans the meeting provided even more insight into the reasons for my opposition. I want to express my support of the opinions and facts put forth by Mr. Wolff, Mr. Schneider, Mr. Cheslock, Mrs. Schillinger, and Mr. Shahrouri. I want to also express a concern that was not brought up last night - that of the long-term consequences if and when the farm ceases operations. It would seem to me that either the proposed pit would remain in place and increase the likelihood of environmental implications if left unchecked or the taxpayers of Ledgeview would be held responsible for the removal and cleanup of the site. I believe that with the information shared and the expressed beliefs of the vast majority of our citizens you will do what is right for the town and its citizens and have the resolve to stand by that decision regardless of any future opposition to the upcoming vote.
>
> Regards,
> Lee Adams
> 611 Marble Rock Circle

--
Lee Adams
920.366.9920
lee.adams82@gmail.com

Charlotte Nagel

From: Phil Danen <pjdanen@ledgeviewwisconsin.com>
Sent: Tuesday, May 22, 2018 10:57 AM
To: sburdette@ledgeviewwisconsin.com; cnagel@ledgeviewwisconsin.com
Subject: Fwd: Ledgeview Resident

Follow Up Flag: Follow up
Flag Status: Flagged

Phil Danen
Ledgeview Town Chairman

Sent from my iPad

Begin forwarded message:

> **From:** Tricia Adams <tricia.deprey@gmail.com>
> **Date:** May 18, 2018 at 10:18:27 AM CDT
> **To:** pjdanen@ledgeviewwisconsin.com
> **Subject: Ledgeview Resident**
>
> Good morning Phil,
>
> First, thank you for serving on our town board! I appreciate in advance you taking the time to read my email.
>
> I live at 611 Marble Rock Circle. We bought our lot and built our house less than two years ago. I am writing to you because I'm concerned about the proposed waste management system for Ledgeview Farms.
>
> First, we absolutely would not have purchased our lot if the manure pit had been in place two years ago. My family of four are very active outside as runners and cyclists. After reading several medical journal articles about the toxic gases created by concentrated waste, I would (will) not allow myself, my husband, or my kids to be outside on Lime Kiln next to the pit. We would (will) have to drive somewhere else to exercise outside.
>
> Second, several residents (including ourselves) who moved in recently have stated that they will be asking for lower property taxes if the manure pit is installed. After doing research, I found that manure pits in non-rural areas around the US have historically lowered property values from 30-88%.....**88%.**
>
> Last, please read this article when you have a chance:
> http://news.psu.edu/story/146221/2012/10/04/farm-safety-expert-beware-toxic-gases-manure-storages

Here is what struck me the most: "Two brothers, ages 2 and 4, were found unresponsive next to the family farm's manure storage just minutes after their father and grandfather began agitating the manure in the tank. The brothers were riding their bikes on a roadway that runs next to the structure." ***Lime Kiln road is a roadway that runs next to the proposed structure.*** These dangers are real, they are important, and they need to be strongly considered. I am concerned about our neighbors, as well as all of the employees of the farm.

Please vote no. Ledgeview has the opportunity to be a friendly, active, outdoor community. If you oppose the application, there is still time to consider other options for Ledgeview Farms. If this goes through, the damage is done, **it is irreversible**, and repercussions are potentially disastrous.

Thank you so much for your time!
Tricia Adams

Tricia Adams
Triathlon Coach/Owner, TDA Coaching, LLC
USA Triathlon LI, ASFA Sports Nutrition Certified
www.tdacoaching.com
(920) 366-9949

PennState

Farm-safety expert: Beware of toxic gases from manure storages

October 4, 2012

UNIVERSITY PARK, Pa. -- A narrowly averted farm tragedy in September has a farm safety expert in Penn State's College of Agricultural Sciences renewing his warning about the dangers of toxic gases emanating from manure-storage facilities.

The stark reminder of the serious hazards lurking around manure pits came to light once again Sept. 17 on a Montour County farm, explained Davis Hill, senior extension associate in the University's Agricultural Safety and Health Program.

Two brothers, ages 2 and 4, were found unresponsive next to the family farm's manure storage just minutes after their father and grandfather began agitating the manure in the tank. The brothers were riding their bikes on a roadway that runs next to the structure.

"Their dad explained that he had just started the tractor that operated the agitator," Hill said. "He checked the connections for leaks and then decided to walk around to the back of the structure so he could see into the top more easily to make sure it was mixing correctly. The back of the structure was buried in the ground with a roadway around the back which leads up to the barnyard.

"As he walked around the side toward the back, he found his two sons. The youngest was blue while the other one was very pale. Both were unresponsive. He immediately told his dad to shut down the agitator and call 911 while he moved both boys to fresh air. The older son revived quickly. The younger boy remained unconscious for nearly 20 minutes."

The manure-storage structure is 124 feet across and 12 feet deep, Hill noted. The tank was partially buried and partially above ground. It was nearly full and covered with the typical crust that forms on top of liquid-manure storages. It was the first day for agitating the storage.

"The first day of agitation or mixing of the manure is when we often see higher levels of manure gas," he said. "When you break up that crust and stir around the manure, gases that are contained below the crust are allowed to pour out of the storage."

The back side of the structure is mostly buried, with only a foot or so above ground level. The gases "boiled over" the wall and settled next to the structure, where the children were found.

"No one really would have suspected that until this incident happened, and now, it is very clear to see," Hill said. "Being heavier than air, the toxic gases would accumulate right where the children were riding their bikes."

There are four predominant toxic gases that are produced during manure storage and released during agitation. The most serious of these, from a health standpoint, is hydrogen sulfide. This gas is colorless and has a rotten egg smell at very low concentrations, but people are not able to detect this odor at high concentrations.

Hydrogen sulfide is heavier than air, which means it will stay close to the surface or settle in low areas. As the manure in this structure was being agitated and stirred, high levels of this toxic gas would have been released when the crust of the manure was broken, Hill pointed out. As the amount of gas built up on the surface of the manure, it likely spilled over the top of the wall and rolled to the ground.

"At high levels, this toxic gas can cause loss of consciousness and stopping or pausing of breathing and can lead to death," he said. "At extremely high levels, breathing will cease and death can occur within minutes."

Federal and state agriculture officials have raised concerns about the possibility of higher-than-usual levels of hydrogen sulfide gas being emitted from manure pits containing gypsum-based animal bedding, such as was used on this farm. Hill said he plans to work with the USDA Natural Resources Conservation Service and others on research to determine if there is a connection between gypsum bedding, elevated hydrogen sulfide levels and manure-pit incidents.

He is looking for farmers using gypsum bedding who are willing to participate in this research. Interested farmers can contact him at 814-865-2808 or by email at deh27@psu.edu.

Hill said carbon dioxide also is released during manure agitation. This gas, which is heavier than air, is also colorless and odorless. "Carbon dioxide displaces oxygen and, at high levels, can cause a person to quit breathing," he explained.

Ammonia, another manure gas, is lighter than air, which means it normally will rise once it's released, according to Hill. "This gas is colorless but has a very pungent odor which will get stronger at higher concentrations," he said. "This property will cause anyone exposed to this gas to vacate the area immediately."

Methane is the other gas people often relate with manure storages. This is another colorless and odorless gas. Like ammonia, it is lighter than air, which means it will dissipate outside. This gas will asphyxiate, which means it will displace breathable oxygen in high enough concentration. This gas also is very flammable and explosive in the right concentration.

The recent incident should be a warning to other farmers that have manure storages where toxic gases can be released, Hill stressed. He offered the following recommendations regarding these structures:

-- Make sure everyone who needs to be near manure-storage structures understand the hazards, including how the various gases can affect them.

-- Make sure there is no access to low lying areas next to these structures during manure agitation. Consider a buffer zone of at least 20 feet around the structure during this time.

-- Especially keep children well away from all hazardous farm operations. Lower concentrations of toxic gases can have serious effects on them.

-- Bystanders and nonessential workers should stay away during agitation and manure pump-out operations.

-- When agitating manure storages located below animal living areas, realize that dangerous levels of toxic gases can be pushed up through slotted floors into the animal housing. Make sure these spaces are well ventilated before and during agitation. In some cases, people and animals should be removed before agitation of the manure.

-- If you must be near spaces that are being agitated, wearing a portable gas detector would offer an early warning if toxic gas is present. This device is relatively inexpensive and can measure a single gas (hydrogen sulfide is suggested) or multiple gases and can give warning by sounding an audible alarm when dangerous levels of gas are being released.

Other safety suggestions related to manure storages can be found at http://www.agsafety.psu.edu/.

MEDIA CONTACTS:

Jeff Mulhollem, jjm29@psu.edu
Work Phone: 814-863-2719

Last Updated October 04, 2012

Charlotte Nagel

From: Mark Danen <mdanen@ledgeviewwisconsin.com>
Sent: Friday, May 18, 2018 12:35 PM
To: cnagel@ledgeviewwisconsin.com
Subject: Fwd: Ledgeview Resident

Sent from my iPad

Begin forwarded message:

From: Tricia Adams <tricia.deprey@gmail.com>
Date: May 18, 2018 at 10:23:51 AM CDT
To: mdanen@ledgeviewwisconsin.com
Subject: Ledgeview Resident

Good morning Mark,

Thank you for serving on our town board! I appreciate in advance you taking the time to read my email.

I live at 611 Marble Rock Circle. We bought our lot and built our house less than two years ago. I am writing to you because I'm concerned about the proposed waste management system for Ledgeview Farms.

First, absolutely would not have purchased our lot if the manure pit had been in place two years ago. My family of four are very active outside as runners and cyclists. After reading several medical journal articles about the toxic gases created by concentrated waste, I would (will) not allow myself, my husband, or my kids to be outside on Lime Kiln next to the pit. We would (will) have to drive somewhere else to exercise outside.

Second, several residents (including ourselves) who moved in recently have stated that they will be asking for lower property taxes if the manure pit is installed. After doing research, I found that manure pits in non-rural areas around the US have historically lowered property values from 30-88%.....**88%.**

Last, please read this article when you have a chance: http://news.psu.edu/story/146221/2012/10/04/farm-safety-expert-beware-toxic-gases-manure-storages

Here is what struck me the most: "Two brothers, ages 2 and 4, were found unresponsive next to the family farm's manure storage just minutes after their father and grandfather began agitating the manure in the tank. The brothers were riding their bikes on a roadway that runs next to the structure." ***Lime Kiln road is a roadway that runs next to the proposed structure.*** These dangers are real, they are important, and they need to be strongly considered. I am concerned about our neighbors, as well as all of the employees of the farm.

Please vote no. Ledgeview has the opportunity to be a friendly, active, outdoor community. If you oppose the application, there is still time to consider other options for Ledgeview Farms. If this goes through, the damage is done, **it is irreversible**, and repercussions are potentially disastrous.

Thank you so much for your time!
Tricia Adams

Tricia Adams
Triathlon Coach/Owner, TDA Coaching, LLC

USA Triathlon L1, ASFA Sports Nutrition Certified
www.tdacoaching.com
(920) 366-9949

Charlotte Nagel

From: Mark Danen <mdanen@ledgeviewwisconsin.com>
Sent: Friday, May 18, 2018 12:35 PM
To: cnagel@ledgeviewwisconsin.com
Subject: Fwd: Ledgeview Farms

Sent from my iPad

Begin forwarded message:

From: Brooke Neville <office@nevillesales.com>
Date: May 18, 2018 at 12:23:15 PM CDT
To: mdanen@ledgeviewwisconsin.com
Subject: Ledgeview Farms

This note is to express my strong opposition to the proposed Manure pits by Ledgeview Farms. My husband, 2 year old daughter, and myself live on Beachmont Road, which very close to the proposed pit site.

A few points:
-The farm has been in violation before and don't have a good track record of being an ethical or positive business.
- Manure pits are dangerous and should not be located so close to homes and families, particularly with so many young children.
- There are not enough protections in place to contain either a major storm (overflow) or damage to the facility.
- The compliance is "self-regulated" which is unacceptable in light of the past business practices of Ledgeview Farms, LLC.

I plan on attending the meeting on May 29th.

Thank you,
Brooke Neville

Charlotte Nagel

From: Sarah Burdette <sburdette@ledgeviewwisconsin.com>
Sent: Monday, May 21, 2018 10:19 AM
To: Charlotte Nagel
Subject: FW: Ledgeview Farms Manure Pite

Follow Up Flag: Follow up
Flag Status: Flagged

For the May 29 meeting file.

Sarah K. Burdette
Administrator
Town of Ledgeview

Ledgeview
Set your sights high

3700 Dickinson Road
De Pere, WI 54115
Phone: 920.336.3360, ext. 108
Mobile: 920-639-6083
sburdette@ledgeviewwisconsin.com www.LedgeviewWisconsin.com

From: Mark Danen [mailto:mdanen@ledgeviewwisconsin.com]
Sent: Monday, May 21, 2018 9:55 AM
To: sburdette@ledgeviewwisconsin.com
Subject: Fwd: Ledgeview Farms Manure Pite

Sent from my iPad

Begin forwarded message:

From: Shawn Hennigan <sphennigan@gmail.com>
Date: May 20, 2018 at 3:19:11 PM CDT
To: pdanen@ledgeviewwisconsin.com, rvanrossum@ledgeviewwisconsin.com,

kgeurts@ledgeviewwisconsin.com, cpeltier@ledgeviewwisconsin.com,
mdanen@ledgeviewwisconsin.com
Subject: Ledgeview Farms Manure Pite

Dear members of Ledgeview Town Board,

We are writing to you regarding the proposed Manure pits. I would like you to know that we STRONGLY OPPOSE the installation of the manure pits. In January 2015, we built a home at the end of the cul de sac on Country Winds Court, probably 250 yards away from the proposed 12 million gallon pit.

We have several issues with these pits, particularly to the larger of the 2 being so close to my home. First, Ledgeview has been an area of rapid population and new home growth over the past 10+ years. There has been a steady transition from an agricultural area to a more residential one. As such, the town has benefitted from a significant increase in collected taxes. There are many new homes, most with families containing young children, all of whom would be negatively affected by these manure pits. They pose significant health concerns regarding runoff into the water table, lack of significant protections from runoff from storms, potential issues with storm damage to the holding pit, to name a few. Further, the concentrated smell blowing through the residential area would be horrible. For much of the summer and fall season, when we typically spend a lot of time outdoors, we will not be able to enjoy being outside, let alone even open our windows.

We don't know if Ledgeview Farms originally owned much of the land that has become highly residential, but clearly a decision was made by the town to zone these areas as residential and not agricultural. It is obvious that increased tax revenues was cited as one big advantage to development. We can't believe that after home developments into the 10's of millions of dollars, or likely more, that the town could allow this farm to degrade the values of all of these properties by allowing the construction of manure pits. No one can make the argument that this is a good idea for the families that have decided to build new homes, live and raise their families in this area.

There are documented instances of significant health concerns, even death, resulting from proximity of manure pits to residential areas.

Finally, if these manure pits are allowed to proceed, the town should expect a wave of legal challenges to the declining property values, which may negatively affect the town tax base, not to mention the halting of future developments in Ledgeview.

Unfortunately, we will be out of town on May 29, so we will not be able to attend the meeting to voice my opposition to this project. We think the town made their decision to encourage home development, and this is a slap in the face of the residents who have relocated to Ledgeview. I welcome your thoughts on this important topic.

Dr. Shawn & JoAnn Hennigan
3467 Country Winds Ct
920-639-7751

Charlotte Nagel

From: Sarah Burdette <sburdette@ledgeviewwisconsin.com>
Sent: Thursday, May 24, 2018 7:57 AM
To: Charlotte Nagel
Subject: FW: Concerned Ledgeview Resident on Manure Pit and Pedestrian Accommodations for Lime Kiln Road

Follow Up Flag: Follow up
Flag Status: Flagged

For the May 29 meeting

Sarah K. Burdette
Administrator
Town of Ledgeview

Ledgeview
Set your sights high

3700 Dickinson Road
De Pere, WI 54115
Phone: 920.336.3360, ext. 108
Mobile: 920-639-6083
sburdette@ledgeviewwisconsin.com www.LedgeviewWisconsin.com

From: Mark Danen [mailto:mdanen@ledgeviewwisconsin.com]
Sent: Wednesday, May 23, 2018 10:11 PM
To: sburdette@ledgeviewwisconsin.com
Subject: Fwd: Concerned Ledgeview Resident on Manure Pit and Pedestrian Accommodations for Lime Kiln Road

Sent from my iPad

Begin forwarded message:

> **From:** Amanda Auricchio <amanda_auricchio@yahoo.com>
> **Date:** May 23, 2018 at 11:01:09 AM CDT

To: "pjdanen@ledgeviewwisconsin.com" <pjdanen@ledgeviewwisconsin.com>, "rvanrossum@ledgeviewwisconsin.com" <rvanrossum@ledgeviewwisconsin.com>, "kgeurts@ledgeviewwisconsin.com" <kgeurts@ledgeviewwisconsin.com>, "cpeltier@ledgeviewwisconsin.com" <cpeltier@ledgeviewwisconsin.com>, "mdanen@ledgeviewwisconsin.com" <mdanen@ledgeviewwisconsin.com>
Cc: Amanda Auricchio <amanda_auricchio@yahoo.com>, Gaetano Auricchio <gaetano.auricchio@belgioioso.com>
Subject: Concerned Ledgeview Resident on Manure Pit and Pedestrian Accommodations for Lime Kiln Road

Phil, Renee, Ken, Cullen, and Mark,

First of all, I would like to thank you each for taking on the role of Town Board Supervisors. I appreciate all the work you do for our town. My husband and I, along with our 3 sons, moved to Ledgeview in 2013. We built our dream house in the Eagle Bluff subdivision.

I am reaching out to you with a few concerns I have: the potential construction of a manure pit and the safety of Lime Kiln Road.

I am very concerned about the potential upcoming Manure Pit that could be placed a mile from our home. As an avid runner, I run past the farm on Lime Kiln 4 to 5 times a week. I have watched the farm grow over the course of our time in Ledgeview. I have run thru the manure they leave on the road daily. (It doesn't seem neighborly to leave the roads so dirty with manure.) As the farm has grown, I am shocked to learn that the farm has been in violation of their herd size. They have outgrown their location, and on several occasions, they overspread the manure in the fields neighboring our land. I am very concerned to hear that the farm consciously grew beyond the herd size they were allowed to have. I firmly believe in the model of asking for permission, not begging for forgiveness. The sad part is that I don't believe the Ledgeview Farms have asked for forgiveness. They violated their herd size, and now are asking for more. They want to put a permanent manure pit in the backyards of many of our residents, including our own.

From my research, I have found manure pits are dangerous to the health and well being of our community. Death have occurred. Deaths. Yes, deaths! In our newly budding community, do you as a board, want to consciously allow for the introduction of a manure pit around so many family homes. Manure pits are dangerous, and they should not be placed so close to our homes and our families, particularly with so many young children in the close vicinity.

My biggest fear is that this manure pit will be approved for our community. Then what? Who will be overseeing this self-regulated manure pit? Who will be responsible to make sure our water is not contaminated and our air isn't being filled with highly toxic gases? Will it be the same folks that didn't ask for permission? I pray we won't be at a point that Ledgeview Farms are finally begging for forgiveness.

Aside from the safety and health concerns, I am disappointed to think of the affect this manure pit will have on the smell of the air around our home. Whenever they spread the manure, it just smells horrible. In addition, I am disappointed to think of the loss of property value for ourselves and our friend who have built or purchased their dream home.

So as you look to the Tuesday, May 29th vote, you have my support to DENY both the application for an increase in herd size AND the construction of any manure pits.

On a final note, back in September of 2017, I reached out to the Supervisors to add in a pedestrian accommodation along Lime Kiln road. I was told this was a county road. Therefore, I reached out to Nicholas Uitenbroek at the Brown County Public Works Department, and he confirmed that, "Unfortunately, we don't have any roadway projects scheduled for CTH V in the immediate future (not in the next 10 to 15 years or so). Both the Village of Bellevue and the Town of Ledgeview have identified the need for pedestrian and bicycle improvements on CTH V in their Bicycle/Pedestrian Plan or their Comprehensive Plan. Municipalities have the option to add bicycle and/or pedestrian accommodations, such as trails or sidewalks, along County Highways even if a roadway project is not scheduled." I look for your support in continuing to for ways to add in a pedestrian accommodation along Lime Kiln Road.

As I always say, health is indeed our first wealth. Please look for ways to grow (not hinder) the health and well being of our community.

Sincerely,
Amanda Auricchio

718 Iron Horse Way
Green Bay, WI 54311

920-217-5246

Charlotte Nagel

From: Sarah Burdette <sburdette@ledgeviewwisconsin.com>
Sent: Thursday, May 24, 2018 7:59 AM
To: Charlotte Nagel
Subject: FW: Manure Pit Concerns

Follow Up Flag: Follow up
Flag Status: Flagged

Sarah K. Burdette
Administrator
Town of Ledgeview

Ledgeview
Set your sights high

3700 Dickinson Road
De Pere, WI 54115
Phone: 920.336.3360, ext. 108
Mobile: 920-639-6083
sburdette@ledgeviewwisconsin.com www.LedgeviewWisconsin.com

From: Mark Danen [mailto:mdanen@ledgeviewwisconsin.com]
Sent: Wednesday, May 23, 2018 10:03 PM
To: sburdette@ledgeviewwisconsin.com
Subject: Fwd: Manure Pit Concerns

Sent from my iPad

Begin forwarded message:

From: David Evans <evansdd@gmail.com>
Date: May 23, 2018 at 9:42:06 AM CDT

To: mdanen@ledgeviewwisconsin.com
Subject: Fwd: Manure Pit Concerns

Mr. Danen-

I am sure you are receiving lots of feedback in regards to the application that Ledgeview Farms has submitted for the development of a manure pit on their property in Ledgeview. I wanted to take this time to voice my support for the broader community, and not the farm that has undergone rapid expansion without a clear strategic vision. A manure pit can have major impacts to the health and well being of our residents, and the attractiveness of the town for future development. We truly have a unique community here that is planning on exciting growth, and I am afraid that this development will bring that growth to a screeching halt. I am sure you have read all about the impacts these projects have on the communities, and I hope you will vote to support the decision the board made last year when this topic was originally raised. Please protect our community and please vote to reject the proposal for the construction of these manure pits.

Thank you for your service, and please feel free to reach out anytime if you need something from me, or my neighborhood.

Regards,

David D. Evans
M: 773-960-5523

645 Marble Rock Circle
Green Bay, WI 54311

Charlotte Nagel

From: Sarah Burdette <sburdette@ledgeviewwisconsin.com>
Sent: Thursday, May 24, 2018 7:59 AM
To: Charlotte Nagel
Subject: FW: Ledgeview Farms, LLC

Follow Up Flag: Follow up
Flag Status: Flagged

Sarah K. Burdette
Administrator
Town of Ledgeview

Ledgeview
Set your sights high

3700 Dickinson Road
De Pere, WI 54115
Phone: 920.336.3360, ext. 108
Mobile: 920-639-6083
sburdette@ledgeviewwisconsin.com www.LedgeviewWisconsin.com

From: Mark Danen [mailto:mdanen@ledgeviewwisconsin.com]
Sent: Wednesday, May 23, 2018 10:08 PM
To: sburdette@ledgeviewwisconsin.com
Subject: Fwd: Ledgeview Farms, LLC

Sent from my iPad

Begin forwarded message:

From: Pat Schillinger <pat.schillinger@gmail.com>
Date: May 23, 2018 at 9:31:01 AM CDT
To: pjdanen@ledgviewwisconsin.com, rvanrossum@ledgeviewwisconsin.com,

kgeurts@ledgviewwisconsin.com, cpeltier@ledgeviewwisconsin.com, mdanen@ledgeviewwisconsin.com
Subject: Ledgeview Farms, LLC

Dear Chairman Danen and Supervisors Van Rossum, Geurts, Peltier, and Danen -

I am contacting you to express our family's strong opposition to the application by Ledgeview Farms to expand their herd and construct 2 manure storage facilities.

I cannot attend the Town Board meeting next week because I will be on business so I wanted to provide my thoughts directly to you. I attended the Town's Zoning and Planning Commission meeting when this was discussed and I did speak publicly in opposition to the application at that time.

I believe the application should be denied due to public safety concerns.

A November, 2008 report titled "Manure Gas Safety" compiled by experts from the US Department of Agriculture and the Wisconsin Department of Agriculture Trade & Consumer Protection laid out the hazards of manure storage. Here is a sample of the report's findings:

"The decomposition of manure in storage or handling systems generates gases, some of which are toxic, explosive, and oxygen displacing. The most hazardous gases are hydrogen sulfide (H2S), ammonia (NH3), methane (CH4), and carbon dioxide (CO2). Dangerous levels of these gases can accumulate in and around manure management systems, particularly when manure is being agitated or otherwise disturbed.

Hydrogen sulfide levels may increase a thousand-fold during agitation. This extremely toxic gas is the most dangerous manure gas as it is colorless, heavier than air, and may cause death in seconds at high concentrations. While hydrogen sulfide is commonly known for its rotten egg odor, the odor isn't detectable by the human sense of smell at higher concentrations. It affects eyes, respiratory system, and the central nervous system."

The report also lists the risks inherent in ammonia, methane and carbon dioxide.

https://datcp.wi.gov/Documents/ManureGasSafetyReport.pdf

I also researched public records detailing injuries and deaths due to manure pits. Most of the deaths occurred to employees of the farm where the manure was stored. However, there are documented instances of children and other non-employees dying after being exposed to the gases from manure pits or from falling into them.

See:

https://www.wisfarmer.com/story/news/2016/09/21/fatal-fumes-lurk-manure-storage-facilities/90771590/

http://www.syracuse.com/news/index.ssf/2015/08/farm_manure_pits_toxic_gases_kill_quickly_rescues_often_turn_deadly_too.html

https://www.agupdate.com/agriview/news/dairy/still-grieving-family-promotes-safety/article_16b132b1-b035-50a1-a2b2-477b97ceb1a3.html

These are just a few examples. Every year people die from exposure to manure pits. I learned by reading Ledgeview Farms' application and from the testimony at the Zoning/Planning Commission meeting that most of the actions to ensure safety or combat damage/runoff from their manure pit is "self-regulated." That is a scary and dangerous proposition. If you review the public record of the Farms' past actions you will see that there are many instances where they have been in violation of DNR and EPA rules and regulations. They are not a good corporate/farm/business citizen in our community and they cannot be trusted to ensure the safekeeping and maintenance of these manure pits.

The proposed location of the pits is dangerously close to dozens of homes with families of young children. Exposure by any wandering, curious child near the pit could result in great bodily harm or death. Ledgeview Farms is not located in a rural area with few people living nearby. There are literally homes lining the sides of the field where they want to build their 12 million gallon manure pit.

For these reasons, we respectfully request that you deny their application based - at least in part - due to the dangerous public safety and health issues it poses to our community.

Thank you.

Sincerely,
Pat

Patrick J Schillinger
714 Iron Horse Way
Green Bay, WI 54311

920-634-9501 cell

pat.schillinger@gmail.com

Charlotte Nagel

From: Renee Vanrossum <rvanrossum@ledgeviewwisconsin.com>
Sent: Monday, May 28, 2018 9:13 PM
To: cnagel@ledgeviewwisconsin.com; sburdette@ledgeviewwisconsin.com
Subject: Fwd: Protect Ledgeview (Manure Pit)

Follow Up Flag: Follow up
Flag Status: Flagged

Sent from my iPad

Begin forwarded message:

From: Meredith Wangerin <mwangerin@gmail.com>
Date: May 24, 2018 at 10:30:41 AM CDT
To: rvanrossum@ledgeviewwisconsin.com
Subject: Fwd: Protect Ledgeview (Manure Pit)

Ms. Van Rossum-

I am sure you are receiving lots of feedback in regards to the application that Ledgeview Farms has submitted for the development of a manure pit on their property in Ledgeview. Please vote protect our community, and its residents from the potential health issues that typically arise from such developments. Please uphold the restrictions you placed on such a development last year, and please continue to act on behalf of the broader community, as opposed to a select group of farmers. I own a business, and recently opened a new location down the road from this development. Businesses are meant to make the community better, not to create lasting negative impacts to its residents.

Thank you for your service to the community.

Regards,

Dr. Meredith Evans
M: 312-504-1493

645 Marble Rock Circle
Green Bay, WI 54311

May 27, 2018

Dodgeview Town Board:

We are writing to express our opposition to Jason Pansier's request for a conditional use permit and livestock facility siting approval relating to property located at 3499 Lime Kiln Road and 3875 Dickinson Road.

As a homeowner adjacent to the Pansier property we are very concerned about our personal health and our property value. The Wisconsin Dept. of Revenue has determined that "residences within a quarter mile of a CAFO had home values decrease by 13%. Homeowners within a mile of a CAFO suffered a 8% loss in home values." CAFO's also threaten human health, may contaminate land, air and water, cause home values to plummet, and "have the ability to create serious quality of life issues."

We believe the addition of any livestock facility and/or manure pit to detrimental to our family, our neighbors, and the Town of Dodgeview!

Sincerely,

Jim and Julie Enright
2277 Dollar Rd

Charlotte Nagel

From: Cullen Peltier <cpeltier@ledgeviewwisconsin.com>
Sent: Wednesday, May 30, 2018 10:55 AM
To: Charlotte Nelson
Subject: Fwd: Ledgeview Farms Manure Pit

Sent from my iPad

Begin forwarded message:

From: Chad Anderson <chad.anderson@editfruitjuice.com>
Date: May 28, 2018 at 5:26:26 PM CDT
To: "pdanen@ledgeviewwisconsin.com" <pdanen@ledgeviewwisconsin.com>, "rvanrossum@ledgeviewwisconsin.com" <rvanrossum@ledgeviewwisconsin.com>, "kgeurts@ledgeviewwisconsin.com" <kgeurts@ledgeviewwisconsin.com>, "cpeltier@ledgeviewwisconsin.com" <cpeltier@ledgeviewwisconsin.com>, "mdanen@ledgeviewwisconsin.com" <mdanen@ledgeviewwisconsin.com>
Cc: Chad Anderson <chad.anderson@editfruitjuice.com>, "ck1anderson@msn.com" <ck1anderson@msn.com>, Shawn Hennigan <sphennigan@gmail.com>, John Connelly - D2 Ingredients <jconnelly@d2ingredients.com>
Subject: Ledgeview Farms Manure Pit

Phil

Just a quick message to give my support in rejecting the request by Jason Pansier, owner, for a conditional use permit and livestock facility siting approval relating to property located at 3499 Lime Kiln Road and 3875 Dickinson Road. Unfortunately, I will be out of town during the public hearing on May 29, 2018 and will not be able to attend. As a neighbor to the Pansier Dairy Farm we have seen the following failures:

1. Frequent manure spills on the public roads surrounding our neighborhood and the 2 dairy locations.
2. Spreading of manure prior to rain.
3. Spreading of manure on snow.
4. Transporting oversized and overweight manure wagons without proper blinking hazard lights.
5. Manure contaminated ditches and waterways across the street from the Heifer location.
6. Manure Dust and Fecal Material on Vehicles after driving on roads surrounding Pansier farms.
7. Excess bugs and flies surrounding the Pansier farms

Pansier Dairy Farm is documented EPA Rule Violator and at "CAFO" herd size without proper permitting. It is highly doubtful that many of us would have built >$500K homes in this area

with a CAFO in the area. There have been numerous articles demonstrating massive loss of property values adjacent to, as well as, up to 3 miles in the surrounding area of a CAFO.

Most importantly, we have to understand the dangers of having multi-million gallon manure lagoons within 250-300 feet of a high density of people. As a previous agricultural livestock producer, I know the dangers of manure pit gases. We are taught in school should that they can be toxic and even deadly, especially to children. There have been many recent events where lives have been lost due to the dangerous gases methane, hydrogen sulfide, carbon dioxide and ammonia, which are present at manure lagoons.

I have added a few of the recent articles that have shown the effectiveness of working together.

http://www.nffc.net/Learn/Fact%20Sheets/AAIEnvironmental&HealthLivestock.pdf

Environmental and Health Problems in Livestock Production
www.nffc.net
LEVELING THE FIELD – ISSUE BRIEF #2 Environmental and Health Problems in Livestock Production: Pollution in the Food System Over the last thirty years, the livestock production system in the United States has undergone an

http://www.farmfutures.com/commentary/smithfield-loses-50-million-lawsuit

https://www.public-health.uiowa.edu/ehsrc/CAFOstudy/CAFO_1.pdf

http://ir.uiowa.edu/cgi/viewcontent.cgi?article=1022&context=oeh_pubs

https://nocafos.org/latest-news

My wife and I hope that you and the Ledgeview council will agree that allowing this livestock operation to continue to expand is not in the best interest or safety of our community and it's residents. We appreciate everything you do and continue to do to allow the community of Ledgeview to thrive. Thank you!

Sincerely,

Chad & Kim Anderson
2262 Meadow Ridge Road
De Pere, WI 54115

AAI The Agribusiness Accountability Initiative

agribizacct@comcast.net | www.agribusinessaccountability.org | (410) 319-9143

LEVELING THE FIELD – ISSUE BRIEF #2

Environmental and Health Problems in Livestock Production:

Pollution in the Food System

Over the last thirty years, the livestock production system in the United States has undergone an industrial revolution. The number of animals raised for meat has been steady or growing, even as the number of farms raising animals has declined. Today, we have only a quarter the number of hog farms we had in 1982, but the number of hogs sold has gone up. How is that possible? Only because of a major change in the way livestock are produced—a change that affects farmers, consumers, businesses, and our communities.

In the industrial model of livestock production, animals are housed in close quarters inside massive climate-controlled buildings or on feedlots. Each confined animal feeding operation, or CAFO, may house tens or even hundreds of thousands of animals. To prevent disease, many livestock companies require their growers to feed animals low doses of antibiotics. CAFOs store the waste these animals generate in massive lagoons on the property and sometimes spread or spray the manure on available land.

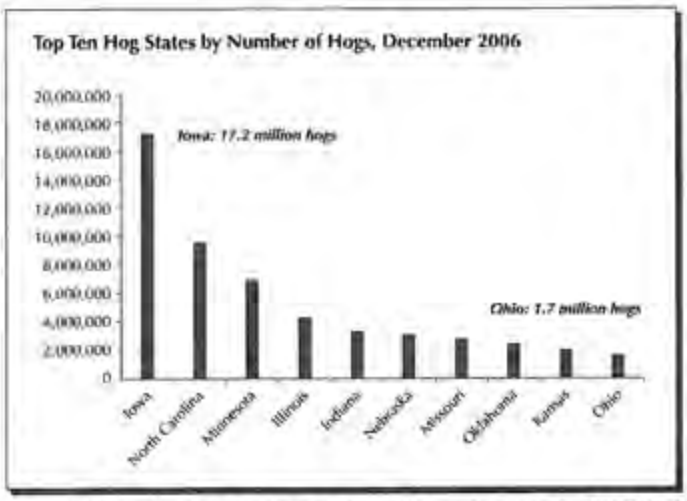
Even if you've never seen a CAFO, you can probably understand why many communities and researchers are worried about their impact on the environment and public health. Workers in confinement buildings and residents of the communities where these operations are located feel the impacts most acutely, but we are all affected by health and environmental problems in the food system. The vitality of our food system is dependent on healthy rural communities and a clean rural environment. If they're compromised by air pollution, water pollution, odor, or antibiotic resistance, then we all need to be concerned.

This issue brief is the second in a series that maps the impacts of industrial livestock production and outlines the creative, innovative responses of individuals, organizations and communities. We'll begin with a summary of major health and environmental concerns; then we'll look at what groups all across the country are doing to address them. We can learn from their experience and use the tools available to build a healthier, safer, and more vibrant food system.

When Manure Multiplies

In every way—within confinement barns and feedlots and within the communities and regions where animals are raised for meat—livestock production has become more concentrated. In the hog sector, the 110 largest operations, which each house over 50,000 animals, account for 55% of the national hog inventory.[1] In two North Carolina counties alone, the number of hogs has increased by 2 million since 1990, and the counties now average 2,185 hogs per square mile.[2] Three counties in northern Iowa experienced a nearly three-fold increase in the number of hogs between 1992 and 1997—from 600,000 to over 1.6 million—while the number of farms raising hogs declined by almost 40 percent.[3]

When CAFOs housing thousands of animals are geographically concentrated, their environmental and health impacts are concentrated too. Workers, area residents, and the communities located down-stream or down-wind of the animals may find themselves with a lot of problems on their hands. The greatest environmental and health challenges are odor, air pollution, surface and ground water pollution, and antibiotic resistance. Let's take a look at these problems in more detail.



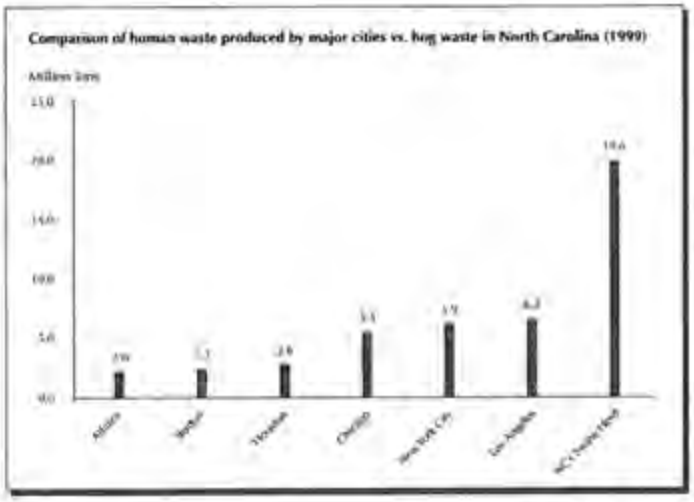
The top ten hog producing states housed a combined total of 52.6 million hogs in 2006. A high concentration of animals magnifies their impacts on health and the environment.
Source: USDA/NASS (2007)

Water Pollution from Manure

Animals generate waste. While many traditional crop and livestock operations use manure as a fertilizer, letting animals roam on land after harvest to build up organic matter,[4] industrial operations have far too much waste (and far too little land) to use this method. Most industrial operations store waste in massive lagoons that can hold millions of gallons of liquid manure. They may spread or spray some of the manure on available land. When it is spread in excessive quantities, or when the lagoons leak, problems result.

Hog CAFOs are often cited as the most problematic with respect to waste storage and removal, but there are numerous examples of pollution problems originating in cattle feedlots, industrial dairies, and poultry operations.[5] On Maryland's eastern shore, 6,000 broiler houses turn out 750,000 tons of chicken manure each year, more waste than is produced by a city of 4 million people.[6] A state-wide study in California conducted by the Environmental Protection Agency estimates that each dairy cow produces almost 44,000 pounds of manure per year. California is now home to over 1.5 million dairy cows. Many of the operations are located in the San Joaquin Valley, which is struggling to deal with the manure problem and related pollution issues.[7]

Meanwhile, as visible in the chart below, hog CAFOs in North Carolina alone produce nearly 20 million tons of waste a year—more than the human residents of New York, Chicago, and Los Angeles combined.[8]



Cochran et al. (2000)

The careful management and removal of this amount of waste is crucial to preserving environmental and human health. Raw manure can contain up to 100 million fecal coliform bacteria per gram, as well as

ammonia, phosphorus, and other nutrients and microbes that can contaminate soil and water in high concentrations.[9] E. Coli bacteria have been found in the manure of a quarter of the beef cattle on large feedlots.[10] Unfortunately, evidence suggests that pollution problems from CAFO manure are large and spreading.

Nitrogen and phosphorus can aid plant growth when applied in reasonable amounts, but are dangerous in high concentrations. The EPA has identified poultry manure as the largest source of excess phosphorus and nitrogen in the Chesapeake Bay and found that the nutrients have created a dead zone as plants and aquatic life are smothered from lack of oxygen. One-third of all wells in Maryland's chicken-producing areas have been found to have concentrations of nitrate, which is created by the breakdown of nitrogen by microbes, that exceed EPA standards for drinking water.[11]

Another study found that nitrates were responsible for contamination in 3/4 of all wells surveyed in central and western Kansas.[12] High nitrate concentrations in drinking water can cause blue baby syndrome and may contribute to developmental defects in fetuses or miscarriages in pregnant women.[13]

Manure gets into surface and ground water when lagoons spill or break, or when the CAFO operator spreads or sprays too much manure on the land around the operation.[14] Spills and leaks occur quite frequently.[15] In just one example, researchers at Kansas State University acknowledged that 87 million gallons of waste had leached into groundwater over the 15-year life of a large Kansas hog CAFO.[16] Another study found that over half of Iowa's 5600 manure storage structures leaked at rates above the legal limit.[17]

Nitrogen and other pollution from CAFOs becomes an even greater public concern when the effects of manure contamination spread from the operation outward into the community and beyond. The EPA reported in 1998 that CAFOs were a contributing source of water pollution in 20% of impaired water sources in the United States.[18]

Manure contamination can spread in groundwater aquifers or on products washed with contaminated water. In an era of national and even global food distribution, we are all at risk when the rural environment is compromised.

Air Pollution from Waste

"Piling up too much 'stuff' in one place causes problems. If you spread out the animals and let manure lay where it falls in a pasture, it doesn't bother anyone very much. But if you start collecting it, flushing it, spreading and spraying it around—all normal practices in confinement operations—it becomes air pollution."

– Dr. John Ikerd, University of Missouri, 2001

Another method used by livestock production facilities to dispose of waste is the spray application of liquefied manure to fields surrounding the operation.

Spraying large amounts of manure sends dust particles into the air that can penetrate the lungs of humans nearby. The particles carry toxic gases such as ammonia, which can impede the lungs from clearing dust particles, and hydrogen sulfide, which can prevent cells from using oxygen and causes loss of consciousness, coma, or death at high exposure levels.[19] One study found that residents living downwind from CAFOs emitting hydrogen sulfide at fairly low levels were suffering from permanent nervous system impairment.[20] Exposure to persistent,

Thousands of cows produce a lot of waste.

Photo courtesy factoryfarm.org

low levels of hydrogen sulfide can cause fatigue, short-term memory loss, headaches, and other symptoms.[21] Air pollution from CAFOs is poorly regulated under the federal Clean Air Act, so the harm to residents living near the facilities from air pollution goes largely unaddressed.[22]

Risk to Workers, CAFO Owners and Their Families

Workers, CAFO owners, and their families face some of the greatest risks from livestock pollution.[23] Many spend their days inside these operations and are exposed regularly to dust, gases and odor.

Epidemiological studies have compared CAFO workers to workers involved in jobs that do not bring them in contact with livestock. The studies show significantly higher incidences of chronic bronchitis, asthma, flu-like symptoms, and lower respiratory tract inflammation in CAFO workers than in other workers. Ammonia, toxins, and dust are the biggest health threats. CAFO workers have been found to have higher incidences of infection with and illness from salmonella, leptospirosis, and hepatitis E than non-CAFO workers.[24]

The families of CAFO owners and the owners themselves are also at risk. One particularly horrific story retold by researcher Marlene Halverson involved five members of a CAFO-owning family who died from methane asphyxiation after entering a 10-foot deep liquid manure pit on their farm in Michigan. One family member had climbed down a ladder in the pit to make a repair, was overcome by fumes, and fell in. Four others followed him and perished as each tried to save the last.[25]

When Animals Stop Smelling and Start Stinking

Much of the damage caused by livestock pollution is subtle. Community members may not realize that their health problems are related to a nearby CAFO unless tests are conducted and the results are publicized. But anyone who has ever been near an industrial livestock facility can tell you that there is one major impact that is definitely not subtle: the smell.

Odor is more than an inconvenience. Studies show that chronic bad odor can have significant health effects. Odor also compromises the quality of life of rural residents.

One study in North Carolina compared residents living within 2 miles of a CAFO to residents not living near a CAFO. The CAFO community reported significantly greater frequency of headaches and burning eyes than the other group, which researchers attributed to the concentrated odor. These residents also reported significantly more times during the day when they could not open windows or enjoy the outdoors. Residents of communities down-wind from animal facilities often report significant mood disturbance, tension, depression, anger, fatigue, and confusion.[26]

Odor also affects the rural economy. Would you want to live next to an operation so smelly that you couldn't open your windows? A 2001 study by a national property appraisal firm found that property values around CAFOs could decline by anywhere from 50% to 90% due to "diminished marketability, loss of use and enjoyment, and loss of exclusivity."[27] State tax tribunals in Michigan reduced the assessed values of residential properties adjacent to CAFOs by between 50 and 66% because of flies and odor.[28]

Photo courtesy factoryfarm.org

Encouraging Monoculture

Researchers also note that industrialized livestock production promotes a system where feed crops are grown on large, specialized farms and feed is shipped considerable distances to reach the CAFO.

Soybeans as far as the eye can see.
Photo by Elanor Starmer

Large-scale, input-intensive grain and oilseed farming can have significant environmental impacts of its own, including soil depletion and water contamination from pesticide and fertilizer runoff. Transportation imposes environmental costs as well in the form of greenhouse gas emissions from semis carrying feed. And as we saw above, separating crop and livestock production creates numerous problems when the manure cannot be properly used or disposed of. The specialized, industrial model of production has reduced the presence of diversified farms and ranches where reasonable quantities of manure are used to build soil health—the kinds of farms and ranches that produced the majority of our meat and milk until the last third of the 20th century. The eventual disappearance of these small- and mid-sized farms would be a significant environmental—not to mention social and economic—blow to our society and food system.[29]

Antibiotic Resistance

Industrial livestock production may be threatening the effectiveness one of the mainstays of our health system: antibiotics. Animals living so closely together are at risk for spreading disease, so many livestock companies require their growers to feed animals low doses of antibiotics as a preventative measure. In fact, some 70% of antibiotics used in the United States are fed to animals who are not sick.[30] Many in the scientific community have expressed concern that the system will increase antibiotic resistance and put human health at risk. A 2002 study found antibiotics in 1/3 of ground and surface water samples taken near hog CAFOs and in 2/3 of samples near poultry CAFOs. Studies show that manure lagoons can leach antibiotic-resistant bacteria along with other contaminants.[31] Antibiotic resistance should be a major concern for us all: doctors report a growing number of illnesses that no longer respond to antibiotic treatment, resulting in prolonged illness or death in patients with resistant strains of an illness.[32] The American Medical Association now opposes the use of antibiotics in farm animals that are not sick.[33]

Hogs are packed tightly together in this industrial facility, increasing their risk of spreading disease.
Photo courtesy Institute for Agriculture and Trade Policy: The Price we Pay for Corporate Hogs

What Can We Do? Strategies for Protecting Health and the Environment

Communities mobilize against the health and environmental impacts of CAFOs for many reasons. They are spurred to act because of harm done to their property; because they resent the community strife that corporate livestock production creates as it pits CAFO owners and their non-CAFO-owning neighbors against each other; or because they believe that corporations have violated basic standards of fairness, foisting costs on the community even as they receive large tax relief packages, low-interest finance, and limited liability agreements from state or local governments.[34] Their resistance takes many forms and happens on local, state, and national levels:

This young advocate says no to CAFOs in Tennessee.
Photo courtesy factoryfarm.org

Fighting CAFO Pollution to Protect Health and the Environment

- **Keep control at the local level.** Communities in states with local control have passed county planning or zoning regulations to keep large-scale livestock facilities out. The ordinances can set limits on the number of animals allowed in a facility or set acreage requirements; dictate "setback" regulations that require facilities to be a certain number of feet from a road, waterway, or property line; or require prospective CAFO operators to apply for environmental permits or livestock waste permits before the county will issue a zoning permit.[35]
- In communities where CAFOs are already operating, local environmental and public health ordinances have helped mitigate their effects. In Missouri, local groups passed health ordinances in twelve counties to keep swine facilities further from residential or public land.[36]
- In states that do not allow local control, community members have used public comment periods for CAFO licenses to express their concerns to local policymakers. If residents can prove a CAFO will negatively impact their land, a construction permit can be turned down.[37]
- Communities may be able to buy time to consider proposals for new CAFO construction by enacting a moratorium on new CAFOs until appropriate planning and zoning regulations can be put in place.[38]
- **Work on the state level.** Communities can pressure state enforcement agencies through formal complaints and letters to the state agency in charge of monitoring and enforcement for CAFOs (often the Department of Natural Resources). Most CAFOs must also apply for permits with the state under the Clean Water and Clean Air Acts, so community members can organize to attend public permit meetings with state lawmakers. As a last resort, citizens are allowed to formally request the involvement of the federal Environmental Protection Agency by filing a citizen suit under the Clean Water Act.
- State-wide ballot initiatives are another option. In 1998, Colorado voters succeeded in passing Amendment 14, which placed stricter regulations on large swine CAFOs and mandated the use of lagoon covers for odor control.[39]
- **Lobby on the federal level.** The Clean Water Act and the Clean Air Act must be strengthened to better address CAFO pollution and odor. Permitting requirements should be more strict, and the public review process for CAFOs must be thorough.
- **Support alternative livestock producers** through your purchases and by lobbying for government support for smaller-scale, diversified livestock operations.

For more information:

CAFO Pollution and Environmental and Health Effects:

- **The Institute for Agriculture and Trade Policy** has put out a series of detailed fact sheets on the problems of air and water pollution from CAFOs, health impacts, and impacts on workers. IATP also has information on how to make safer, more sustainable food choices. Access them at www.iatp.org/foodandhealth/issues_factoryfarms.cfm.
- IATP researcher **Marlene Halverson**'s excellent report on the impacts of hog CAFOs is available at www.iatp.org/hogreport/index.html.
- Read a comprehensive report on CAFOs and air quality by researchers at the **U. of Iowa and Iowa State**: www.public-health.uiowa.edu/ehsrc/CAFOstudy.htm

Antibiotics:

- Read Antibiotics, Agriculture, and Resistance, a report by the **Land Stewardship Project**: www.landstewardshipproject.org/pr/2002/newsr_021218.html
- **Union of Concerned Scientists** is one of the leading groups working on the overuse of antibiotics in livestock production. Access their resources at www.ucsusa.org/food_and_environment/antibiotics_and_food/
- **Keep Antibiotics Working** is a coalition of health, environmental, agriculture and consumer groups with excellent information on the use of antibiotics in livestock production. www.keepantibioticsworking.com/

Take Action on CAFO pollution:

- Read a guide by **Diane Hatz**, former director of the GRACE factory farm project, on how to confront a CAFO: www.factoryfarm.org/guide/docs/guide.pdf
- The **Sierra Club** has resources on challenging CAFO pollution, including "Five Local Strategies to Keep CAFOs Out." www.sierraclub.org/factoryfarms/resources/strategies.asp.
- Find out about federal policy proposals from the website of the **Sustainable Agriculture Coalition** (http://www.sustainableagriculturecoalition.org/) and sign up for action alerts from the **National Campaign for Sustainable Agriculture** (www.sustainableagriculture.net) to find out how you can take action.
- Visit the website of **Food and Water Watch** for more information on the impacts of factory farming and how consumers can act to change it. http://foodandwaterwatch.org/food.
- Support sustainable, smaller scale livestock producers by finding alternative retail outlets in your area. Visit farmers' markets or make connections on-line through resources like the **Eat Well Guide** (http://www.eatwellguide.org/) and **Farm to Table** (http://www.farmtotable.org/).

REFERENCES:

[1] Donham, K., S. Wing, D. Osterberg, et al. (2007). Community Health and Socioeconomic Issues Surrounding Concentrated Animal Feeding Operations. Environmental Health Perspectives **115** (2): 317-320

[2] Hubbell, B., and R. Welsh (1998). "An examination of trends in geographic concentration in U.S. hog production, 1974–96." Journal of Agricultural and Applied Economics **30**: 285-299

[3] Jackson, L. L., D. R. Keeney, et al. (2000). "Swine Manure Management Plans in North-Central Iowa: Nutrient Loading and Policy Implications." Journal of Soil and Water Conservation **55**(2).

[4] Honeyman, M. (1996). "Sustainability Issues of U.S. Swine Production." Journal of Animal Science 74: 1410-1417

[5] NRDC (2006). Facts About Pollution from Livestock Farms, Natural Resources Defense Council.

[6] Goodman, P. (1999). "Poultry's Price: An Unsavory Byproduct- Runoff and Pollution." Washington Post. Washington, DC: A1

[7] EPA (2004). U.S. EPA Regional Administrator Recognizes Certified Dairy Producer in Lodi. E. P. Agency, EPA.

[8] Cochran, K., J. Rudek, et al. (2000). Dollars and Sense: An Economic Analysis of Alternative Hog Waste Management Technologies. Washington, DC, Environmental Defense.

[9] Cole, D., L. Todd, and S. Wing (2000). "Concentrated Swine Feeding Operations and Public Health: A Review of Occupational and Community Health Effects." Environmental Health Perspectives **108**(8): 685-699.

[10] Wallinga, D., MD (2004). Concentrated Animal Feeding Operations: Health Risks from Air Pollution. Minneapolis, MN, Institute for Agriculture and Trade Policy, Food and Health Progam.

[11] Goodman, P. (1999), op. cit.

[12] Volland, Z., and Chappelle (2003). "Cost of Remediation of Nitrogen-Contaminated Soils Under CAFO Impoundments." Journal of Hazardous Substance Research 4.

[13] Cole et al. (2000), op. cit.

[14] Krider, J. (1987). Assessing Animal Waste Systems' Impacts on Groundwater: Occurrences and Potential Problems. Rural Groundwater Contamination. F. M. D'Itri, and L.G. Wolfson. Chelsea, MI, Lewis Publishers, Inc.: 115-128; Huffman, R. L., and P. Westerman (1991). Seepage and Electromagnetic Terrain Conductivity Around New Swine Lagoons. Meeting of the American Society of Agricultural Engineers, Albuquerque, NM; Westerman, P., R.L. Huffman, and J. Feng (1995). "Swine Lagoon Seepage in Sandy Soil." Trans American Society of Agricultural Engineers **38**: 1749-1760; Cole et al. (2000), op. cit.

[15] Kleiner, A. M., and D. Constance (1998). Pork, power and the populist response: The environmental issues surrounding the industrialization of the pork industry in Missouri. International Symposium on Society and Resource Management, Columbia, MO.

[16] Williams, H. (2006). "Fighting Corporate Swine." Politics and Society **34**(3): 369-398.

[17] Osterberg, D., and David Wallinga (2004). "Addressing Externalities from Swine Production to Reduce Public Health and Environmental Impacts." American Journal of Public Health **94**(10): 1703-1709.

[18] Ribaudo M. and Gollehon, N. (2006) Animal Agriculture and the Environment. *Agricultural Resources and Environmental Indicators, 2006.* http://www.ers.usda.gov/publications/arei/eib16/Chapter4/4.5/

[19] Wallinga, D. (2004), op. cit.

[20] Ibid.

[21] Legator, M. S., et al. (2001). "Health Effects from Chronic Low-Level Exposure to Hydrogen Sulfide." Archives of Environmental Health **56**(2): 123-131.

[22] Chapin, A., C. Boulind, and A. Moore (1998). Controlling Odor and Gaseous Emission Problems from Industrial Swine Facilities: Recent Laws and New Ideas. New Haven, CT, Yale University Environmental Protection Clinic; Safley, L. M. (2003). Getting My Barn Built: An Update on Regulations from a U.S. Perspective. Banff Pork Seminars. Banff, BC.

[23] Donham, K. J. (1990). "Health effects from work in swine confinement buildings." American Journal of Industrial Medicine 4:17-26; Zejda, J., T. Hurst, et al. (1993). "Respiratory health of swine producers: focus on young workers." Chest **103**: 702-709; Zuskin, E., B. Kanceljak, et al. (1991). "Immunological and respiratory findings in swine workers." Environmental Res 56: 120-130; Cole et al. (2000), op. cit.

[24] Cole et al. (2000), op. cit.; Halverson, M. (2000). The price we pay for corporate hogs. Minneapolis, MN, Institute for Agriculture and Trade Policy.

[25] Halverson, M. (2000), op. cit.

[26] Wallinga, D. (2004), op. cit.

[27] Kilpatrick, J. A. (2001). "Concentrated Animal Feeding Operations and Proximate Property Values." The Appraisal Journal: 301-306.

[28] Alexander, J. (2006). The CAFO Effect on Property Values: There Goes the Neighborhood. The Muskegon Chronicle. Muskegon, MI.

[29] Jackson, L. L. (1998). Large-scale swine production and water quality. In Pigs, Profits, and Rural Communities, K. Thu and E. Durrenberger, eds. Albany: SUNY Press; Lawrence, M. (1999). Studying the Impacts of Industrial Confined Animal Feeding Operations: A Review of the Literature.

[30] Wallinga, D. (2004). Concentrated Animal Feeding Operations: Health Risks from Water Pollution. Minneapolis: Institute for Agriculture and Trade Policy.

[31] Osterberg and Wallinga (2004), op. cit.

[32] Keep Antibiotics Working (2007). Antibiotic Resistance: An Emerging Public Health Crisis. Washington, DC: KAW

[33] American Medical Association. Antimicrobial Use and Resistance. House of Delegates resolution 508 (A-01), June 2001. Available at www.keepantibioticsworking.com/library/uploadedfiles/American_Medical_Association_Resolution_508_-_.htm.

[34] Johnsen, C. (2003). Raising a Stink: The Struggle over Factory Hog Farms in Nebraska. Lincoln, NE, University of Nebraska Press; Waters, S. (2004). Presentation for Senate Staff Briefing on Livestock Market Reform. Senate Committee on Agriculture. Washington, DC, Western Organization of Resource Councils; Williams, H. (2006), op. cit.

[35] Aiken, J. D. (2005). "The Nebraska Hog Wars." Agricultural Law Update 22(7).

[36] Hatz, D. (2002). Guide to Confronting a CAFO. New York, GRACE; Williams (2006), op. cit.

[37] Hatz (2002), op. cit.

[38] Schwab, J. (1998). Planning and Zoning for Concentrated Animal Feeding Operations. American Planning Association.

[39] Chapin (1998), op. cit.

AAI The Agribusiness Accountability Initiative

agribizacct@comcast.net | www.agribusinessaccountability.org | (410) 319-9143

LEVELING THE FIELD – ISSUE BRIEF #2

Environmental and Health Problems in Livestock Production:

Pollution in the Food System

Over the last thirty years, the livestock production system in the United States has undergone an industrial revolution. The number of animals raised for meat has been steady or growing, even as the number of farms raising animals has declined. Today, we have only a quarter the number of hog farms we had in 1982, but the number of hogs sold has gone up. How is that possible? Only because of a major change in the way livestock are produced—a change that affects farmers, consumers, businesses, and our communities.

In the industrial model of livestock production, animals are housed in close quarters inside massive climate-controlled buildings or on feedlots. Each confined animal feeding operation, or CAFO, may house tens or even hundreds of thousands of animals. To prevent disease, many livestock companies require their growers to feed animals low doses of antibiotics. CAFOs store the waste these animals generate in massive lagoons on the property and sometimes spread or spray the manure on available land.

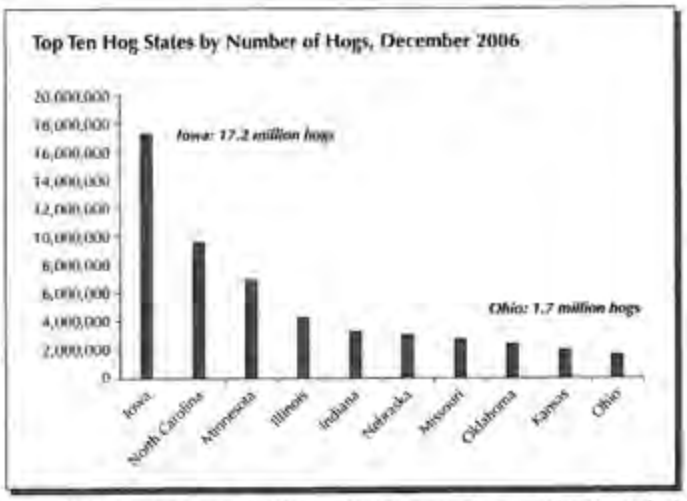
Even if you've never seen a CAFO, you can probably understand why many communities and researchers are worried about their impact on the environment and public health. Workers in confinement buildings and residents of the communities where these operations are located feel the impacts most acutely, but we are all affected by health and environmental problems in the food system. The vitality of our food system is dependent on healthy rural communities and a clean rural environment. If they're compromised by air pollution, water pollution, odor, or antibiotic resistance, then we all need to be concerned.

This issue brief is the second in a series that maps the impacts of industrial livestock production and outlines the creative, innovative responses of individuals, organizations and communities. We'll begin with a summary of major health and environmental concerns; then we'll look at what groups all across the country are doing to address them. We can learn from their experience and use the tools available to build a healthier, safer, and more vibrant food system.

When Manure Multiplies

In every way—within confinement barns and feedlots and within the communities and regions where animals are raised for meat—livestock production has become more concentrated. In the hog sector, the 110 largest operations, which each house over 50,000 animals, account for 55% of the national hog inventory.[1] In two North Carolina counties alone, the number of hogs has increased by 2 million since 1990, and the counties now average 2,185 hogs per square mile.[2] Three counties in northern Iowa experienced a nearly three-fold increase in the number of hogs between 1992 and 1997—from 600,000 to over 1.6 million—while the number of farms raising hogs declined by almost 40 percent.[3]

When CAFOs housing thousands of animals are geographically concentrated, their environmental and health impacts are concentrated too. Workers, area residents, and the communities located downstream or down-wind of the animals may find themselves with a lot of problems on their hands. The greatest environmental and health challenges are odor, air pollution, surface and ground water pollution, and antibiotic resistance. Let's take a look at these problems in more detail.



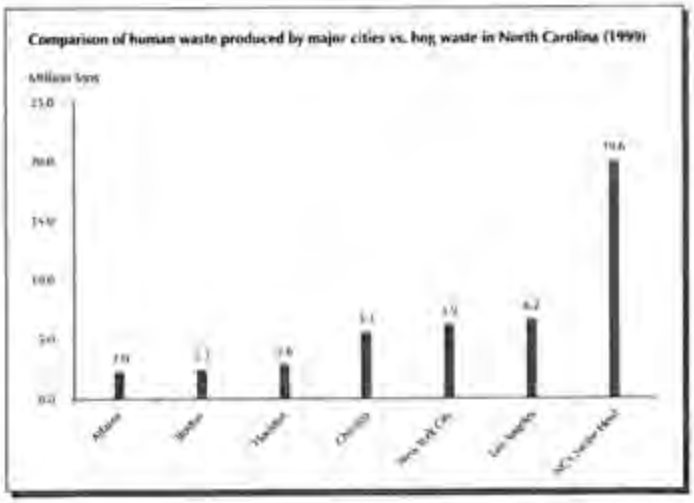
The top ten hog producing states housed a combined total of 52.6 million hogs in 2006. A high concentration of animals magnifies their impacts on health and the environment.
Source: USDA/NASS (2007)

Water Pollution from Manure

Animals generate waste. While many traditional crop and livestock operations use manure as a fertilizer, letting animals roam on land after harvest to build up organic matter,[4] industrial operations have far too much waste (and far too little land) to use this method. Most industrial operations store waste in massive lagoons that can hold millions of gallons of liquid manure. They may spread or spray some of the manure on available land. When it is spread in excessive quantities, or when the lagoons leak, problems result.

Hog CAFOs are often cited as the most problematic with respect to waste storage and removal, but there are numerous examples of pollution problems originating in cattle feedlots, industrial dairies, and poultry operations.[5] On Maryland's eastern shore, 6,000 broiler houses turn out 750,000 tons of chicken manure each year, more waste than is produced by a city of 4 million people.[6] A state-wide study in California conducted by the Environmental Protection Agency estimates that each dairy cow produces almost 44,000 pounds of manure per year. California is now home to over 1.5 million dairy cows. Many of the operations are located in the San Joaquin Valley, which is struggling to deal with the manure problem and related pollution issues.[7]

Meanwhile, as visible in the chart below, hog CAFOs in North Carolina alone produce nearly 20 million tons of waste a year—more than the human residents of New York, Chicago, and Los Angeles combined.[8]



Cochran et al. (2000)

The careful management and removal of this amount of waste is crucial to preserving environmental and human health. Raw manure can contain up to 100 million fecal coliform bacteria per gram, as well as

ammonia, phosphorus, and other nutrients and microbes that can contaminate soil and water in high concentrations.[9] E. Coli bacteria have been found in the manure of a quarter of the beef cattle on large feedlots.[10] Unfortunately, evidence suggests that pollution problems from CAFO manure are large and spreading.

Nitrogen and phosphorus can aid plant growth when applied in reasonable amounts, but are dangerous in high concentrations. The EPA has identified poultry manure as the largest source of excess phosphorus and nitrogen in the Chesapeake Bay and found that the nutrients have created a dead zone as plants and aquatic life are smothered from lack of oxygen. One-third of all wells in Maryland's chicken-producing areas have been found to have concentrations of nitrate, which is created by the breakdown of nitrogen by microbes, that exceed EPA standards for drinking water.[11]

Another study found that nitrates were responsible for contamination in 3/4 of all wells surveyed in central and western Kansas.[12] High nitrate concentrations in drinking water can cause blue baby syndrome and may contribute to developmental defects in fetuses or miscarriages in pregnant women.[13]

Manure gets into surface and ground water when lagoons spill or break, or when the CAFO operator spreads or sprays too much manure on the land around the operation.[14] Spills and leaks occur quite frequently.[15] In just one example, researchers at Kansas State University acknowledged that 87 million gallons of waste had leached into groundwater over the 15-year life of a large Kansas hog CAFO.[16] Another study found that over half of Iowa's 5600 manure storage structures leaked at rates above the legal limit.[17]

Nitrogen and other pollution from CAFOs becomes an even greater public concern when the effects of manure contamination spread from the operation outward into the community and beyond. The EPA reported in 1998 that CAFOs were a contributing source of water pollution in 20% of impaired water sources in the United States.[18]

Manure contamination can spread in groundwater aquifers or on products washed with contaminated water. In an era of national and even global food distribution, we are all at risk when the rural environment is compromised.

Air Pollution from Waste

"Piling up too much 'stuff' in one place causes problems. If you spread out the animals and let manure lay where it falls in a pasture, it doesn't bother anyone very much. But if you start collecting it, flushing it, spreading and spraying it around—all normal practices in confinement operations—it becomes air pollution."

– Dr. John Ikerd, University of Missouri, 2001

Another method used by livestock production facilities to dispose of waste is the spray application of liquefied manure to fields surrounding the operation.

Spraying large amounts of manure sends dust particles into the air that can penetrate the lungs of humans nearby. The particles carry toxic gases such as ammonia, which can impede the lungs from clearing dust particles, and hydrogen sulfide, which can prevent cells from using oxygen and causes loss of consciousness, coma, or death at high exposure levels.[19] One study found that residents living downwind from CAFOs emitting hydrogen sulfide at fairly low levels were suffering from permanent nervous system impairment.[20] Exposure to persistent,

Thousands of cows produce a lot of waste.
Photo courtesy factoryfarm.org

low levels of hydrogen sulfide can cause fatigue, short-term memory loss, headaches, and other symptoms.[21] Air pollution from CAFOs is poorly regulated under the federal Clean Air Act, so the harm to residents living near the facilities from air pollution goes largely unaddressed.[22]

Risk to Workers, CAFO Owners and Their Families

Workers, CAFO owners, and their families face some of the greatest risks from livestock pollution.[23] Many spend their days inside these operations and are exposed regularly to dust, gases and odor.

Epidemiological studies have compared CAFO workers to workers involved in jobs that do not bring them in contact with livestock. The studies show significantly higher incidences of chronic bronchitis, asthma, flu-like symptoms, and lower respiratory tract inflammation in CAFO workers than in other workers. Ammonia, toxins, and dust are the biggest health threats. CAFO workers have been found to have higher incidences of infection with and illness from salmonella, leptospirosis, and hepatitis E than non-CAFO workers.[24]

The families of CAFO owners and the owners themselves are also at risk. One particularly horrific story retold by researcher Marlene Halverson involved five members of a CAFO-owning family who died from methane asphyxiation after entering a 10-foot deep liquid manure pit on their farm in Michigan. One family member had climbed down a ladder in the pit to make a repair, was overcome by fumes, and fell in. Four others followed him and perished as each tried to save the last.[25]

When Animals Stop Smelling and Start Stinking

Much of the damage caused by livestock pollution is subtle. Community members may not realize that their health problems are related to a nearby CAFO unless tests are conducted and the results are publicized. But anyone who has ever been near an industrial livestock facility can tell you that there is one major impact that is definitely not subtle: the smell.

Odor is more than an inconvenience. Studies show that chronic bad odor can have significant health effects. Odor also compromises the quality of life of rural residents.

One study in North Carolina compared residents living within 2 miles of a CAFO to residents not living near a CAFO. The CAFO community reported significantly greater frequency of headaches and burning eyes than the other group, which researchers attributed to the concentrated odor. These residents also reported significantly more times during the day when they could not open windows or enjoy the outdoors. Residents of communities down-wind from animal facilities often report significant mood disturbance, tension, depression, anger, fatigue, and confusion.[26]

Odor also affects the rural economy. Would you want to live next to an operation so smelly that you couldn't open your windows? A 2001 study by a national property appraisal firm found that property values around CAFOs could decline by anywhere from 50% to 90% due to "diminished marketability, loss of use and enjoyment, and loss of exclusivity."[27] State tax tribunals in Michigan reduced the assessed values of residential properties adjacent to CAFOs by between 50 and 66% because of flies and odor.[28]

Photo courtesy factoryfarm.org

Encouraging Monoculture

Researchers also note that industrialized livestock production promotes a system where feed crops are grown on large, specialized farms and feed is shipped considerable distances to reach the CAFO.

Soybeans as far as the eye can see.
Photo by Elanor Starmer

Large-scale, input-intensive grain and oilseed farming can have significant environmental impacts of its own, including soil depletion and water contamination from pesticide and fertilizer runoff. Transportation imposes environmental costs as well in the form of greenhouse gas emissions from semis carrying feed. And as we saw above, separating crop and livestock production creates numerous problems when the manure cannot be properly used or disposed of. The specialized, industrial model of production has reduced the presence of diversified farms and ranches where reasonable quantities of manure are used to build soil health—the kinds of farms and ranches that produced the majority of our meat and milk until the last third of the 20th century. The eventual disappearance of these small- and mid-sized farms would be a significant environmental—not to mention social and economic—blow to our society and food system.[29]

Antibiotic Resistance

Industrial livestock production may be threatening the effectiveness one of the mainstays of our health system: antibiotics. Animals living so closely together are at risk for spreading disease, so many livestock companies require their growers to feed animals low doses of antibiotics as a preventative measure. In fact, some 70% of antibiotics used in the United States are fed to animals who are not sick.[30] Many in the scientific community have expressed concern that the system will increase antibiotic resistance and put human health at risk. A 2002 study found antibiotics in 1/3 of ground and surface water samples taken near hog CAFOs and in 2/3 of samples near poultry CAFOs. Studies show that manure lagoons can leach antibiotic-resistant bacteria along with other contaminants.[31] Antibiotic resistance should be a major concern for us all: doctors report a growing number of illnesses that no longer respond to antibiotic treatment, resulting in prolonged illness or death in patients with resistant strains of an illness.[32] The American Medical Association now opposes the use of antibiotics in farm animals that are not sick.[33]

Hogs are packed tightly together in this industrial facility, increasing their risk of spreading disease.
Photo courtesy Institute for Agriculture and Trade Policy:
The Price we Pay for Corporate Hogs

What Can We Do? Strategies for Protecting Health and the Environment

Communities mobilize against the health and environmental impacts of CAFOs for many reasons. They are spurred to act because of harm done to their property; because they resent the community strife that corporate livestock production creates as it pits CAFO owners and their non-CAFO-owning neighbors against each other; or because they believe that corporations have violated basic standards of fairness, foisting costs on the community even as they receive large tax relief packages, low-interest finance, and limited liability agreements from state or local governments.[34] Their resistance takes many forms and happens on local, state, and national levels:

This young advocate says no to CAFOs in Tennessee.
Photo courtesy factoryfarm.org

Fighting CAFO Pollution to Protect Health and the Environment

- **Keep control at the local level.** Communities in states with local control have passed county planning or zoning regulations to keep large-scale livestock facilities out. The ordinances can set limits on the number of animals allowed in a facility or set acreage requirements; dictate "setback" regulations that require facilities to be a certain number of feet from a road, waterway, or property line; or require prospective CAFO operators to apply for environmental permits or livestock waste permits before the county will issue a zoning permit.[35]
- In communities where CAFOs are already operating, local environmental and public health ordinances have helped mitigate their effects. In Missouri, local groups passed health ordinances in twelve counties to keep swine facilities further from residential or public land.[36]
- In states that do not allow local control, community members have used public comment periods for CAFO licenses to express their concerns to local policymakers. If residents can prove a CAFO will negatively impact their land, a construction permit can be turned down.[37]
- Communities may be able to buy time to consider proposals for new CAFO construction by enacting a moratorium on new CAFOs until appropriate planning and zoning regulations can be put in place.[38]
- **Work on the state level.** Communities can pressure state enforcement agencies through formal complaints and letters to the state agency in charge of monitoring and enforcement for CAFOs (often the Department of Natural Resources). Most CAFOs must also apply for permits with the state under the Clean Water and Clean Air Acts, so community members can organize to attend public permit meetings with state lawmakers. As a last resort, citizens are allowed to formally request the involvement of the federal Environmental Protection Agency by filing a citizen suit under the Clean Water Act.
- State-wide ballot initiatives are another option. In 1998, Colorado voters succeeded in passing Amendment 14, which placed stricter regulations on large swine CAFOs and mandated the use of lagoon covers for odor control.[39]
- **Lobby on the federal level.** The Clean Water Act and the Clean Air Act must be strengthened to better address CAFO pollution and odor. Permitting requirements should be more strict, and the public review process for CAFOs must be thorough.
- **Support alternative livestock producers** through your purchases and by lobbying for government support for smaller-scale, diversified livestock operations.

For more information:

CAFO Pollution and Environmental and Health Effects:

- **The Institute for Agriculture and Trade Policy** has put out a series of detailed fact sheets on the problems of air and water pollution from CAFOs, health impacts, and impacts on workers. IATP also has information on how to make safer, more sustainable food choices. Access them at www.iatp.org/foodandhealth/issues_factoryfarms.cfm.
- IATP researcher **Marlene Halverson**'s excellent report on the impacts of hog CAFOs is available at www.iatp.org/hogreport/index.html.
- Read a comprehensive report on CAFOs and air quality by researchers at the **U. of Iowa and Iowa State**: www.public-health.uiowa.edu/ehsrc/CAFOstudy.htm

Antibiotics:

- Read Antibiotics, Agriculture, and Resistance, a report by the **Land Stewardship Project**: www.landstewardshipproject.org/pr/ 2002/newsr_021218.html
- **Union of Concerned Scientists** is one of the leading groups working on the overuse of antibiotics in livestock production. Access their resources at www.ucsusa.org/food_and_environment/antibiotics_and_food/
- **Keep Antibiotics Working** is a coalition of health, environmental, agriculture and consumer groups with excellent information on the use of antibiotics in livestock production. www.keepantibioticsworking.com/

Take Action on CAFO pollution:

- Read a guide by **Diane Hatz**, former director of the GRACE factory farm project, on how to confront a CAFO: www.factoryfarm.org/guide/docs/guide.pdf
- The **Sierra Club** has resources on challenging CAFO pollution, including "Five Local Strategies to Keep CAFOs Out." www.sierraclub.org/factoryfarms/resources/strategies.asp.
- Find out about federal policy proposals from the website of the **Sustainable Agriculture Coalition** (http://www.sustainableagriculturecoalition.org/) and sign up for action alerts from the **National Campaign for Sustainable Agriculture** (www.sustainableagriculture.net) to find out how you can take action.
- Visit the website of **Food and Water Watch** for more information on the impacts of factory farming and how consumers can act to change it: http://foodandwaterwatch.org/food.
- Support sustainable, smaller scale livestock producers by finding alternative retail outlets in your area. Visit farmers' markets or make connections on-line through resources like the **Eat Well Guide** (http://www.eatwellguide.org/) and **Farm to Table** (http://www.farmtotable.org/).

REFERENCES:

[1] Donham, K., S. Wing, D. Osterberg, et al. (2007). Community Health and Socioeconomic Issues Surrounding Concentrated Animal Feeding Operations. Environmental Health Perspectives **115** (2): 317-320

[2] Hubbell, B., and R. Welsh (1998). "An examination of trends in geographic concentration in U.S. hog production, 1974–96." Journal of Agricultural and Applied Economics **30**: 285-299

[3] Jackson, L. L., D. R. Keeney, et al. (2000). "Swine Manure Management Plans in North-Central Iowa: Nutrient Loading and Policy Implications." Journal of Soil and Water Conservation **55**(2).

[4] Honeyman, M. (1996). "Sustainability Issues of U.S. Swine Production." Journal of Animal Science 74: 1410-1417

[5] NRDC (2006). Facts About Pollution from Livestock Farms, Natural Resources Defense Council.

[6] Goodman, P. (1999). "Poultry's Price: An Unsavory Byproduct- Runoff and Pollution." Washington Post. Washington, DC: A1

[7] EPA (2004). U.S. EPA Regional Administrator Recognizes Certified Dairy Producer in Lodi. E. P. Agency, EPA.

[8] Cochran, K., J. Rudek, et al. (2000). Dollars and Sense: An Economic Analysis of Alternative Hog Waste Management Technologies. Washington, DC, Environmental Defense.

[9] Cole, D., L. Todd, and S. Wing (2000). "Concentrated Swine Feeding Operations and Public Health: A Review of Occupational and Community Health Effects." Environmental Health Perspectives **108**(8): 685-699.

[10] Wallinga, D., MD (2004). Concentrated Animal Feeding Operations: Health Risks from Air Pollution. Minneapolis, MN, Institute for Agriculture and Trade Policy, Food and Health Progam.

[11] Goodman, P. (1999), op. cit.

[12] Volland, Z., and Chappelle (2003). "Cost of Remediation of Nitrogen-Contaminated Soils Under CAFO Impoundments." Journal of Hazardous Substance Research 4.

[13] Cole et al. (2000), op. cit.

[14] Krider, J. (1987). Assessing Animal Waste Systems' Impacts on Groundwater: Occurrences and Potential Problems. Rural Groundwater Contamination. F. M. D'Itri, and L.G. Wolfson. Chelsea, MI, Lewis Publishers, Inc.: 115-128; Huffman, R. L., and P. Westerman (1991). Seepage and Electromagnetic Terrain Conductivity Around New Swine Lagoons. Meeting of the American Society of Agricultural Engineers. Albuquerque, NM; Westerman, P., R.L. Huffman, and J. Feng (1995). "Swine Lagoon Seepage in Sandy Soil." Trans American Society of Agricultural Engineers **38**: 1749-1760; Cole et al. (2000), op. cit.

[15] Kleiner, A. M., and D. Constance (1998). Pork, power and the populist response: The environmental issues surrounding the industrialization of the pork industry in Missouri. International Symposium on Society and Resource Management, Columbia, MO.

[16] Williams, H. (2006). "Fighting Corporate Swine." Politics and Society **34**(3): 369-398.

[17] Osterberg, D., and David Wallinga (2004). "Addressing Externalities from Swine Production to Reduce Public Health and Environmental Impacts." American Journal of Public Health **94**(10): 1703-1709.

[18] Kibaudo M. and Gollehon, N. (2006) Animal Agriculture and the Environment. *Agricultural Resources and Environmental Indicators, 2006.* http://www.ers.usda.gov/publications/arei/eib16/Chapter4/4.5/

[19] Wallinga, D. (2004), op. cit.

[20] Ibid.

[21] Legator, M. S., et al. (2001). "Health Effects from Chronic Low-Level Exposure to Hydrogen Sulfide." Archives of Environmental Health **56**(2): 123-131.

[22] Chapin, A., C. Boulind, and A. Moore (1998). Controlling Odor and Gaseous Emission Problems from Industrial Swine Facilities: Recent Laws and New Ideas. New Haven, CT, Yale University Environmental Protection Clinic; Safley, L. M. (2003). Getting My Barn Built: An Update on Regulations from a U.S. Perspective. Banff Pork Seminars, Banff, BC.

[23] Donham, K. J. (1990). "Health effects from work in swine confinement buildings." American Journal of Industrial Medicine 4:17-26; Zejda, J., T. Hurst, et al. (1993). "Respiratory health of swine producers: focus on young workers." Chest **103**: 702-709; Zuskin, E., B. Kanceljak, et al. (1991). "Immunological and respiratory findings in swine workers." Environmental Res 56: 120-130; Cole et al. (2000), op. cit.

[24] Cole et al. (2000), op. cit., Halverson, M. (2000). The price we pay for corporate hogs. Minneapolis, MN, Institute for Agriculture and Trade Policy.

[25] Halverson, M. (2000), op. cit.

[26] Wallinga, D. (2004), op. cit.

[27] Kilpatrick, J. A. (2001). "Concentrated Animal Feeding Operations and Proximate Property Values." The Appraisal Journal: 301-306.

[28] Alexander, J. (2006). The CAFO Effect on Property Values: There Goes the Neighborhood. The Muskegon Chronicle. Muskegon, MI.

[29] Jackson, L. L. (1998). Large-scale swine production and water quality. In Pigs, Profits, and Rural Communities. K. Thu and E. Durrenberger, eds. Albany: SUNY Press; Lawrence, M. (1999). Studying the Impacts of Industrial Confined Animal Feeding Operations: A Review of the Literature.

[30] Wallinga, D. (2004). Concentrated Animal Feeding Operations: Health Risks from Water Pollution. Minneapolis: Institute for Agriculture and Trade Policy.

[31] Osterberg and Wallinga (2004), op. cit.

[32] Keep Antibiotics Working (2007). Antibiotic Resistance: An Emerging Public Health Crisis. Washington, DC: KAW

[33] American Medical Association. Antimicrobial Use and Resistance. House of Delegates resolution 508 (A-01), June 2001. Available at www.keepantibioticsworking.com/library/uploadedfiles/American_Medical_Association_Resolution_508_-_.htm

[34] Johnsen, C. (2003). Raising a Stink: The Struggle over Factory Hog Farms in Nebraska. Lincoln, NE, University of Nebraska Press; Waters, S. (2004). Presentation for Senate Staff Briefing on Livestock Market Reform. Senate Committee on Agriculture. Washington, DC, Western Organization of Resource Councils; Williams, H. (2006), op. cit.

[35] Aiken, J. D. (2005). "The Nebraska Hog Wars." Agricultural Law Update 22(7).

[36] Hatz, D. (2002). Guide to Confronting a CAFO. New York, GRACE; Williams (2006), op. cit.

[37] Hatz (2002), op. cit.

[38] Schwab, J. (1998). Planning and Zoning for Concentrated Animal Feeding Operations. American Planning Association.

[39] Chapin (1998), op. cit.

Farm Futures

Defending Agriculture
By Gary Baise

darcy maulsby/ThinkstockPhotos

AGENDA > COMMENTARY

Smithfield loses $50 million lawsuit

Why didn't lawyers use North Carolina's Right-to-farm statute?

Gary Baise 1 | May 01, 2018

Murphy Brown LLC , a subsidiary of Smithfield Foods and hog producer, received a verdict last Thursday from a North Carolina jury that it must pay plaintiffs $50 million in damages as a result of a nuisance lawsuit. The jury ruled in a unanimous verdict each plaintiff should be awarded $75,000 in compensatory damages and $5 million in punitive damages.

Smithfield will appeal the decision.

The North Carolina legislature has also passed a law in the last year which will likely limit each plaintiff's compensatory damages so it is unlikely any plaintiff will see the $5 million. The *Wall Street Journal* indicated, "It is unclear if a state law that caps punitive damages at the higher of 3 times compensatory damages...would apply."

This is the first of 26 cases to go to trial. The second case is slated to go to trial next month. A spokesperson for Smithfield stated, "These lawsuits are an outrageous attack on animal agriculture, rural North Carolina and thousands of independent family farmers who own and operate contract farms."

What happened?

Murphy Brown was accused of failing to eliminate obnoxious, recurrent odors and large number of pests from a CAFO which plaintiffs claimed affected their homes. This was a dispute between adjacent property owners regarding how society views common law nuisance, environmental law and agricultural land use.

The rights of neighbors vs. hog production goes back to the 1600s in England. A famous case we all learn about in law school, *William Aldred's case* , dates back to 1611. This is the first case on record which tried to rectify an alleged environmental harm. The court in 1611 stated "[a] an action on the case lies for erecting a hogstye so near the house of the plaintiff that the air thereof was corrupted." Ever since this case, upset landowners have sought to protect their right to the enjoyment of their property.

Nuisance is a result of some conduct that is intentional, negligent or subject to strict liability. Nuisance as a cause of action seems fairly simple. However, virtually every state in the Union has passed a Right to Farm Statute to protect farmers because it can be alleged farming is a nuisance to a neighbor because farms generate dust, noise, pesticide drift and odors.

In this case, plaintiffs alleged Murphy Brown and its hogs placed on a contract farmer's land created an unlawful interference with a neighbor's use and enjoyment of their land. (Pretty simple.)

The jury instructions provided by the court provides interesting insight. The court instructed the jury to base its view on the law given to it by the Court and instructed the jurors they must not be swayed by bias or prejudice towards either party.

The court stated, "Our system of law does not permit jurors to be governed by prejudice or sympathy or public opinion" (impossible). He also told the jurors they were the sole judges of credibility and believability of each witness.

After going through the preliminary instructions, he identified 10 plaintiffs by name and told the jurors to decide the case based on the issues presented to them. The first issue the Court directed jurors to consider was, "Did the defendant substantially and unreasonably interfere with the plaintiffs' use and enjoyment of his or her property?" The judge further instructed that an inference could be drawn and stated, "Inference is substantial when it results in significant annoyance, material physical discomfort or injury to a person's health or property."

The court then defined the term "substantial interference" and whether that interference would be unreasonable to a person of ordinary prudence and discretion. The Court went on to define substantial interference being unreasonable and listed several factors, such as suitability to the location of the defendant's property; the nature, utility and social value of the plaintiffs' use and enjoyment of his property, and had that been invaded.

The Court then said if the answer to issue one is yes, then his second instruction was, "What amount of damages, if any, is plaintiff entitled from the defendant?" Then the Court explained to the jurors that if they awarded actual damages, they should ask "Is the defendant liable to the plaintiff for punitive damages?"

The Court told the jurors that the plaintiff had to prove by clear and convincing evidence there was malice or willful or wanton conduct exhibited by Murphy Brown (I found this instruction amazing).The court explained, "Malice means a sense of personal ill will toward the plaintiff that activated or incited the defendant to perform the act or undertake the conduct that resulted in harm to the plaintiff."

The Right to Farm statute in North Carolina played no role in the jury trial. Without this defense, defeat was almost certain.

The opinions of the author are not necessarily those of Farm Futures or Farm Progress.

IOWA CONCENTRATED ANIMAL FEEDING OPERATIONS AIR QUALITY STUDY

Final Report

Iowa State University and The University of Iowa Study Group

February 2002

CHAPTER 1 Executive Summary

Introduction

In mid-June of 2001, Governor Tom Vilsack requested that the faculty of the two universities address the public health and environmental impacts of concentrated animal feeding operations (CAFOs, also referred to as Concentrated Feeding Operations or CFOs). In response to this request, Richard Ross, PhD, DVM, Dean of the College of Agriculture at Iowa State University and James Merchant, MD, DrPH, Dean of the College of Public Health at The University of Iowa, were asked by the Department of Natural Resources Director Jeffrey Vonk to provide guidance **"regarding the impacts of air quality surrounding CFOs on Iowans and recommended methods for reducing and/or minimizing emissions. Specifically, I am asking your advice and recommendations on how the Department of Natural Resources should address this critically important public policy issue."**

Director Vonk asked five questions. Through a series of discussions and meetings, a combined study group of faculty and consultants (See Attachment 1) was identified, conflict of interest and confidentiality statements were signed by all faculty and consultants, definitions were discussed and agreed upon, a comprehensive report outline was developed and agreed upon and individual teams of faculty agreed to write each of the 10 chapters that constitute the full report. A technical and policy workshop was held in Des Moines on December 18 and 19, 2001, at which time chapter presentations were made and discussions were held regarding the series of five questions asked by Director Vonk. Groups were assigned to summarize the responses to these five questions in this Executive Summary. Peer review of this Executive Summary and the full report was considered to be vital to the validity and integrity of the report. This peer review, completed by national and international scientists who are experts in the areas addressed by the report (See Attachment 2), was completed in January, 2002. Their review comments, as well as comments from members of the combined study group, were discussed at meetings on January 8, 24 and 29 and were useful in completing the final report for submission to the Iowa Department of Natural Resources (IDNR). An agreed-upon glossary, which defines the many technical terms used in this report, is found in Attachment 3.

Response to Question 1

There are two questions contained in Question 1. The first is:

Based on analysis of peer-reviewed, duplicated, legitimate, published scientific research, is there direct evidence of harm to humans by emissions, byproducts, toxic waste, or infectious agents produced by CFOs?

There is now an extensive literature documenting acute and chronic respiratory diseases and dysfunction among workers, especially swine and poultry workers, from exposures to complex mixtures of particulates, gases and vapors within CAFO units. Common complaints among workers include sinusitis, chronic bronchitis, inflamed mucous membranes of the nose, irritation of the nose and throat, headaches, muscle aches and pains. Asthma and acute (cross-shift) declines in lung function are

documented among CAFO workers, even though workers with pre-existing asthma usually select themselves out of such employment because of increased asthma severity. Progressive declines in lung function over years are documented among CAFO workers. Those workers with increased acute declines in lung function, which are often accompanied by chest tightness and wheezing (asthma-like syndrome), have been found to have more rapid declines in lung function over time. Very high exposures to hydrogen sulfide, which occurs during pit agitation, may result in death from asphyxia and respiratory arrest; those who survive such high dose exposures often develop reactive airways distress syndrome (RADS), bronchiolitis obliterans and severe respiratory impairment. It is therefore concluded that there is direct evidence of harm to humans from occupational exposures within CAFOs (See Chapter 6.3.2).

However, one cannot directly extrapolate occupational health risks observed among workers inside CAFOs to community health risks that may arise from CAFO emissions. While the discharge of airborne particulates and gases/vapors from CAFOs and manure handling clearly occur, the aerosols at the point source differ from ambient exposures as they move downwind, both in composition and in concentration. The populations at risk (workers) within CAFO units and within the community (community residents) also differ significantly. CAFO workers are generally a healthy population (those fit enough to work), while community residents include children, the elderly, and those with preexisting impairments. Regulatory agencies recognize the need for lower exposure limits to compensate for increased susceptibility among community residents, to allow for uncertainty factors from epidemiological study findings (and for species to species differences when animal data is used) to establish community ambient exposure limits.

The second part of the first question is:

What human research is there to confirm the existence of disease and exactly what are the specific chemical, bacterial, or aromatic causes of such diseases?

Published, controlled studies of odor experienced by community residents living in proximity to CAFOs are limited to two studies in North Carolina and one in Iowa. The first North Carolina study reported more negative mood states (tension, depression, anger, reduced vigor, fatigue and confusion) among those exposed to CAFO odor compared with control subjects. The second North Carolina study reported increased symptoms of headache, runny nose, sore throat, excessive coughing, diarrhea, burning eyes and reduced quality of life measures among community residents living in proximity to a swine CAFO compared with rural residents not living in proximity to livestock operations. The Iowa study found increases in several symptom clusters, mainly eye and upper respiratory symptoms, among those living within two miles of a swine CAFO compared with rural residents living near minimal livestock production. These studies are limited in size and scope, did not make specific environmental exposure or odor measurements, and are subject to recall bias. They are notable in that they are controlled studies that report eye and respiratory symptoms associated with concentrated livestock exposures that are similar to more prevalent and severe symptoms experienced by CAFO workers who are exposed at much higher concentrations of mixed emissions (See Chapter 6.3.3).

Also relevant in responding to this question are many experimental and epidemiological studies of non-CAFO populations exposed to low concentrations of individual chemical components of CAFO emissions, particularly hydrogen sulfide, ammonia and endotoxin. These studies document respiratory symptoms associated with low levels of these individual exposures. Because at least two of these

chemicals (hydrogen sulfide and ammonia) are found in CAFO emissions that contribute to ambient community exposures, these experimental and community exposure studies are relevant to this question (See Chapter 6.3.1). Both the Environmental Protection Agency (EPA) and the Agency for Toxic Substance and Disease Registry (ATSDR)[1] have recommended ambient exposure limits for ammonia and hydrogen sulfide based on these studies.

It is concluded that no specific disease(s) *per se* among community residents can be confirmed to arise from a specific chemical, bacteria or aromatic cause. However, the findings of the limited community studies of concentrated livestock exposures are consistent with adverse health effects observed in other experimental and epidemiological studies of some specific chemicals (ammonia and hydrogen sulfide) known to be components of CAFO air emissions. It is, therefore, also concluded that CAFO air emissions may constitute a public health hazard[2] and that precautions should be taken to minimize both specific chemical exposures (hydrogen sulfide and ammonia) and mixed exposures (including odor) arising from CAFOs.

Response to Question 2

Question 2: Based on an analysis of peer-reviewed, duplicated, legitimate, and published scientific research, what specific substances, including aromatic compounds, do you believe require regulatory action to protect the public?

By consensus of the entire study group, the following substances should be considered for regulatory action: (1) hydrogen sulfide; (2) ammonia; and (3) odors. The justification for regulatory action of these substances is based on our assessment of the scientific literature, (See Chapters 2.0-8.0), recommendations by pertinent federal agencies, and review of regulations established in other states (See Chapter 9.0).

Hydrogen sulfide and ammonia are recognized degradation products of animal manure and urine (See Chapter 3.4 in the full report). Both of these gases have been measured in the general vicinity of livestock operations at concentrations of potential health concern for rural residents, under prolonged exposure (See Chapter 8.0).

The World Health Organization lists hydrogen sulfide as a toxic hazard in many environments, and recommends specific exposure limits. The ATSDR lists hydrogen sulfide and ammonia on its registry of toxic substances[1] under its federal mandate to protect the public health according to the Comprehensive Environmental Response, Compensation, and Liability Act, [42 U.S.C. 9604 et seq] as amended by the Superfund Amendments and Reauthorization Act [pub. 99-499]. Furthermore, the ATSDR has published Minimum Risk Levels (MRL's) for these substances to protect the public's health.[1] The EPA historically evaluates scientific information regarding environmental contaminants and the potential threats for human health hazards. Based on a standardized risk assessment process, the EPA identifies hydrogen sulfide and ammonia as potentially hazardous substances.[3] A detailed description of the process and justification used by the EPA and ATSDR to include ammonia and hydrogen sulfide as hazardous substances is provided in detail in Chapter 8.7.

---

[1] Agency for Toxic Substances and Disease Registry, Minimal Risk Levels for Hazardous Substances (MRLs), http://www.atsdr.cdc.gov/mrls.html

[2] hazard: the potential for radiation, a chemical or other pollutant to cause human illness or injury

[3] Environmental Protection Agency, Integrated Risk Information System, www.epa.gov/iris/subst.html

Minnesota and Nebraska have established air quality standards for hydrogen sulfide based on public health concerns. California and Minnesota regulate ambient concentrations of hydrogen sulfide based upon nuisance and human health effects. Minnesota is in the process of setting standards for ammonia ambient exposures. Monitoring of ammonia ambient exposures is taking place in Missouri. The regulatory actions taken by other states in setting standards are described in Chapter 9.0.

Odors have been a major concern of residents in the vicinity of CAFOs (see Chapter 3.4, 4.0, 6.8 and 8.0). Colorado, Missouri, and North Carolina have recognized the need to promulgate odor regulations. Details of the processes of odor regulations for these states are presented in Chapter 9.0.

Response to Question 3

Question 3: Based on an analysis of peer-reviewed, duplicated, legitimate, and published scientific research, what would you recommend as Iowa or National consensus standards for any proposed substances to be regulated as emissions from CFOs?

The study group recommends that ambient air quality standards be developed to regulate the concentration of hydrogen sulfide, ammonia and odor. There has been considerable discussion on what standard levels should be established for each pollutant as well as where the measurement should take place. Some states measure concentration at the property line of the source while others measure at the residence or public use area. The U.S. EPA has determined that simultaneous exposure of two substances such as hydrogen sulfide and ammonia (both pulmonary irritants) results in an additive effect. Thus, in order to protect against the adverse effects of such binary mixtures the exposure limit for each should be reduced accordingly. While emissions from CAFOs fluctuate over time, they produce chronic rather than acute exposures. Rather than representing single doses, these exposures are recurring and may persist for days with each episode.

The study group reached consensus that measurements for hydrogen sulfide and ammonia should be taken at the CAFO property line and residence or public use area. Measurements for odor should be taken at a residence or public use area and one proposal includes measurements at the CAFO property line. The study group recommends that measurements for hydrogen sulfide and ammonia should be time weighted rather that instantaneous to allow for atmospheric variability.

With current animal production practices, stored manure must be removed and land-applied. During these times hydrogen sulfide, ammonia and odor levels at or near production facilities may be significantly higher than during normal conditions. Therefore, it is also recommended that provisions be made for allowable times to exceed the established standards to allow for proper manure application to land. Notification must be given to the Iowa DNR and nearby residents, at least 48 hours in advance when the operation expects to exceed the standards

The study group provides the following recommendations on the regulation of hydrogen sulfide, ammonia, and odor from CAFOs:

Hydrogen Sulfide

It is recommended that hydrogen sulfide, measured at the CAFO property line, not exceed 70 parts per billion (ppb) for a 1-hour time-weighted average (TWA) period. In addition, the concentration at a residence or public use area shall not exceed 15 ppb, measured in the same manner as the property line

measurement. It is recommended that each CAFO have up to seven days (with 48 hour notice) each calendar year when they are allowed to exceed the concentration for hydrogen sulfide.

Ammonia

It is recommended that ammonia, measured at the CAFO property line, not exceed 500 ppb for a 1-hour TWA period. In addition, the concentration at a residence or public use area shall not exceed 150 ppb, measured in the same manner as the property line measurement. It is recommended that each CAFO have up to seven days (with 48 hour notice) each calendar year when they are allowed to exceed the concentration for ammonia.

Odor

The study group was unable to reach consensus on the regulation of odors. Thus, the following two opinions for odor are presented:

Opinion 1:

It is recommended that odor, measured at the residence or public use area, shall not exceed 7:1 dilutions with an exceedence defined as two excessive measurements separated by 4 hours, in any day. It is recommended that each CAFO have up to seven days (with 48 hour notice) each calendar year when they are allowed to exceed the concentration for odor. At the CAFO property line, odor shall not exceed a 15:1 dilution, with an exceedence defined as one excessive two-hour time averaged sample, in any day. It is recommended that each CAFO have up to 14 days (with 48 hour notice) each calendar year when they are allowed to exceed the property line concentration for odor. Exceedence of a CAFO ambient air quality standard should result in regulatory action similar to that which would be required in regulatory action exceedence of a National Ambient Air Quality Standard. The IDNR should be granted the power to develop an implementation plan to reduce the emissions that led to the violation.

Opinion 2:

Odor recommendations are more difficult to establish because studies relating health impacts to odor exposure have not measured odor concentrations. However, odor concentrations related to annoyance impacts have been established. Measurements for odor should be taken at a residence or public use area. Using sampling events at the source, the frequency, duration, and concentration of exposure to odor at the residence can be modeled using tools currently available, thereby avoiding extensive monitoring.

Polls indicate that residents are willing to tolerate nuisance odors for only up to a reasonable amount of time (see Iowa Rural Life Poll, Chapter 7 in the full report). Thus, the reported odor concentration represents tolerable continuous exposure, above which, concentrations are tolerated only in relation to their frequency and duration. An odor concentration of 7:1 dilutions at a residence is a tolerable odor providing it is not exceeded for periods that extend beyond that considered reasonable.

Response to Question 4

Question 4: What do you think should be done to address any other emerging issues with respect to industrial CFOs in Iowa?

There are other important emerging issues surrounding the intensification of livestock production that extend beyond concerns over air emissions. These include concerns about water quality, the health of CAFO workers, socioeconomic impacts in rural communities, and the emergence of microorganisms resistant to antibiotics used in human and veterinary medicine. There are also concerns about the emission of greenhouse gases from CAFO sites. The effects of siting large CAFOs in or near communities should be recognized and used in making informed decisions on permitting facilities. There is a need to evaluate plans for controlling livestock epidemics and for proper disposal of carcasses in the event of an outbreak. Recent events in Europe associated with foot and mouth disease, plus renewed concerns over agricultural bioterrorism highlight this need. Lastly, the study group makes recommendations regarding the formation of a science advisory panel to advise the IDNR on agricultural and environmental health issues. Each of these issues is further described below.

Some issues discussed in this section may be outside the purview of the IDNR, but all are congruent with science-based conclusions in the body of the report. Some are appropriately addressed by other state or federal agencies, and some can only be addressed through a combination of related public policies.

Water Quality

Water quality is a major issue concerning CAFOs. Concerns include: 1) leakage or rupture of lagoons (both lined and unlined); and 2) runoff from agricultural fields where animal waste has been improperly applied. Nonpoint discharges may result in surface runoff with high concentrations of ammonia, biochemical oxygen demand (BOD), total and fecal coliform bacteria, total suspended solids, and phosphorus which can cause low dissolved oxygen in streams. Ecosystem impacts may include fish kills, changes in the natural food webs, algae growth, and losses of biological diversity in stream habitat. Both the structure and function of aquatic ecosystems can be impaired. Impacts may include increased cost for drinking water treatment of surface water supplies, reduced harvest of fish and shellfish, closed bathing beaches due to fecal coliforms, and loss of aesthetic beauty of Iowa's waterways.

Recently, Iowa has experienced an increase in the number of CAFOs as well as a greater density of animals per operation. Many larger operations are not self-sufficient in grain production and purchase feed from other sources. Therefore, applicators must follow additional application guidelines established by legislation and rules. While some study group members believe manure should never be applied to frozen ground or steep slopes, others recommend that manure application on steep slopes and frozen ground follow guidelines established by USDA Natural Resources Conservation Service "Iowa Nutrient Management Standard 590". In addition, large producers are required to file manure management plans with the IDNR.

Study group members reached consensus that as operations become more numerous and concentrated on limited land bases, there is an increased risk for deterioration of water quality. All members believe that if producers do not follow their manure management plans, the chance for runoff of nutrients and bacteria is increased. In addition, some members felt more strongly on this issue, stating that it is not possible to apply manure at high areal loading rates without runoff of nutrients and bacteria because

one cannot foresee intense rainfall events. One cannot assume that manure can always be safely applied to land without a potential for runoff. These members feel the present system of CAFO production disposes of too much manure in too small an area exposed to uncontrolled meteorological conditions to realistically expect acceptable water quality.

Wastes that are stored in lagoons or earthen waste storage structures have a potential for spills and/or groundwater contamination if existing standards are not met. National Pollutant Discharge Elimination System (NPDES) permits are required for large (>1000 animal units) open feedlots which allow discharge only in the event of a 25-year, 24-hour storm. Totally roofed CAFOs are not allowed to discharge into surface waters, and therefore do not require NPDES permits. This is in contrast to small Iowa towns, all of which are required to have NPDES permits and meet effluent discharge requirements.

Occupational Health

The occupational health problems for those who work inside CAFOs have been well recognized since 1977. At least 25 percent of workers in swine CAFOs have been reported to have current respiratory health problems. Recommended maximum exposure levels designed to protect worker health have been defined (See Chapter 6.3). It is apparent that current Occupational Safety and Health Administration (OSHA) limits are not protective of CAFO worker health because a number of hazardous contaminants are not regulated. Importantly, OSHA has not promulgated any Permissible Exposure Limits specifically to protect the health of livestock production workers.

There are several important regulatory problems that have interfered with the protection of workers in CAFOs. Most of the large livestock and poultry producers have not been regulated by OSHA, even though they may have more than 10 employees and are subject to OSHA regulations. The specialization of livestock production has led to increased cumulative exposure, as workers may spend as much as 70 hours per week in these buildings. There is a need to establish exposure standards that protect workers for these extended work schedules. There is enough information to protect workers' health if recognized workplace management procedures are adopted. It is recommended that the livestock-producing industries institute comprehensive worker health protection programs.

Antibiotic Resistance

Antibiotic resistance is a health threat of great concern. Recent documents from the World Health Organization (2000), the Centers for Disease Control, and other health agencies have placed a high priority on the understanding and control of antibiotic resistance (Interagency Task Force On Antimicrobial Resistance, 2000; Tenover and Hughes, 1995). It is clear that certain antibiotic use practices in human medicine have contributed to resistance. Agricultural antibiotic use practices have also been targeted as contributing to this serious problem (Witte, 1998). In particular, the subtherapeutic use of antibiotics in food producing animals has been identified by public health officials as the key factor in the development of resistance among foodborne pathogens (Gorbach, 2001).

Antibiotic resistant organisms or the resistance genes responsible can be spread from agricultural settings into human populations through a variety of mechanisms. Ingestion of contaminated food products, especially animal-derived foods including meat and dairy products, has been linked to spread of antibiotic resistant organisms (Mead et al., 1999). Direct contact between colonized or infected animals and farm workers has also been associated with the acquisition of resistant organisms in humans (Levy et al, 1976).

Various studies have demonstrated that continued use of antibiotics in feedstuffs provides conditions favorable to the selection of resistant strains of bacteria in food animals and their environment (Chee-Sanford et al., 2001; Zahn, Anhalt, & Boyd, 2001). Yet the threats for emergence of resistant strains of bacteria through subtherapeutic use of antibiotics in livestock applies wherever these practices occur; the threat is not restricted to CAFOs. Selection pressure may be enhanced by: (1) the long-term use of antibiotics in animals having endemic subclinical infections; (2) poor environmental hygiene; and (3) management practices that allow for the introduction of naïve, susceptible animals or the movement of carrier animals into a naïve herd. This latter practice allows for the continuous passage of resistant bacteria among susceptible animals. Over the past decade, increasing numbers of organisms isolated from food animals or meat products demonstrate resistance to antibiotics including penicillins, tetracycline, sulfamethoxazole, streptomycin and other compounds (Aarestrup et al, 1998; Centers for Disease Control and Prevention, 1999; Molbak et al, 1999; Smith et al., 1999; Threlfall et al., 1996; White et al., 2001).

Antibiotics are critically important in human and veterinary medicine, and in the current context, food animal production. Organisms resistant to all classes of available antimicrobial agents have been identified in human medicine and the incidence of community acquired highly drug resistant organisms is increasing (Neu, 1992). No new classes of antimicrobial agents will be available in the foreseeable future. It is critical that the appropriate state and federal agencies and the research community in the United States take a leading role in defining the risks associated with different antibiotic use practices and develop strategies to improve our antibiotic stewardship both in human and agricultural settings (American Medical Association, 2001).

Greenhouse Gas Emissions

Regarding air pollution, air permits are not required for emissions from CAFOs, so there is not a good method to quantify their inputs. However, emissions of particulate matter, sulfur compounds, and nitrogen oxides are believed to be a very minor portion of Iowa's total emissions. CAFO emissions of these pollutants are small compared to emissions from stationary sources (power plants and industry) and mobile sources (automobiles and truck diesel). Greenhouse gas emissions from CAFOs are significant for methane. On a radiative basis (greenhouse gas impacts), methane is about 10-15% of the total greenhouse gas produced in Iowa, and methane from manure management is about 25% of the total (approximately 3% of total greenhouse gas estimated in Ney et al., 1996). The Iowa Greenhouse Gas Action Plan calls for capture of methane at large feed lots (Ney et al., 1996). Nitrous oxide emissions from manure management at CAFOs is a small contribution, and the emissions of carbon dioxide from CAFOs are a negligible portion of the state's CO_2 emissions.

Community and Socioeconomic Impacts

A number of important community and socioeconomic issues have developed with the emergence of CAFOs, as described in Chapter 7. Research has explored some of these issues, and posed and evaluated alternatives, including some alternatives for livestock production. To a significant extent, these issues are tied to overall changes in agriculture and rural life in America. Importantly, these issues are complex and generally outside the purview of the IDNR.

These issues include the concern about increased concentration of control of livestock supply chains, lack of public price discovery, and loss of family farmers' control of production. Another concern is decline in local economic activity and increases in purchases of some animal production inputs from

outside the local area, as CAFOs increase in size and number. This is a complex issue since we must estimate what purchases would have been made had the structure remained the same. Of equal importance is the fact that decision-making on questions that matter at the local level are increasingly more centralized with the growth of corporate CAFOs.

Devaluation of property near hog CAFOs and related legal challenges are documented. Studies in Michigan, North Carolina, and Missouri found that the value of real estate close to CAFOs tended to fall. These and other data show that CAFOs are defined by present and potential neighbors as at least a nuisance.

Studies showing a decline in neighborliness, or community social capital, have been conducted in Iowa, North Carolina, Minnesota, and Missouri. This decline was measured by diminished opportunities to socialize, lack of trust, increased community conflict, and related variables in communities where CAFOs are concentrated.

A more diverse livestock sector that was able to remain competitive and responded to increasingly differentiated consumer preferences would likely result in greater environmental (Donham, 2000), social (Wright, et al., 2001), and economic sustainability of rural areas than one dominated by large-scale CAFOs. Policies that encourage more diverse livestock/crop farms, particularly those using sustainable production systems, could also reduce the regulatory burden of the IDNR and other agencies.

The most clearly recognizable socioeconomic issue for CAFOs that impinges on the IDNR's responsibilities is what CAFOs may do to aquatic, wildlife, and aesthetic qualities of living in Iowa, as well as tourism in Iowa. If air and water quality is compromised, the interest of persons and businesses considering relocation to Iowa will be lessened. A compromised environment could have an economic impact on tourism by keeping Iowa a low priority destination for visitors as well as driving fishing and hunting activity away from Iowa and toward less challenged environments.

Livestock Epidemic and Disposal Issues

The current state plan for Foot and Mouth Disease (FMD) in Iowa is multi-agency and is called the Foot and Mouth Disease Response and Recovery Plan. As part of its responsibilities in the state plan, the IDNR has developed the FMD Carcass Disposal Plan. Burial and composting are given high priority compared to burning, in order to reduce air pollution consequences. However, the potential impacts of a FMD epidemic like that of last year in the United Kingdom and Europe should be evaluated to assess if the current plans are sufficient for isolation of pathogens and destruction of carcasses. In addition, these plans should be evaluated for other pathogens, including bioterrorist introduction of anthrax and other potential agents of agricultural bioterrorism.

Formation of a Science Advisory Panel

To enhance the effectiveness of responses to emerging issues, the study group recommends formation of a science advisory panel to contract with the IDNR on agricultural and environmental issues. The University of Iowa and Iowa State University participants have found the current review of scientific literature on CAFOs and the ensuing discussions to be very useful. University faculty could continue in a more general role as a scientific advisory panel. This would provide the opportunity to develop closer collaboration and planning in a prospective manner. The partnership of the IDNR and other appropriate state agencies with a continuing advisory group of specialists in the sciences germane to

agricultural, environmental, and public health issues would strengthen Iowa's ability to plan for prevention or remediation of emerging problems in a thoughtful and positive manner with sufficient lead-time to engage the needed resources and evaluation. A science advisory panel could suggest areas for needed research to better resolve or control the factors related to emerging issues. The panel could recommend consultants, establish standard operating procedures for resolving questions, and be prepared with the necessary background, literature resources and ongoing discussion to support science-based advice as needed by the IDNR or other agencies in Iowa.

Response to Question 5

Question 5: Finally, I am seeking your recommendations regarding available methods of reducing or minimizing the emissions from CFOs and the impact of those emissions on the ambient air surrounding sites.

Emissions from CAFOs originate from three primary sources: (1) air emissions from housing units; (2) air emissions from manure storage facilities, and (3) air emissions during and following land application events. Documented emission reduction strategies exist for all three of these sources. Some of the documented strategies are more effective than others and some are more economical than others, however, economical strategies exist for dealing with emissions from all three sources.

Housing Unit Air Emissions

Housing unit air emissions ultimately are carried out with the ventilation air exhausted from buildings. Emissions originate from the feeding floor itself, where deposited manure and urine decompose anaerobically resulting in airborne gases and particulates from dried fecal material. In addition, emissions originate from under-floor manure storage in slatted systems and from bedding pack in deep-bedded systems. Studies have shown that, in slatted-floor housing systems, the emission contribution from the feeding floor itself can exceed 60 percent of the total with the remaining contribution from the under-floor storage compartment. Use of smooth cleanable surfaces along with frequent and complete scraping, and/or frequent flushing of the feeding floor with minimal air exchange between the housing air and the under-floor slurry, is a good strategy for reducing housing unit emissions.

If housing unit emissions are post-processed, (i.e., exhaust ventilation air is treated), additional strategies exist. Scrubbing the ventilation air with biofilters, where the exhausted air is passed through a bed of gas-scrubbing microorganisms, has been shown to reduce ammonia and odor emissions by more than 90 percent. However, effective use of biofilter technology requires simultaneous use of power ventilation. Biofilters are difficult to implement under high ventilation rate situations typical of Iowa summers and, of course, are not useful in naturally ventilated housing systems.

Gases and odors adhere to dust particles. Natural biomass filters such as corn stalks and chopped-straw have been used to capture a portion of the larger dust particles emitted with ventilation air. The evidence on this strategy is still being documented but research to date indicates that about 60 percent of the odor can be reduced using this technique.

Tree barriers are being evaluated for effectiveness in reducing odor and particulates and enhancing mixing and dilution. However, the impact on a large scale relative to livestock or poultry production sites is unknown. Tree barriers surrounding production sites have high aesthetic value.

Storage Unit Air Emissions

Outside manure storage systems can be a source of additional gas emissions. Regardless of whether the storage system is formed concrete, steel-lined, or earthen basin, these open exposures to the atmosphere can result in high emission rates. Emission rates are highly influenced by weather conditions. The most effective and economically feasible strategy for reducing emissions from outside storage units (not including anaerobic lagoons) is accomplished by covering the entire surface area of the storage unit. Research has been conducted on many covering materials, ranging from expensive impermeable covers, to relatively inexpensive chopped-straw covers with a maintained minimum depth of coverage. Inexpensive, chopped-straw cover, with a maintained minimum depth is as effective in reducing emissions as the more expensive covers. However, the key to success with this strategy is maintenance of a minimum depth of straw.

The best method for minimizing odors from anaerobic lagoons is to simply practice good management. It is most important to use adequate dilution water and load at or below design capacity. There has been much discussion recently about the use of anaerobic digesters which can significantly reduce storage odors and generate energy in the form of methane gas.

Air Emissions from Land Applied Manure

Emissions during land application of livestock and poultry manure can be intense if the manure is surface-applied. The majority of total emissions, roughly 80 percent, occur during the first six hours after land application. To significantly reduce emissions of gases and odors during land application, injection or immediate coverage (within 1 hour) is required. Odor reduction is, in turn, dependent upon the degree of soil coverage. Poorly injected manure slurry with little soil coverage is only marginal in effectiveness in reducing gas and odor emissions. To take full benefit of the natural odor absorption capacity of soils, the slurry must be completely covered. The evidence is clear that 85-90 percent emission reduction is possible with complete soil coverage compared to surface application when coverage is delayed for more than 3-6 hours.

Policy Strategies for Long-Term Viability of the Livestock Industry in Iowa

Emission of gases and particulates from livestock and poultry systems is an inevitable outcome requiring special attention. Strategies for emission reduction for all stages of production have been outlined, with most being economically feasible. The strategies outlined previously are documented techniques that have gained fairly widespread acceptance with scientists and engineers working in this area.

A few strategies have been discussed for years. They lack the scientific evidence to document their specific benefits, but nevertheless deserve discussion. The study group is unanimous in the belief that a long-term strategy of better facility siting, setbacks, and landscape considerations, in addition to the implementation of available odor and gas reducing technologies, will benefit both the producer and residents in the community. The study group strongly urges that the following topics receive careful consideration.

Statewide Spatial Planning

Facilities built today, under current siting and setback practices, have a lifetime of roughly 15 years. In the long-term, guidelines should be established based on siting and spatial planning considerations that require siting of new and replaced facilities in accordance with a statewide spatial plan. Some areas of the state are currently over-populated with facilities. A statewide spatial plan, based for example on

animal units per acre, would help guide and distribute animals in a manner that takes full advantage of Iowa's soil/nutrient capabilities and minimizes the impacts of air emissions on the community.

Local Siting Guidelines

The study group feels strongly that current siting guidelines are outdated and not reflective of the changing demographics in rural Iowa. Current siting guidelines use a simple distance and size regulation for new facilities. The study group feels that this method of siting is not conducive to the long-term viability of the livestock and poultry industries in Iowa. A strategy that takes into account proposed facility size and type, distance and orientation to surrounding neighbors, local weather patterns, odor control measures, existing recreational and public-use facilities, and other existing production facilities in a community would provide better placement guidance of facilities and contribute positively to spatial planning considerations. Siting models that utilize the above mentioned inputs have been developed, are currently being calibrated, and should be used in community-wide applications.

Aesthetic Considerations for Livestock and Poultry Production Sites

Evidence exists in the literature that foliage (primarily trees) will enhance mixing and capture some of the odor-producing gases and particulates emitted from livestock and poultry production facilities. Currently, research projects are being planned, and some have already been conducted, to test the use of strategically placed tree barriers around production sites. Although evidence documenting odor, gas, and particulate-capture-percentages on a production-size scale is limited, the study group feels strongly that landscape changes such as strategically placed tree lines will positively impact producer/community relationships. This is a researchable area and one that holds promise as a natural, aesthetically pleasing strategy for producers to implement.

Conclusion to Executive Summary

The consensus responses summarized in this Executive Summary provide a science-based summary of this inquiry from the Iowa Department of Natural Resources. The study group recognizes the importance of livestock production and the vital role it plays in the livelihoods of Iowa producers and suppliers and the state's economy. It is, therefore, critically important that science-based policies be developed to sustain livestock production. It is equally vital that such policies protect the public's health, sustain and enhance the communities in which livestock production takes place, and protect and enhance the environment and Iowa's natural resources through sound production practices, environmental controls and the development of a long-range, sustainable, community health and environmentally conscious spatial plan for CAFOS.

References

Aarestrup FM, Bager F, Jensen NE, Madsen M, Meyling A, Wegener HC. Surveillance of antimicrobial resistance in bacteria isolated from food animals to antimicrobial growth promoters and related therapeutic agents in Denmark. APMIS 106:606-622 (1998).

American Medical Association, Resolutions of the 2001 Annual Meeting of the AMA House of Delegates: 508. Antimicrobial Use and Resistance. http://www.ama-assn.org/ama/pub/category/6692.html.

Centers for Disease Control and Prevention. National antimicrobial resistance monitoring system. Enteric bacteria 1999 annual report (1999).

Chee-Sanford, JC, Aminov, RI, Krapac, IJ, Garrigues-JeanJean, N, Mackie, RI. Occurrence and diversity of tetracycline resistance genes in lagoons and groundwater underlying two swine production facilities. Applied and Environ Microbiol 67:1494-1502 (2001).

Donham KJ. The concentration of swine production: Effects on swine health, productivity, human health, and the environment. Veterinary Clin North Am: Food Anim Pract 16:559-597 (2000).

Gorbach SL. Antimicrobial use in animal feed–time to stop. N Engl J Med 345:606-622 (2001).

Interagency Task Force on Antimicrobial Resistance. A public health action plan to combat antimicrobial resistance. Part I: Domestic Issues http://www.cdcgov/drugresistance/actionplan/aractionplan.pdf (2000).

Levy S B, FitzGerald GB, Macone AB. Changes in intestinal flora of farm personnel after introduction of a tetracycline-supplemented feed on a farm. N Engl J Med 295:583-8 (1976).

Mead PS, Slutsker L, Dietz V, McCaig LF, Bresee JS, Shapiro C, Griffin PM, Tauxe RV. Food-related illness and death in the United States. Emerg Infect Dis 5:607-625 (1999).

Molbak K, Baggesen DL, Aarestrup FM, Ebbesen JM, Engberg J, Frydendahl K, Gerner-Smidt P, Petersen AM, Wegener HC. An Outbreak of multidrug-resistant, quinolone-resistant salmonella enterica serotype typhimurium DT104. N Engl J Med 341:1420-1425 (1999).

Ney RA, Schnoor JL, Foster NSJ, Forkenbrock DJ, Iowa greenhouse gas action plan. Iowa City, IA: Center for Global and Regional Environmental Research, University of Iowa (1996).

Smith KE, Besser JM, Hedberg CW, Leano FT, Bender JB, Wicklund JH, Johnson BP, Moore KA, Osterholm MT. Quinolone-resistant Campylobacter jejuni infections in Minnesota, 1992- 1998. Investigation Team. N Engl J Med 340:1525-1532 (1999).

Tenover FC, Hughes JM. WHO Scientific Working Group on monitoring and management of bacterial resistance to antimicrobial agents. Emerg Infect Dis 1:37 (1995).

Threlfall EJ, Frost JA, Ward LR, Rowe B. Increasing spectrum of resistance in multiresistant Salmonella typhimurium [letter]. Lancet 347:1053-1054 (1996).

White DG, Zhao S, Dusler R, Ayers S, Friedman S, Chen S, McDermott PF, McDermott S, Wagner DD, Meng J. The isolation of antibiotic-resistant Salmonella from retail ground meats. N Eng J Med 345(19):1147-1154 (2001).

Witte W. Medical consequences of antibiotic use in agriculture. Science 279:996-997 (1998).

World Health Organization. Overcoming antimicrobial resistance. WHO/CDS/2000.2 (2000).

Wright W, Flora CB, Kremer KS, Goudy W, Hinrichs C, Lasley P, Maney A, Kroma M, Brown H, Pigg K, Durgan B, Coleman J, Elias Morse D. Technical work paper on social and community impacts. Prepared for the Generic Environmental Impact Statement on Animal Agriculture and the Minnesota Environmental Quality Board (2001).

Zahn, JA, Anhalt J, Boyd E. Evidence for transfer of tylosin and tylosin-resistant bacteria in air from swine production facilities using sub-therapeutic concentrations of tylan in feed. J Anim Sci 79, Suppl. 1:189 (2001).

2-1-2007

Community Health and Socioeconomic Issues Surrounding Concentrated Animal Feeding Operations.

Kelley J. Donham
University of Iowa

Steven Wing

David Osterberg
University of Iowa

Please see article for additional authors.

Environmental Health Perspectives, 115:2 (2007) pp.317-320. DOI:10.1289/ehp.8836.

Community Health and Socioeconomic Issues Surrounding Concentrated Animal Feeding Operations

Kelley J. Donham,[1] Steven Wing,[2] David Osterberg,[1] Jan L. Flora,[3] Carol Hodne,[1] Kendall M. Thu,[4] and Peter S. Thorne[1]

[1]College of Public Health, The University of Iowa, Iowa City, Iowa, USA; [2]Department of Epidemiology, University of North Carolina, Chapel Hill, North Carolina, USA; [3]Department of Sociology, Iowa State University, Ames, Iowa, USA; [4]Department of Anthropology, Northern Illinois University, DeKalb, Illinois, USA

A consensus of the Workgroup on Community and Socioeconomic Issues was that improving and sustaining healthy rural communities depends on integrating socioeconomic development and environmental protection. The workgroup agreed that the World Health Organization's definition of health, "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity," applies to rural communities. These principles are embodied in the following main points agreed upon by this workgroup. Healthy rural communities ensure *a*) the physical and mental health of individuals, *b*) financial security for individuals and the greater community, *c*) social well-being, *d*) social and environmental justice, and *e*) political equity and access. This workgroup evaluated impacts of the proliferation of concentrated animal feeding operations (CAFOs) on sustaining the health of rural communities. Recommended policy changes include a more stringent process for issuing permits for CAFOs, considering bonding for manure storage basins, limiting animal density per watershed, enhancing local control, and mandating environmental impact statements. *Key words:* animal confinements, environmental impact, livestock, mental health, odor, poultry, right-to-farm legislation, swine. *Environ Health Perspect* 115:317–320 (2007). doi:10.1289/ehp.8836 available via *http://dx.doi.org/* [Online 14 November 2006]

Background and Recent Developments

The agricultural community in areas of large-scale livestock production. The rural and agricultural community has changed dramatically over the past half century. The trends include an overall reduction in the number of farms, an increase in size of the farms, and economic concentration in the industries that supply inputs and purchase commodities from farms. The structure of the pork industry has also changed dramatically during the past three decades. The number of hog producers in the United States was more than 1 million in the 1960s but fell to about 67,000 by 2005 [U.S. Department of Agriculture (USDA) 2005]. Although the total inventory of hogs has changed little over the years, the structural shift toward concentration has been dramatic with the 110 largest hog operations in the country, each of which has over 50,000 hogs, now constituting 55% of the total national inventory (USDA 2005). The swine industry includes the following types of producers: small independent "niche" operators who often market organic pork to local markets, traditional independent operators, and large family or unaffiliated corporations. Former independent operators are increasingly raising livestock on contract for larger corporations. According to the U.S. Government Accountability Office, in 1999 contract production constituted more than 60% of total hog output and 35% of the cattle market (U.S. Government Accountability Office 2005), while poultry is produced almost entirely via contracts. Corporate producers or incorporated family-based operations employ from a few individuals to several hundred. Most often upper management and many of the workers in such operations do not come from or live in the vicinity of concentrated animal feeding operations (CAFOs).

The community of people living in the region of large-scale livestock production consists of residents of small family farms (that may or may not produce pork), workers at the production facilities, rural nonfarm residents, and the residents of neighboring towns. The challenges CAFOs place on neighbors were extensively reviewed in 1996 (Thu 1996) and again in a 2002 report accompanied by a number of consensus recommendations for the future of the hog industry in Iowa (Iowa State University and University of Iowa 2002). A number of additional scientific reviews and symposia summaries have been issued (Centers for Disease Control and Prevention 1998; Cole et al. 2000; Donham 2000; National Academy of Sciences 2002; Schiffman et al. 2000; Thu 2002).

Economic health. Economic concentration of agricultural operations tends to remove a higher percentage of money from rural communities than when the industry is dominated by smaller farm operations, which tend to circulate money within the community. Goldschmidt (1978) documented this as early as 1946 in California, one of the first states where industrialized agriculture developed. Specifically, he compared two agricultural communities, one dominated by larger industrialized farms with absentee ownership and a high percentage of hired farm labor, and the other community was dominated by smaller owner-operated farms. The latter community was found to have a richer civic and social fabric with more retail purchases made locally and with income more equitably distributed. A similar study by MacCannell (1988) of comparable types of communities found that the concentration and industrialization of agriculture were associated with economic and community decline locally and regionally. Studies in Illinois (Gomez and Zhang 2000), Iowa (Durrenberger and Thu 1996), Michigan (Abeles-Allison and Connet 1990), and Wisconsin (Foltz et al. 2002) demonstrated decreased tax receipts and declining local purchases with larger operations. A Minnesota study (Chism and Levins 1994) found that the local spending decline was related to enlargement in scale of individual livestock operations rather than crop production. These findings consistently show that the social and economic well-being of local rural communities benefits from increasing the number of farmers, not simply increasing the volume of commodity produced (Osterberg and Wallinga 2004).

Physical health. There have been more than 70 papers published on the adverse health effects of the confinement environment on swine producers by authors in the United States, Canada, most European countries, and Australia (Cormier et al. 1997; Donham 2000; Donham et al. 1977, 1982, 1986, 1990, 2002; Kirkhorn and Schenker 2002; Kline et al. 2004; Preller et al. 1995; Reynolds et al. 1996; Rylander et al. 1989; Schiffman

This article is part of the mini-monograph "Environmental Health Impacts of Concentrated Animal Feeding Operations: Anticipating Hazards—Searching for Solutions."

Address correspondence to P.S. Thorne, College of Public Health, The University of Iowa, 100 Oakdale Campus, 176 IREH, Iowa City, IA 52242-5000 USA. Telephone: (319) 335-4216. Fax: (319) 335-4006. E-mail: peter-thorne@uiowa.edu

This workshop was supported by grant P30 ES05605-145 from the Environmental Health Sciences Research Center at The University of Iowa and the National Institute of Environmental Health Sciences.

The authors declare they have no competing financial interests.

Received 10 November 2005; accepted 13 November 2006.

et al. 1995; Schwartz et al. 1992; Thu et al. 1997; Wing and Wolf 2000). It is clear that at least 25% of confinement workers suffer from respiratory diseases including bronchitis, mucus membrane irritation, asthmalike syndrome, and acute respiratory distress syndrome. Recent findings substantiate anecdotal observations that a small proportion of workers experience acute respiratory symptoms early in their work history that may be sufficiently severe to cause immediate withdrawal from the work place (Dosman et. al. 2004). An additional acute respiratory condition, organic dust toxic syndrome, related to high concentrations of bioaerosols in livestock buildings occurs episodically in more than 30% of swine workers.

Environmental assessments of air quality inside livestock buildings reveal unhealthful concentrations of hydrogen sulfide, ammonia, inhalable particulate matter, and endotoxin (Iowa State University and University of Iowa 2002; Schenker et al. 1998). While there is less information on adverse effects among residents living in the vicinity of swine operations, that body of literature has been growing in recent years (Avery et al. 2004; Bullers 2005; Centers for Disease Control and Prevention 1998; Kilburn 1997; Merchant et al. 2005; Mirabelli et al. 2006a; Reynolds et al. 1997; Schiffman et al. 1995, 2000; Thu 2002; Thu et al. 1997; Wing and Wolf 2000).

Thu et al. (1997) documented excessive respiratory symptoms in neighbors of large-scale CAFOs, relative to comparison populations in low-density livestock-producing areas. The pattern of these symptoms was similar to those experienced by CAFO workers. Wing and Wolf (2000) and Bullers (2005) found similar differences in North Carolina. A case report associated with hydrogen sulfide exposure from a livestock processing facility in South Sioux City, Nebraska, revealed excessive diagnoses of respiratory and digestive disturbances in people living nearby (Campagna et al. 2004). Schiffman and colleagues reported that neighbors of confinement facilities experienced increased levels of mood disorders including anxiety, depression, and sleep disturbances attributable to exposures to malodorous compounds (Schiffman et al. 1995, 2000). Avery et al. (2004) found lower concentration and secretion of salivary immunoglobulin A among swine CAFO neighbors during times of moderate to high odor compared with times of low or no odor, suggesting a stress-mediated physiologic response to malodor (Shusterman 1992).

Community environmental air quality assessments have shown concentrations of hydrogen sulfide and ammonia that exceed U.S. Environmental Protection Agency (U.S. EPA) and Agency for Toxic Substances and Disease Registry recommendations (Reynolds et al. 1997). A recent study revealed that children living on farms raising swine have an increased risk for asthma, with increasing prevalence of asthma outcomes associated with the increased size of the swine operation (Merchant et. al. 2005). Children in North Carolina attending middle schools within 3 miles of one or more swine CAFOs and children attending schools where school staff report CAFO odors in school buildings were found to have a higher prevalence of wheezing compared with other middle school children (Mirabelli et al. 2006a, 2006b). It should be noted that these studies (although controlled) lack contemporaneous exposure assessment and health outcomes ascertainment. Additional research to include environmental exposure data related to biomarkers of response is needed.

Mental health. Living in proximity to large-scale CAFOs has been linked to symptoms of impaired mental health, as assessed by epidemiologic measures. Greater self-reported depression and anxiety were found among North Carolina residents living near CAFOs (Bullers 2005; Schiffman et al. 1995). This finding was not corroborated in a small study by Thu et al. (1997) of depression among people living near to or far from CAFOs. However, it should be noted that the study of Thu et al. differed in that residents were not asked to report on their mental state during an actual odor episode as was the case in the study by Schiffman et al. (1995).

Greater CAFO-related posttraumatic stress disorder (PTSD) cognitions have been reported among Iowans living in an area of CAFO concentration compared with Iowans living in an area of a low concentration of livestock production (Hodne CJ, unpublished data). PTSD cognitions were consistent with interviewees' multiple concerns about the decline in the quality of life and socioeconomic vitality caused by CAFOs, in areas of CAFO concentration with declining traditional family farm production.

Social health. One of the most significant social impacts of CAFOs is the disruption of quality of life for neighboring residents. More than an unpleasant odor, the smell can have dramatic consequences for rural communities where lives are rooted in enjoying the outdoors (Thu 2002). The encroachment of a large-scale livestock facility near homes is significantly disruptive of rural living. The highly cherished values of freedom and independence associated with life oriented toward the outdoors gives way to feelings of violation and infringement. Social gatherings when family and friends come together are affected either in practice or through disruption of routines that normally provide a sense of belonging and identity—backyard barbecues and visits by friends and family. Homes are no longer an extension of or a means for enjoying the outdoors. Rather, homes become a barrier against the outdoors that must be escaped.

Studies evaluating the impacts of CAFOs on communities suggest that CAFOs generally attract controversy and often threaten community social capital (Kleiner AM, Rikoon JS, Seipel M, unpublished data; 2000; Ryan VD, Terry AI, Besser TL, unpublished data; Thu 1996). The rifts that develop among community members can be deep and long-standing (DeLind 1998). Wright et al. (2001), in an in-depth six-county study in southern Minnesota, identified three patterns that reflect the decline of social capital that resulted from the siting of CAFOs in all six rural communities they studied: *a*) widening gaps between CAFO and non-CAFO producers; *b*) harassment of vocal opponents of CAFOs; and *c*) perceptions by both CAFO supporters and CAFO opponents of hostility, neglect, or inattention by public institutions that resulted in perpetuation of an adversarial and inequitable community climate. Threats to CAFO neighbors have also been reported in North Carolina (Wing 2002). Clearly, community conflict often follows the siting of a CAFO in a community. What is not known is if community conflict resulting from the siting or presence of CAFOs has an impact on the ability of communities to act on other issues.

Environmental injustice. Disproportionate location of CAFOs in areas populated by people of color or people with low incomes is a form of environmental injustice that can have negative impacts on community health (Wing et al. 2000). Several studies have shown that a disproportionate number of swine CAFOs are located in low-income and nonwhite areas (Ladd and Edwards 2002; Wilson et al. 2002; Wing et al. 2000) and near low-income and nonwhite schools (Mirabelli et al. 2006a, 2006b). These facilities and the hazardous agents associated with them are generally unwanted in local communities and are often thrust upon those sectors with the lowest levels of political influence. CAFOs are locally unwanted because of their emissions of malodor, nutrients, and toxicants that negatively affect community health and quality of life. Low-income communities and populations that experience institutional discrimination based on race have higher susceptibilities to CAFO impacts due to poor housing, low income, poor health status, and lack of access to medical care.

Failure of the political process. In 2005 the U.S. Government Accountability Office issued a report on the effectiveness of U.S. EPA efforts in meeting its obligations to regulate concentrated animal feeding operations (U.S. Government Accountability Office 2005). The report identified two major flaws:

a) allowing an estimated 60% of animal feeding operations in the United States to go unregulated, and *b)* lack of federal oversight of state governments to ensure they are adequately implementing required federal regulations for CAFOs. Additionally, many states have not taken a proactive stance to comply with the U.S. EPA regulations. Therefore, the concentration of livestock production, most noted by CAFO-style production, has continued to expand in most states. This has resulted in many rural communities and individuals taking action on their own, through local ordinances or litigation, as they have not been able to find access through usual governmental channels.

Several studies have found that property values decrease when CAFOs move into a community (Abeles-Allison and Conner 1990; Hamed et. al. 1999; Herriges et al. 2003; Palmquist et al. 1997). Neighbors of CAFOs are interested in preventing loss of property value, loss of their homes and land, forced changes in their life style, adverse changes in their communities, and threats to their health (Thu and Durrenberger 1998). The democratic process offers citizens access to lawmakers, to the courts, and to direct action to redress their grievances. However, the legislative process in many states has often been unresponsive to citizen wishes concerning CAFOs (Cantrell et al. 1996). For example, 13 states have enacted laws that inhibit citizens from speaking freely about agriculture if it is disparaging. A representative example can be seen in a South Dakota law that defines disparagement as

> dissemination in any manner to the public of any information that the disseminator knows to be false and that states or implies that an agricultural food product is not safe for consumption by the public or that generally accepted agricultural and management practices make agricultural food products unsafe for consumption by the public. (South Dakota Codified Laws 2006)

All 50 states have some form of right-to-farm legislation. This legislation serves to protect farming operations from zoning laws or lawsuits that would overly restrict the ability of farmers to do business (Chapin et al. 1998; Hamilton 1998). Right-to-farm legislation varies from state to state but may include laws that prevent zoning from limiting farm practices that have substantial detrimental effects on neighbors, such as CAFO production. Right-to-farm laws may also include preemption of other actions of local government that normally could limit what businesses are allowed to do, known as home rule. For example, the Iowa Supreme Court has ruled that county governments cannot use home rule powers or protection of public health to promulgate laws that are more restrictive than state laws currently in force (Worth County Friends of Agriculture v. Worth County, Iowa, 2004). Although local governmental action has been limited by the bias toward agricultural producers, individual actions have not. Courts in several states have ruled that right-to-farm laws give only limited protection from nuisance action. The Iowa Supreme Court in June 2004 found that CAFO immunity provisions written in Iowa statutes were unconstitutional (Gacke v. Pork XTRA 2004). A district court in Illinois granted a temporary injunction stopping the construction of a nearby CAFO based on an anticipatory nuisance premise (Nickels et al. vs. Burnett 2002) that such a facility would constitute reasonable interference with neighbors' quality of life.

Most states have enacted some forms of environmental laws aimed at protecting the environment from agricultural discharges or emissions. One form of these laws requires establishment of manure management plans. Typically, these laws call for certain sizes of operations to apply for permits. These permits may include the filing of a manure management plan, which calls for a plan for CAFO operators to manage their manure in a manner to prevent water and soil pollution. However, there is little if any performance inspection or enforcement of these plans (Jackson et al. 2000). Nonenforcement is primarily due to the lack of personnel and technical resources at state environmental agencies. For example, some states may have 2,000 or more such operations but not enough staff to efficiently process permit applications, much less get out into the field to inspect performance of these operations.

Workshop Recommendations

Priority research needs. **Community health studies.** Although sufficient research supports actions to protect rural residents from the negative impacts of CAFOs on community health, additional research could be conducted to further delineate mechanisms of effects and impacts on susceptible subgroups. These areas include psychophysiologic impacts of malodor; impacts of malodor on mental health and quality of life; and respiratory impacts of bioaerosol mixtures, especially among asthmatics, children, and the elderly. Wider and more effective application of community-based participatory research will be important to advance research in these areas.

Sustainability of livestock production. Federal funding for agricultural research should be reoriented to promote innovation in sustainable livestock production.

Translation of science to policy. Requirements for issuing permits for CAFOs should include increased protections for health and the environment including the following:

- CAFOs should be sited and issued permits on the basis of total animal density allowed in a given watershed as determined by the carrying capacity.
- Environmental impact statements should be mandated for all new CAFOs. These should include environmental health, social justice, and socioeconomic issues.
- Decisions to issue permits for CAFOs should be considered in public meetings and decided at the local level.
- CAFOs should be regulated using standards applied to general industry based on the level of emissions and type of waste handling.
- Permits for manure storage basins should require bonding for performance and remediation.
- The current state of knowledge of community impacts of CAFOs warrants support for the American Public Health Association recommendation for a moratorium on all new CAFO construction.

References

Abeles-Allison M, Conner L. 1990. An Analysis of Local Benefits and Costs of Michigan Hog Operation Experiencing Environmental Conflicts. East Lansing, MI:Department of Agricultural Economics, Michigan State University.

Avery R, Wing S, Marshall S, Schiffman S. 2004. Perceived odor from industrial hog operations and suppression of mucosal immune function in nearby residents. Arch Environ Health 59:101–108.

Bullers S. 2005. Environmental stressors, perceived control, and health: the case of residents near large-scale hog farms in eastern North Carolina. Hum Ecol 33:1–16.

Campagna D, Kaltman SJ, Pierson R, Ihsérre SG, Philer BL, et al. 2004. Ambient hydrogen sulfide total reduced sulfur, and hospital visits for respiratory diseases in northeast Nebraska, 1998-2000. J Expo Anal Environ Epidemiol 14:180–187.

Cantrell P, Perry R, Sturtz P. 1996. Hog wars: the corporate grab for control of the hog industry and how citizens are fighting back. Culture Agric18(2):86–91. Available: http://www.anthrosource.net/doi/pdf/10.1525/cag.1996.18.2.86 [accessed 26 September 2006].

Centers for Disease Control and Prevention. 1998. Public Health Issues Related to Concentrated Animal Feeding Operations. Workshop. Washington, DC:National Center for Environmental Health, Centers for Disease Control and Prevention. Available: http://www.cdc.gov/cafos [accessed 26 September 2006].

Chapin A, Bouland C, Moore A. 1998. Controlling Odor and Gaseous Emission Problems from Industrial Swine Facilities: A Handbook for All Interested Parties. Yale Environmental Protection Clinic. Available http://www.yale.edu/envirocenter/clinic/swine/swine.html [accessed 15 June 2006].

Chiam JW, Lavins KA. 1994. Farm spending and local selling: how do they match up? Minn Agric Economist 676:1–4.

Cole D, Todd L, Wing S. 2000. Concentrated swine feeding operations and public health: a review of occupational and community health effects. Environ Health Perspect 108:685–699.

Cormier Y, Duchaine C, Israël-Assayag E, Bédard G, Laviolette M, Dosman J. 1997. Effects of repeated swine building exposures on normal naive subjects. Eur Respir J 10:1516–1522.

DeLind LB. 1998. Parma, a story of hog hotels and local resistance. In: Pigs, Profits, and Rural Communities (Thu K, Durrenberger EP, eds). Albany, NY:State University of New York Press, 23–38.

Donham KJ. 2000. The concentration of swine production. Effects on swine health, productivity, human, and the environment. Vet Clinics N Am Food Anim Pract16(3):559–597.

Donham KJ, Cumro D, Reynolds S. 2002. Synergistic effects of dust and ammonia on the occupational health effects of poultry workers. J Agromed 8(2):57–76.

Donham K, Haglind P, Peterson Y, Rylander R. 1989. Environmental and health studies in swine confinement buildings. Am J Ind Med 15:559–593.

Donham KJ, Knapp L, Monson R, Gustafson K. 1982. Acute toxic exposure to gases from liquid manure. J Occup Med 24:142–145.

Donham KJ, Merchant J, Lassise D, Popendorf W, Burmeister L. 1990. Preventing respiratory disease in swine confinement workers: intervention through applied epidemiology, education and consultation. Am J Ind Med 18:241–261.

Donham KJ, Rubino M, Thedell TD, Kammermeyer J. 1977. Potential health hazards to agricultural workers in swine confinement buildings. J Occup Med 19(6):383–387.

Dosman JA, Lawson JA, Kirychuk SP, Cormier Y, Biem J, Koehncke N. 2004. Occupational asthma in newly employed workers in intensive swine confinement facilities. Eur Respir J 24(4):696–702.

Durrenberger P, Thu KM. 1996. The Expansion of large scale hog farming in Iowa: the applicability of Goldschmidt's findings fifty years later. Hum Org 55(4):409–415.

Foltz JD, Jackson-Smith D, Chen L. 2002. Do purchasing patterns differ between large and small dairy farms? Econometric evidence from three wisconsin communities. Agric Resour Econ Rev 31(1):25–38.

Gacke v. Pork XTRA, L.L.C. June 2004. Case No. 147 / 02-0417, Iowa Supreme Court, Des Moines, IA.

Goldschmidt W. 1978. Agribusiness and the rural community. In: As You Sow: Three Studies in the Social Consequence of Agribusiness. Montclair, NJ:Allenheld, Osmun, and Co. [First published as Small Business and the Community: A study in Central Valley of California on effects of scale of farm operations. Report of the Special Committee to Study Problems of American Small Business, United States Senate, December 23, 1946, U.S. Government Printing Office, Washington, DC, 1946.]

Gomez MI, Zhang L. 2000. Impacts of concentration in hog production on economic growth in rural Illinois: an economic analysis. American Agricultural Economics Association Annual Meeting, 31 July–2 August 2000, Tampa, FL. Available: http://agecon.lib.umn.edu/cgi-bin/view.pl [accessed 5 January 2007].

Hamed M, Johnson TG, Miller KK. 1998. The Impacts of Animal Feeding Operations on Rural Land Values. Columbia, MO: University of Missouri-Columbia, Community Policy Analysis Center. Available: http://www.cpac.missouri.edu/library/reports/landvalue-saline/landvalues.pdf [accessed 26 September 2005].

Hamilton ND. 1998. Right-to-farm laws reconsidered: ten reasons why legislative efforts to resolve agricultural nuisances may be ineffective. Drake J Agric Law 3(1):104.

Herriges JA, Secchi S, Babcock BA. 2003. Living with Hogs in Iowa: The Impact of Livestock Facilities on Rural Residential Property Values. Working Paper 03-WP 342. Center for Agricultural and Rural Development, Iowa State University. Available: http://www.card.iastate.edu/publications/DBS/PDFFiles/03wp342.pdf [accessed 26 September 2005].

Iowa State University and The University of Iowa. 2002. Iowa Concentrated Animal Feeding Operations Air Quality Study. Iowa City, IA:The University of Iowa College of Public Health. Available: http://www.ehsrc.org [accessed 15 June 2006].

Jackson LL, Keeney D, Gilbert E. 2000. Swine manure management plans in North-Central Iowa: nutrient loading and policy implications. J Soil Water Conserv 55:205–212.

Kilburn, K. 1997. Exposure to reduced sulfur gases impairs neurobehavioral function. So Med J 90(10):997–1006.

Kirkhorn SR, Schenker MB. 2002. Current health effects of agricultural work: respiratory disease, cancer, reproductive effects, musculoskeletal injuries, and pesticide-related illnesses. J Agric Saf Health 8:199–214.

Kline J, Doekes G, Bonlokke J, Hoffman H, Von Essen S, Zhai R. 2004. Working group report 3: Sensitivity to organic dusts—atopy and gene polymorphisms. Am J Ind Med 46:416–418.

Ladd AE, Edward B. 2002. Corporate Swine and Capitalist Pigs: A Decade of Environmental Injustice and Protest in North Carolina. Soc Justice 29:26–46.

MacCannell D. 1988. Industrial agriculture and rural community degradation. In: Agriculture and community change in the U.S.: The Congressional Research Reports (Swanson LE, ed). Boulder, CO:Westview Press, 15–75.

Merchant JA, Naleway AL, Svendsen ER, Kelly KM, Burmeister LF, Stromquist AM, et al. 2005. Asthma and farm exposures in a cohort of rural Iowa children. Environ Health Perspect 113:350–356.

Mirabelli MC, Wing S, Marshall S, Wilcosky T. 2006a. Asthma symptoms among adolescents who attend public schools that are located near confined swine feeding operations. Pediatrics 118(1):e66–e75.

Mirabelli MC, Wing S, Marshall S, Wilcosky T. 2006b. Race, poverty, and potential exposure of middle school students to air emissions from confined swine feeding operations. Environ Health Perspect 114:591–596.

National Academy of Sciences. 2002. The scientific basis for estimating air emissions from animal feeding operations. Washington, DC:National Academy Press.

Nickels et al. v. Burnett. 2002. Appelate Court of Illinois Second District. No. 2-03-0414. Available: http://www.state.il.us/court/OPINIONS/AppellateCourt/2003/2ndDistrict/October/Html/2030414.htm [accessed 15 June 2006].

Osterberg D, Wellinga D. 2004. Addressing externalities from swine production to reduce public health and environmental impacts. Am J Public Health 94(10):1703–1708.

Palmquist RB, Roka FM, Vukina T. 1997. Hog operations, environmental effects and residential property values. Land Econ 73:114–124.

Preller L, Heederik D, Boleij JS, Vogelzang PF, Tielen MJ. 1995. Lung function and chronic respiratory symptoms of pig farmers: focus on exposure to endotoxins and ammonia and use of disinfectants. Occup Environ Med 52(10):654–660.

Reynolds SJ, Donham KJ, Stookesberry J, Thorne PS, Subramanian P, Thu K, et al. 1997. Air quality assessments in the vicinity of swine production facilities. J Agromed 4:37–45.

Reynolds SJ, Donham KJ, Whitten P, Merchant JA, Burmeister LF, Popendorf WJ. 1996. Longitudinal evaluation of dose-response relationships for environmental exposures and pulmonary function in swine production workers. Am J Ind Med 29:33–40.

Rylander R, Donham K, Hurt C, Brouwer K, Heederik D. 1989. Effects of exposure to dust in swine confinement buildings—a working group report. Scand J Work Environ Health 15:309–312.

Schenker M, Christiani D, Cormier Y, Dimich-Ward H, Doekes G, Dosman J, et al. 1998. Respiratory health hazards in agriculture. Am J Respir Crit Care Med Suppl 158(pt 2):S1–S76.

Schiffman S, Walker J, Dalton P, Lorig T, Raymer J, Shusterman D, et al. 2000. Potential health effects of odor from animal operations, wastewater treatment, and recycling of byproducts. J Agromed 7:7–81.

Schiffman SS, Miller EA, Suggs MS, Graham BG. 1995. The effect of environmental odors emanating from commercial swine operations on the mood of nearby residents. Brain Res Bull 37:369–375.

Schwartz DA, Landas SK, Lassise DL, Burmeister LF, Hunninghake GW, Merchant JA. 1992. Airway injury in swine confinement workers. Ann Intern Med 116:630–635.

Shusterman D. 1992. Critical review: the health significance of environmental odor pollution. Arch Environ Health 47:76–87.

South Dakota Codified Laws. 2006. Title 20-10A. Liability for Disparagement of Agricultural Food Products. Available: http://legis.state.sd.us/statutes/DisplayStatute.aspx?Type=statute&Statute=20-10A-1 [accessed 15 June 2006].

Thu K, ed. 1996. Understanding the Impacts of Large-Scale Swine Production: Proceedings from an Interdisciplinary Scientific Workshop. Iowa City, IA:The University of Iowa.

Thu K. 2002. Public Health concerns for neighbors of large-scale swine production. J Agric Saf Health 8(2):175–184.

Thu K, Donham K, Ziegenhorn R, Reynolds S, Thorne PS, Subramanian P, et al. 1997. A control study of the physical and mental health of residents living near a large-scale swine operation. J Agric Saf Health 3:13–26.

Thu KM, Durrenberger P, eds. 1998. Pigs Profits and Rural Communities. Albany, NY:State University of New York Press.

USDA (U.S. Department of Agriculture). 2005. National Agricultural Statistics Service. Available: http://www.nass.usda.gov/index.asp [accessed on 15 June 2006].

U.S. Government Accountability Office 2005. Livestock Market Reporting: USDA Has Taken Some Steps to Ensure Quality, but Additional Efforts Are Needed. GAO-06-202, 9 December 2005. Available: http://www.gao.gov/new.items/d06202.pdf [accessed 15 June 2006].

Wilson S, Howell F, Wing S, Sobsey M. 2002. Environmental injustice and the Mississippi hog industry. Environ Health Perspect 110(suppl 2):195–201.

Wing S. 2002. Social responsibility and research ethics in community-driven studies of industrialized hog production. Environ Health Perspect 110:437–444.

Wing S, Wolf S. 2000. Intensive livestock operations, health, and quality of life among eastern North Carolina residents. Environ Health Perspect 108:233–238.

Wing S, Cole D, Grant G. 2000. Environmental injustice in North Carolina's hog industry. Environ Health Perspect 108:225–231.

Wright W, Flora CB, Kramer KS, Goudy W, Hinrichs C, Lasley P, et al. 2001. Social and Community Impacts. Technical work paper. Prepared for the Generic Environmental Impact Statement on Animal Agriculture and the Minnesota Environmental Quality Board. St. Paul, MN:State of Minnesota. Available: http://www.eqb.state.mn.us/geis/ [accessed 5 January 2007].

Worth County Friends of Agriculture v. Worth County. October 2004. Case No. 82/03-0552, Iowa Supreme Court, Des Moines, IA.

Monitoring, Reporting, Educating about CAFO Pollution

For the Health of Now and Future Generations

Fighting Factory Farm Pollution

Supporting Sustainable Agriculture

Latest CAFO News – All

Lake Erie Harmful Algal Bloom Bulletin 5-19-18

MAY 23, 2018

True color image on 16 May 2018 taken by the MODIS on the NASA Aqua satellite. A plume of sediment from the Maumee River appears in the southwest corner of the lake. Sediment from previous high flow events and strong winds can be seen. No cyanobacteria are present.

[caption id="attachment_2507" align="alignleft" width="830"]

Read More

Stench Alert

1969

MAY 20, 2018

Strong and foul emissions near Lime Lake on May 20, 2018

Location: Lime Lake - Southwest of Hudson Dairy.
Type of Observation: Stench/Odor Comments: Wind blowing from the northeast resulting in a strong, toxic smelling emissions. Keeping the windows closed most on the day a necessity. Getting much stronger near dusk.

...

Read More

It's Still Raining! May 19, 2018 – April 24, 2018

MAY 19, 2018

Spring returns to South Central Michigan. Grass grows, trees are leafing, and beautiful flowers bring us their sweet fragrance. But that's not the only thing we smell. Come along as we follow the stench on this very stinky Royal Wedding weekend.

May 19, 2018– Halliwill/New Flevo/Van...

Read More

Toledo Mayor goes after Farm Bureau and Legislature at Algae Conference

MAY 2, 2018

Tom Henry, Toledo Blade

ANN ARBOR — The second and final day of an algae conference here attended by many Great Lakes scientists and policy experts began with some strong accusations by Toledo Mayor Wade Kapszukiewicz about the agricultural lobby's influence on state legislators.

"We live in a state where our legislature is a wholly owned subsidiary of the farm bureau," Mayor...

Read More

Are farmers' profits more important than our water? Michigan Radio

MAY 1, 2018

Jack Lessenberry, Michigan Radio

Last week, the Ohio Environmental Protection Agency announced that efforts to decrease those potentially toxic algae blooms in Lake Erie aren't working. When I read that, let's say I wasn't exactly surprised. I moderated a large forum on this subject in Tontogany, Ohio last year.

I came away realizing that the problem was far worse than I...

Read More

Kent County dairy CAFO pipeline spills manure into river, MLive

MAY 1, 2018

FREEPORT, MI -- Between 5,000 and 10,000 gallons of liquid cow manure spilled into a tributary of the Coldwater River when a dairy farm pipeline malfunctioned, according to state regulators.

The Michigan Department of Environmental Quality is investigating the agriculture spill, which was discovered Monday, April 30, between 10-11 a.m., according to the dairy farm owner where the spill occurred.

Anglers notified...

Read More

Stench compensation: Jury awards hog farm neighbors $50 million (NC)

APRIL 30, 2018

RALEIGH, NC - The News & Observer; BY ANNE BLYTHE ablythe@newsobserver.com
A North Carolina jury awarded $50 million to neighbors of a 15,000-hog farm in Eastern North Carolina in a case being closely watched across the country by environmentalists and the hog farm industry.

The verdict, revealed late Thursday after a jury deliberated less than...

Read More

LAKE ADVOCATES — OHIO EPA IS "WHOLLY-OWNED SUBSIDARY OF THE FARM BUREAU"

APRIL 20, 2018

News from

April 19, 2018
Contact: Mike Ferner 419-729-7273

LAKE ADVOCATES: OHIO EPA IS A "WHOLLY-OWNED SUBSIDARY OF THE FARM BUREAU"

"Farm Bureau failed in federal court to protect the polluters of Chesapeake Bay, but the Bureau's loyal agents in Ohio...

Read More

What will Lake Erie's impairment mean for northwest Ohio?

MARCH 25, 2018

By Tom Henry, Toledo Blade

Though hailed as a rare victory for environmentalists, the Kasich administration's reversal on the western Lake Erie impairment issue is only a "key first step" in litigation that may keep the state of Ohio tied up in court for years over cleanup strategies, according to the Chicago-based legal advocacy group that forced the administration's hand on the...

Read More

Kasich declares Lake Erie' Open Waters Impaired (Toledo Blade)

MARCH 22, 2018

The Kasich administration — after years of resistance on behalf of agriculture — announced Thursday it has reversed itself on northwest Ohio's arguably most contentious water-policy issue and will declare the open waters of western Lake Erie as impaired.

Although details of the impairment designation are still to be worked out, it will invariably mean tighter rules for agriculture and others...

Read More

May 25, 2018

To Whom It May Concern,

Ledgeview Farms should not be allowed to construct not operate a manure pit at their location on Lime Kiln Road. I support the Ledgeview Town Board's decision last fall to expand the distance between residential property and any manure pit.

A manure pit at the Lime Kiln road location would be detrimental to the Ledgeview community. It has the potential to decrease land value in an otherwise thriving community. Most worrisome are the potential environmental and health impacts. Manure pits release hazardous gases into the environment. One of the most significant concerns is its proximity to wetlands. Many homes in the area rely on well water and the possibility of that water contamination could be harmful to the biodiversity of the surrounding area, not to mention dangerous to those who consume that water and rely on it.

As a citizen of Ledgiew, and a citizen of Wisconsin, I ask that Ledgeview farms not be allowed to build a manure pit near residential homes.

Thank you,

Caitlin Enright

Memorandum

To: Ms. Sarah Burdette (Town Administrator) and Mr. Phil Danen (Town Chairman)

From: Alan C. Cheslock – 3565 Beachmont Road, De Pere, WI 54115 ACC

Date: May 28, 2018

Subject: Ledgeview Farms, LLC Expanded Livestock Siting Application

---

SUMMARY

Ledgeview Farms should be prevented from operating above 1,000 animal units and their Livestock Siting Application denied by the Town because of the farm's unreasonable delay in seeking the permit. The farm's unreasonable delay will cause harm, both health and monetary, to residents who purchased homes near the farm during the period of delay. Ledgeview Farms knew at least 10 years ago that the farm needed to apply for the permit and build the required manure storage facility. After 10 years of delay the farm should not be allowed to operate above 1,000 animal units to the harm of nearby residents.

FACTS

Ledgeview Farms was notified over ten years ago, at least as early as October 24, 2007, that if the farm was over 1,000 animal units, the farm needed to apply for certain DNR permits (Exhibit A). The DNR suspected the farm was over 1,000 animal units (Exhibit A). The DNR again reminded Ledgeview Farms about one year later that the DNR suspected the farm was over 1,000 animal units and that the farm needed to apply for a permit (Exhibit B). One requirement of the permitting process, made known in a letter to Ledgeview Farms, is six months of manure storage and the farm currently only had 2-3 months of manure storage (Exhibit C). The DNR indicated Ledgeview Farms was ignoring the DNR's request for filing a permit (Exhibit D).

Ledgeview Farms submitted a permit application on October 21, 2008 stating the farm had 1,380 animal units with intention to grow to 1,924 animal units in 5 years (Exhibit C'). The animal units were reported by Ledgeview Farms, not the DNR. (See Exhibit C'). The application was deemed incomplete by the DNR and Ledgeview Farms was notified of the additional actions needed to complete the permit application (Exhibit E). The DNR did not receive a completed permit application and sent Ledgeview Farms a Notice of Violation on February 19, 2009 (Exhibit F).

The Notice of Violation resulted in an Enforcement Conference on May 19, 2009 that included Jason Pansier from Ledgeview Farms, DNR, and county representatives (Exhibit G). At the conference the DNR again expressed to Ledgeview Farms that a manure storage facility of six months capacity was required as part of the permitting process (Exhibit G). The DNR gave a January 1, 2010 deadline for constructing the manure storage facility (Exhibit G). In reply, Jason Pansier stated that Ledgeview Farms would get rid of animals to go below 1,000 animal units (Exhibit G). If Ledgeview Farms went below 1,000 animal units the farm would not need to apply for the permit and would not need the six months capacity of manure storage (Exhibit G).

On April 3, 2009 Ledgeview Farms affirmed in writing that they would operate below 1,000 animal units (Exhibit H). The April 3, 2009 letter included an animal unit calculation sheet, apparently completed by Ledgeview Farms, indicating they had 980 animal units (Exhibit H). Just a few months prior Ledgeview Farms indicated that they had 1,380 animal units (Exhibit C'). The DNR requested a monthly animal unit calculation (prepared by Ledgeview Farms) in response to Ledgeview Farms' agreement to operate below 1,000 animal units (Exhibit J). The animal unit reports were not provided by Ledgeview Farms (Exhibit J).

Perhaps suspicious of the validity of the animal unit reports from Ledgeview Farms, the DNR requested information as to how the farm (e.g., to whom were the animals sold) went from about 1,400 animal units to less than 1,000 animal units in only a few months (See Exhibit K). Ledgeview Farms provided a very basic spreadsheet report with "Livestock Inc." typed at the top and presumably listing animal tag numbers and weights (See Exhibit L). Ledgeview Farms alleged the animals were sold to Livestock Inc. but did not provide receipts (See Exhibit K). The DNR tried to verify the sales to "Livestock Inc." but the DNR could not find a business with that name to contact (See Exhibit L). Ledgeview Farms provided no information from the company that allegedly purchased the animals (See Exhibit K).

Through 2013 Ledgeview Farms continued to represent to the DNR that they were operating below 1,000 animal units (Exhibit M). However, when a third party, AgSource Laboratories, prepared a report for the farm, signed by Jason Pansier, in early 2014, the report indicated well above 1,000 animal units (Exhibit N). In early 2014 Ledgeview Farms was required to have the 2013 annual farm reported created by AgSource in view of an EPA Administrative Order (Exhibit N and O). The next year's report by AgSource indicated similar animal unit numbers to 2013 (Exhibit O).

The EPA Administrative Order was in response to what the EPA called "serious compliance problems," noting, among other things, failure to obtain required permits (Exhibit O). The report of Exhibit O further explains the serious problems. On November 29, 2016 the EPA sent Ledgeview Farms a Notice of Intent to file a Civil Administrative Complaint against the farm seeking a $128,000 penalty.

Ledgeview Farms finally submitted a permit application to the DNR on January 4, 2018 (Exhibit Q). The January 4, 2018 permit was filed over 10 years after the DNR sent notice to Ledgeview Farms in October 2007 (Exhibits A and Q).

During the period from 2007 to 20018 residential development in the Town of Ledgeview has expanded significantly. In late 2013 a final plat was approved for The Reserve at Meadow Ridge (Exhibit S). I purchased Lot 1 in 2014 and built a new home on the lot in 2016 where I currently reside. The subdivision is directly adjacent Ledgeview Farms. I would not have purchased the lot had a manure pit been constructed in the location near Copper Lane and Lime Kiln Road. I would not have built a home on the site had a manure pit been constructed in that location.

CONCLUSION

Ledgeview Farms was put on notice over 10 years ago that the farm needed to construct a manure storage facility if the farm was to operate above 1,000 animal units. The farm was already operating above 1,000 animal units. Ledgeview Farms told the DNR that the farm would drop below 1,000 animal units. It seems apparent Ledgeview Farms never dropped below 1,000 animal units. There are no verified sales of animals. Rather, the farm continued to

provide false reports to the DNR leading one to believe the farm did not need the manure storage facility because the farm was below 1,000 animal units. This is verified by a third party, AgSource, that prepared a farm report indicating Ledgeview Farms was above 1,000 animal units. This was in 2013. Yet, Ledgeview Farms still did not file for the permit. It was not until after Ledgeview Farms was threatened with a $128,000 fine from the EPA that the farm seriously pursued the permit and finally filed for the permit in 2018.

Meanwhile, unknowing citizens were purchasing residential lots and building homes next to Ledgeview Farms. Had the farm not unreasonably delayed in obtaining the permit, a manure storage facility would have been built in the location near Copper Lane and Lime Kiln roads several years ago. This would have undoubtedly prevented the development of at least the Reserve at Meadow Ridge subdivision that was approved in 2013. After the actions and unreasonable delay by Ledgeview Farms, the farm should not be allowed to operate above 1,000 animal units to the harm to health and safety of nearby residents who moved to the area during the period of on reasonable delay.

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Matthew Frank, Secretary
Ronald W. Kazmierczak, Regional Director

Northeast Region Headquarters
2984 Shawano Ave., P.O. Box 10448
Green Bay, Wisconsin 54307-0448
Telephone 920-662-5100
FAX 920-662-5413
TTY Access via relay - 711

October 24, 2007

Roy and Glen Pansier
3870 Dickinson Road
De Pere, WI 54115-0796

Dear Messrs. Pansier:

The purpose of this letter is to inform you that the Department of Natural Resources (Department) believes your livestock operations have more than 1000 animal units. As such, an Animal Units Calculation Worksheet is enclosed for you to fill out, sign, and return. The total number of animal units to be included will be based on all animal units for all livestock located at all of your operations. These calculations must also include the animals from any satellite facilities under common ownership or management (e.g., Lime Kiln Rd.).

If you are currently over or near the Concentrated Animal Feeding Operation (CAFO) threshold of 1000 animal units, an initial site visit will be arranged, at which time a Wisconsin Pollutant Discharge Elimination System (WPDES) permit application package will be provided.

If you are currently below 1000 animal units but are considering reaching permit size in the future, an initial application must be received at least **12 months** prior to reaching the threshold. If you do not expect to reach or exceed 1000 animal units, a permit is not required; however, the enclosed Animal Unit Calculation Worksheet still needs to be returned.

This is the Department's second attempt to contact you. If you have already submitted the requested materials, or have any other questions, please contact me immediately at (920) 662-5400.

I look forward to receiving the Animal Unit Calculation Worksheet by **November 2, 2007**.

Sincerely,

Craig Webster
Watershed Expert and Program Coordinator

C: Brown County LWCD

Enclosure

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Matthew J. Frank, Secretary
Ronald W. Kazmierczak, Regional Director

Northeast Region Headquarters
2984 Shawano Ave., P.O. Box 10448
Green Bay, Wisconsin 54307-0448
Telephone 920-662-5100
FAX 920-662-5413
TTY Access via relay - 711

July 15, 2008

Roy & Glen Pansier
3870 Dickinson Road
DePere, WI 54115

SUBJECT: WPDES Permit Application Materials

Dear Roy & Glen–

This letter is regards to applying for a Wisconsin Pollutant Discharge Elimination System (WPDES) permit for your farm. Enclosed is a packet of information for you to review. This information can also be found on the Department of Natural Resource's website at:

http://dnr.wi.gov/runoff/ag/permits.htm.

The Department believes your operation may have more than 1,000 animal units. Please complete the enclosed Livestock/Poultry Operation WPDES Permit Application (Form 3400-25) and Animal Units Calculation Worksheet (Form 3400-25A) and send to me at the letterhead address above by **August 8, 2008** in order to start the process of obtaining a permit.

Once I have received the above mentioned forms, we can set up a meeting to tour the farm and identify any potential problem areas that may require attention prior to receiving a WPDES permit. This is a good meeting to have your crop advisor and engineer/consultant present as well as County Land Conservation and NRCS staff if needed.

If you have any questions, please contact me at (920) 662-5407 or Casey.Jones@wisconsin.gov.

Sincerely,

Casey L. Jones
Agricultural Runoff Management Specialist
WI DNR—Green Bay

Enclosures: WPDES Permit Application Packet

cc: Dan Helf – DNR
Bill Hafs, Brown County LCD
File

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Matthew J. Frank, Secretary
Ronald W. Kazmierczak, Regional Director

Northeast Region Headquarters
2984 Shawano Ave., P.O. Box 10448
Green Bay, Wisconsin 54307-0448
Telephone 920-662-5100
FAX 920-662-5413
TTY Access via relay - 711

October 15, 2008

Jason Pansier
Ledgeview Farms, LLC
3870 Dickinson Road
DePere, WI 54115

SUBJECT: WPDES Permit Application Materials

Dear Jason –

Thank you for meeting with me on Tuesday October 14, 2008 to discuss the permit process. Because your farm numbers are already over 1000 animal units, it is important that you continue to work with the Department to get your Wisconsin Pollutant Discharge Elimination System (WPDES) permit issued as soon as possible. I have filled in the blanks for the initial application forms, please review and sign and return to me at the address in the letterhead by October 22, 2008. If there are any corrections, please make them and initial next to the correction. Just a reminder that this is not optional—all farms over 1000 animal units are required by law to obtain a WPDES permit and operate according to those requirements.

Although we went over some things during the meeting you will be required to fill out and submit the Environmental Analysis Questionnaire (attached). All maps need to be provided and all questions need to be answered. If you find you do not have time to do this, you should hire a consultant to help you with the application process. This information needs to be submitted by November 14, 2008. If more time is needed to gather information; contact me and propose another due date.

I have requested a copy of your nutrient management plan from Jon Anderson, the manager of Agri-Partners (also known as Progressive Farmers). However, it is your responsibility to have them send me a copy. There will be modifications required for the plan to meet the additional requirements of permitted farms. Please contact your nutrient management planner and request they update your plan to meet these requirements—this updated plan can be submitted to me at a later date.

Once you have a permit the farm is not allowed to have any discharges from the production areas (main farm and heifer farm locations). Some areas will need to be addressed prior to issuing the permit; others can be addressed within the first year of the permit term (under a compliance schedule). Areas that need attention now are as follows:

- Manure from the outdoor lot area at the heifer farm is actively discharging into a waterway. Containment of the runoff from this area will be required. As mentioned, roof gutters would help eliminate the volume of runoff from this area—however, a designed manure storage structure will be required to eliminate the discharge into the waterway.

- Manure/soil runoff from the outdoor lots at the main farm may be discharging into the waterway. This area needs to be managed to sustain vegetation to prevent erosion/runoff into adjacent stream. Containment around outdoor concrete lane and feeding areas may be necessary to ensure manure does not discharge to groundwater or surface water.

- All farms over 1000 animal units will be required to have six months of storage beginning January 1, 2010. Your farm currently has 2-3 months of manure storage. You have stated you will not be hiring a consultant for designing manure storage—please continue to work with Brown County and NRCS staff to move forward with designing this structure. Plans and specifications for any proposed manure storage (for main farm as well as heifer farm) will need to be submitted to the Department for review prior to being built. Three copies of the plans should be sent to me. These should be sent in as soon as possible to ensure the structure can be built in 2009.

Please submit the requested items above in a timely manner. If you have any questions regarding this letter or the permit issuance process, I can be contacted at 920-662-5407. Thank you.

Sincerely,

Casey L. Jones

Casey L. Jones
Agricultural Runoff Management Specialist
DNR Northeast Region

Enclosure: Application materials

CC: Dan Helf—DNR
Brent Petersen—Brown County

Rec'd 10-21-08 by cg

State of Wisconsin
Department of Natural Resources
Bureau of Watershed Management
P.O. Box 7921, Madison WI 53707-7921

Livestock/Poultry Operation WPDES* Permit Application

*Wisconsin Pollutant Discharge Elimination System

Form 3400-25 Rev. 05/07

WPDES Permit Number WI-	Expiration Date

NOTICE: Use of this form is required by the Department for any application filed pursuant to chapter NR 243, Wis. Adm. Code, and section 283.53(3), Wis. Stats. The Department will not consider your application complete unless you complete and submit this application form. Penalties for failure to submit a completed form are established in ss. 283.89 and 283.91, Wis. Stats.

Section 283.91(4), Wis. Stats., provides that: Any person who knowingly makes any false statement, representation or certification in this application shall upon conviction be punished by a fine of not more than $10,000 or by imprisonment for not more than 6 months or both. Personally identifiable information collected will be used for program administration. The Department may also provide this information to requesters under Wisconsin's open records law [ss. 19.31-19.39, Wis. Stats.].

- Read the attached instructions before filling out this form.
- Print or type the requested information, except for the signature.
- Return this form with your completed WPDES application to your regional Department contact.

A. LEGAL NAME FOR PERMIT ISSUANCE

Legal name of the operation or parent company to which the permit will be issued: Ledgeview Facility LLC Ledgeview Farms LLC

B. OPERATOR CONTACT INFORMATION

1. Legal Name of Farm/Operation: Ledgeview Facility LLC

2. Name of Operator or Manager: Jason Pansier Title: Co-owner 336-7919

3. Mailing Address-Street, Route or Box: 3870 Dickinson Rd City/Town, State, Zip Code: Depere WI 54115

4. Telephone Number (include area code): 920-336-7919 Cell Phone: 920-655-1344 Fax Number: E-mail Address:

C. PHYSICAL LOCATION OF OPERATION

1. Location Address (if different from mailing address in B3 above): 3870 Dickinson Rd

2. County: Brown Township Name: Ledgeview Latitude: Longitude:

3. Town Number: 23 N Range Number (E or W): 21 E Section: 32 & 33 Quarter: Quarter/Quarter:

D. PARENT COMPANY/OWNER INFORMATION (if applicable)

1. Name of Parent Company/Owner (if different from operator in B2 above):

2. Contact Person Title:

3. Mailing Address-Street, Route or Box City/Town, State, Zip Code:

4. Telephone Number (include area code) Cell Phone: Fax Number: E-mail Address:

E. CROP CONSULTANT

1. Name of Crop Consultant: Steve Kohl Company/Title: Agri-Partners (Progressive Farms)

2. Mailing Address-Street, Route or Box City/Town, State, Zip Code:

3. Telephone Number (include area code): 920-756-9999 Cell Phone: OR Fax Number: 920-849-9213 (main office) E-mail Address:

F. DESIGN ENGINEER

1. Name of Design Engineer Company/Title:

2. Mailing Address-Street, Route or Box City/Town, State, Zip Code:

3. Telephone Number (include area code) Cell Phone: Fax Number: E-mail Address:

EXHIBIT C

tank for milkhouse wastewater 6000 gallons land apply

2-3 mos storage at main farm

Livestock/Poultry Operation WPDES* Permit Application

*Wisconsin Pollutant Discharge Elimination System

Form 3400-25 Rev. 5/07

Separator - main

Sand - freestalls

C. ANIMAL UNITS

1. Use the Animal Units Calculation Worksheet on page three of this form to determine the number of animal units held in confinement or feeding facilities for more than 45 days in a 12 month period. Include all sites under common ownership that a) are adjacent to the main farm, or b) share manure management, storage facilities, or spreading fields with the main farm. Be sure to include the date of any proposed expansions.

☑ Check here after completing the Animal Unit Calculation Worksheet. **The Calculation Worksheet must be included with the application.**

2. List dates of all proposed expansions within the next five years (MM/YY): (Internal growth only)
Expansion 1: _____ Expansion 2: _____ Expansion 3: _____

D. TYPE, DIMENSIONS AND USE OF ROOFED AND OUTDOOR AREAS

1. Animals at this operation are currently: ☐ In outdoor barnyard or feedlot

☐ Housed under roof ☒ Both outdoor and partially housed under roof ☐ Outdoor vegetated area

2. Approximate area of outdoor lots:

Area 1: 24 ft x 200 ft Area 2: 70 ft x 260 ft Area 3: _____ ft x _____ ft

E. TYPES OF MANURE STORAGE

1. Indicate all existing and proposed manure storage facility types. These may include earthen, earthen with a concrete floor, synthetically lined, concrete, steel above ground tank, below ground storage tank, anaerobic lagoon, roofed storage shed, underfloor storage, stacking slab (clay or concrete), unconfined manure stack, or other (specify).

	Existing or Proposed?	Storage type (see above)	Year built	Dimensions (ft)	Capacity (gals/tons)	Days of storage avail.
Facility 1	existing	concrete	1996	80'x40'x8'		(2-3 months total)
Facility 2	existing	concrete	1999	80'x40'x8'		
Facility 3	existing	tank			60000 gal	
Facility 4						
Facility 5						
Facility 6						
				Totals:		

F. MANURE DISPOSAL/TREATMENT

1. How much manure, litter and wastewater is generated annually by the operation? _____ tons/gallons (circle one)

How many tons of manure or litter, or gallons of wastewater produced by the CAFO will not be land applied but will be disposed of in an alternate manner? _____ tons/gallons (circle one) Describe alternate method: _____

2. Main Methods of Manure Disposal: ☑ Land application ☐ Composting ☐ Other (Specify) _____

3. Method of Land Application: ☑ Surface applied ☑ Incorporated ☐ Injected ☐ Spray irrigation

4. Average acreage available for spreading on an annual basis 1993 Acres

Total acres covered by the Nutrient Management Plan 1410 Acres

This application must be signed by an individual who is either an owner of the operation identified in B2 above or a corporate officer if the operation is incorporated.

I certify that I am familiar with the information contained in this application and that to the best of my knowledge and belief such information is true, complete and accurate.

Printed or Typed Name of Official Representative	Title
Jason R Pansier	Co-Owner
Signature of Official Representative	**Date Application Signed**
Jason R. Pansier	10-17-08

(~~7-8% annual growth~~) ~~10%~~

Animal Unit Calculations: Current Number of AUs on Operation

Animal Type		I. Mixed Animal Units			II. Non-mixed Animal Units		
		b. Equiv. factor	c. Current Number	d. No. of AUs	e. Equiv. factor	f. Current Number	g. No. of Aus
Dairy/Beef Calves (under 400 lbs)		0.20 x	200	= 40			
Dairy Cattle	Milking & Dry Cows	1.40 x	530	= 742	1.43 x		=
Dairy Cattle	Heifers (800 lbs to 1200 lbs)	1.10 x	170	= 187			
Dairy Cattle	Heifers (400 lbs to 800 lbs)	0.60 x	150	= 90	1.00 x		=
Beef	Steers or Cows (400 lbs to market)	1.00 x	300	= 300			
Beef	Bulls (each)	1.40 x	~15	= 21	1.00 x		=
Veal Calves		0.50 x		=	1.00 x		=
Swine	Pigs (up to 55 lbs)	0.10 x		=	0.10 x		=
Swine	Pigs (55 lbs to market)	0.40 x		=			
Swine	Sows (each)	0.40 x		=			
Swine	Boars (each)	0.50 x		=	0.40 x		=
Chickens	Layers (each) -non-liquid manure system	0.01 x		=	0.0123 x		=
Chickens	Broilers/Pullets (each) -non-liquid manure system	0.005 x		=	0.008 x		=
Chickens	Per Bird -liquid manure system	0.033 x		=	0.0333 x		=
Ducks	Ducks (each) -liquid manure system	0.2 x		=	0.2 x		=
Ducks	Ducks (each) -non-liquid manure system	0.01 x		=	0.0333 x		=
Turkeys (each)		0.018 x		=	0.018 x		=
Sheep (each)		0.1 x		=	0.1 x		=
Horses (each)		2 x		=	2 x		=

Total Animal Units:

Total Mixed Animal Units = (add all rows above)	Total Non-Mixed Animal Units = (Enter the single highest number from any row above; DO NOT add the totals)
1380	

Does operation need a WPDES permit? Yes

at 8% annual growth over 5 yrs

Animal Unit Calculations: Projected Number of AUs on Operation

Animal Type		I. Mixed Animal Units			II. Non-mixed Animal Units		
		b. Equiv. factor	c. Current Number	d. No. of AUs	e. Equiv. factor	f. Current Number	g. No. of Aus
	Dairy/Beef Calves (under 400 lbs)	0.20 x	280	= 56			
Dairy Cattle	Milking & Dry Cows	1.40 x	742	= 1039	1.43 x		=
Dairy Cattle	Heifers (800 lbs to 1200 lbs)	1.10 x	238	= 262			
Dairy Cattle	Heifers (400 lbs to 800 lbs)	0.60 x	210	= 126	1.00 x		=
Beef	Steers or Cows (400 lbs to market)	1.00 x	420	= 420			
Beef	Bulls (each)	1.40 x	15	= 21	1.00 x		=
	Veal Calves	0.50 x		=	1.00 x		=
Swine	Pigs (up to 55 lbs)	0.10 x		=	0.10 x		=
Swine	Pigs (55 lbs to market)	0.40 x		=			
Swine	Sows (each)	0.40 x		=			
Swine	Boars (each)	0.50 x		=	0.40 x		=
Chickens	Layers (each) -non-liquid manure system	0.01 x		=	0.0123 x		=
Chickens	Broilers/Pullets (each) -non-liquid manure system	0.005 x		=	0.008 x		=
Chickens	Per Bird -liquid manure system	0.033 x		=	0.0333 x		=
Ducks	Ducks (each) -liquid manure system	0.2 x		=	0.2 x		=
Ducks	Ducks (each) -non-liquid manure system	0.01 x		=	0.0333 x		=
	Turkeys (each)	0.018 x		=	0.018 x		=
	Sheep (each)	0.1 x		=	0.1 x		=
	Horses (each)	2 x		=	2 x		=

Total Animal Units:

Total Mixed Animal Units = (add all rows above)	Total Non-Mixed Animal Units = (Enter the single highest number from any row above; DO NOT add the totals)
1924	

Does operation need a WPDES permit? yes

Dates of Proposed Expansions (within the next 5 years) **MM/YY** 1_____ 2_____ 3_____

8% annual internal growth x 5 yrs ...

Jones, Casey L - DNR

From: Stoll, Richard C - DNR
Sent: Wednesday, October 22, 2008 3:53 PM
To: Jones, Casey L - DNR
Cc: Helf, Daniel R - DNR
Subject: RE: Pansier/Ledgeview Farm letter

Follow Up Flag: Follow up
Flag Status: Red

Did you actually see Karst identifiers or is it in a likely area? If there is observed fractures etc the code can likely allow you more options on regulation. Regardless, I forwarded Dan some information on townships of primary concern. I do not recall Depere as within one but if above the ledge (bluff) it could quite easily be. Dan, is on a group coming up with recommendations for ag wastes in karst and at risk areas. I suspect implementation would need to occur at once for all such facilities in these areas. If yours is the first then all others afterwards would likely have to follow the same protocol. Ask Dan if his materials are ready for that.

From: Jones, Casey L - DNR
Sent: Wednesday, October 15, 2008 11:34 AM
To: Helf, Daniel R - DNR; Stoll, Richard C - DNR
Cc: Petersen_BA; Hafs_BC
Subject: Pansier/Ledgeview Farm letter

Dan/Rick,

I've attached a letter regarding a farm in Depere that currently has about 1400 animal units. The Department had sent them a letter last fall regarding applying for a permit and I had sent them one in July, but they had ignored them. I was able to go out there yesterday with Brent from Brown County to talk about the permit process. The farm as well as land they spread on may have karst topography...
<< File: Pansier application_meeting response.doc >>
Brent,

If Zirbels (Mike and Dennis) are both over 1000 AU, let me know and I will contact them regarding applying for a permit.

Thanks,

Casey L. Jones
Agricultural Runoff Management Specialist
(Brown, Marinette, Menominee, Oconto & Shawano Counties)
Wisconsin Department of Natural Resources
2984 Shawano Ave, PO Box 10448
Green Bay, WI 54307
(☎) phone: (920) 662-5407
(☎) fax: (920) 662-5413
(✉) e-mail: Casey.Jones@Wisconsin.gov

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Matthew J. Frank, Secretary
Ronald W. Kazmierczak, Regional Director

Northeast Region Headquarters
2984 Shawano Ave., P.O. Box 10448
Green Bay, Wisconsin 54307-0448
Telephone 920-662-5100
FAX 920-662-5413
TTY Access via relay - 711

November 25, 2008

Jason Pansier
Ledgeview Farms, LLC
3870 Dickinson Road
DePere, WI 54115

Certified Mail-
Return Receipt Requested

Subject: WPDES Permit Application Status Update Request

Dear Mr. Pansier:

The Department of Natural Resources (DNR) received your initial WPDES permit application forms (3400-25 & 3400-25A) on October 21, 2008. The Department requested the Environmental Analysis Questionnaire be completed and submitted by November 14, 2008—this has not been received to date.

The following table in this letter contains a summary of application items needed. Completing all application items is needed for a complete WPDES permit application determination and permit issuance. Because you are already over 1000 animal units it is imperative that you continue submitting your application. You are currently operating without a permit which is a violation of state and federal regulations.

DNR or other agency staff may be available to assist with completing your permit application. Please be aware that:

1. Some application items (e.g. Nutrient Management Plan and Waste Storage Facilities) may take considerable amounts of time to prepare, review and, when necessary, amend to meet all state or federal requirements.
2. Application items submitted that are vague, unclear or general may be responded to by DNR with requests for additional information.

For your assistance, agency contacts and other information that may be related to permit applications are enclosed with this letter.

WPDES Permit Application Status Report

Received	Complete	Incomplete	Under Review	Application Item
Part 1: General Operation Requirements				
	X			Livestock/Poultry Operation WPDES Permit Application Form 3400-25
	X			Animal Units Calculation Worksheet Form 3400-25A

EXHIBIT tabbies E

Received	Complete	Incomplete	Under Review	Application Item
				Narrative with historical, current, and future operational information including planned construction/expansion
				Scaled drawing(s) identifying the following existing and/or proposed items:
				• Animal housing
				• Waste storage facilities
				• Groundwater monitoring wells
				• Permanent spray irrigation or other land spreading systems
				• Feed storage structures
				• Raw material storage
				• Loafing or outside lot areas
				• Ancillary service and storage areas
				• Water supply well(s)
				• Treatment systems or structures
				• Runoff controls
				• CAFO outdoor vegetated areas
				Written descriptions of the structures and areas identified above (including number of animals, projected number of days in use and type/percent of vegetative cover for outdoor lots and CAFO outdoor vegetated areas)
				Site Location Maps – Existing & Proposed
				• Aerial Photograph
				• Soil Survey Maps
				Manure Flow Diagram identifying where manure goes to/from at the production site
Part 2: Environmental Analysis Questionnaire				
				Environmental Analysis Questionnaire with each question fully addressed
Part 3: Nutrient Management Plan				
590 plan received		Complete plan due 3-1-09		Nutrient Management Plan meets all the requirements in NRCS Technical Standard 590 and Ch. NR 243.14, Wis. Adm. Code
Part 4: Plans & Specifications for New Structures				
				Proposed Waste Storage Facilities plans and specifications (1 copy to local staff, 2 copies to Madison)
				Proposed Runoff Control System(s) plans & specifications (1 copy to local staff, 2 copies to Madison)

Received	Complete	Incomplete	Under Review	Application Item
Part 5: Post Construction Documentation for Existing Structures				
				Existing Waste Storage Facilities as-built information or engineering evaluation (1 copy to local staff, 2 copies to Madison)
				Existing Runoff Control System(s) as-built information or engineering evaluation (1 copy to local staff, 2 copies to Madison)

Please submit unchecked items to my attention at the address on the top of the letter head by January 16, 2009. If the requested materials will not be ready by that date, please contact me as soon as possible with an alternative timeline. If a consultant is hired to complete your application, have them contact me once they are retained.

Upon receiving a complete permit application, I will need to set up another visit to tour your facility and get a better understanding of your operation as well as discuss the remainder of the permit process. I will contact you once I receive the requested materials to set up this meeting. If you have any questions, please contact me at 920-662-5407 or Casey.Jones@Wisconsin.gov

Sincerely,

Casey L. Jones

Casey L. Jones
Agricultural Runoff Management Specialist
DNR—Northeast Region

CC: Dan Helf – DNR Green Bay
Tom Bauman – DNR Madison
Andrew Craig – DNR Madison
Bill Hafs – Brown County Land Conservation
Steve Keil – Agripartners Cooperative

Permit Application Assistance

Nutrient Management Plans

DNR Madison and Regional staff as well as DATCP staff review Nutrient Management Plans (NMP). The NMP must contain information necessary to document how land application activities will comply with the restrictions in s. NR 243.14 and NRCS Standard 590. Wisconsin Conservation Planning Tech Note WI-1- contains additional guidance and detail on what items need to be included in a NMP as well as useful background information for nutrient management planning.

NR 243 - (NR 243 [PDF 221KB])
NRCS 590 - http://efotg.nrcs.usda.gov/references/public/WI/590.pdf
WI Conservation Planning Tech Note WI-1- http://www.wi.nrcs.usda.gov/technical/technotes.html

Please note Chapter NR 243 Wis. Adm. Code was amended in July 2007 with new requirements for CAFO's. These include:

- General application restrictions - setbacks and other best management practices to protect surface and ground water quality;
- Nutrient crediting;
- Surface Water Quality Management Area (SWQMA) application restrictions;
- Phosphorus Delivery;
- Solid manure winter restrictions – including the need for any solid manure stacking locations; and
- Liquid manure winter restrictions – including identification of specific fields for applications and certification that manure storage facilities provide a minimum of 180 days storage capacity.

Nutrient Management Contacts

Madison
Andrew Craig, DNR Nutrient Management Specialist, Madison – (608) 267-7695. andrew.craig@wisconsin.gov
Stephanie Schneider, DATCP Nutrient Management Specialist, Madison – (608)224-4511.

DNR Regional Staff
Casey Jones, Agricultural Runoff Management Specialist, Green Bay – 920-662-5407. casey.jones@wisconsin.gov

NRCS – Brown County
Green Bay Service Center – 920-884-8910

County Land and Water
Bills Hafs, County Conservationist, Green Bay – 920-391-4633. Hafs_BC@co.brown.wi.us

Plans & Specifications for New Structures

DNR engineers in Madison conduct full reviews for completeness of plan and specification submittals and follow-up with the operation as needed for additional information. Review and approval of plans and specifications are also completed by DNR engineers in Madison. By statute, there is a 90-day review period for this information once it is deemed complete. Part of the completeness review involves determining if other portions of the WPDES permit application packet are complete (i.e. Environmental Analysis Questionnaire).

Post Construction Documentation for Existing Structures

Information for existing materials may not be available. A compliance schedule for the evaluation of existing structures and runoff controls may be required in the first year of permit issuance. Post construction documentation for new structures is required to be submitted within 60 days of completion.

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Matthew J. Frank, Secretary
Ronald W. Kazmierczak, Regional Director

Northeast Region Headquarters
2984 Shawano Avenue
Green Bay, Wisconsin 54313-6727
Telephone 920-662-5100
FAX 920-662-5413
TTY Access via relay - 711

February 19, 2009

CERTIFIED MAIL
Return Receipt Requested
CT: 2009-NEEE-016

Ledgeview Farms, LLC
Mr. Roy Pansier, Registered Agent
3875 Dickenson Road
DePere, WI 54115

Subject: **Notice of Violation - Chapter 283, Wis. Statutes**
Enforcement Conference – March 9, 2009

Dear Mr. Pansier:

The Department of Natural Resources (Department) has reason to believe Ledgeview Farms, LLC (Ledgeview) is in violation of Wisconsin's wastewater discharge permit requirements. Ledgeview is located at 3870 Dickinson Road, T23N-21E-R25E Sections 29, 32, & 33, Town of Ledgeview, Brown County, Wisconsin (the Site).

The Department alleges the following specific violation by Ledgeview:

Section 283.31(1), Wis. Stats. - Water Pollutant Discharge Elimination System Permits. The discharge of any pollutant into any waters of the state or the disposal of sludge from a treatment work by any person is unlawful unless such discharge or disposal is done under a permit issued by the department under this section or s. 283.33.

Section NR 243.11(3)(a), Wis. Adm. Code. Large Concentrated Feeding Operations. Any person owning or operating a large CAFO that stores manure or process wastewater in a structure that is at or below grade or that land applies manure or process wastewater shall have a WPDES permit. A discharge of pollutants from manure or process wastewater to waters of the state by an unpermitted animal feeding operation with 1,000 animal units or more is prohibited.

Section NR 243.03(12)(a), Wis. Adm. Code, "concentrated animal feeding operation" or "CAFO" means an animal feeding operation that has 1,000 animal units or more at any time and stores manure or process wastewater in a below or at grade level storage structure or land applies manure or process wastewater.

Section NR 243.03(31), Wis. Adm. Code, "Large CAFO" means an animal feeding operation that has 1,000 animal units or more at any time.

Section NR 243.03(4), Wis. Adm. Code, "Animal feeding operation" means a lot or facility, other than a pasture or grazing area, where animals have been, are or will be stabled or confined, and will be fed or maintained for a total of 45 days or more in any 12-month period. Two or more animal

feeding operations under common ownership or common management are a single operation if *at least one* of the following is true: (a) The operations are adjacent. (b) The operations utilize common systems for the landspreading of manure or other wastes, including a nutrient management plan or landspreading acreage. (c) Manure, barnyard runoff or other wastes are commingled in a common storage facility prior to landspreading.

In correspondence dated September 12, 2007, the Department stated its belief that Ledgeview had more than 1,000 animal units and requested Ledgeview complete an Animal Units Calculation Worksheet no later than October 12, 2007. Ledgeview did not respond to this request.

On July 15, 2008, the Department mailed to Ledgeview a permit application packet to obtain a WPDES permit. Ledgeview was requested to complete the application materials as well as the Animal Units Calculation Worksheet by August 8, 2008. Ledgeview did not respond to this request.

On October 13, 2008, after several unsuccessful attempts, the Department contacted Mr. Jason Pansier by telephone to discuss the WPDES permit and scheduled a time to visit Ledgeview.

In correspondence dated October 15, 2008, the Department documented the results of an October 14, 2008, visit to Ledgeview. Enclosed with the letter was a WPDES permit application for Ledgeview to review and sign and a copy of an Animal Units Calculation Worksheet completed by the Department during the site visit. The letter requested Ledgeview sign the permit application and return it to the Department by October 22, 2008, and submit an Environmental Analysis Questionnaire by November 14, 2008. The letter also identified several areas of immediate concern with the farming operations at Ledgeview:

1) Manure from the outdoor lot area at the heifer farm is actively discharging into a waterway. A designed manure storage structure will be required to eliminate this discharge.
2) The outdoor lots at the main farm need increased management to sustain vegetation and prevent erosion/runoff that may be discharging into the waterway. Containment around outdoor concrete lane and feeding areas may be necessary to ensure manure does not discharge to groundwater or surface water.
3) Ledgeview needs to begin planning immediately for the design of its six-month manure storage facility that is required to be in place no later than January 1, 2010. Plans and specifications for any proposed manure storage (for the main farm as well as the heifer farm) will need to be submitted to the Department for review and approval prior to being constructed.

In a letter dated November 25, 2008, the Department notified Ledgeview that it had received Ledgeview's initial permit application forms on October 21, 2008, but that it had not received the Environmental Analysis Questionnaire as requested. The letter also informed Ledgeview of the specific items that were needed to complete Ledgeview's initial WPDES permit application and for the permit review process to begin. The remaining items were requested by January 16, 2009.

On December 19, 2008, Mr. Jason Pansier of Ledgeview contacted Department Agricultural Runoff Specialist Casey Jones to request animal units information be sent to NRCS. Mr. Pansier also stated that he would attempt to locate the Department's November 25, 2008, letter to see what items were still needed for the permit application. Ms. Jones noted that the application materials were requested to be submitted by mid-January 2009.

On February 5, 2009, the Department returned a phone call to Mr. Jason Pansier. Mr. Pansier indicated Ledgeview was working on getting the necessary permit information together.

To date, the Department has not received the required permit application materials from Ledgeview. Therefore, the Department alleges Ledgeview to be discharging wastewater without a WPDES permit in violation of s. 283.31(1), Wis. Stats.

Enforcement Conference

The Department is concerned about the unauthorized discharges at Ledgeview and the continued failure to respond to permit application requests. The Department has therefore scheduled an enforcement conference to discuss this matter. **The meeting will be held at 1:00 p.m. on Monday, March 9, 2009, at the Department of Natural Resources Northeast Region Headquarters located at 2984 Shawano Avenue in Green Bay.** A map showing the office location is enclosed for your use. Please contact me immediately if you need to reschedule the meeting to a more convenient time.

- Please be prepared to discuss the current status of Ledgeview's permit application and any progress made toward addressing the items described in the Department's October 15, 2008, correspondence. On several occasions we have suggested Ledgeview retain the services of a consulting service to assist with completing the permit application materials. We strongly encourage you to have your consultant attend this meeting.

Please be advised the Department is authorized to seek injunctive or other appropriate relief for violations of pollution discharge elimination laws, including forfeitures of no more than $10,000 per day of violation pursuant to s. 283.91(2), Wis. Stats. Any person who willfully or negligently violates laws relating to pollution discharge elimination may be fined not more than $25,000 per day of violation or imprisoned for not more than 6 months or both, pursuant to s. 283.91(3), Wis. Stats. Each day of violation is considered a separate offense. Additionally, s. 283.87, Wis. Stats., allows the Department to recover the cost of removing, terminating, or remedying the adverse effects upon the water/environment, including the cost of replacing fish or other wildlife destroyed by the discharge.

If you have any technical questions regarding your compliance responsibilities, please contact Department Agricultural Runoff Specialist Casey Jones at (920) 662- 5407. If you have questions concerning this letter or if you need to reschedule our meeting, please contact me at (920) 662-5444.

Sincerely,

Judy Polczynski

Judy Polczinski
Environmental Enforcement Specialist

Cc: C. Jones- NER/Green Bay
D. Helf – NER / Green Bay
M. Hoefer – LC/8
T. Bauman – WT/3
Bill Hafs – Brown Co. Land & Water Conservation Dept., 1150 Bellevue St., Green Bay, WI 54302

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Matthew J. Frank, Secretary
Ronald W. Kazmierczak, Regional Director

Northeast Region Headquarters
2984 Shawano Avenue
Green Bay, Wisconsin 54313-6727
Telephone 920-662-5100
FAX 920-662-5413
TTY Access via relay - 711

March 24, 2009

CT: 2009-NEEE-016

Ledgeview Farms, LLC
Mr. Jason Pansier
3875 Dickenson Road
DePere, WI 54115

Subject: **Enforcement Conference Summary**
Written Response Due March 27, 2009

Dear Mr. Pansier:

Thank you for meeting with us on March 19, 2009, to discuss alleged violations of Wisconsin's wastewater discharge permit requirements at Ledgeview Farms, LLC (Ledgeview) located at 3870 Dickinson Road, T23N-21E-R25E Sections 29, 32, & 33, Town of Ledgeview, Brown County, Wisconsin. An attendance roster is enclosed for your reference.

Meeting Agreement
By March 27, 2009, Ledgeview will submit in writing their intention for future operations at Ledgeview. Specifically, the response will state whether Ledgeview intends to continue operating with greater than 1,000 animal units or whether Ledgeview will change its operations to go below this State regulatory and permitting threshold.

If Ledgeview intends to remove animals from its operation so that a WPDES permit is no longer necessary from the Department, Ledgeview's response will state which animals will be removed to go below 1,000 animal units and by what date this will be completed.

If Ledgeview should determine it will continue operating at or above the 1,000 animal unit threshold, Ledgeview will indicate this in the response and proceed with the WPDES permitting process which includes submittal of previously specified application materials. It is understood that as part of the permitting process, a manure storage facility with six-month capacity will need to be constructed by January 1, 2010.

Meeting Summary
Judy Polczinski began the meeting with introductions and requested Jason Pansier of Ledgeview give a history of Ledgeview. Mr. Pansier stated that he is a partner of Ledgeview along with his father and uncle. The farm has been operating in the family since the early 1960's. Ledgeview operations take place on both owned and rented land in Brown and Manitowoc Counties. The animal operations are housed in Brown County. Mr. Pansier stated that future correspondence should be sent to his attention at the 3875 Dickenson Road address.

Dan Helf briefly reviewed the wastewater permitting rules for confined animal feeding operations (CAFO) and the ultimate goal of protecting ground and surface water.

Mr. Pansier stated that gutters have been installed on the calf barn last week and that the remaining gutters were to be installed this week or next. Mr. Pansier also said that Ledgeview would be constructing a concrete barrier to contain runoff from the heifer farm feedlot.

Mr. Pansier then stated that Ledgeview did not have the financial resources to construct the required manure storage facility this year with the current milk pricing. He was told by Manitowoc County NRCS that there is no cost-sharing available for Ledgeview due to ongoing violations with tile lines installed in a wetland. Mr. Pansier said that he was also told by NRCS that Ledgeview could correct the violation by removing the tile lines.

Casey Jones, Brent Petersen, and Jon Bechle described for Mr. Pansier that an engineer would need to develop the plans and specifications for a manure storage facility and that the engineer would also verify the facility is constructed as designed and provide the necessary documentation to both the Department and the Brown County Land Conservation Department (LCD).

Ms. Jones explained that once Ledgeview has its permit, it can expand its operations (within certain limits) under the then-current permit. However, Ledgeview would need to ensure that it has six months of manure storage capacity for the number of animals at any given time.

Mr. Helf stated that permitted farming operations over 1,000 animal units are not allowed to land apply liquid manure or process wastewater during the months of February and March or at any time there is frozen or snow-covered ground.

Mr. Bechle informed Mr. Pansier that there are multiple offices that Ledgeview will need to work with; at the county level there is both the Brown County LCD and the Manitowoc County LCD and at the federal level, both the Brown County NRCS and Manitowoc County NRCS offices. In addition, if Ledgeview operates with 1,000 or more animal units it will be subject to regulation by the Department at the state level. Mr. Bechle only provided information on the activities for which Brown County LCD has authority.

If Ledgeview should decide to operate with less than 1,000 animal units, it will no longer need a WPDES permit from the Department. However, even if Ledgeview goes below this threshold, Brown County LCD will still regulate operations at or above 500 animal units. Mr. Bechle stated that any work done in the yard that effects manure or its runoff, such as gutter installation or feedlot construction, will require a permit by Brown County LCD. The County permit is required prior to any construction activities. Should Ledgeview install any practices without the required County permit and approvals, the activities would be considered a violation and would require after-the-fact permitting by the County. In addition, any unauthorized activities may be subject to a monetary penalty from the County.

Mr. Pansier was provided a copy of the NRCS Ch. 313 – Waste Storage Facility specifications and a copy of the Brown County Animal Waste Management Ordinance. Mr. Pansier stated that he was already given a copy of a listing of agricultural consulting firms. A copy of the Animal Unit Calculation worksheet is enclosed with this letter.

Ms. Jones stated the Department is not requiring Ledgeview to remove animals from its operations, that this is a business decision by Ledgeview. Regardless of Ledgeview's decision to get a permit or go below the permitting threshold, Ledgeview will need to work with Brown County LCD to address the

current runoff issues at the heifer farm outdoor lot area. The Main Farm outdoor lot area also needs attention.

Mr. Pansier stated that Ledgeview would get rid of animals to go below the 1,000 animal unit threshold. Ms. Polczinski encouraged Mr. Pansier to discuss today's meeting with his partners and then provide Ledgeview's intentions in writing.

If you have any technical questions regarding your compliance responsibilities with state requirements, please contact Department Agricultural Runoff Specialist Casey Jones at (920) 662- 5407. For any questions regarding your compliance responsibilities with the Brown County ordinance, please contact either Mr. Bechle (920-391-4620) or Mr. Petersen (920-391-4643).

We look forward to receiving your response by March 27, 2009.

Sincerely,

Judy Polczinski
Environmental Enforcement Specialist

Enclosure – Attendance roster, Animal Unit Calculation Worksheet
Cc: C. Jones- NER/Green Bay
D. Helf – NER / Green Bay
M. Hoefer – LC/8
J. Bechle – Brown Co. Land Conservation Dept., 1150 Bellevue St., Green Bay, WI 54302
B. Petersen - Brown Co. Land Conservation Dept., 1150 Bellevue St., Green Bay, WI 54302

ENFORCEMENT CONFERENCE ATTENDANCE

Ledgeview Farms, LLC
10:30 a.m., Thursday, March 19, 2009
DNR Northeast Region Headquarters

Name	Title/Representing	Phone Number
Judy Olejniczak	Enforcement Specialist / DNR	920-662-5444
Casey Jones	DNR	920-662-5407
Julie Pusin	Ledgeview Farms	920-655-13??
Jon Bechle	Brown Co. Land & Water	920-391-4638
Brent Peterse	Brown Co. LCD	920-391-4643
Dan Helf	DNR	920 662-5141

March 26, 2009

To Whom It May Concern:

We will need to rid of twenty steers and ten cows per month, to satisfied your request by December 20. We will also need to rid our three part-time employees and two full-time employees, for we cannot afford, to make a living on a family farm.

Sedgeview Farms

State of Wisconsin Department of Natural Resources

ANIMAL UNITS CALCULATION WORKSHEET
INSTRUCTIONS Form 3400-25A Rev. 04/07

This worksheet must be submitted regardless of whether a permit is required.

Notice: Use this worksheet to calculate the number of animal units on your operation, both at the current time and after any proposed expansions planned within the next five years. You are required to complete these calculations to determine if you must apply for a Wisconsin Pollutant Discharge Elimination System (WPDES) permit under NR 243, Wis. Admin. Code. A WPDES permit is required for all livestock/poultry operations that will contain 1,000 or more animal units.

- If you do expect your operation to reach or exceed 1,000 animal units, a permit is required and you must complete and submit an initial Livestock/Poultry Operation WPDES Permit Application consisting of Form 3400-25 at least 12 months prior to reaching the 1,000 animal unit threshold. In addition, you will need to submit other WPDES application materials as part of a complete final permit application at least 6 months prior to reaching the 1,000 animal unit threshold. Please contact your regional DNR contact for more information on what is required as part of a final permit application.

- If you do not expect to reach or exceed 1,000 animal units, a WPDES permit is not required. However, if you have received an Animal Unit Verification Report (Form 3400-181), return it along with this worksheet to your regional DNR contact.

Completing AU worksheet using Microsoft Excel or Word:

1. To begin calculations using Microsoft Excel or Word, double-click on table below. If completing this form by hand see directions below.
   a. For existing operations, enter the current number of each animal type on your operation in the **Current Number** column. Count the highest number of animals on-site at any time during the past year, and include all animals that are part of your operation that are at adjacent locations or under common management.
   b. If you plan to expand within the next five years, also enter your proposed animal numbers in the **Projected Number** column on Page 2.
   c. For brand new operations where there currently aren't any animals present, enter 0 for Total Mixed and Non-Mixed Animal Units on Page 1. On Page 2 enter your proposed animal numbers in the **Projected Number** columns.
   d. Note: For some animal types (for example, dairy cattle and swine), animal categories are combined as part of non-mixed AU calculations.
2. The worksheet will automatically calculate the number of Mixed and Non-Mixed Animal Units (AU) on the operation. If either "Total Animal Units" is 1000 or more, you are required to obtain a WPDES permit.
3. Enter the dates of all proposed expansions, if applicable, within the next five years on Page 2.
4. To quit editing click anywhere outside of the table within the document.

Completing AU worksheet by hand:

1. Print out both pages of this document
   a. For existing operations, enter the current number of each animal type on your operation in the **Current Number** columns. Count the highest number of animals on-site at any time during the past year, and include all animals that are part of your operation that are at adjacent locations or under common management.
   b. If you plan to expand within the next five years, also enter your proposed animal numbers in the **Projected Number** columns on Page 2.
   c. For brand new operations where there currently aren't any animals present, enter 0 for Total Mixed and Non-Mixed Animal Units on Page 1. On Page 2 enter your proposed animal numbers in the **Projected Number** columns.
   d. Note: For some animal types (for example, dairy cattle and swine), animal categories are combined as part of non-mixed AU calculations.
2. Multiply the number entered in columns in the projected number by the appropriate equivalency factor to determine the equivalent number of animal units for each animal type.
3. Add all values in column d together. This equals the Total Mixed Animal Units. For column g, enter the equivalent animal unit number from the row with the highest animal unit number in Total Non-mixed AU.
4. If either "Total Animal Units" is 1000 animal units or more, you are required to obtain a WPDES permit
5. Enter the dates of all proposed expansions, if applicable, within the next five years on Page 2.

Animal Unit Calculations: Current Number of AUs on Operation

Animal Type		I. Mixed Animal Units			II. Non-mixed Animal Units		
		b. Equiv. factor	c. Current Number	d. No. of AUs	e. Equiv. factor	f. Current Number	g. No. of Aus
Example - Broilers (non-liquid manure)		*0.005 x*	*150,000*	*= 750*	*0.008 x*	*150,000*	*= 1200*
Dairy/Beef Calves (under 400 lbs)		0.20 x	500	= 100	*Fed numbers in this column comply with 40 CFR s. 122.23*		
Dairy Cattle	Milking & Dry Cows	1.40 x	350	= 490	1.43 x		=
	Heifers (800 lbs to 1200 lbs)	1.10 x	120	= 132			
	Heifers (400 lbs to 800 lbs)	0.60 x	90	= 54	1.00 x		=
Beef	Steers or Cows (400 lbs to market)	1.00 x	200	= 200			
	Bulls (each)	1.40 x	3	= 4	1.00 x		=
Veal Calves		0.50 x		=	1.00 x		=
Swine	Pigs (up to 55 lbs)	0.10 x		=	0.10 x		=
	Pigs (55 lbs to market)	0.40 x		=			
	Sows (each)	0.40 x		=			
	Boars (each)	0.50 x		=	0.40 x		=
Chickens	Layers (each) -non-liquid manure system	0.01 x		=	0.0123 x		=
	Broilers/Pullets (each) -non-liquid manure system	0.005 x		=	0.008 x		=
	Per Bird -liquid manure system	0.033 x		=	0.0333 x		=
Ducks	Ducks (each) -liquid manure system	0.2 x		=	0.2 x		=
	Ducks (each) -non-liquid manure system	0.01 x		=	0.0333 x		=
Turkeys (each)		0.018 x		=	0.018 x		=
Sheep (each)		0.1 x		=	0.1 x		=
Horses (each)		2 x		=	2 x		=

Total Animal Units:

Total Mixed Animal Units = (add all rows above)	Total Non-Mixed Animal Units = (Enter the single highest number from any row above; DO NOT add the totals)
490	

Does operation need a WPDES permit? _____

Ledgeview Farms
3875 Dickinson Road
De Pere, WI 54115

September 30, 2009

OCT 09 2009

Ledgeview Farms Update:

Facility Below:
Retaining wall combined with the pit.

Facility Above:
No cattle behind cow yard.
Grass planted.

August

Animal Unit Calculations: Current Number of AUs on Operation

Animal Type		I. Mixed Animal Units			II. Non-mixed Animal Units		
		b. Equiv. factor	c. Current Number	d. No. of AUs	e. Equiv. factor	f. Current Number	g. No. of Aus
Example- Broilers (non-liquid manure)		*0.005 x*	*150,000*	*= 750*	*0.008 x*	*150,000*	*= 1200*
Dairy/Beef Calves (under 400 lbs)		0.20 x	400	= 80	*Fed numbers in this column comply with 40 CFR s. 122.23*		
Dairy Cattle	Milking & Dry Cows	1.40 x	320	= 448	1.43 x		=
	Heifers (800 lbs to 1200 lbs)	1.10 x	118	= 130			
	Heifers (400 lbs to 800 lbs)	0.60 x	94	= 57	1.00 x		=
Beef	Steers or Cows (400 lbs to market)	1.00 x	198	= 198			
	Bulls (each)	1.40 x	4	= 5.6	1.00 x		=
Veal Calves		0.50 x		=	1.00 x		=
Swine	Pigs (up to 55 lbs)	0.10 x		=	0.10 x		=
	Pigs (55 lbs to market)	0.40 x		=			
	Sows (each)	0.40 x		=			
	Boars (each)	0.50 x		=	0.40 x		=
Chickens	Layers (each) -non-liquid manure system	0.01 x		=	0.0123 x		=
	Broilers/Pullets (each) -non-liquid manure system	0.005 x		=	0.008 x		=
	Per Bird -liquid manure system	0.033 x		=	0.0333 x		=
Ducks	Ducks (each) -liquid manure system	0.2 x		=	0.2 x		=
	Ducks (each) -non-liquid manure system	0.01 x		=	0.0333 x		=
Turkeys (each)		0.018 x		=	0.018 x		=
Sheep (each)		0.1 x		=	0.1 x		=
Horses (each)		2 x		=	2 x		=

Total Animal Units:

Total Mixed Animal Units = (add all rows above)	Total Non-Mixed Animal Units = (Enter the single highest number from any row above; DO NOT add the totals)
919	

Does operation need a WPDES permit? _____

Setembir

Animal Unit Calculations: Projected Number of AUs on Operation

Animal Type		I. Mixed Animal Units			II. Non-mixed Animal Units		
		b. Equiv. factor	c. Current Number	d. No. of AUs	e. Equiv. factor	f. Current Number	g. No. of Aus
Example - Broilers (non-liquid manure)		*0.005 x*	*150,000*	*= 750*	*0.008 x*	*150,000*	*= 1200*
	Dairy/Beef Calves (under 400 lbs)	0.20 x	440	= 88	Fed numbers in this column comply with 40 CFR § 122.23		
Dairy Cattle	Milking & Dry Cows	1.40 x	318	= 446	1.43 x		=
Dairy Cattle	Heifers (800 lbs to 1200 lbs)	1.10 x	120	= 132			
Dairy Cattle	Heifers (400 lbs to 800 lbs)	0.60 x	99	= 60	1.00 x		=
Beef	Steers or Cows (400 lbs to market)	1.00 x	205	= 205			
Beef	Bulls (each)	1.40 x	2	= 3	1.00 x		=
	Veal Calves	0.50 x		=	1.00 x		=
Swine	Pigs (up to 55 lbs)	0.10 x		=	0.10 x		=
Swine	Pigs (55 lbs to market)	0.40 x		=			
Swine	Sows (each)	0.40 x		=			
Swine	Boars (each)	0.50 x		=	0.40 x		=
Chickens	Layers (each) -non-liquid manure system	0.01 x		=	0.0123 x		=
Chickens	Broilers/Pullets (each) -non-liquid manure system	0.005 x		=	0.008 x		=
Chickens	Per Bird -liquid manure system	0.033 x		=	0.0333 x		=
Ducks	Ducks (each) -liquid manure system	0.2 x		=	0.2 x		=
Ducks	Ducks (each) -non-liquid manure system	0.01 x		=	0.0333 x		=
	Turkeys (each)	0.018 x		=	0.018 x		=
	Sheep (each)	0.1 x		=	0.1 x		=
	Horses (each)	2 x		=	2 x		=
Total Animal Units:			**Total Mixed Animal Units =** (add all rows above) 934			**Total Non-Mixed Animal Units =** (Enter the single highest number from any row above; DO NOT add the totals)	

Does operation need a WPDES permit? _____

Dates of Proposed Expansions (within the next 5 years) **MM/YY** 1_____ 2_____ 3_____

2002

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Matthew J. Frank, Secretary
Ronald W. Kazmierczak, Regional Director

Northeast Region Headquarters
2984 Shawano Avenue
Green Bay, Wisconsin 54313-6727
Telephone 920-662-5100
FAX 920-662-5413
TTY Access via relay - 711

October 1, 2009

CT: 2009-NEEE-016

Ledgeview Farms, LLC
Mr. Jason Pansier
3875 Dickenson Road
DePere, WI 54115

Subject: **Written Response Deadline - October 15, 2009**

Dear Mr. Pansier:

This purpose of this letter is to request certain specific information from you regarding the status of run-off controls, manure storage, and the number of animal units (AUs) at Ledgeview Farms, LLC (Ledgeview). Please submit a written response no later than **October 15, 2009** that contains the following:

1. Animal Unit Calculation Worksheet. In response to your decision to operate Ledgeview below the WPDES permitting threshold of less than 1,000 AU, the Department has requested monthly status reports to show Ledgeview is continuously operating below that level. We received an AU worksheet from Ledgeview on June 25, 2009, and have not received further information. You should complete the enclosed AU worksheet for the current number of animals at Ledgeview and return it by October 15, 2009. The AU calculation worksheet form is available at the Department's web site at http://dnr.wi.gov/runoff/pdf/ag/cafo/form340025a.pdf.

As per my June 18, 2009 correspondence, monthly status reports will need to be submitted on the 15th of each subsequent month until such time when Ledgeview has documented it is *continuously* operating below 1,000 AUs and Ledgeview has received notice from the Department that it may discontinue the monthly reporting.

I caution you to be as accurate as possible when completing the AU calculation worksheet since your permit status is dependent on this information. Failure to provide accurate information may subject you to penalties pursuant to s. 283.91(4), Wis. Stats.

2. Plans and Specifications for Runoff Controls. Your June 24, 2009, letter indicates Ledgeview is working with the Brown County Land Conservation Department on plans for runoff issues at both Ledgeview's Main Farm and the Heifer Farm. Your written response due by October 15, 2009, should also include a description of the current status of these plans.

3. Manure Storage. Ledgeview has been working with Brown County LCD to determine options for manure storage at Ledgeview. Your written response due October 15, 2009, should also describe the current status of this effort.

Please contact Department Agricultural Runoff Specialist Casey Jones at (920) 662- 5407 if you have any technical questions regarding your compliance responsibilities with state requirements. For any questions regarding your compliance responsibilities with the Brown County ordinance, please contact either Jon Bechle (920-391-4638) or Brent Petersen (920-391-4643). Please contact me at (920) 662-5444 if you have questions about this letter.

Sincerely,

Judy Polczinski
Environmental Enforcement Specialist

Cc: C. Jones - NER/Green Bay
J. Bechle – Brown Co. Land Conservation Dept., 1150 Bellevue St., Green Bay, WI 54302
B. Petersen - Brown Co. Land Conservation Dept., 1150 Bellevue St., Green Bay, WI 54302

CASE ACTIVITY REPORT
Form 4100-182 9-99

State of Wisconsin
Department of Natural Resources
Environmental Enforcement

Case Number	Case Title
2009-NEEE-016	Ledgeview Farms, LLC

Activity	Date of Activity
Telephone Contact – Jason Pansier	November 11, 2009

Narrative

At 10:25 a.m. on Wednesday, November 11, 2009, EE Specialist Judy Polczinski called Jason Pansier of Ledgeview Farms, LLC on his mobile telephone (920)655-1344. The purpose of the call was to clarify the information Pansier submitted on November 5, 2009.

Polczinski asked what "Livestock Inc." meant on the listing of animals sold. Pansier said that is the farmer's association that the cows are sold through. Polczinski said that the name doesn't show up in the state's records of incorporated businesses. Pansier said that's what it says on their cards and paperwork.

When asked about distinguishing between steers and cows, Pansier stated that whenever less than 30 or 35 are sold it's always cows and that includes the single animal sales. Pansier recalled that 150-180 total cows were sold during the past year. They sold cows when the prices were as good as they could get and then sold steers to get and stay below the 1,000 Animal Units (AUs). Whenever lots of animals (70+) are sold at a time, that is always steers.

Pansier stated that Ledgeview is working with Dave at the County to take care of all the issues that are needed to get a DNR permit because then Ledgeview can work on one thing at a time instead of submitting a permit application and "having to fix 15 things at once". Then when Ledgeview wanted to get a permit and go over the 1,000 AUs they'd just have the paperwork to deal with. Dave told Pansier that he (County) could get everything done to meet DNR codes.

Polczinski told Pansier that we need to ensure the discharge issues have been addressed and asked for photos of the controls in place at the Main Farm outdoor feedlot and at the Heifer Farm. Pansier said that the Heifer Farm controls were all done and working. Pansier also stated that the channel at the Main Farm had been repaired by filling and that the fencing had been removed from that area so no animals are there. Pansier said he would take photos as requested. Polczinski asked that the photos be submitted with the next monthly report due on December 15th and Pansier agreed provided Polczinski would put it in a letter since Pansier was out cutting corn and didn't take notes during the call.

Pansier asked if we wanted the animals sold with the next report and Polczinski replied affirmatively and then described the contents for the final report due on January 10, 2010 (a summary of animals sold since September 2008, a final AU worksheet, and status of any remaining runoff issues.)

Cc: C. Jones

Enforcement Specialist Reporting	Date of Report	Exhibit Reference
Judy Polczinski	November 11, 2009	

October

Animal Unit Calculations: Current Number of AUs on Operation								
Animal Type		I. Mixed Animal Units			II. Non-mixed Animal Units			
		b. Equiv. factor	c. Current Number	d. No. of AUs	e. Equiv. factor	f. Current Number	g. No. of Aus
Example - Broilers (non-liquid manure)		0.005 x	150,000	= 750	0.008 x	150,000	= 1200
Dairy/Beef Calves (under 400 lbs)		0.20 x	390	= 78	Fed numbers in this column comply with 40 CFR § 122.23		
Dairy Cattle	Milking & Dry Cows	1.40 x	320	= 448	1.43 x		=
	Heifers (800 lbs to 1200 lbs)	1.10 x	110	= 121			
	Heifers (400 lbs to 800 lbs)	0.60 x	132	= 80	1.00 x		=
Beef	Steers or Cows (400 lbs to market)	1.00 x	208	= 208			
	Bulls (each)	1.40 x	7	= 10	1.00 x		=
Veal Calves		0.50 x		=	1.00 x		=
Swine	Pigs (up to 55 lbs)	0.10 x		=	0.10 x		=
	Pigs (55 lbs to market)	0.40 x		=			
	Sows (each)	0.40 x		=			
	Boars (each)	0.50 x		=	0.40 x		=
Chickens	Layers (each) -non-liquid manure system	0.01 x		=	0.0123 x		=
	Broilers/Pullets (each) -non-liquid manure system	0.005 x		=	0.008 x		=
	Per Bird -liquid manure system	0.033 x		=	0.0333 x		=
Ducks	Ducks (each) -liquid manure system	0.2 x		=	0.2 x		=
	Ducks (each) -non-liquid manure system	0.01 x		=	0.0333 x		=
Turkeys (each)		0.018 x		=	0.018 x		=
Sheep (each)		0.1 x		=	0.1 x		=
Horses (each)		2 x		=	2 x		=
			Total Mixed Animal Units = (add all rows above) 945			Total Non-Mixed Animal Units = (Enter the single highest number from any row above; DO NOT add the totals)		

Total Animal Units:

Does operation need a WPDES permit? _____

Livestock Inc.

Date:	Tag:	Live	Number	
09/02/2008	725	1405	1	651342
09/03/2008	723	1685	3	651363
	751	1165		
	753	1610		
09/04/2008	127	1210	2	651079
	141	1250		
09/08/2008	501	1390	1	668216
09/11/2008	201	1510	72	651146
	202	1605		651137
	203	1480		
	204	1395		
	205	1545		
	206	1500		
	207	1330		
	208	1575		
	209	1405		
	210	1390		
	211	1420		
	212	1615		
	213	1855		
	214	1415		
	215	1500		
	216	1530		
	217	1435		
	218	1520		
	219	1585		
	220	1400		
	221	1495		
	222	1300		
	223	1500		
	224	1780		
	225	1425		
	226	1500		
	227	1475		
	228	1540		
	229	1540		
	230	1550		
	231	1210		
	232	1490		
	233	1260		
	234	1660		
	235	1310		
	236	1605		

	237	1425		
	238	1535		
	239	1445		
	240	1650		
	241	1435		
	242	1610		
	243	1475		
	244	1505		
	245	1385		
	246	1590		
	247	1370		
	248	1450		
	249	1630		
	250	1460		
	251	1550		
	252	1520		
	253	1440		
	254	1485		
	255	1505		
	256	1635		
	257	1470		
	258	1620		
	259	1470		
	260	1490		
	261	1510		
	262	1620		
	263	1290		
	264	1490		
	265	1375		
	266	1570		
	267	1470		
	268	1610		
	269	1405		
	270	1420		
	713	1855		
	715	1670		
09/25/2008	513	1595	2	651293
	515	1295		
09/29/2009	865	1925	2	668413
	867	1820		
09/29/2008	869	1045	1	668398
10/06/2008	586	1560	31	668485
	588	1515		
	601	1575		
	602	1325		
	603	1320		

	604	1480		
	605	1345		
	606	1585		
	607	1510		
	608	1690		
	609	1405		
	610	1210		
	611	1345		
	612	1420		
	613	1325		
	614	1535		
	615	1495		
	616	1460		
	617	1685		
	618	1370		
	619	1595		
	620	1320		
	621	1480		
	622	1590		
	623	1360		
	624	1495		
	625	1280		
	626	1485		
	594	1430		
	582	1300		
	584	1170		
10/06/2008	590	1635	2	668463
	592	1660		
10/13/2008	895	1680	4	668535
	892	940		
	894	990		
	893	1085		
11/13/08	147	1020	1	668864
11/17/08	360	1155	1	668903
11/30/2008	040	1265	24	668768
	041	1535		
	042	1595		
	043	1320		
	044	1465		
	045	1435		
	046	1505		
	047	1515		
	048	1425		
	049	1495		
	050	1390		
	051	1350		

	052	1180		
	053	1420		
	054	1525		
	055	1465		
	056	1275		
	057	1295		
	058	1260		
	059	1295		
	034	1595		
	035	1745		
	032	1080		
	033	1490		
12/08/2008	198	1665	2	671528
	199	1595		
12/08/2008	246	1615	23	671542
	247	1710		
	901	1355		
	902	1315		
	903	1295		
	904	1325		
	905	1270		
	906	1320		
	907	1550		
	908	1340		
	909	1220		
	910	1325		
	911	1455		
	912	1480		
	913	1370		
	914	1410		
	915	1455		
	916	1540		
	917	1490		
	918	1360		
	919	1425		
	920	1400		
	197	1095		
12/15/2008	321	1480	4	671600
	322	1490		
	323	1615		
	324	1500		
12/17/2008	942	1290	2	671625
	943	1060		
12/22/2008	656	1625	1	669940
12/23/2008	657	1475	2	671651
	655	1520		

12/29/2008	262	1185	5	671684
	263	1245		
	264	1430		
	265	1325		
	266	1250		
12/30/2008	257	1735	5	671701
	258	1685		
	259	1835		
	260	1570		
	261	1425		
01/05/2009	037	1700	2	671806
	039	1760		
01/06/2009	040	1400	20	671779
	041	1395		
	042	1385		
	043	1410		
	044	1455		
	051	1475		
	052	1395		
	053	1265		
	054	1490		
	055	1225		
	059	1285		
	060	1340		
	061	1420		
	062	1500		
	063	1250		
	064	1475		
	065	1220		
	066	1400		
	067	1325		
	068	1425		
01/19/2009	351	1010	3	671852
	352	1400		
	353	1255		
1/20/2009	354	1435	1	671872
02/16/2009	598	690	5	672084
	594	1775		
	597	1780		
	596	2000		
	595	1655		
02/23/2009	201	1340	28	672130
	202	1335		
	203	1515		
	204	1500		
	205	1460		

	206	1340		
	207	1345		
	208	1365		
	210	1250		
	211	1360		
	212	1340		
	214	1415		
	215	1400		
	216	1330		
	217	1440		
	218	1455		
	219	1575		
	220	1475		
	221	1495		
	222	1445		
	223	1475		
	224	1430		
	225	1495		
	898	1255		
	900	1200		
	899	1780		
03/14/2009	304	1585	2	677577
	305	1650		
03/16/2009	301	1195	18	677550
	302	1645		
	303	1125		
	401	1295		
	402	1375		
	403	1360		
	404	1375		
	405	1565		
	406	1360		
	407	1435		
	408	1520		
	409	1680		
	410	1655		
	411	1340		
	412	1395		
	413	1515		
	414	1525		
	415	1435		
03/23/2009	330	1550	5	677677
	331	1575		
	332	1715		
	333	1640		
	334	1555		

03/30/2009	101	1480	25	677761
	102	1510		
	103	1335		
	104	1500		
	105	1610		
	106	1530		
	107	1560		
	108	1515		
	109	1345		
	110	1400		
	111	1530		
	112	1325		
	113	1395		
	114	1480		
	115	1490		
	116	1500		
	117	1450		
	118	1475		
	119	1405		
	120	1580		
	121	1485		
	122	1360		
	123	1505		
	124	1555		
	125	1410		
04/06/2009	147	1315	1	677812
04/07/2009	145	1690	1	677832
04/10/2009	147	1015	1	678195
04/11/2009	146	1775	1	678187
		1355	70	678196
		65645		
		33120		
		2980		
04/13/2009	511	875	26	677890
	514	1615		
	515	1330		
	516	1375		
	517	1445		
	518	1535		
	519	1395		
	520	1445		
	521	1440		
	522	1325		
	523	1355		
	524	1445		
	525	1250		

	526	1575		
	527	1595		
	528	1515		
	529	1450		
	530	1480		
	531	1385		
	532	1330		
	533	1605		
	534	1445		
	535	1575		
	536	1285		
	537	1490		
	538	1495		
04/14/2009	508	1905	2	677918
	509	1995		
04/15/2009	510	1810	1	677914
04/20/2009	401	1020	2	677980
	402	1025		
04/21/2009	446	1970	1	678046
04/27/2009	447	1750	4	678043
	448	1540		
	449	1300		
	450	1620		
5/27/2009	729	1035	2	681936
	730	1200		
06/01/2009	744	1975	2	681982
	745	1035		
06/02/2009	746	1615	1	681984
06/09/2009	507	1450	1	682063
06/15/2009	529	1645	2	682153
	530	1710		
06/18/2009	565	1575	1	682356
06/19/2009	566	1465	1	682355
06/25/2009	613	1420	2	682186
	614	1385		
07/06/2009	683	1620	1	682270
07/07/2009	684	1770	1	682267
07/08/2009	685	1070	1	682296
07/20/2009	809	1260	1	682483
07/23/2009	845	1035	1	682523
07/24/2009	846	1870	1	682538
07/27/2009	847	1925	1	682576
07/27/2009	848	1030	1	682582
07/29/2009	672	1130	1	687824
	807	1900	1	682505

08/03/2009	698	1730	2	687866
	699	1650		
08/17/2009	435	1395	34	687994
	436	1320		
	437	1590		
	438	1600		
	439	1550		
	440	1675		
	441	1535		
	442	1500		
	443	1590		
	444	1375		
	445	1475		
	446	1525		
	447	1340		
	448	1285		
	449	1590		
	450	1470		
	451	1690		
	452	1445		
	453	1420		
	454	1530		
	455	1350		
	456	1435		
	457	1560		
	458	1485		
	459	1335		
	460	1330		
	461	1380		
	462	1490		
	463	1520		
	464	1540		
	465	1295		
	466	1440		
	467	1675		
	468	1635		
08/17/2009	401	1365	34	687985
	402	1480		
	403	1330		
	404	1380		
	405	1390		
	406	1365		
	407	1495		
	408	1305		
	409	1530		
	410	1265		

	411	1460		
	412	1330		
	413	1480		
	414	1390		
	415	1350		
	416	1580		
	417	1465		
	418	1525		
	419	1320		
	420	1280		
	421	1600		
	422	1165		
	423	1500		
	424	1545		
	425	1560		
	426	1165		
	427	1380		
	428	1590		
	429	1550		
	430	1175		
	431	1505		
	432	1465		
	433	1375		
	434	1420		
08/17/2009	469	1680	35	687995
	470	1370		
	471	1410		
	472	1415		
	473	1545		
	474	1395		
	475	1370		
	476	1435		
	477	1215		
	478	1435		
	479	1515		
	480	1370		
	481	1410		
	482	1570		
	483	1230		
	484	1580		
	485	1625		
	486	1505		
	487	1295		
	488	1570		
	489	1520		
	490	1345		

	491	1320		
	492	1365		
	493	1455		
	494	1345		
	495	1260		
	496	1470		
	497	1410		
	498	1495		
	499	1510		
	500	1440		
	501	1770		
	502	1460		
	503	1330		
08/17/2009	001	1520	41	700617
	002	1565		
	003	1430		
	004	1505		
	005	1400		
	006	1515		
	007	1295		
	008	1525		
	009	1340		
	010	1365		
	011	1305		
	012	1460		
	013	1340		
	014	1395		
	015	1630		
	016	1540		
	017	1410		
	018	1435		
	019	1470		
	020	1500		
	021	1435		
	022	1400		
	023	1400		
	024	1430		
	025	1325		
	026	1420		
	027	1440		
	028	1420		
	029	1500		
	030	1385		
	031	1455		
	032	1450		
	033	1460		

	034	1420		
	035	1530		
	036	1250		
	037	1485		
	038	1360		
	039	1365		
	040	1440		
	041	1010		
08/18/2009	2041	1910	1	687972
08/19/2009	203	1915	1	687975
08/19/2009	202	1130	1	687989
08/19/2009	852	1175	7	688568
	853	785		
	697	1665		
	698	1595		
	690	1740		
	700	1285		
	851	1935		
08/26/2009	243	1275	1	688108
09/10/2009	855	1415	1	688219
09/24/2009	094	1110	1	688374
09/25/2009	093	1325	1	688378
09/29/2009	364	905	1	688433
09/29/2009	363	1605	1	688430
09/14/2009	865	1280	1	688265
09/14/2009	864	1780	1	688271
09/15/2009	866	1025	1	688304
09/10/2009	854	1330	1	688215

State of Wisconsin
Department of Natural Resources

Animal Numbers Verification Form

Notice: Complete and submit this form to the DNR to document whether or not you are required obtain a WPDES permit under Ch. NR 243, Wis. Adm. Code. This form is not an application for a WPDES permit. Personally identifiable information collected will be used for program administration. The Department may also provide this information to requesters under Wisconsin's public records law [ss. 19.31-19.39, Wis. Stats.]

1. LEGAL NAME OF "MAIN" OPERATION & CONTACT INFORMATION

Legal Name of Operation: LEDGEVIEW FARMS

Name of Owner or Operator: JASON PANSIER

Phone Number(s): 920 336-7919

Mailing Address – Street, Route or Box: 3870 DICKINSON DE PERE

City/Town, State, Zip Code: WI 54115

2. OTHER SITES

	Name of Farm/Operation	Physical Location Address	County
1.	Main Farm	3870 Dickinson Rd	
2.	3688	Lime Kiln Rd	
3.			
4.			
5.			

Current Animal Numbers

Animal Type	Main	Site 1	Site 2	Site 3	Site 4	Site 5
Milking & Dry Cows		328				
Heifers (800 – 1200 lbs)			112			
Heifers (400 – 800 lbs)			78			
Steers (400lbs to market)			~~200~~ 104			
Bulls						
Calves (less than 400 lbs)		234				
Other:						

EXHIBIT tabbies M

$(328 \times 1.4) + (112 \times 1.1) + (78 \times 0.6) + 104 + (234 \times 0.2)$

$459.2 + 123.2 + 46.8 + 104 + 46.8 = 780$ AU

2019

Does the operation identified in the previous tables have any plans of expansion in the next 2-3 years (circle one)? **Yes** (No) we just want too stop my runoff and keep cows inside

If you circled yes, please fill out the table below to the expected number of animals at each site.

Projected Animal Numbers

Animal Type	Main	Site 1	Site 2	Site 3	Site 4	Site 5
Milking & Dry Cows						
Heifers (800 – 1200 lbs)						
Heifers (400 – 800 lbs)						
Steers (400lbs to market)						
Bulls						
Calves (less than 400 lbs)						
Other:						

I certify that I am familiar with the information contained in the previous tables and that to the best of my knowledge and belief such information is true, complete and accurate. This application must be signed by an individual who is either an owner of the operation identified above or a corporate officer if the operation is incorporated.	
Printed Name of Official Representative Jason Pensiv	Title owner
Signature of Official Representative [signature]	Date Application Signed 1-25-13

Jones, Casey L - DNR

From: Bauman, Thomas S - DNR
Sent: Friday, March 14, 2014 4:16 PM
To: Jones, Casey L - DNR
Subject: FW: Ledgeview Farms Annual Report
Attachments: Ledgeview Farms 2013 Annual Report.pdf

FYI

Tom Bauman
Agricultural Runoff Program
Wisconsin Department of Natural Resources
(☎) phone: (608) 266-9993
(☎) fax: (608) 267-2800
(✉) e-mail: Thomas.Bauman@wisconsin.gov

Quality Customer Service is Important to Us. Tell Us How We Are Doing.
Water Division Customer Service Survey
https://www.surveymonkey.com/s/WDNRWater

From: Kevin Beckard [mailto:kbeckard@agsource.com]
Sent: Friday, March 14, 2014 3:55 PM
To: (schwer.don@epa.gov)
Cc: Wetenkamp_DL; Bauman, Thomas S - DNR
Subject: Ledgeview Farms Annual Report

Good Afternoon Don,
Attached you will find the 2013 annual report for Ledgeview Farms, LLC as required by paragraph 69 of their Administrative Order Docket No. V-W-13-AO-22. The report contains the required information from items a through g in paragraph 69 of the order. I went over this information with Jason Pansier today. I will also be sending you a hard copy in the mail. If you have any questions or need further information feel free to contact me.

Thank You,
Kevin

Kevin Beckard
NMP/GPS Specialist
AgSource Laboratories
920-309-1948

2021

2013 Annual Report

Ledgeview Farms, LLC

Introduction

Ledgeview Farms, LLC is a dairy and cropping enterprise located in the Town of Ledgeview in Brown County Wisconsin. The business is owned and managed by Glen, Jason and Roy Pansier.

This report is being prepared in accordance with paragraph 69 of the Ledgeview Farms Administrative Order (Docket No. V-W-13-AO-22) they received from EPA in 2013. Paragraph 69 of the Administrative Order states:

Annual Reports: Respondent shall submit an annual report to EPA and WDNR not later than March 15 of each calendar year following the effective date of this Order. In each annual report, Respondent shall include the following information for the previous calendar year prior to submittal of that annual report:

A. The maximum number and type of animals confined, whether in open confinement or housed under roof:

Animal Numbers for 2013		
Livestock Type and Size Class	**Animal Numbers**	**Housing Type**
Calves (Dairy/Beef) up to 400#	375	Housed under Roof
Heifers – 400# to 800#	130	Housed under Roof/Open Confinement
Heifers – 800# to 1200#	200	Housed under Roof/Open Confinement
Milking and Dry Cows	550	Confined under Roof
Beef Steers -400# to Market	425	Housed under Roof/Open Confinement

B. The estimated amount of total manure, litter, and process wastewater generated at the Site in the previous 12 months:

In 2013 Ledgeview Farms generated and land applied approximately 15,100 tons of solid/semi-solid manure and approximately 350,000 gallons of milkhouse wastewater.

C. The estimated amount of total manure, litter, and process wastewater transferred to another person from the Site in the previous 12 months (tons/gallons):

In 2013 Ledgeview Farms did not transfer any manure or process wastewater from their farm to a 3rd party in 2013. All manure and process wastewater

generated by the farm was applied to fields contained within the nutrient management plan.

D. The total number of acres for land application covered by the nutrient management plan:

The nutrient management plan for Ledgeview Farms for 2013 contained 2,077 acres. For 2014 the acres contained in this plan will be approximately 2,181 acres as Ledgeview Farms has rented additional cropland.

E. The total number of acres under the control of Respondent that were used for land application of manure, litter, and process wastewater in the previous 12 months:

In 2013 Ledgeview Farms applied manure and process wastewater to 863 acres. All fields were contained in the Ledgeview Farms nutrient management plan.

F. A summary of all manure, litter, and process wastewater discharges from the production area that have occurred in the previous 12 months, including the date, time, and approximate volume of such discharges:

Ledgeview Farms has not documented any discharge events from the production sites in 2013. As stated in the letter submitted in October of 2013 by Dave Wetenkamp of the Brown County Land and Water Conservation Department Ledgeview Farms implemented interim controls to control runoff from both production sites. Ledgeview Farms is actively working on the development of additional runoff controls to meet WPDES permit requirements.

G. A statement indicating whether the current version of the nutrient management plan was developed or approved by a certified nutrient management planner.

Kevin Beckard of Agsource Laboratories developed the Nutrient Management Plan (NMP) for Ledgeview Farms. Kevin is a Certified Crop Advisor (license # 29509) in Wisconsin.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false statements and information, including the possibility of fines and imprisonment for knowing violations.

Ledgeview Farms Representative -Jason Pansier

AgSource Laboratories
A subsidiary of Cooperative Resources International

106 North Cecil Street
P.O. Box 7
Bonduel, Wisconsin 54107
715-758-2178 • FAX 715-758-2620
www.agsource.com

DATE: 3-6-2015

TO: Donald R. Schwer III – US EPA Region 5

FROM: Kevin Beckard, AgSource Laboratories

SUBJECT: Ledgeview Farms 2014 Annual Report

Mr Schwer,
Attached you will find the 2014 annual report for Ledgeview Farms, LLC as required by paragraph 69 of their Administrative Order Docket No. V-W-13-AO-22. The report contains the required information from items a through g in paragraph 69 of the order. If you have any questions or need further information feel free to contact me at 920-309-1948.

Thank You,

Kevin Beckard
AgSource

Cc: Jason Pansier – Ledgeview Farms
Brad Holtz - WDNR

2014 Annual Report

Ledgeview Farms, LLC

Introduction

Ledgeview Farms, LLC is a dairy and cropping enterprise located in the Town of Ledgeview in Brown County Wisconsin. The business is owned and managed by Glen, Jason and Roy Pansier.

This report is being prepared in accordance with paragraph 69 of the Ledgeview Farms Administrative Order (Docket No. V-W-13-AO-22) they received from EPA in 2013. Paragraph 69 of the Administrative Order states:

Annual Reports: Respondent shall submit an annual report to EPA and WDNR not later than March 15 of each calendar year following the effective date of this Order. In each annual report, Respondent shall include the following information for the previous calendar year prior to submittal of that annual report:

A. The maximum number and type of animals confined, whether in open confinement or housed under roof:

Animal Numbers for 2014		
Livestock Type and Size Class	**Animal Numbers**	**Housing Type**
Calves (Dairy/Beef) up to 400#	370	Housed under Roof
Heifers – 400# to 800#	135	Housed under Roof/Open Confinement
Heifers – 800# to 1200#	205	Housed under Roof/Open Confinement
Milking and Dry Cows	555	Confined under Roof
Beef Steers -400# to Market	420	Housed under Roof/Open Confinement

B. The estimated amount of total manure, litter, and process wastewater generated at the Site in the previous 12 months:

In 2014 Ledgeview Farms generated and land applied approximately 15,750 tons of solid/semi-solid manure and approximately 360,000 gallons of milkhouse wastewater.

C. The estimated amount of total manure, litter, and process wastewater transferred to another person from the Site in the previous 12 months (tons/gallons):

In 2014 Ledgeview Farms did not transfer any manure or process wastewater from their farm to a 3rd party. All manure and process wastewater generated by the farm was applied to fields contained within the nutrient management plan.

D. The total number of acres for land application covered by the nutrient management plan:

The nutrient management plan for Ledgeview Farms for 2014 contained 2,146 acres. For 2015 the acres contained in this plan will be increased as Ledgeview Farms has purchased and rented additional cropland.

E. The total number of acres under the control of Respondent that were used for land application of manure, litter, and process wastewater in the previous 12 months:

In 2014 Ledgeview Farms applied manure and process wastewater to approximately 874 acres. All fields were contained in the Ledgeview Farms nutrient management plan.

F. A summary of all manure, litter, and process wastewater discharges from the production area that have occurred in the previous 12 months, including the date, time, and approximate volume of such discharges:

Ledgeview Farms has not documented any discharge events from the production sites in 2014.

G. A statement indicating whether the current version of the nutrient management plan was developed or approved by a certified nutrient management planner.

Kevin Beckard of Agsource Laboratories developed the Nutrient Management Plan (NMP) for Ledgeview Farms. Kevin is a Certified Crop Advisor (license # 29509) in Wisconsin.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false statements and information, including the possibility of fines and imprisonment for knowing violations.

Ledgeview Farms Representative

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

NOV 29 2016

REPLY TO THE ATTENTION OF

WC-15J

CERTIFIED MAIL 7009 1680 0000 7645 8580
RETURN RECEIPT REQUESTED

Ledgeview Farms LLC
c/o Roy Pansier, Registered Agent
3870 Dickinson Road
De Pere, Wisconsin 54115

Subject: Notice of Intent to File Civil Administrative Complaint Against Ledgeview Farms

Dear Mr. Pansier:

The U. S. Environmental Protection Agency plans to file an administrative complaint for civil penalties against Ledgeview Farms LLC, pursuant to Section 309(g) of the Clean Water Act (CWA), 33 U.S.C. § 1319. In the complaint, EPA will allege that Ledgeview Farms LLC has violated the CWA by having seven unauthorized discharges of manure and process wastewater and having one unauthorized discharge of construction sediment to Waters of the United States.

Based on information currently available to us, we plan to propose a penalty of up to $128,000 in the complaint. This letter is not a demand to pay a penalty. We will not ask you to pay a penalty until we file the complaint or a final order. Before filing the complaint, we are giving you the opportunity to present any information that you believe we should consider. Relevant information might include evidence that you did not violate the law; evidence that you relied on compliance assistance from EPA or a state agency; evidence that we identified the wrong party; or financial data bearing on your ability to pay a penalty.

If you believe that you will be unable to pay a $128,000 penalty because of financial reasons, please send us certified, complete financial statements including balance sheets, income statements and all notes to the financial statements, and your company's signed income tax returns with all schedules and amendments, for the past three years.

You may assert a claim of business confidentiality under 40 C.F.R. Part 2, Subpart B, for any portion of the information you submit to us. Information subject to a business confidentiality

claim is available to the public only to the extent allowed by 40 C.F.R. Part 2, Subpart B. If you fail to assert a business confidentiality claim, EPA may make all submitted information available, without further notice, to any member of the public who requests it.

Before filing the complaint, EPA is extending to Ledgeview Farms LLC the opportunity to resolve this matter by entering into a Consent Agreement and Final Order (CAFO) with issuance of a CAFO by EPA. If Ledgeview Farms wishes to discuss resolving this matter under a CAFO, **within 10 calendar days** after you receive this letter, please send any written response to:

Donald R. Schwer III
Water Division, WC-15J
U.S. EPA Environmental Protection Agency, Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604

and

Catherine Garypie
Office of Regional Counsel
U.S. EPA Environmental Protection Agency, Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604

If you want to confer with us, you should contact Donald R. Schwer III of the Water Enforcement and Compliance Assurance Branch, in writing **within 10 calendar days** after you receive this letter. Please be advised that this conference is not a settlement negotiation covered by Federal Rule of Evidence 408; we may use any information you submit in support of an administrative, civil or criminal action. After the conference (or after you have submitted a written reply if we do not have a conference), we may give you the opportunity to engage in settlement negotiations before we file the complaint. If pre-filing settlement negotiations commence and are successful, a settlement agreement can be filed under EPA regulations at 40 C.F.R. § 22.13(b).

If you do not respond to this letter, EPA may file a complaint without further notice against Ledgeview Farms as authorized under Section 309(g) of CWA, 33 U.S.C. § 1319(g).

If you have any questions, please telephone Donald R. Schwer III, (312) 353-8752 or Catherine Garypie, Associate Regional Counsel, at (312) 886-5825.

Thank you for your prompt attention to this matter.

Sincerely,

Christopher Korleski
Director, Water Division

cc: Tom Bauman, Wisconsin Department of Natural Resources
Brad Holtz, Wisconsin Department of Natural Resources
Casey Jones, Wisconsin Department of Natural Resources

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
PO Box 7185
101 S. Webster Street
Madison WI 53707-7185

Scott Walker, Governor
Daniel L. Meyer, Secretary
Telephone 608-266-2621
FAX 608-267-3579
TTY Access via relay - 711

January 4, 2018

Jason Pansier
Ledgeview Farms LLC
3870 Dickinson Road
De Pere, WI 54115

SUBJECT: CAFO WPDES Permit Application - Acknowledgment of Receipt
WPDES Permit No. WI-0065421-01

Dear Jason Pansier:

The Department received your final application for a CAFO WPDES permit for Ledgeview Farms LLC on December 15, 2017. The application is complete for review and now includes the following components:

1. Livestock/Poultry Operation WPDES Permit Application Forms 3400-025, 025B, 025C
2. Animal Unit Calculation Worksheet Form 3400-025A
3. Labeled Aerial Maps
4. Soil Survey Maps
5. EA Questionnaire
6. 180 Day Manure Storage Calculations & Supporting Documentation
7. Nutrient Management Plan (NMP)
8. Plans and Specifications for an Additional Waste Storage Facility
9. Evaluations for the Following Existing Facilities:
    a. Main Farm:
        i. Waste storage facility built in 2015 (4-5 million gallons)
        ii. Pit 1; waste storage facility built in 1995 (490,000 gallons)
        iii. Pit 2; waste storage facility built in 1999 (504,000 gallons)
        iv. Solid waste stacking area
        v. Manure transfer system (piping & reception tanks) for all barns
        vi. Feed storage area
        vii. Feed storage area runoff controls
        viii. Runoff controls for all feedlots (heifer barn & cow barns)
    b. Heifer Farm:
        i. Waste storage facility for heifer barns
        ii. Solid waste stacking area
        iii. Feed storage area
        iv. Feed storage area runoff controls

I have distributed your application components to the appropriate DNR technical reviewers. As the review process continues, additional materials may be requested.

Your regional Agricultural Runoff Management Specialist is Heidi Schmitt Marquez. Heidi can be contacted at (920) 662-5187 or by e-mail to Heidi.SchmittMarquez@wisconsin.gov. You should now work with her to continue processing your permit application.

Thank you for submitting a final permit application. Please do not hesitate to contact Heidi Schmitt Marquez or me if you have any questions about your application materials.

Sincerely,

Clare Freix

Clare Freix
CAFO Intake Specialist
Bureau of Watershed Management
Phone: (608) 261-8437
Email: Clare.Freix@Wisconsin.gov

cc: Heidi Schmitt Marquez, DNR
Richard Seas, Roach & Associates
Kevin Beckard, AgSource Laboratories
Mike Mushinski, County Conservationist

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

WC-15J

MEMORANDUM

SUBJECT: Inspection Report Transmittal to Ledgeview Farms, LLC

FROM: Donald R. Schwer III DRS 8/10/17
Enforcement Officer

TO: File

I attest that the inspection report from the April 9, 2015 inspection was transmitted to Ledgeview Farm, LLC. The transmittal letter and the report were signed at the time of transmittal on December 8, 2015. EPA has misplaced the signed versions of these documents. The certified mail receipt documents that the farm received the inspection report on December 14, 2015. Attached is the Certified Mail receipt, the transmittal letter, and the inspection report as transmitted.

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Roy Pansier, Registered Agent
Ledgeview Farms, LLC
3870 Dickinson Road
De Pere, Wisconsin 54115

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☑ Agent ☐ Addressee

B. Received by (Printed Name) Joann Pansier C. Date of Delivery 12-14-15

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail® ☐ Priority Mail Express™
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. 7009 1680 0000 7675 2374

PS Form 3811, July 2013 Domestic Return Receipt

7009 1680 0000 7675 2374

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com

RECEIVED

Postage	$ 11.67
Certified Fee	3.30
Return Receipt Fee (Endorsement Required)	2.70
Restricted Delivery Fee (Endorsement Required)	

DEC 14 2015 Postmark Here

WATER ENFORCEMENT & COMPLIANCE ASSURANCE BRANCH, EPA, REGION 5

Mr. Roy Pansier, Registered Agent
Ledgeview Farms, LLC
3870 Dickinson Road
De Pere, Wisconsin 54115

2035

WC-15J

CERTIFIED MAIL 7009 1680 0000 7675 2374
RETURN RECEIPT REQUESTED

Mr. Roy Pansier, Registered Agent
Ledgeview Farms, LLC
3870 Dickinson Road
De Pere, Wisconsin 54115

Subject: Clean Water Act Compliance Evaluation Inspection Report

Dear Mr. Pansier:

Protecting water quality is a high priority of the U.S. Environmental Protection Agency. Pollutants such as excessive nutrients and pathogens discharged to waterways from animal feeding operations contribute to poor water quality and impairment of uses of those waterways.

On April 9, 2015, EPA conducted an inspection of your facility, Ledgeview Farms in De Pere, Wisconsin. The purpose of the inspection was to evaluate compliance with the Clean Water Act (CWA) and Administrative Order V-W-13-AO-22. Ledgeview Farms is a large Concentrated Animal Feeding Operation (CAFO) as defined in 40 C.F.R. § 122. During the inspection, we observed violations of the CWA and Administrative Order. The CWA and Order requires you to immediately cease all unauthorized discharges.

Ledgeview Farms continues to have serious compliance problems as noted in EPA's inspection report which is enclosed. EPA had a conference call with you on April 21, 2015 in which we discussed our concerns. You had committed to correct the concerns we noted on the upper and lower farm and provide us a plan that included the installation of interim measures and a schedule for the installation of all permanent measures. To this date, EPA has yet to receive a complete and approvable Permit Compliance Plan submittal from Ledgeview Farms.

If you have any questions or concerns regarding this letter, or the inspection report, please contact Donald R. Schwer III at (312) 353-8752 or schwer.don@epa.gov.

Sincerely,

Ryan Bahr, Chief, Section 2
Water Enforcement and Compliance Assurance Branch

Enclosure

Cc: Brad Holtz, Wisconsin Department of Natural Resources
Amy Minser, Wisconsin Department of Natural Resources

CWA COMPLIANCE EVALUATION INSPECTION REPORT
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 5

Purpose:	Compliance Evaluation Inspection
Facility:	Ledgeview Farms 3875 Dickinson Road De Pere, Wisconsin 54115 44.4249N, 87.9695W
NPDES Permit Number:	None
Date of Inspection:	April 9, 2015
EPA Representatives:	Donald R. Schwer III, Enforcement Officer schwer.don@epa.gov, 312-353-8752 Ben Atkinson, Agronomist
State Representatives:	NA
Facility Representatives:	Jason Pansier, Owner
Report Prepared by:	Donald R. Schwer III, Enforcement Officer
Report Date:	December 8, 2015

Inspector Signature_____

1. BACKGROUND

The purpose of this report is to describe, evaluate and document Ledgeview Farms compliance with the Clean Water Act (CWA) at its De Pere, Wisconsin facility on April 9, 2015. This inspection was performed pursuant to Section 308(a) of the Federal Water Pollution Control Act, as amended. EPA issued an Order for Compliance, Docket Number: V-W-13-AO-22, on September 13, 2013 and issued an Information Request, Docket Number: V-W-14-308-24, on July 18, 2014.

Ledgeview Farms is a Limited Liability Company (LLC) dairy operation in Brown County, Wisconsin. It is owned and operated by Mr. Glenn Pansier (father), Mr. Roy Pansier (uncle), and Mr. Jason Pansier (son). The operation consists of two facilities that operate under the same nutrient management plan (NMP). The Home site is at 3875 Dickinson Road, De Pere, Wisconsin. A Satellite site is northeast of the Home location at 3688 County Road V, De Pere, Wisconsin.

Ledgeview Farms is considered a large Concentrated Animal Feeding Operation (CAFO) due to the total number of cattle maintained at the facility. Ledgeview Farms currently houses approximately 550 mature dairy cows and 1130 cattle other than mature dairy cows. There was currently no National Pollutant Discharge Elimination System (NPDES) permit allowing discharge from the CAFO. The facility had submitted a permit application to WDNR.

Ledgeview Farms was conducting earthwork related to the construction of a waste storage facility and a milking parlor. There was currently no National Pollutant Discharge Elimination System (NPDES) permit allowing sediment discharge from the facility related to construction and earthwork.

Surface runoff from the Ledgeview Farms Home site flowed through pathways to unnamed tributaries that abuts the east side of the site. The unnamed tributary that abuts the east side of the Home site flows to an unnamed tributary that flows to Bower Creek. Bower Creek flows to the East River. The East River flows to the lower Fox River. The lower Fox River flows to Green Bay.

Surface runoff from the Ledgeview Farms Satellite site flowed east through ditches and pathways to an unnamed tributary. Additionally, surface runoff from portions of the Satellite site flowed south/west to an unnamed tributary that abuts the south/west end of the site. The unnamed tributaries flow to Bower Creek. Bower Creek flows to the East River. The East River flows to the lower Fox River. The lower Fox River flows to Green Bay.

The watershed is covered under a Total Maximum Daily Load and Watershed Management Plan for Total Phosphorus and Total Suspended Solids in the Lower Fox River Basin and Lower Green Bay.

2. SITE INSPECTION

Prior to beginning the inspection, I conducted a visual reconnaissance of the Ledgeview Farms sites and its surroundings from the public right-of-way. This included Dickinson Road for the Home site and County Road V for the Satellite site. During the reconnaissance, I observed significant track out of sediment onto County Road V near the construction entrance related to the construction of a structure north of the new barn. Sediment was deposited in the south bound lane of County Road V. The sediment accumulation was most significant within the first couple hundred feet south of the construction entrance; however, sediment had been tracked all the way to the intersection of County Road V and Dickinson Road.

I arrived at Ledgeview Farms Home site at approximately 8:23 a.m. on April 9, 2015. I parked the vehicle near the entrance of the facility. The temperature was approximately 36° F and it was overcast. The weather station, Green Bay Weather Forecast Office, WI US (USC00473268), in Green Bay, Wisconsin had an observed rainfall of 0.28 inches on April 9, 2015. Upon arrival, Mr. Atkinson and I put on disposable boots. I located Mr. Jason Pansier in the milking shed and explained to him that I would like to conduct an inspection to evaluate Ledgeview Farms compliance with the Administrative Order and to evaluate the interim and permanent measures the farm had implemented to cease discharges of manure and process wastewater. I told Mr. Pansier that the inspection would be similar to the previous inspection we conducted at the facility. Mr. Pansier requested time to finish milking the cows. I asked Mr. Pansier if there was anyone else on site who could perform the facility walkthrough. He said he was the only person who could walk us around the facility.

We waited in our vehicle until Mr. Pansier finished milking. During the time we waited in our vehicle, we observed a skid loader transporting loads of sand to the north side of the facility. The skid loader continued transporting loads of sand until we began the walkthrough at 9:30 a.m. Later in the inspection, we noted fresh loads of sand at all the entrance/exit locations of the barns. Mr. Pansier requested we begin the inspection at the Satellite facility. I said we would like to start the inspection at this site.

2.1 Walkthrough of the Facility

To facilitate the walkthrough section of this report, overview photographs are included in Attachment 1 which includes building labels, outlines of drainage pathways, and sample locations. The inspection photographs are in Attachment 2.

Home Site

We began the walkthrough portion of the inpection by walking to the north end of the facility. We observed an emergency response plan in the machine shed located on the far west side of the facility. At the north end of the Milk Cow Barn, manure and process wastewater was flowing north into the field north of the Milk Cow Barn (Attachment 2: RIMG0011-RIMG0013). I observed an accumulation of manure, bedding, and feed

solids throughout the field north of the Milk Cow Barn. Manure and process wastewater was flowing out from a barn access point on the northwest corner of the Milk Cow Barn (Attachment 2: RIMG0014). A berm of sand had been recently placed across the access point; however, it did not eliminate the flow of manure and process wastewater from the barn. Additionally, drainage from the access way and feed bunker were contributing flow north into the field north of the Milk Cow Barn (Attachment 2: RIMG0015; RIMG0192). The access way and feed bunker lacked proper housekeeping which resulted in an accumulation of raw materials and manure on the access way surfaces (Attachment 2: RIMG0192). Process wastewater was flowing north from the access way to the field north of the Milk Cow Barn.

I observed process wastewater on the north end of the feed bunker which could drain west to the unnamed tributary (Attachment 2:RIMG0016). I observed manure and process wastewater in pathways throughout the field north of the Milk Cow Barn (Attachment 2: RIMG0017-RIMG0019). Process wastewater flowed north down the ledge into a borrow area (Attachment 2: RIMG0020-RIMG0030). The borrow area under construction did not conatin any sediment and erosion control structures or best management practices (BMPs) in place. The facitily had not acquired a constuction site storm water discharge permit or developed a storm water pollution prevention plan for the areas of the facility that were disturbed. I estimated the total area of disturbed land at approximately 9-12 acres based on on-site observation and aerial photographs. I estimated that the borrow area was approximately 2-3 acres in size. I observed process wastewater in puddles and pathways throughout the borrow area and the general flow direction of the process wastewater was to the north. The flowing wastewater in the pathways was dark in color and smelled of manure. The flowing wastewater in the pathways looked like a diluted liquid manure slurry that would normally be stored in a waste storage facility or slurry storage structure.

Process wastewater and sediment laden stormwater flowed north into a forested area. I observed foam throughout the flow pathway in the forested area (Attachment 2: RIMG0033-RIMG0040). The flow pathway continued north and then east and connected with the unnamed tributary. The water from the flow pathway was cloudy at the discharge point into the unnamed tributary(Attachment 2: RIMG0043-RIMG0044). Before the pathway connected with the unnamed tributary, the topography leveled off. In this area I observed the deposition of red clay along the forest floor (Attachment 2: RIMG0202-RIMG0206).

We continued back south where we observed another process wastewater stream flowing down the ledge into the borrow area (Attachment 2:RIMG0047-RIMG0059; RIMG241-RIMG0261). The process wastewater was emanating from the barns and cattle pathways used to transfer dairy cows between the New Barn and the existing barns (Attachment 2: RIMG0078; RIMG0080-RIMG0082; RIMG0091- RIMG0092).

We continued north between the existing barns. I observed manure and process wastewater tracked out of the barn and on the concrete area (Attachment 2: RIMG0060-RIMG0062). Sand had recently been placed at the barn access point in which manure

and process wastewater was tracked out of the barn. This area drains north to the field north of the Milk Cow Barn.

We walked to Lot B. The open lot did not have containment for manure or process wastewater. A sand berm had recently been placed on the east end of the open lot (Attachment 2: RIMG0063-RIMG0064). A pile of bedding was located at the east side of Lot B. The process wastewater from the open lot and pile could flow east and north to a culvert under the New Barn and to the unnamed tributary on the east side of the site (Attachment 2: RIMG0064-RIMG0065). I observed a pile of waste material located east of Lot B (Attachment 2: RIMG0066-RIMG0067). Process wastewater contacting the waste material could flow north to the culvert under the new barn and to the unnamed tributary.

At the southeast corner of the New Barn, I observed a mucky area that drained toward the culvert under the New Barn. Sand had been placed at an access point along the southwest end of the New Barn. Manure and process wastewater was observed outside of the southwest access point of the New Barn and could flow south toward the mucky area (Attachment 2: RIMG0072-RIMG0077).

A cow access way between the New Barn and the barn west of the New Barn contained manure solids on its surface. Manure and process wastewater flowed north from the access way between the New Barn and the barn west of the New Barn (Attachment 2: RIMG0078; RIMG0091-RIMG0092). It then flowed west after contacting a concrete wall and then flowed to the north into the field west of the concrete pits (Attachment 2: RIMG0080-RIMG0082). A sand berm had recently been placed near the metal gate on the access way. Mr. Pansier said he did not believe the sand berms were sufficient to adequatly contain the manure and process wastewater.

I observed the west concrete pit; it was partially full (Attachment 2: RIMG0083). At the northwest corner of the concrete pit, I observed process wastewater which drained to the northwest (Attachement 2: RIMG0084). There was a trickling flow of process wastewater emenating from the northwest corner of the concrete pit (Attachement 2: RIMG0085; RIMG0090).

I observed manure and waste materials throughout the access ways on the production area due to poor housekeeping (Attachement 2: RIMG0093; RIMG0095).

Satellite Site

I began the walkthrough of the Satellite site on the east side of Lot D. A sand berm had recently been placed at the access gate for Lot D. Feed, manure, and process wastewater were observed east of the access gate on the concrete (Attachement 2: RIMG0098-RIMG0102). The area east of the access gate drained southeast into a grassed area north of the Heifer Barn. The grassed area drained into the County Road V ditch. Feed and process wastewater had no containment along the south end of Lot D (Attachement 2: RIMG0103-RIMG0105). The facility had recently constructed a new feed bunker

(Attachement 2: RIMG0109). Leachate was observed outside of the bunker walls on the north and south side of the new feed bunker (Attachment 2: RIMG0110; RIMG0115). An unnamed tributary is located less than 50 feet from the edge of the feed bunker (Attachment 2: RIMG0112- RIMG00114). I observed leachate seeping out through the rock/soil along the south side of the feed bunker and flowing overland to the unnamed tributary (Attachment 2: RIMG0116-RIMG0119; RIMG0126-RIMG0130; RIMG0167-RIMG0168). I observed a sheen where the leachate entered the unnamed tributary (Attachment 2: RIMG0120-RIMG0125).

I observed process wastewater and feed solids around the southeast side of the feed bunkers (Attachment 2: RIMG0133-RIMG0136). The process wastewater was located in an area and could flow south and west into and across a field. I observed process wastewater and feed solids around the east side of the feed bunkers (Attachment 2: RIMG0137; RIMG0154- RIMG0162). The process wastewater flowed east into a grassed area north of the Heifer Barn and continued northeast into the County Road V ditch (Attachment 2: RIMG0138- RIMG0151; RIMG0163-RIMG0166). I observed feed solids throughout the grassed area and observed water flowing through the culvert east under County Road V. The County Road V ditch and culverts flowed to the unnamed tributary.

2.2 Closing Conference and Post-Inspection

I summarized my findings and observations to Mr. Pansier. I expressed the following areas of concern:

1. At the Satellite site, process wastewater runoff generated at the open lot and feed bunkers flowed east to the County Road V ditch.
2. At the Satellite site, process wastewater generated at the New Bunker flowed west to the unnamed tributary.
3. At the Home site, process wastewater was trickling out of the northwest corner of the concrete pit.
4. At the Home site, manure and process wastewater from the feed bunker, access way, and northwest access point of the Milk Cow Barn did not have containment and flowed north through pathways that led to the unnamed tributary on the east end of the site.
5. At the Home site, manure and process wastewater from the New Barn, cattle walkways, and the barn located between the New Barn and the Milk Cow Barn did not have containment and flowed north through pathways that led to the unnamed tributary on the east end of the site.
6. At the Home site, manure and process wastewater from the used bedding stockpile and Lot B could flow east and north through a culvert under the barn to the unnamed tributary on the east end of the site.

2.3 Sampling Information

Sampling was conducted at various locations of the production area to determine the presence of pollutants that could impact the applicable unnamed tributaries. Mr. Pansier did not accompany EPA during sampling. I offered to split samples with Mr. Pansier. Mr. Pansier declined splitting samples. Samples were tested for fecal coliform, biochemical oxygen demand (BOD), total dissolved solids (TDS), total suspended solids (TSS), ammonia nitrogen, nitrate- nitrite nitrogen, total Kjeldahl nitrogen (TKN), and total phosphorus (TP).

Sample B01 was taken at 11:02 a.m. as a field blank. Sample S01 was taken at 11:14 a.m. of process wastewater from the New Bunker (Attachment 2: RIMG0169, RIMG0170). Sample S02 was taken at 11:25 a.m. of process wastewater emanating from the New Bunker and flowing into an unnamed tributary (Attachment 2: RIMG0178, RIMG0179). Sample S03 was taken at 11:32 a.m. of process wastewater in the grassed area at the Satellite site (Attachment 2: RIMG0181-RIMG0184). Sample S04 was taken at 11:35 a.m. of process wastewater flowing into the culvert under County Road V at the Satellite site (Attachment 2: RIMG0185- RIMG0189). Sample S05 was taken at 12:45 p.m. from the process wastewater in the drainage pathway at the unnamed tributary on the east side of the Home site (Attachment 2: RIMG0194-RIMG0195). Sample S06 and Sample S07 were taken at 1:00 p.m. of process wastewater in the drainage pathway in the borrow area that drains to the unnamed tributary on the east side of the Home site (Attachment 2: RING0234-RIMG0235). Sample S08 was taken at 1:12 p.m. of manure and process wastewater in a pathway emanating from the New Barn and cattle walkways between the New Barn and the barn west of the New Barn (Attachment 2: RIMG0250-RIMG0253). Sample S09 was taken at 1:20 p.m. of manure and process wastewater in a pathway emanating from the Milk Cow Barn and the access way between the Milk Cow Barn and the feed bunkers (Attachment 2: RIMG0265-RIMG0267). Sampling locations can be seen in Attachment 1: Figure 1 and Figure 2.

Sampling concluded at 1:20 pm. I took all samples. Samples were preserved starting at 1:30 pm according to EPA Region 5 Field Sampling Plan. Fecal coliform samples were transported to Pace Analytical Services, Inc. at 1241 Bellevue Street, Green Bay, Wisconsin. All other samples were hand delivered to the EPA Region 5 Chicago Regional Laboratory. All samples met holding time according to the EPA Region 5 Field Sampling Plan developed for the inspection.

The results of the sampling, summarized in Table 1, indicate multiple areas contribute pollutants into the unnamed tributaries. All of the samples had significant quantities of fecal coliform (<901 to 2,500,000 colony forming units (CFU) per 100 milliliter). Additionally, several forms of nitrogen are contained in the process wastewater samples, as indicated by the TKN, nitrate- nitrite nitrogen, and ammonia nitrogen sampling results. Total Phosphorus, TDS, and TSS were present in the samples. The laboratory results are in Attachment 3.

Table 1: Field Sampling Results

Sample ID	Fecal Coliform (CFU/100ml)	Biochemical Oxygen Demand (BOD) (mg/L)	Total Kjeldahl Nitrogen (TKN) (mg/L)	Nitrate-Nitrite Nitrogen (mg/L)	Ammonia Nitrogen (mg/L)	Total Phosphorus (mg/L)	Total Dissolved Solids (TDS) (mg/L)	Total Suspended Solids (TSS) (mg/L)
S01	<901	9300	1700	3.08	56.3	502	42000	95.7
S02	90,900	2600	162	1.94	67.7	21.9	4030	1670
S03	2,100,000	4300	244	U	57.2	103	5700	960
S04	2,500,000	2300	146	U	32.1	56.7	3680	342
S05	135,000	280	47.1	3.07	11.2	8.59	1060	66.0
S06	1,140,000	870	229	5.19	51.0	36.8	2760	645
S07	1,300,000	1800	255	5.22	45.4	39.8	2670	636
S08	757,000	4400	276	14.2	105	32.4	4310	149
S09	260,000	2300	138	2.79	18.9	40.1	2220	270
B01	-	4	0.09	U	U	U	U	U

U-Undetectable

3. POTENTIAL VIOLATIONS

According to Section 301(a) of the Clean Water Act, it is a violation to discharge pollutants from a CAFO to waters of the United States without a permit.

EPA observed discharges in the following locations:

1. At the Home site, process wastewater was trickling out of the northwest corner of the concrete pit and was observed in a depressional area. The depressional area drained north through pathways and was observed discharging to the unnamed tributary on the east side of the Home site.

2. At the Home site, manure and process wastewater from the feed bunker, access way, and the northwest access point of the Milk Cow Barn did not have containment and was flowing north through pathways and was observed discharging to the unnamed tributary on the east side of the Home site.

3. At the Home site, manure and process wastewater from the New Barn, cattle walkways, and the barn west of the New Barn did not have containment and was flowing north through pathways and was observed discharging to the unnamed tributary on the east side of the Home site.

4. At the Satellite site, process wastewater runoff generated at the feed bunkers was flowing east to the County Road V ditch. The County Road V ditch and culverts flow to the unnamed tributary.

5. At the Satellite site, process wastewater runoff generated at the New Bunker was flowing west and was observed discharging to the unnamed tributary.

According to Section 301(a) of the Clean Water Act, it is a violation to discharge pollutants from a point source to waters of the United States without a permit.

EPA observed discharges in the following locations:

1. At the Home site, the borrow area did not have sediment and erosion controls in place. Sediment laden storm water from the borrow area was flowing north through pathways and was observed discharging to the unnamed tributary on the east side of the Home site.

4. AREAS OF CONCERN

EPA observed these areas of concern whereby pollutants have the potential to reach waters of the United States:

1. At the Home site, runoff from Lot B could flow east to the unnamed tributary on the east end of the site.

2. The Home site contained waste feed, manure, and process wastewater in many of the access ways.

3. At the Satellite site, process wastewater runoff generated at the open lot could flow east to the County Road V ditch.

LIST OF ATTACHMENTS

1. Aerial photographs of Ledgeview Farms
2. Inspection Photographs
3. Field Sampling Results

ATTACHMENT 1: AERIAL PHOTOGRAPHS OF LEDGEVIEW FARMS

Figure 1.1: March 24, 2014 aerial photograph of Ledgeview Farms Home Site

2556016

THIS IS AN UNOFFICIAL COPY OF A DOCUMENT RECORDED IN THE REGISTER OF DEEDS OFFICE

FINAL PLAT

THE RESERVE AT MEADOW RIDGE

A RESUBDIVISION OF PART OF LOT 1 AND ALL OF LOTS 2, 3 AND 4 OF CERTIFIED SURVEY MAP NO. 7857, RECORDED IN VOLUME 54, PAGE 95, AND ALSO ALL OF VACATED COBALT LANE AND ALL THAT PORTION OF VACATED COPPER LANE AS VACATED PER RESOLUTION NO. 2013-091 AND RECORDED AS DOCUMENT NO. 2643013, ALL BEING PART OF THE SOUTHWEST ¼ OF THE NORTHWEST ¼ OF SECTION 28 AND PART OF THE SOUTHEAST ¼ OF THE NORTHEAST ¼ OF SECTION 29, TOWNSHIP 23 NORTH, RANGE 21 EAST, TOWN OF HUDSON, BROWN COUNTY, WISCONSIN.

29 28

LOCATION MAP
(NOT TO SCALE)

SE 1/4 NE 1/4

SW 1/4 NW 1/4

NE 1/4 SE 1/4

NW 1/4 SW 1/4

AVRES ASSOCIATES

SHEET 1 OF 2

EXHIBIT 5 2050

2651016

FINAL PLAT

THE RESERVE AT MEADOW RIDGE

A RESUBDIVISION OF PART OF LOT 1 AND ALL OF LOTS 2, 3 AND 4 OF CERTIFIED SURVEY MAP NO. 7037, RECORDED IN VOLUME 54, PAGE 95, AND ALSO ALL OF VACATED COBALT LANE AND ALL THAT PORTION OF VACATED COPPER LANE AS VACATED PER RESOLUTION NO. 2013-009 AND RECORDED AS DOCUMENT NO. 2543551, ALL BEING PART OF THE SOUTHWEST ¼, OF THE NORTHWEST ¼ OF SECTION 23 AND PART OF THE SOUTHEAST ¼ OF THE NORTHEAST ¼ OF SECTION 26, TOWNSHIP 23 NORTH, RANGE 21 EAST, TOWN OF LEDGEVIEW, BROWN COUNTY, WISCONSIN

AVRES ASSOCIATES

Charlotte Nagel

From: Phil Danen <pjdanen@ledgeviewwisconsin.com>
Sent: Tuesday, May 29, 2018 9:19 AM
To: cnagel@ledgeviewwisconsin.com
Subject: Fwd: Maure Pit Opposition
Attachments: Ledgeview Farms Manure Pit Opposition.docx; Untitled attachment 00588.htm

Follow Up Flag: Follow up
Flag Status: Flagged

Phil Danen
Ledgeview Town Chairman

Sent from my iPad

Begin forwarded message:

> **From:** Kate LaCount <kate@dotdel.com>
> **Date:** May 28, 2018 at 11:14:44 PM CDT
> **To:** pjdanen@ledgeviewwisconsin.com, rvanrossum@ledgeviewwisconsin.com, kgeurts@ledgeviewwisconsin.com, cpeltier@ledgeviewwisconsin.com, mdanen@ledgeviewwisconsin.com
> **Subject: Maure Pit Opposition**
>
> Hello,
> Attached please find a letter of concern regarding the upcoming vote about the addition of two manure pits to the town.

Dear Philip Danen, Renee Van Rossum, Ken Geurts, Cullen Peltier, Mark Danen:

We recently learned of the upcoming vote regarding the addition of two open air manure pits to be installed by Ledgeview Farms. We cannot stress our opposition to this enough. These pits have known safety issues.
It's likely you have seen this, but if not, a Wisconsin report detailing the dangers of manure storage can be found at this link:

https://datcp.wi.gov/Documents/ManureGasSafetyReport.pdf

This is only one of many informational links that can be found online regarding these pits, most of which detail the dangers of them.

These requested pits would be installed in what has become a residential neighborhood that only continues to grow. Having been small business owners we can appreciate the goal of the farm to manage their business and we are sure they would argue that they were here first. That is true. However, the town board approved zoning of much of the land that surrounds this farm as residential. The farm is really no longer in an agricultural area. It is in the middle of a residential area that the town desired. It can't be done both ways. The town can't build a tax base with the residential homes that were desired and then not protect them from dangerous agricultural practices. In our opinion, it would now be negligent of the town to allow such a known safety hazard to be built in such close proximity to residential homes and the families they contain. Additionally, compliance for the management of such pits seems to be self-regulated. The farm already has a poor track record of compliance for things that are regulated. That the town would allow them to build structures such as these and trust them to properly manage them seems unconscionable.
We strongly urge you to decline the request for the construction of these manure pits.
Thank you for considering our concerns.

Sincerely,
Kate & Del LaCount
3978 Three Penny Court

MANURE GAS SAFETY

REVIEW OF PRACTICES AND RECOMMENDATIONS FOR WISCONSIN LIVESTOCK FARMS

November 2008

Safety Review Team

Ed Odgers, DATCP
John Ramsden, NRCS
Corey Schuelke, Waupaca County LCD
Cheryl Skjolaas, UW-Biological Systems Engineering
Dean Sylla, NRCS
Robert Thiboldeaux, DHFS
Peter Wurzer, DATCP

MANURE GAS SAFETY
REVIEW OF PRACTICES AND RECOMMENDATIONS
FOR WISCONSIN LIVESTOCK FARMS

I. INTRODUCTION

The death of five people from hydrogen sulfide inhalation on a Virginia dairy farm in July 2007 was a grim reminder of the hazards posed by gases associated with manure handling systems. The threat of accidents, combined with the increasing scale and complexity of manure management systems, prompted the Wisconsin Department of Agriculture, Trade, and Consumer Protection (DATCP) and USDA, Natural Resources Conservation Service (NRCS) to convene an interagency team (members are listed in Appendix A) to review safety considerations related to certain manure handling practices. In particular, the safety review team focused on the expanding use of drive-in, covered storage tanks and transfer channels intended to be entered with machinery for removing sand bedding. This was identified as a potentially hazardous practice. The team met from August 2007 to July 2008 to assess the safety aspects of this and other manure management practices and to provide recommendations to reduce the risk of accidents from manure management system gases. The group developed findings and reached recommendations through a consensus process that relied on the expert contributions from individual members and the review of research and industry findings and recommendations.

This report contains the findings and recommendations of the team. Chief among its findings, the team concluded that safety considerations currently incorporated into manure system designs and included in operation and maintenance plans have not kept pace with changes in manure management and the associated risks of manure gases. Safer system designs and management practices, along with increased awareness of these dangers, will be needed to help prevent manure gas tragedies from occurring on Wisconsin farms. This report addresses the following areas:

- Information and education
- Revision to technical standards
- Identification and notification to owners of unsafe systems
- Adoption of safety measures and practices
- Improved safety planning

II. OVERVIEW OF HAZARDS

The decomposition of manure in storage or handling systems generates gases, some of which are toxic, explosive, and oxygen displacing. The most hazardous gases are hydrogen sulfide (H_2S), ammonia (NH_3), methane (CH_4), and carbon dioxide (CO_2). Dangerous levels of these gases can accumulate in and around manure management systems, particularly when manure is being agitated or otherwise disturbed.

Hydrogen sulfide levels may increase a thousand-fold during agitation. This extremely toxic gas is the most dangerous manure gas as it is colorless, heavier than air, and may cause death in seconds at high concentrations. While hydrogen sulfide is commonly known for its rotten egg odor, the odor isn't detectable by the human sense of smell at higher concentrations. It affects eyes, respiratory system, and the central nervous system.

Ammonia has a sharp pungent odor and is generally higher in poultry manure. It is lighter than air. Ammonia causes irritation of the eyes and respiratory tract. At higher concentrations, this gas may cause permanent lung damage.

Methane is highly flammable. A spark from equipment, open flames, smoking materials, faulty wiring, or welding could provide an ignition source for an explosion or fire. Methane is odorless, colorless, and lighter than air. By displacing air at high concentrations, methane which is itself non-toxic, can become an asphyxiant and will cause rapid breathing, dizziness, and fatigue.

Carbon dioxide is heavier than air and will displace oxygen. Carbon dioxide exposure may result in headaches and dizziness. Death by asphyxiation is possible at high concentrations.

While manure is the primary source for the hazardous gases addressed in this report, the decomposition of other organic material, such as milking center waste, waste feed, feed leachate, and any combination of these materials, may pose similar risks.

III. GENERAL RECOMMENDATIONS

A. Information and Education

The team concluded that there is insufficient knowledge of the hazards associated with gases generated by manure management systems. There also appears to be a general disregard for safety practices that must be addressed to achieve the goals of this report. An information and education effort is needed that targets farm owners/operators, farm workers, manure applicators, manure system designers (private and public sector), equipment vendors, builders, and service providers. Information and education efforts, particularly for farm workers and builders, needs to be bilingual. The following actions are recommended to address these concerns.

1. Develop and disseminate "fast fact cards" on the dangers of manure gases. These cards would specifically focus on dangers of each of the four main manure gases.
2. Develop and disseminate press releases to agricultural newspapers and radio broadcasters related to manure gas safety and system design.
3. Develop bilingual podcasts on the dangers of manure gases and disseminate for agency use via UW Center for Agricultural Safety and Health website.
4. Develop bilingual training resources for safety assessments including monitoring, ventilation, and rescue procedures. Training resources will be developed for two audiences:
    - agency staffs, including UW Cooperative Extension, NRCS, DATCP, and County Conservation staff; and
    - farm personnel, including owner/operators, farm employees, and service personnel.
5. Conduct manure safety trainings for agricultural professional organizations, including a session at the WALCE Professional Development Conference in February 2009.
6. Offer joint agency statewide teleconferences or web seminars for staffs.

7. Design and staff a manure storage and handling safety display for use at the Wisconsin Farm Technology Days 2009 in Dodge County. Utilize the display and relevant materials at other farm expos and meetings as appropriate.

B. Standards and Specifications

The team recommends that the NRCS Waste Storage Facility Standard (313) and Manure Transfer Standard (634) be revised immediately to require that all waste storage facilities, reception tanks, pump chambers, and manholes be configured such that The American Society of Agricultural and Biological Engineers Standard ASAE EP470, Manure Storage Safety (ASAE EP470), criteria (attached) can be followed. Specifically, this emergency revision should prohibit drive-in, covered storage tanks and transfer channels that cannot reasonably be expected to be operated in accordance with ASAE EP470 procedures. Additionally, in conjunction with the expected routine revision of Standards 313 and 634 (to be initiated by the Standards Oversight Council in January 2009), the team recommends amending the standards to require that a safety assessment be conducted by the designer of manure storage and transfer systems and that a safety plan is developed to address manure gas hazards. In particular, sites of human entry into areas where manure gases could concentrate should be identified and addressed within a detailed plan for safe entry procedures and safety features.

C. Identification and Notification of Unsafe Systems

The team concluded that drive-in, covered storage tanks and transfer channels cannot be operated in accordance with published safety standard ASAE EP470 and, therefore, present a potential safety hazard. It is estimated that more than 75 of these systems are currently in use in Wisconsin. The team recommends these systems be abandoned or retrofitted to safer alternatives. Furthermore, the team recommends that federal, state, and local cost-sharing program funds be made available to retrofit unsafe systems. An effort should be made to contact operators with these systems to provide them with the findings of this report along with information on the availability of any financial and technical assistance to retrofit their systems to safer alternatives. Notification should be made by County Land Conservation Departments or NRCS offices as well as through a press release in agricultural newspapers and radio stations. The team also recommends that NRCS or DATCP Engineers and Technicians, as well as County Land Conservation staff, no longer provide assistance to install new drive-in, covered storage tanks and transfer channels, modify existing facilities of this type for continued use, or provide other assistance that directly supports the installation or continued use of an unsafe system.

IV. PRACTICE ASSESSMENT AND RECOMMENDATIONS

The safety review team assessed manure management practices typically found on Wisconsin livestock farms. They are differentiated by their hazard level and recommendations for mitigating those hazards. Other practices and locations on farms may also be hazardous. This report is not intended to address all farm safety concerns. A safety walk-through should be conducted to fully assess safety risks on any farm. The following four categories of practices are areas where hazards from manure gases most commonly exist.

A. Drive-In, Covered Storage Tanks and Transfer Channels

1. Practice Description

These systems are characterized by a vertical walled, concrete structure with either a slatted or solid top, or some combination of slatted or solid top or cover. They are distinguished by a ramp or opening that provides entry by a skid loader or other human-operated equipment into the tank or channel for the purpose of removing residual solids and sand. They are usually located beneath part of a barn or the entire barn, and they may form a conveyance channel that extends from the barn to an exterior storage structure. Their purpose is to provide short-term waste storage and/or transfer. Manure enters the structure from above through the slatted floor or slots cast into solid portions of the tank top, and is usually removed from the tank by pumping or by gravity flow.

2. Hazard Description

These structures may contain toxic concentrations of hydrogen sulfide gas, particularly when wastes are being agitated and moved. Additionally, there is danger of asphyxiation by oxygen displacing gases as well as the risk of methane explosion. Risk of injury from falls and drowning risks may also exist.

3. Recommendations

a. Practice Limitation

Skid loaders or similar equipment cannot be operated in these tanks in accordance with published safety standards. All published safety procedures require testing for gases, ventilation, use of respirators, and some sort of retrieval method for a person entering the storage area. Standard ASAE EP470 applies to human entry into under-floor storages, underground covered storages or pumping stations, and above/below ground tanks (concrete, steel, etc.) without covers. The standard states:

> *"Do not enter an under-floor (underground) covered storage or pumping station without using the proper respirator equipment. In addition, these safety practices are needed: (a) Shut off any manure pumps, (b) ventilate storage or pumping station at the maximum rate, (c) test the storage or station air for O_2 level and toxic gas levels, (d) attach a safety harness and rope to the working person with at least one person standing by to help with a mechanical retrieval device, and (e) have on hand an extra set of proper respirator equipment for the person standing by."*

While items a, b, c, and e can be accomplished, it is not possible to use a mechanical retrieval device for a person overcome with manure gases while operating a skid loader or similar equipment in these tanks.

b. Practice Alternatives

Larger reception tanks can include a pump that is used to transfer sand-laden manure to long-term storage. The reception tank can be designed to allow implementation of all of the ASAE EP470 safety procedures if human entry into

the reception tank is needed. Smaller, narrower transfer channels (typically 2 to 4 feet wide, 4 to 6 feet deep) can be designed with a removable top to transfer sand-laden manure to a larger reception tank located outside of the building. The smaller transfer channel can be cleaned from above by removing the top, such that human entry into the channel is not needed. Alternately, the channel could incorporate a mechanical cleaner to move sand without the need for human entry. There are three commercial products available to accomplish this:

1) a "sand boat" system that uses a mechanical cable driven system to transfer manure from a 3' x 3' channel to a reception tank;

2) an auger system, which uses horizontal augers to transfer manure from small in-barn channels to a reception tank, and

3) a pre-cast concrete "U-channel" with a removable top that transfers manure to a pre-cast reception tank outside of the building.

Non-mechanical systems can also incorporate a "chaser" of flush water to prevent sand accumulation.

c. Safety Features

All the practice alternatives listed above are designed to limit or eliminate the need for human entry into manure transfer areas. If entry into the reception tank portion of the system is ever required, all of the ASAE EP470 recommended safety measures can be implemented.

d. Safety Plans

Safety plans for the identified practice alternatives will need to be site specific. Entry into the reception tank portion of each system must be in accordance with ASAE EP470 recommended safety procedures.

4. Implementation Strategy for Recommendations:

a. Modification to Conservation Practice Standards

The NRCS Conservation Practice Standards 634 - Manure Transfer, and 313 - Waste Storage Facility should be revised immediately to require that all waste storage facilities, reception tanks, pump chambers, and manholes be configured such that ASAE EP470 standards can be followed. Specifically, this emergency revision should prohibit drive-in, covered storage tanks, and transfer channels that cannot reasonably be expected to be operated and maintained in accordance with ASAE EP470 procedures. Additional safety criteria should be incorporated in the standards as part of the routine revision process described in Section III, General Recommendations.

b. Information and Education

General informational materials are discussed in Section III. Specific to this practice, operators with existing drive-in, covered storage tanks, and transfer channels should be educated on the hazards associated with them and encouraged

to abandon or retrofit these systems consistent with identified practice alternatives.

B. Open Manure Storage Pits and Tanks

1. Practice Description

An embankment structure, excavated pit, dugout or fabricated structure that is used to contain manure, milking center waste and other organic waste generated by a livestock facility prior to land application or treatment. The manure surface of an "open" storage is exposed to the elements and is not under a building, nor does it have a lid, cover, slats, or other enclosing structures preventing open circulation and air exchange. The sides may be vertical or sloped.

2. Hazard Description

The primary gas safety hazards are from hydrogen sulfide and ammonia exposure. Open manure storage is generally not as hazardous as covered storage or other manure facilities in buildings. However, during times when the manure is being agitated or when air movement is limited, gas levels may become dangerous within and near the storage.

3. Recommendations

a. Practice Limitation

None required based on hazardous gas.

b. Practice Alternatives

None warranted based on hazardous gas.

c. Safety Features

Provide fencing, warning signs and other means to exclude unauthorized or accidental entry. This is already required under NRCS standards and by local ordinances in some cases.

d. Safety Plans

The safety plan should include warnings to avoid agitation when air movement is limited and that entry should be minimized and only occur when natural ventilation is assured.

4. Implementation Strategy for Recommendations

a. Information and Education

A general information and education strategy focused on farmers and farm workers, on the fundamentals of manure gas safety, as described in Section III.

b. Technical Standards Revision

None specific to this category.

C. Reception Tanks, Pump Chambers, and Manholes

1. Practice Description

   A vessel in which manure, milking center waste, feed storage leachate, or other organic waste is collected or stored for short periods of time before removal or transfer to storage or treatment. The vessel is usually of a size and capacity to accommodate a single or several waste collection cycles, and may be emptied as frequently as several times daily or as long as weekly.

2. Hazard Description

   These structures may contain toxic concentrations of hydrogen sulfide gas, particularly when wastes are being agitated and moved. Additionally, there is danger of asphyxiation by oxygen displacing gases, ammonia exposure, risk of methane explosion, and non-gas related risks of falling, drowning, and moving mechanical parts.

3. Recommendations

   a. Practice Limitation

      It is difficult to limit the use of these structures. However, the need for human entry can be minimized and safeguarded.

   b. Practice Alternatives

      Design features that preclude the need for human entry for maintenance including removable pumps and "dry" pump chambers should be considered.

   c. Safety Features

      The following safety features should be incorporated into future installations of this practice:

      - signs warning of the dangers and prescribing the entry procedures;
      - covers, grates, fencing or railings to prevent unauthorized and accidental entry; and
      - mechanical ventilation, tripod or other attachment for a winching out a disabled worker.

   d. Safety Plans

      A site-specific safety plan should be developed for human entry. Plans should comply with ASAE EP470 recommended safety procedures and may include the following:

      - monitoring,
      - ventilation,
      - rescue procedures,
      - SCBA (Self Contained Breathing Apparatus), and
      - lock-out/tag-out procedures.

4. Implementation Strategy for Recommendations

   a. Modification to Conservation Practice Standards

      The NRCS Conservation Practice Standards 634 - Manure Transfer, and 313 - Waste Storage Facility should be revised immediately to require that all waste storage facilities, reception tanks, pump chambers, and manholes be configured such that ASAE EP470 standards can be followed. Additional safety criteria should be incorporated in the standards as part of the routine revision process described in Section III, General Recommendations.

   b. Information and Education

      A general Information and Education strategy focused on farmers, farm workers and service providers, on the fundamentals of manure gas safety, as described in Section III.

D. Manure Processing Rooms and Buildings

1. Practice Description

   Enclosed structures or portions of structures designed to provide protection from precipitation and freezing for manure processing, handling and storage equipment such as manure solids separators, sand separators, methane powered electrical generators, manure treatment equipment, manure reception and loading areas.

2. Hazard Description

   The primary gas safety hazards are from high levels of ammonia causing respiratory injury, from methane explosion, and from hydrogen sulfide exposure. Asphyxiation from engine exhaust from generator sets or handling machinery may also exist in buildings containing this equipment or adjacent buildings. Heat exposure and high decibel sound may also be safety hazards. Secondary hazards are associated with the corrosion of building components from hydrogen sulfide exposure, particularly electrical equipment, creating the risk of electrical shock or spark ignition of methane. These structures are usually not "confined areas" and may be intended for routine human occupancy.

3. Recommendations

   a. Practice Limitations

      Future applications of this practice should avoid locating processing rooms in multiple-use buildings, particularly those for frequent human occupancy. Potentially hazardous activities should be located in separate, isolated buildings.

   b. Practice Alternatives

      None

c. Safety Features

Ensure adequate ventilation to maintain safe conditions and a safe and practical temperature. In most cases, power ventilation will be required. Consideration should be given to equipping the building or room to ventilate at a base rate as well as a higher air exchange rate to evacuate the building or room before and during occupancy. In-place gas monitoring should be considered. Warning signs should be posted at entries.

d. Safety Plans

A site-specific safety plan shall be developed that may include the following:

- warning signs stating entry procedures;
- emergency response plans;
- monitoring protocols;
- hearing protection; and
- equipment maintenance and inspection.

4. Implementation Strategy for Recommendations

a. Information and Education

A general information and education strategy focused on farmers, farm workers, building contractors, and facility planners/designers, on the fundamentals of manure gas safety, as described in Section III.

b. Technical Standards Revision

NRCS Conservation Practice Standards 634 - Manure Transfer, and 313 - Waste Storage Facility are expected to undergo revision beginning in January 2009. As part of the revision of the Manure Transfer Standard, the considerations portion should be revised to recommend the safety features and plans cited above.

Appendix A

Manure Management System
Safety Review Team Membership

Name	Affiliation, Title	Contact Information
John Ramsden, PE Co-Chair	NRCS State Conservation Engineer	(608) 662-4422 x234 john.ramsden@wi.usda.gov
Ed Odgers, PE Co-Chair	DATCP Chief of Conservation Engineering	(608) 224-4630 Fax: (608) 224-04615 ed.odgers@wisconsin.gov
Cheryl Skjolaas	UW-Biological Systems Engineering Interim Director UW Center for Ag Safety and Health	(608) 265-0568 Fax: (608) 262-1228 skjolaas@facstaff.wisc.edu
Robert Thiboldeaux, PhD	Dept. Health and Family Services Bureau of Environmental Health, Division of Public Health, Toxicologist	(608) 267-6844 Fax (608) 267-4853 robert.thiboldeaux@wi.gov
Corey Schuelke	Waupaca County LCD Engineering Conservation Technician	(715) 258-6245 (715) 258-6239 cschue@co.waupaca.wi.us
Dean Sylla, PE	NRCS Area Engineer, NE	(920) 733-1575 X 120 dean.sylla@wi.usda.gov
Peter Wurzer	DATCP Engineering Specialist	(715) 832-6547 peter.wurzer@wisconsin.gov

ASAE EP470 JAN1992 (R2005)
Manure Storage Safety

American Society of
Agricultural and Biological Engineers

STANDARD

ASABE is a professional and technical organization, of members worldwide, who are dedicated to advancement of engineering applicable to agricultural, food, and biological systems. ASABE Standards are consensus documents developed and adopted by the American Society of Agricultural and Biological Engineers to meet standardization needs within the scope of the Society; principally agricultural field equipment, farmstead equipment, structures, soil and water resource management, turf and landscape equipment, forest engineering, food and process engineering, electric power applications, plant and animal environment, and waste management.

NOTE: ASABE Standards, Engineering Practices, and Data are informational and advisory only. Their use by anyone engaged in industry or trade is entirely voluntary. The ASABE assumes no responsibility for results attributable to the application of ASABE Standards, Engineering Practices, and Data. Conformity does not ensure compliance with applicable ordinances, laws and regulations. Prospective users are responsible for protecting themselves against liability for infringement of patents.

ASABE Standards, Engineering Practices, and Data initially approved prior to the society name change in July of 2005 are designated as 'ASAE', regardless of the revision approval date. Newly developed Standards, Engineering Practices and Data approved after July of 2005 are designated as 'ASABE'.

Standards designated as 'ANSI' are American National Standards as are all ISO adoptions published by ASABE. Adoption as an American National Standard requires verification by ANSI that the requirements for due process, consensus, and other criteria for approval have been met by ASABE.

Consensus is established when, in the judgment of the ANSI Board of Standards Review, substantial agreement has been reached by directly and materially affected interests. Substantial agreement means much more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and that a concerted effort be made toward their resolution.

CAUTION NOTICE: ASABE and ANSI standards may be revised or withdrawn at any time. Additionally, procedures of ASABE require that action be taken periodically to reaffirm, revise, or withdraw each standard.

ASABE, 2950 Niles Road, St. Joseph, MI 49085-9659, USA ph. 269-429-0300, fax 269-429-3852, hq@asabe.org

Manure Storage Safety

Developed by the ASAE Swine Housing Committee; approved by the Structures and Environment Division Standards Committee; adopted by ASAE January 1992; reaffirmed December 1996, December 1997, reaffirmed for one year February 2003; reaffirmation extended one year by SE-03 February 2004; reaffirmed February 2005.

1 Purpose and scope

1.1 The purpose of this Engineering Practice is to set forth existing known practices on manure storages that help (1) minimize the hazards of manure gases to livestock and humans, and (2) minimize the potential for drownings at manure storage sites.

1.2 This Engineering Practice does not include the design loads or structural specifications for manure storages (see ASAE Engineering Practice EP393, Manure Storage).

1.3 This Engineering Practice contains information on safety equipment, management suggestions on safety, and the manure gases hydrogen sulfide, methane, ammonia, and carbon dioxide. Also given is a listing of the maximum safe gas concentrations, related standards and practices, and pertinent references.

2 Background

2.1 Liquid or semi-solid manure that is handled or set in motion by pumping, mixing, spreading, or cleaning-out can release large amounts of gases. The quantity released depends on the animal species, temperature, fluidity of the manure, pH, length of storage time, and type of handling system. The gases of concern are hydrogen sulfide, H_2S, carbon dioxide, CO_2, methane, CH_4, and ammonia, NH_3. (See Section 8—Technical Information on Manure Gases, for more information on these gases.)

2.2 Manure gases have been fatal to both livestock and humans. Humans have died when they entered a manure storage without a supplied air respirator or a self-contained breathing apparatus. Animals and humans have died when liquid manure stored under slotted floors was agitated and gases were released. Animal performance in partial and total slotted floor enclosed buildings is impaired when pit gas concentrations exceed recommended limits.

3 Potentially lethal situations

3.1 Fatalities that occur when agitating manure are generally caused by compounding the toxic effect of H_2S with the asphyxiating effect of oxygen, O_2, depletion by other gases. (See Section 8—Technical Information on Manure Gases, for toxic levels.)

3.2 Methane explosions can result from concentrations of the gas within flammable limits. These concentrations can occur during agitation or when the gas is trapped in an improperly ventilated space over extended periods of time.

3.3 When ventilation equipment fails, the concentrations of manure gases and animal respiration air increase due to the lack of fresh air dilution.

3.4 Drownings of humans or animals can occur in aboveground tanks, below-ground tanks, or earthen storages. Livestock deaths have occurred due to structural failure of floorings or covers over storages or due to open gates.

3.5 Protective barriers or railings around openings can prevent accidents. Push-off platforms or ramps (piers) can be a site where the tractor scraper driver can tumble into an open storage. These should be protected with a sturdy railing or semicircular metal support embedded in concrete (i.e., hook).

3.6 Thick crusts on dairy and beef storage basins can appear solid, but may break under the weight of humans, animals, or equipment. Swine manure usually has a very thin crust if any.

4 Controlling manure gases with ventilation

4.1 Properly designed and operated ventilation systems help prevent accidents by removing or diluting levels of toxic gases in confinement units.

4.2 Exhausting air from below slotted floors, especially when agitating the manure, decreases concentrations of manure gases at animal level. However, the concentration still may be excessive for humans and animals. Two methods of gas removal are (1) isolated nonducted pit fans, and (2) pit fans connected to perforated plastic pipes or plenums under the slotted floors or under elevated pens (pig decks). Fans connected to correctly sized perforated ducts or plenums have more exhaust points and generally reduce the undesirable gas level more than isolated fans, especially at low airflow rates. As with the area fan, the duct or plenum needs to be at least 0.3 m (1 ft) above the manure level for reducing pit gas levels. Spacing of perforated ducts or plenums should not exceed 4 m (13 ft) in order to be effective.

4.3 The design of the air inlet system of a building has a significant effect on airflow patterns within the building and on pit gas concentrations. The airflow patterns should ensure that gases generated by the manure are moved away from the animals. (This airflow pattern may not always be the best design for keeping partially slatted pens clean in the case of swine.) Dilution and removal of gases is as important as controlling building temperature and humidity.

4.4 Isolated pit fans and pit ventilation should be installed at separate sites from the manure removal locations such as pump-outs and clean-out extensions. It is vital that ventilation continue at maximum rates during pit agitation.

4.5 Sealed manure pits or capped pits within structures should be ventilated with an exhaust fan and air inlet(s) to provide for pit gas escape.

4.6 In mechanically ventilated buildings, a warning device should be installed to inform the farmer if there is a ventilation system failure. Brief power outages may be common in some areas. Stand-by generators are a good investment for confinement facilities (see ASAE Engineering Practice EP270, Design of Ventilation Systems for Poultry and Livestock Shelters).

5 Special design and construction safety considerations for new manure storage facilities

5.1 The following considerations should be incorporated in the design and construction of liquid manure systems for a new or remodeled building:

5.1.1 Manure slurry will tend to separate into solid and liquid fractions in storage. Agitation is needed to resuspend the solids and to aid in completely emptying a storage. Provisions such as pump-out ports, agitation pump drop-in access locations in the pit sidewall or pit lid or access for trailer-mounted pumps for earthen storages are needed. Without adequate agitation during unloading, solids will build up and result in reduced storage capacity and higher levels of gas production.

5.1.2 All manure pump-out openings should be located outside enclosed buildings in order to reduce the danger of working in a confined area

when unloading or agitating a storage. The number of manure access points and/or agitation points needed varies with pit size, under-slat style of storage, animal species, and ration. Vacuum tank pump out holes should be 6 m (20 ft) on center on both sides of enclosed total slotted floor deep pit building and on one side of an enclosed partially slotted floor deep pit building. Agitation holes for vertical shaft pumps can be spaced up to 20 m (65 ft) on center (depends on building width). An exception to keeping pump-out openings outside is buildings which are naturally ventilated and three sided or very open. Individual or gang slats are generally removed to drop in the vertical shaft liquid manure pump for agitation and manure removal. Divider walls in pits may be needed to keep ventilation air separate in multiple room buildings. This can affect the agitation hole and pump out hole spacings.

5.1.3 Tank openings should be guarded with grills and/or covers to prevent humans, animals, equipment, and other objects from accidentally falling into the storage structure. Removable covers and grills should be provided on openings for agitation and pumping equipment. Removable covers and grills should be designed to prevent their accidental loss into the tank and their unintentional removal. They should be designed for simple removal and replacement to encourage their use.

5.1.4 Ladders should not be installed on the outside of aboveground tanks unless they are terminated above the reach of an innocent bystander. A safety decal indicating to not leave ladders or climbing equipment near or around the structure should be located next to the ladder. The ladder cage and/or platform should conform to ASAE Standard S412, Ladders, Cages, Walkways and Stairs.

5.1.5 Railings are needed on open manure storages that are below or partially below ground. Storages that are open and above ground would not need a railing. All push-off platforms or piers for open, below-ground manure storage structures need a barrier strong enough to stop a slow-moving tractor or skid loader. Hinged grates, solid covers, or the equivalent are needed for all scrape-in openings to prevent the inadvertent entry of animals and people.

5.1.6 Open storages should be fenced in unless they are aboveground tanks. Warning signs should be posted (see paragraph 7.5).

5.1.7 When the manure storage is outside and pipe-connected to a building, a water seal, gas trap, or other device should be provided to prevent gases in the storage structure from entering the building, especially during agitation. A clean-out access external to the facility should be incorporated to allow unclogging of a drain pipe or storage filling pipe.

5.1.8 Buildings above manure pits should be ventilated at or above the minimum or cold weather ventilation rates given in ASAE Engineering Practice EP270, Design of Ventilation Systems for Poultry and Livestock Shelters. A heater may be needed in cold weather so minimum recommended ventilation levels can be achieved without lowering the building temperature below critical levels.

5.1.9 Typical holding tanks, which hold a week's supply of manure, should have 2 holes in their lids. One is needed for the pump or pump access (submersible), and one for a 0.6 m (2 ft) diameter corrosion-resistant exhaust fan. The holes should be on opposite ends of the tank. The fan should be wired to operate at full speed only. A manual on/off switch should be within 2 m (6 ft) of the fan. The fan is needed for emergency situations when human access to the tank is needed (see Section 7—Safety Equipment, Warning Signs, Management Suggestions).

5.1.10 Electrical equipment should conform to American National Standard ANSI/NFPA 70, National Electrical Code. An electrical shut-off should be installed outside the building (see ANSI/NFPA Standard 70).

6 Safety signs and operator's manual

6.1 The user of the manure storage shall be provided with the appropriate safety information. The information in Section 7—Safety Equipment, Warning Signs, Management Suggestions, should be used as a basis for safety instructions to be included in the operator's manual and on signs. These should be provided when the manure storage is constructed.

7 Safety equipment, warning signs, management suggestions

7.1 Hazard control and accident prevention are dependent upon the awareness, concern, and prudence of personnel involved in the operation, maintenance and use of equipment, and facilities. These safe practice messages are recognized as being effective for enhancing safety, but may not cover all possible hazardous situations; hence, they should be interpreted judiciously and not necessarily reproduced verbatim. These safety practices should be followed if the tank or pit has *ever* been used, regardless of how long ago.

7.2 Rescue equipment such as harnesses, ropes, respirators, and block and tackle should be located near the manure storage area. The location should be clearly marked. Gas detection equipment such as detector tubes and/or instruments designed to detect combustible gases and hydrogen sulfide should be available and located in a warm, dry area. Detector tubes and sensors in gas detection instruments have expiration dates. Checks should be made periodically to be sure that the equipment is operational and properly calibrated and has not been removed. The phone numbers of the local fire department/rescue squad should be posted in a box mounted on a pole near an outside storage or on a wall in an inside storage building. These numbers should be posted near all the telephones on the farm.

7.3 After agitating manure storages under buildings and before entering, NH_3, CH_4, and H_2S levels in the building should be monitored. Animals should be observed through windows for strange behavior. These gases should also be monitored in small collection pits or manure transfer pits and in aboveground storages before going down into these pits or storages with appropriate safety equipment.

7.4 If it is absolutely necessary to enter a transport tank, a below-ground storage, or a pit, then specialized safety equipment such as a supplied air respirator, which supplies grade D breathing air, or a self-contained breathing apparatus must be used by those who are trained and familiar with the use of this equipment. Persons who are not familiar with the equipment and proper maintenance should not purchase or borrow air supplied breathing apparatus for use in potentially life threatening environments. In rural areas, the local fire department, sheriff's office, or rescue unit should be contacted and requested to come to the site. In many cases where people are overcome by pit gases or lack of oxygen two or more people have died. It is not possible to "hold your breath" and rescue someone. Procedures in the National Institute for Occupational Safety and Health (NIOSH) publication, No. 80-106, Working in Confined Spaces, should be followed.

7.5 Warning sign contents—safe management suggestions. Another important piece of safety equipment, in addition to the safety sign in paragraph 5.1.6, is a warning sign dealing with the management of the storage. The management suggestions that pertain to the manure storage should be listed prominently on at least one corrosion resistant sign. These suggestions could be condensed and referenced to an operator's manual. ASAE Standard S441, Safety Signs, should be followed. Special hazardous considerations which should be addressed through appropriate safety signs for various types of storages include but are not limited to the following (wordage only suggested):

7.5.1 Under-floor storages. Sign(s) should be located on the outside of the building wall and near the entry door.

7.5.1.1 After agitation of manure in under-floor storage, the atmosphere in the storage and in the building space above the storage may contain hazardous gases, explosive air mixtures and/or insufficient oxygen for animals and humans.

7.5.1.2 Always maintain at least 0.3 m (1 ft) freeboard between the manure surface and bottom of the flooring in under-floor storages to minimize pit gas concentrations at floor level for animals. This same freeboard is necessary before commencing agitation to ensure that pit

gases can be removed by pit fans. If pit ducts and plenums are used, they should be inspected for dust accumulation every year and cleaned if needed. Ducts and plenums can be cleaned with pressure washers or with chimney sweep brushes. Leaving a small diameter cable or wire in small rigid PVC pipe type ducts allows pulling brushes through them. Holes should be placed in the bottom of the ducts instead of at 9 and 3 o'clock positions to make cleaning easier and to reduce dust build-up. Pit fans should have their guards removed permanently on the side toward the pit because they will quickly clog with dust and reduce the fan's capacity.

7.5.1.3 Provide maximum ventilation during pumping and agitation. Keep all pit ventilation in operation during manure removal and for at least 12 h afterward (ideally 3 to 4 days). If the pit is pumped out in winter, use the maximum ventilation rate as long as possible, since the highest hydrogen sulfide levels occur shortly after start-up of agitation pumps. The building interior should be off-limits to people, and if possible, animals should be evacuated.

7.5.1.4 Do not try to rescue an animal if it falls over during pit agitation. Turn off the pump and ventilate the building until gases have had a chance to escape and be diluted. Test the building atmosphere for toxic gas levels before entering (H_2S is most critical toxic gas).

7.5.1.5 Do not enter an under-floor covered storage or pumping station without using the proper respirator equipment. In addition these safety practices are needed: (a) Shut off any manure pumps, (b) ventilate storage or pumping station at the maximum rate, (c) test the storage or station air for O_2 level and toxic gas levels, (d) attach a safety harness and rope to the working person with at least one person standing by to help with a mechanical retrieval device, and (e) have on hand an extra set of proper respirator equipment for the person standing by.

7.5.1.6 Don't smoke, weld, or use an open flame in confined, poorly ventilated areas where CH_4 can accumulate. Maintain electric motors and wiring in good condition near manure storages. Use watertight and dust-tight electrical fixtures (see ANSI/NFPA Standard 70, National Electrical Code). A sign should be posted to say "Danger No Smoking" during agitating and for 3 to 4 days after.

7.5.1.7 Keep all safety guards and shields in place on pumps, pump hoppers, tank wagons, power units, etc. Do not allow children or irresponsible people near any operating equipment. Do not enter tank wagons. Use caution when changing spout direction on agitation pumps in order to prevent falls.

7.5.1.8 Consult with your physician if you have been exposed to H_2S or NH_3 in concentrations severe enough to cause irritation to the respiratory tract (as indicated by difficulty in breathing).

7.5.2 Underground covered storages or pumping stations. Locate sign(s) near agitation hole(s).

7.5.2.1 Make sure hazardous gases are not being pulled back into a livestock building when agitation is occurring (see also paragraph 5.1.7).

7.5.2.2 Do not enter underground covered storage or pumping station without using the proper respirator equipment. In addition these safety practices are needed: (a) Shut off any pumps, (b) ventilate the storage or pumping station at the maximum rate, (c) test the storage or station air for O_2 level and toxic gas levels, (d) attach a safety harness and cable to the working person with one person standing by to help with a mechanical retrieval device, and (e) have an extra set of proper respirator equipment on hand for the person standing by.

7.5.2.3 Keep all safety guards and shields in place on pumps, pump hoppers, tank wagons, power units, etc. Do not allow children or irresponsible people near any operating equipment. Do not enter tank wagons. Use caution when working on the agitation pump spout to change its direction in order to prevent falls.

7.5.2.4 Consult with your physician if you have been exposed to H_2S or NH_3 in concentrations severe enough to cause irritation to the respiratory tract (as indicated by difficulty in breathing).

7.5.3 Earthen storages. Sign(s) should be located on the fence near entry gate.

7.5.3.1 Post warning sign(s) that say "Danger Manure Storage" or "Danger Keep Out," or "Danger Keep Away."

7.5.3.2 Dairy and beef manure may crust over and even have growing vegetation in bottom loaded storages, but the surface will not support the weight of humans, animals or equipment.

7.5.3.3 Keep all guards and safety shields in place on pumps, pump hoppers, tank wagons, power units, etc. Do not allow children or irresponsible people near any operating equipment. Do not enter tank wagons. Use caution when working on the agitation pump spout to change its direction in order to prevent falls.

7.5.4 Above/below-ground tanks (concrete, steel, etc.) without covers. Sign(s) should be located at eye level on tank surface near agitation location.

7.5.4.1 Post warning sign(s) that say "Danger Manure Storage" or "Danger Keep Out," or "Danger Keep Away."

7.5.4.2 Keep all safety guards and shields in place on pumps, pump hoppers, tank wagons, power units, etc. Do not allow children or irresponsible people near any operating equipment. Do not enter tank wagons. Use caution when working on the agitation pump spout to change its direction in order to prevent falls.

7.5.4.3 Consult with your physician if you have been exposed to H_2S or NH_3 in concentrations severe enough to cause irritation to the respiratory tract (as indicated by difficulty in breathing).

7.5.4.4 Do not enter the storage before (a) testing the pit air for toxic gas levels, (b) using the proper respirator equipment, and (c) attaching a safety harness and rope to the working person with at least one person standing by to help if needed.

8 Technical information on manure gases

8.1 Hydrogen sulfide (2), (10), (11)

8.1.1 Hydrogen sulfide, the most dangerous of manure gases, is colorless and smells like rotten eggs, although at low concentrations this odor is easily masked by other building odors. It is heavier than air (specific gravity relative to air=1.190 at 20 °C [68 °F], and 760 mm Hg) and soluble in water at basic pH's. It is produced from the anaerobic decomposition of organic materials. Hydrogen sulfide is normally released from all stored manure, but it is most dangerous with agitated liquid manure. The release is generally very slow in undisturbed manure and at low temperatures. Concentrations reaching 280–420 mg/m^3 (200–300 ppm) have been reported within a few minutes after the start of manure agitation and have been as high as 1400 mg/m^3 (1000 ppm) during vigorous agitation. In addition to times of agitation, H_2S is also released from liquid which is recycled back from lagoons and reduced solids level storages for flushing. The solids levels can be reduced by gravity separation in settling tanks or mechanical separators. Excessive levels of 220 mg/m^3 (160 ppm) have been measured in pig buildings even with mechanical separators and when recharging from a separated liquids storage pond (not lagoon). Unless fresh water is added lagoons can turn into storage ponds when drought conditions occur.

8.1.2 H_2S's characteristic odor does not give adequate warning because it paralyzes the olfactory system. Thus the sense of smell is rapidly diminished, and high concentrations do not give a perceived proportionally greater odor. The effects on humans of various concentrations are given in Table 1.

8.1.3 Pigs are made uncomfortable (stressed) by prolonged exposure to low levels of H_2S. Pigs exposed continuously to at least 28 mg/m^3 (20 ppm) develop fear of light, loss of appetite, and nervousness. Continuous exposure to 70–340 mg/m^3 (50–240 ppm) causes vomiting, nausea, and diarrhea. In acute poisoning, H_2S acts so rapidly that there are few symptoms of imminent danger. Sudden nausea and unconsciousness are followed by death at concentrations of 1120 mg/m^3 (800 ppm) or above.

Table 1 – Hydrogen sulfide effects at various concentrations (4), (10)

Concentration mg/m³	(H_2S) ppm	Effect on humans
0.007	0.005	Barely detectable
5.6	4	Easily detectable, moderate odor
14	10	Eye irritation
36	27	Unpleasant odor
140	100	Coughing, eye irritation, loss of smell after 2–15 min exposure
280–420	200–300	Eye inflammation and respiratory tract irritation after 1 h
700–980	500–700	Loss of consciousness and possible death in 30–60 min
1120–1400	800–1000	Rapid unconsciousness, cessation of respiration and death
1400	1000	Diaphragm paralysis on first breath, rapid asphyxiation

Table 2 – Maximum safe gas concentrations for an 8-H exposure for humans (3)

Gas	TLV-TWA* mg/m³	TLV-TWA* ppm
Carbon dioxide, CO_2	9000	5000
Ammonia, NH_3	18	25
Hydrogen Sulfide H_2S	14	10
Methane, CH_4	655	1000

*TLV-TWA stands for Threshold Limit Value (Time Weighted Average). The values listed are for 25 °C (77 °F). The concentration of these gases is temperature dependent.

8.2 Methane (2), (7), (10), (11)

8.2.1 Methane is colorless, odorless, and lighter than air (specific gravity relative to air=0.554 at 20 °C [68 °F] and 760 mm Hg). It is slightly soluble in water. Methane is generated from the anaerobic decomposition of manure. All manure storages release CH_4, but the rate of production varies with temperature. Although temperatures of approximately 35 °C (95 °F) are considered ideal for CH_4 production from manure, a small amount of CH_4 is produced from manure at lower temperatures found in under-floor manure storages. Explosive concentrations of methane may be released during liquid manure agitation and remain for several weeks after emptying the storages. Air mixtures containing from 33,000–99,000 mg/m³ (50,000–150,000 ppm or 5–15%) CH_4 are explosive. Methane is not toxic and is unlikely to adversely affect animal and human health and performance in normally ventilated buildings. Methane is an asphyxiant and can cause suffocation by displacement of oxygen from the lungs. Replacing oxygen should revive a victim.

8.3 Ammonia (2), (3), (4), (6), (10), (11)

8.3.1 Ammonia is colorless with a characteristic pungent odor. It is lighter than air (specific gravity relative to air=0.596 at 20 °C [68 °F] and 760 mm Hg) and highly soluble in water. Ammonia concentrations are higher in warm buildings than cold buildings. Enclosed buildings with scrapers or with bedded packs can have NH_3 levels as high as those found in shallow and deep pit buildings. The minimum perceptible level of NH_3 for people is variable, ranging from 0.36 to 39 mg/m³ (0.5 to 54 ppm).

8.3.2 At high concentrations ammonia can cause ulceration of the eyes and severe irritation to the respiratory tract. Ammonia irritates the eyes at about 36 mg/m³ (50 ppm) and the respiratory tract is affected at about 72 mg/m³ (100 ppm). Since NH_3 is very irritating at levels of 72 mg/m³ (100 ppm) a person would leave unless trapped before encountering the harmful levels of 720–1080 mg/m³ (1000–1500 ppm).

8.3.3 Ammonia tends to produce discomfort in animals. Excessive quantities 36 mg/m³ (50 ppm) for prolonged periods predispose swine, poultry layers, broilers, and turkeys to respiratory diseases with the added risk of secondary infections. With baby chickens, the symptoms usually become apparent by the fifth week of age. The symptoms include watery eyes, closed eyelids, rubbing of eyes on the wing, decreased growth rate, poor feed conversion, huddling together of affected birds. Levels up to 54 mg/m³ (75 ppm) will not usually retard growth but will induce an unhealthy appearance. Hen comfort needed for high egg production becomes affected when NH_3 exceeds 14 mg/m³ (20 ppm). Layers exposed to 72 mg/m³ (100 ppm) will not lay as well as those unexposed. Removal of NH_3 did not permit egg production to return to normal. At 72–144 mg/m³ (100–200 ppm), NH_3 induces sneezing, salivation, and loss of appetite in swine. Measured levels have ranged from 0–77 mg/m³ (0–110 ppm) in poultry and swine buildings.

8.4 Carbon dioxide (2), (10), (11)

8.4.1 Carbon dioxide is a colorless, odorless gas heavier than air (specific gravity relative to air=1.529 at 20 °C [68 °F] and 760 mm Hg) and soluble in water. The normal atmosphere contains about 540 mg/m³ (300 ppm) of CO_2. Within an animal housing facility, more CO_2 is released through respiration of the animals than by manure decomposition. Typical concentrations of CO_2 in well-ventilated buildings are in the 900–9000 mg/m³ (500–5000 ppm) range for livestock, depending on season of the year. Levels for people in an office building run about 1260 mg/m³ (700 ppm) or less for good air quality.

8.4.2 Carbon dioxide is not highly toxic to humans or animals. Its main danger is that of contributing to an oxygen deficiency which can result in asphyxiation or suffocation. It also slows growth in animals because it inhibits their appetite. Air containing 72,000 mg/m³ (40,000 ppm) causes deeper and faster breathing. More than 180,000 mg/m³ (100,000 ppm) may produce dizziness and unconsciousness. Death will occur after a few hours at concentrations of 450,000 mg/m³ (250,000 ppm) or more.

8.5 Maximum safe gas concentrations (9), (12)

8.5.1 Animals in confinement are exposed to their environments continuously, whereas, people can get relief from hazardous or irritating situations. For this reason, it is important that careful consideration be given to the quality of the environment within the animal zone or the level just above the floor. The only standards governing permissible levels in confinement buildings are those providing safe environments for workers (see Table 2). The maximum safe gas concentrations for an 8 h workday and 40 h workweek exposure for humans, established by the American Conference of Government Industrial Hygienists, are called threshold limit values, TLV. The values are expressed in milligrams per cubic meter, mg/m³, or parts per million, ppm. Safe gas levels for animals have not been established. However, several researchers have reasoned that animal responses are similar to those of humans. The allowable levels should vary with animal weight and time exposure.

8.5.2 The establishment of maximum safe concentrations of gases is complicated by the fact that animal environments also include dust. Dust particles carry harmful bacteria and viruses which the animals and people can inhale into their respiratory systems. Higher levels of dust, which often occur in cold weather when ventilation rates are minimal, can compound the effect of these gases, especially NH_3, on animals and people. (12)

Cited Standards:

ANSI/NFPA 70, National Electrical Code
ASAE EP270, Design of Ventilation Systems for Poultry and Livestock Shelters
ASAE EP393, Manure Storages
ASAE S412, Ladders, Cages, Walkways, and Stairs

References

1. ACHIH. Threshold limit values and biological exposure indices for 1988–1989. American Conference of Government Industrial Hygienists, 6500 Glenway Ave. Bldg. D-7, Cincinnati, OH.
2. Agricultural Respiratory Hazards Education Series, Unit 4. Livestock confinement dust and gases. No. Pm-1222-4. Iowa State Coop. Extension Service. Ames, IA,.
3. ANSI. Z117, Safety Requirements for Working in Tanks and Other Confined Spaces. American National Standards Institute, New York, NY.
4. ASAE. EP379, Control of Manure Odors. American Society of Agricultural Engineers, St. Joseph, MI 49085.
5. ASAE D384, Manure Production and Characteristics. American Society of Agricultural Engineers, St. Joseph, MI 49085.
6. ASAE S401, Use of Thermal Insulation in Agricultural Buildings. American Society of Agricultural Engineers, St. Joseph, MI 49085.
7. ASAE EP403, Design of Anaerobic Lagoons for Animal Waste Management. American Society of Agricultural Engineers, St. Joseph, MI 49085.
8. ASAE S417, Specifications for Alarm Systems Utilized in Agricultural Structures. American Society of Agricultural Engineers, St. Joseph, MI 49085.
9. ASAE S466, Nomenclature/Terminology for Livestock Waste/Manure Handling Equipment. American Society of Agricultural Engineers, St. Joseph, MI 49085.
10. Donham, Kelley J. March 1987. Health hazards of air in swine buildings: State of the art. Proceedings of annual meeting of the American Assn. of Swine Practitioners.
11. Handbook of chemistry and physics. 1959. 40th edition. Chemical Rubber Publishing Co., Cleveland, Ohio.
12. Midwest Plan Service. 1985. Livestock waste facilities handbook. MWPS-18. Iowa State Univ., Ames, IA.
13. Mine safety applicance data sheet 08-01-02. Detectors, Reagents, and Accessories for Samplair Pump and Testing Kit, 600 Penn Center Blvd., Pittsburgh, PA.
14. Muehling, AJ. 1970. Gases from stored swine wastes. Journal of Animal Science. 30:526–531.
15. NAS. Odors from stationary and mobile sources, p. 182, 1979. National Academy of Sciences, Washington, DC.
16. NFPA, National Electrical Code Handbook. 1987. 4th edition. National Fire Protection Assn., Quincy, MA.
17. NIOSH. Working in confined spaces. No. 80–106. National Institute for Occupational Safety and Health, 4676 Columbia Pkwy, Cincinnati, Ohio.
18. NSC. 1971. Fundamentals of industrial hygiene. 2nd edition. National Safety Council, 444 N. Michigan Ave., Chicago, IL.
19. USDA-ARS. 1970. Air pollutants affecting the performance of domestic animals. Agricultural Handbook No. 380. U.S. Department of Agriculture, Agricultural Research Service, Washington, DC.

Charlotte Nagel

From: Sarah Burdette <sburdette@ledgeviewwisconsin.com>
Sent: Wednesday, May 30, 2018 8:18 AM
To: Charlotte Nagel
Subject: FW: Draft Health and Human Safety Analysis of Ledgeview Farms Wastewater Impoundment
Attachments: Process Safety and Technical Analysis for Ledgeview Farms Lower Farm Manure Pit.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Please include in the resident correspondence files.

Sarah K. Burdette
Administrator
Town of Ledgeview

Ledgeview

3700 Dickinson Road
De Pere, WI 54115
Phone: 920.336.3360, ext. 108
Mobile: 920-639-6083
sburdette@ledgeviewwisconsin.com www.LedgeviewWisconsin.com

From: Michael Tesar [mailto:michaelgtesar@yahoo.com]
Sent: Monday, May 28, 2018 11:55 PM
To: Phil Danen <pjdanen@ledgeviewwisconsin.com>; Sarah Burdette <sburdette@ledgeviewwisconsin.com>
Subject: Draft Health and Human Safety Analysis of Ledgeview Farms Wastewater Impoundment

Good evening Phil and Sarah,

This is late in the game but hopefully of some use and consideration for the basis of your decision tomorrow evening. Please forward to those needing to review, thank you.

Best regards,

Mike

Process Safety Analysis: Ledgeview Farms – Lower Farm Manure Storage Pit

Date: 05/28/18

Executive Summary:

Ledgeview Farms expanded its lower farm operations since approximately 2009 to present. As a result, with the additional head count and construction of ~ 3 acres of open uncovered cement crop storage are being required by the EPA and WI DNR to manage the manure produced and capture precipitation runoff from the site and crop storage areas. The site is within 500' of several residences and upper middle-class subdivision immediately north and downhill from the site. With proper expansion planning of the site, the need for the site storm water and manure collection could have been avoided. The previously mentioned subdivision was designated in town planning maps and under construction, pre-2009 and prior to the initial expansion activities of lower farm.

Regardless of lack of proper planning, numerous options still exist of which a waste collection or "manure" pit is one of the options. Of the options to be considered, the manure pit option was selected by Ledgeview Farms. This option poses the largest negative impact to not only the adjoining property owners but the Town of Ledgeview and local area's economic development. Costco located in Bellevue due to it catering to the upper middle class and the impacted area's strong demographic makeup. The ability for Ledgeview and Bellevue to lure future higher end retailers will be negatively impacted by the installation of this facility.

The manure pit was engineered by Roach Associates and approved by WI DNR and Brown County to current NRCS and DNR Statutes. Setbacks and odor calculations from private wells and adjoining properties are established by the Statutes and constants are not substantiated on physical science but rather legislative debate and intended for remote rural settings.

Consideration to process safety on site and impacts to the site's neighborhood is not supported in any of the pits permitting process unlike the permitting process and regulations associated with an industrial plant. As the modern CAFO (Concentrated Animal Feeding Operation) is an industrial agricultural plant, special consideration to issues of health and human safety need to be applied to this site's unique location and proximity to a medium density residential setting.

Technical Analysis:

Upon detailed review of the subject project, the design basis was to minimize mechanization (pumps, valves, etc), automation, and basic safety instrumentation not only for farm employees but the early warning to the surrounding neighborhood when a spill, breach, or emission of toxic gas is present. The current design employs a gravity based site draining system without any valving for isolation or control of effluent flows into the pit which subjects the facility to potential breaching of the effluent. Level is self-monitored on a weekly basis with a non-maintained staff rod indicator subject to fouling, making the level measurement hard to read,

leading to error in determination of true level. No mention in the application was referred to regarding the qualifications of the employee(s) tasked with monitoring the level. Monitoring and recording of data is self-collected, manually recorded, and reported, without an automatic means of verification.

Lack of Incorporation of Safety and Risk Management in Design Basis.

The current design lacks consideration to a FMEA (Failure Mode Effects Analysis) and LOPA (Layer Of Protection Analysis) to reduce process risk to not only employees but the community surrounding the CAFO plant.

FMEA is used to identify potential high-risk situations, rank them by severity, and list design parameters used to mitigate and reduce risk to an acceptable level. Figure 1 below is an example of an FMEA study:

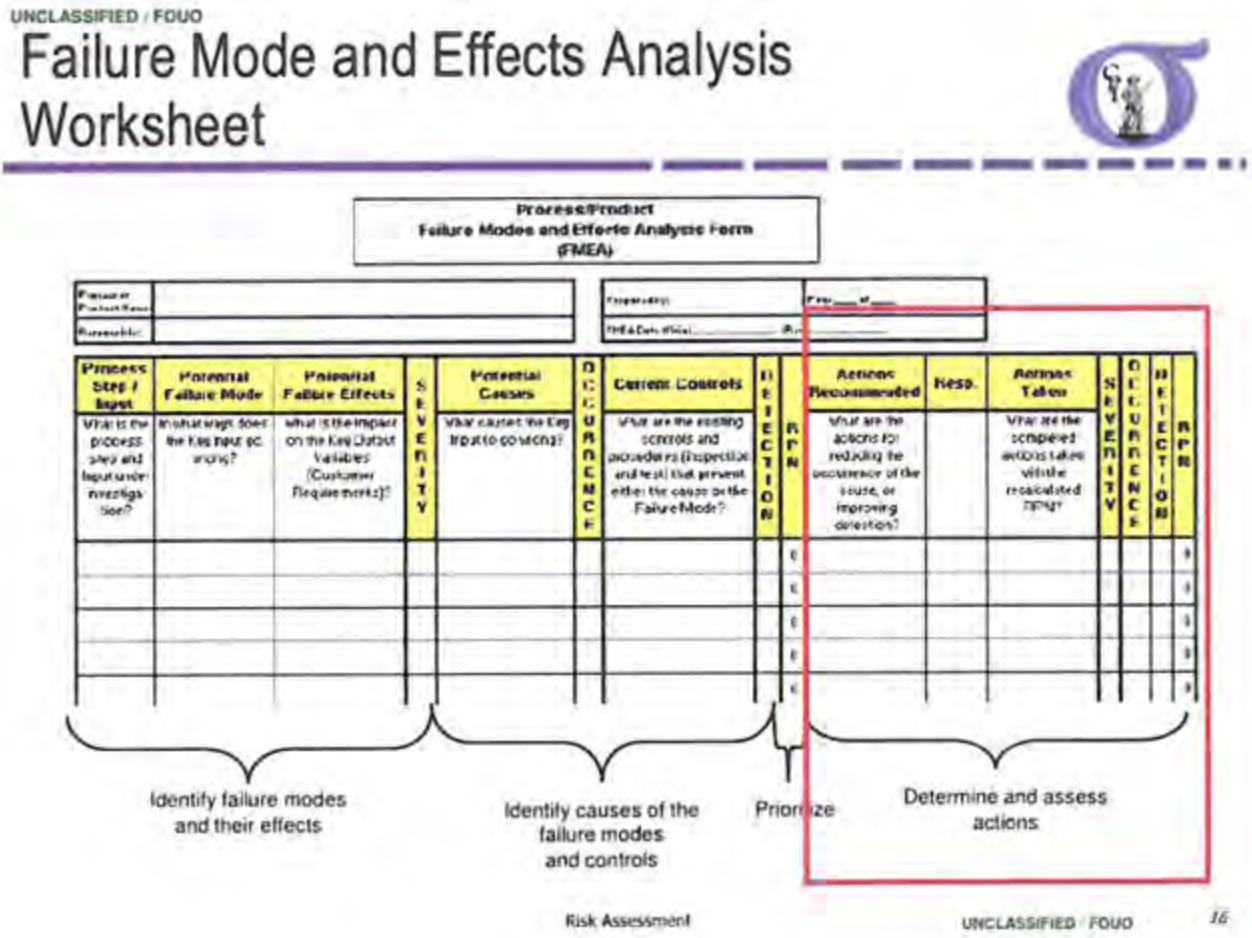


FIGURE 1

LOPA is used to determine the event, identify the cause, and then plan corrective measures to monitor, control, and contain the danger to minimize impact on the outer periphery of exposure. A pictorial representation is illustrated below in Figure 2 and the spreadsheet analysis is indicated below in Figure 3.

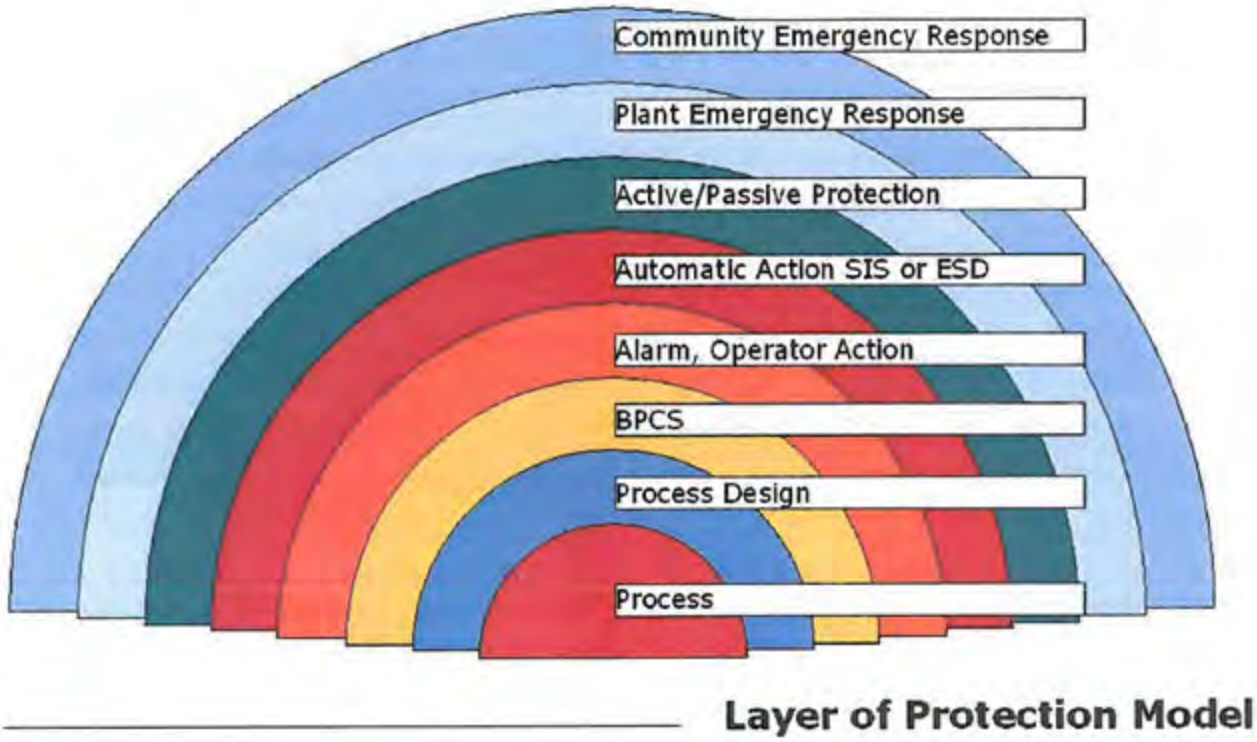


FIGURE 2

Safety Layer of Protection Analysis

Process examples

The Layer of Protection Analysis (LOPA) is performed using a standard table for data entry.

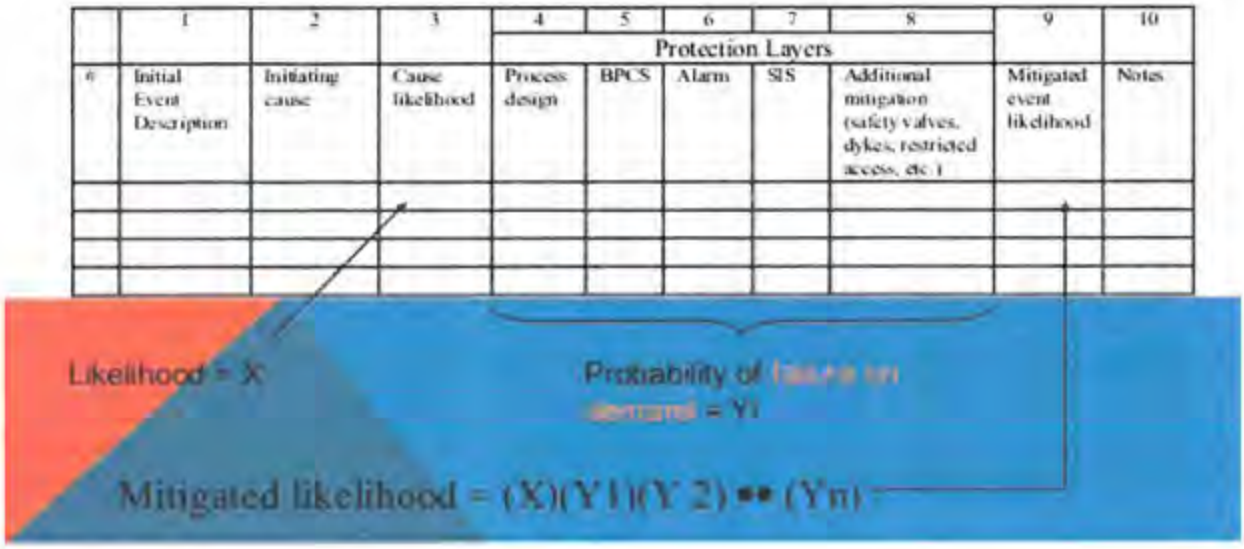


FIGURE 3

The principal reason for performing a process FMEA and LOPA is to produce critical process design parameters to be used in the engineering of the process system to ascertain safe operation of the facility not only to company personnel and preservation of site resources but to contain and limit the influence on the surrounding community.

The current design is principally designed and meets codes for an earthen liquid waste structural standpoint based on current State and Federal Waste Impoundment Facility guidelines. Guidelines and codes are minimal design parameters that are subject to interpretation. Many times, based on local requirements and conditions further considerations need to be accounted for in the design to lower risk and provide a basic common sense level of safety. NRCS 313 eludes to these additional considerations in the current code. The following are excerpts from the Code below:

"Natural Resources Conservation Service CONSERVATION PRACTICE STANDARD WASTE STORAGE FACILITY Code 313

Due consideration should be given to environmental concerns, economics, the overall waste management system plan, and safety and health factors.

Since the economics and risks associated with waste storage facilities are quite high, consider providing the operator with the cost to close the facility. Cost should include removal of the planned sludge accumulation volume and the waste stored at the maximum operating volume.

Considerations for Minimizing the Potential for and Impacts of Sudden Breach of Embankment or Accidental Release from the Waste Storage Facility.

Consider features, safeguards, and/or management measures to minimize the risk of failure or accidental release, or to minimize or mitigate impact of this type of failure when any of the categories listed below might be significantly affected.

Potential impact categories from breach of embankment or accidental release include—

- *Surface water bodies—perennial streams, lakes, wetlands, and estuaries.*
- *Critical habitat for threatened and endangered species.*
- *Riparian areas.*
- *Farmstead, or other areas of habitation.*
- *Off-farm property*
- *Historical and archaeological sites or structures that meet the eligibility criteria for listing in the National Register of Historical Places.*

Consider the following either singly or in combination to minimize the potential of or the consequences of sudden breach of embankments.

- *An auxiliary (emergency) spillway.*
- *Additional freeboard.*
- *Storage for wet year rather than normal year precipitation.*
- *Reinforced embankment— such as, additional top width, flattened and/or armored downstream side slopes.*
- *Secondary containment.*
- *Double liners.*

Options to consider to minimize the potential for accidental release from the waste storage facility through gravity outlets include—

- *Outlet gate locks or locked gate housing.*
- *Secondary containment.*
- *Alarm system.*
- *Another nongravity means of emptying the waste storage facility. "*

Upon review, the highlighted areas were not addressed in the current design. Secondary containment is listed twice and should have been considered with the pits location being elevationally above and less than 300' from the subdivision to the north. In industrial

situations, it is very common to encircle toxic or corrosive containing tanks with spill containment basins.

Recommendations/considerations for alarming were addressed not only in NRCS 313 but also in ASAE EP470 listed below:

"*ASAE EP470 JAN1992 (R2005) Manure Storage Safety*

7 Safety equipment, warning signs, management suggestions

7.1 Hazard control and accident prevention are dependent upon the awareness, concern, and prudence of personnel involved in the operation, maintenance and use of equipment, and facilities. These safe practice messages are recognized as being effective for enhancing safety, but may not cover all possible hazardous situations; hence, they should be interpreted judiciously and not necessarily reproduced verbatim. These safety practices should be followed if the tank or pit has ever been used, regardless of how long ago.

7.2 Rescue equipment such as harnesses, ropes, respirators, and block and tackle should be located near the manure storage area. The location should be clearly marked. Gas detection equipment such as detector tubes and/or instruments designed to detect combustible gases and hydrogen sulfide should be available and located in a warm, dry area. Detector tubes and sensors in gas detection instruments have expiration dates. Checks should be made periodically to be sure that the equipment is operational and properly calibrated and has not been removed. The phone numbers of the local fire department/rescue squad should be posted in a box mounted on a pole near an outside storage or on a wall in an inside storage building. These numbers should be posted near all the telephones on the farm.

Review of the excerpted sections above underlies the basis for performing a FMEA and LOPA prior to detailed engineering to address the guidelines and considerations listed in both code sections."

Section 7.2 addresses the need for area monitoring, alarming, and need for onsite PPE (Personal Protective Equipment) to mitigate the hazardous condition. This level of monitoring is non-existent in the current design. The site is unmanned and monitored weekly. The emergency response content of the permit was lacking in details with consideration to the mitigative process considering the site conditions and what procedure would be taken if the spill exits the property line. To compound this situation, H2S (Hydrogen Sulfide) and Methane would be released, both are toxic and flammable. H2S is the gas of most concern as it is odorless in lethal concentrations and heavier than air which would lend itself to the effects of gravity and flowing into areas of lower elevations which in this circumstance, would be the subdivision directly north of the pit. A recent fatality in Amherst, WI demonstrates the perimeter of lethality the H2S presented with 17 cattle killed within 50-100 feet of top of the pit berm.

Comment was made that H2S and Methane production can be controlled through protein consumption, perhaps an accurate assessment under laboratory conditions but considering all the variables in this situation should be considered irrelevant.

Technical Recommendations:

Recommendation is to table or deny said application until completion of FMEA and LOPA analyses are completed, results compiled, recorded, and included in the current detailed engineering scope. The current design is considered too high of risk to the health and human safety to not only employees but the local surrounding community. Provisions in the current Codes allow for expanded consideration dependent on the siting situation. These considerations were not addressed and missing in this application.

Charlotte Nagel

From: Renee Vanrossum <rvanrossum@ledgeviewwisconsin.com>
Sent: Tuesday, May 29, 2018 5:11 PM
To: cnagel@ledgeviewwisconsin.com
Subject: Fwd: Please vote "no" on the Ledgeview Farms manure pit

Follow Up Flag: Follow up
Flag Status: Flagged

Sent from my iPad

Begin forwarded message:

From: David Ames <aps@new.rr.com>
Date: May 29, 2018 at 4:06:58 PM CDT
To: <pjdanen@ledgeviewwisconsin.com>, <rvanrossum@ledgeviewwisconsin.com>
Cc: <kgeurts@ledgeviewwisconsin.com>, <cpeltier@ledgeviewwisconsin.com>, <mdanen@ledgeviewwisconsin.com>
Subject: Please vote "no" on the Ledgeview Farms manure pit

To Our Representatives,

We implore you to vote down the proposed manure pits in our collective back and front yards for various reasons including but not limited to the following:

- The farm has been in violation before and does not have a good track record of being an ethical or positive business.
- Manure pits are dangerous and should not be located so close to homes and families, particularly so many young children.
- There are not enough protections in place to contain either a major storm (overflow) or damage to facility.
- The compliance is "self-regulated" which is unacceptable in light of the past business practices of Ledgeview Farms, LLC.

Please vote no.

With sincere gratitude from your voting constituents on Dollar Road,

Catherine and David Ames and family

Charlotte Nagel

From: Phil Danen <pjdanen@ledgeviewwisconsin.com>
Sent: Wednesday, May 30, 2018 9:18 AM
To: cnagel@ledgeviewwisconsin.com
Subject: Fwd: Manure Pit

Follow Up Flag: Follow up
Flag Status: Flagged

Phil Danen
Ledgeview Town Chairman

Sent from my iPad

Begin forwarded message:

> **From:** Mike Gallagher <MGallagher@designair.com>
> **Date:** May 29, 2018 at 1:21:14 PM CDT
> **To:** "pjdanen@ledgeviewwisconsin.com" <pjdanen@ledgeviewwisconsin.com>
> **Cc:** Mike Gallagher <MGallagher@designair.com>
> **Subject: Manure Pit**
>
> Phil,
>
> I hope this note finds you well and that you had a relaxing Holiday weekend.
>
> I wanted to write regarding the public hearing tonight regarding the Ledgeview Farms manure pit(s). While I'm a supporter of growing commerce in our town and broader region, I am troubled by the impact that this pits would have on the safety, aesthetics and property values in the area. I hope both you and the town board consider the broader ramifications of this request and the impact on all town residents when deciding. I am strongly against it as a resident near the proposed sites.
>
> It is my understanding that this operation has had difficulties complying with previous regulations and has also built the heard size ahead of required approvals. This history of being a poor neighbor has my family concerned and I hope will also be taken into consideration.
>
> Please reach out if you wish to discuss further – I appreciate your consideration.
>
> Mike

DESIGN AIR

MIKE GALLAGHER
President

1010 W. Kennedy Ave
Kimberly, WI 54136

Direct: 920-702-6816
Cell: 920-819-8648

www.designair.com

Charlotte Nagel

From: Mark Danen <mdanen@ledgeviewwisconsin.com>
Sent: Tuesday, May 29, 2018 2:23 PM
To: cnagel@ledgeviewwisconsin.com
Subject: Fwd: Manure Pit Legislation
Attachments: IMG_4433.JPG; Untitled attachment 00011.htm; Ledgeview Farms LLC AO Redacted_exemption 6 1of2.pdf; Untitled attachment 00014.htm

Sent from my iPad

Begin forwarded message:

From: Allison Kaufman <allisonkkaufman@gmail.com>
Date: May 29, 2018 at 12:44:58 PM CDT
To: mdanen@ledgeviewwisconsin.com
Subject: Fwd: Manure Pit Legislation

Dear Supervisor Danen,

My name is Allison Kaufman. Two years ago, my husband Eric accepted his dream job and quickly relocated our growing family from beautiful Charleston, SC to 3433 Meadow Sound Drive in Ledgeview, WI. We were all hesitant to leave our family and friends and coastal town behind, but we instantly fell in love with our new home and town. I have lived in ten different states, from California to South Carolina, and I tell everyone that this is the greatest place to raise a family. We have three sons: Patrick is 6, Henry is 3, and George was actually born in Green Bay two months after we moved here (see attached photo of the newest Packer fans). I love staying home with our boys and exploring the area. Memories from the parks, trails, libraries, zoo, museums, farms, pool, beaches, and other local events have filled the pages of our sons' memory books. In fact, we find ourselves running out of time to do it all - not a bad problem to have!

Last June, however, we began to worry that Ledgeview might not actually be as great of a place to raise our family as we initially believed. And we started to fear that the "balance" of suburban (Target, Costco, and other conveniences within a mile) and rural (i.e., the horse farm behind our home and dairy farm up the road) that ultimately convinced us to purchase our Ledgeview home, might not really be much of a balance at all. I'm referring specifically to the Ledgeview Facility, LLC's plan to propose a multi-million gallon manure pit outside of my family's subdivision. As you can imagine, my family and many other neighbors are terrified of the health, safety, and financial repercussions of such a development. I have been to several county and town meetings regarding this issue and I appreciate your leadership in this matter. I respectfully request your continued support of the residents. I have outlined some of my family's main concerns below:

Health/Safety:

- The farm that I am most immediately concerned does not have a good track record of safety and compliance. **How can we trust that this grossly negligent farm will suddenly regulate a manure pit in a way that protects its neighbors and the environment?**
    - It has been out of compliance with its animal units (number of animals calculated by weight/size) since around 2007. In 2009, the farm claimed it would diminish its animal numbers.
    - For over 10 years, this farm has been polluting the waters and wetlands of the state. There is run off from the farm to 2 unnamed tributaries that is most likely compromising Bower Creek.
    - The farm has regularly not responded to DNR requests.
    - In 2013 the EPA investigated the farm and found Clean Water Act violations - a federal offense. In 2015, the EPA issued the farm a $128,000 fine for this pollution. Not only did the farm not pay the fine, but they ignored the orders to stop polluting! **See attached report.**

- Decomposing manure produces four main gases: hydrogen sulfide, methane, ammonia, and carbon dioxide. These gases are severe eye irritants and may cause tissue damage. In low concentrations, these gases will "cause dizziness, headache, nausea, and irritation of the respiratory tract." In high concentrations, these gases "can cause unconsciousness, respiratory failure, and death within minutes." (CDC.gov)
    - "Concentrations were significantly higher for homes within 1/4 mile of a facility or associated sprayfield compared to homes more than three miles away"(ehjournal.net)
- "Nearly 80% of antibiotics in the US are sold for use in livestock feeds. The manure produced by these animals contains antibiotic-resistant bacteria, resistance genes, and antibiotics and is subsequently applied to crop fields, where it may put community members at risk for antibiotic-resistant infections." (jamainternalmedicine.com)

Financial:

- All property values will drop. Similarily affected communities have experienced a 25% decline in property values!

In conclusion, the farm is being required to improve its handling of manure because of its history of polluting, but a manure pit is not its only option. According to the DNR, they could install an infiltration system or they could have the manure hauled to Green Bay waste water. I recently toured a dairy farm in Greenleaf, WI that uses this machine (http://www.americandairymen.com/articles/bedding-recovery-unit-bauer-group-turns-cattle-manure-high-quality-bedding-material) to turn their manure into bedding material for the cows! Additionally, the currently planned location on Lime Kiln Road is not it's only option. **My ultimate request is that a setback of at least 1320 feet be required between manure storage facilities and neighboring properties.** This separation distance is based on several studies, including a two year study by the Wisconsin Department of Agriculture, Trade, and Consumer Protection and the Wisconsin Department of Natural Resources entitled "Final Report on Wisconsin's Dairy and Livestock Odor and Air Emission Project", dated September 2009

Thank you for your attention and your dedication to protecting my family, neighbors, and our environment.

Sincerely,

Allison Kaufman

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

SEP 13 20[redacted]

REPLY TO THE ATTENTION OF

WC-15J

CERTIFIED MAIL 7009 1680 0000 7678 5778
RETURN RECEIPT REQUESTED

[redacted]
De Pere, Wisconsin 54115

Subject: Order for Compliance Pursuant to 33 U.S.C. §§ 1318 and 1319(a).
Docket No. V-W-13-AO-22

Dear [redacted]

Protecting water quality is a high priority of the U.S. Environmental Protection Agency. Pollutants such as excessive nutrients and pathogens discharged to waterways from animal feeding operations contribute to poor water quality and impairment of uses of those waterways.

As you know, EPA inspected your facility on April 18, 2013. During the inspection, we observed violations of the Clean Water Act (CWA). Enclosed is the above referenced Order for Compliance (Order). This Order requires you to immediately cease all unauthorized discharges and to construct the necessary structures to comply with the CWA. This Order also requires you to submit a complete Wisconsin Pollutant Discharge Elimination System permit application to the Wisconsin Department of Natural Resources (WDNR).

You must comply with this Order within the time periods specified in the Order. Failure to comply with the Order may subject you to further enforcement action pursuant to Section 309 of the CWA, 33 U.S.C. § 1319(a).

Please be advised that neither the issuance of this Order by EPA nor compliance with its terms affects your obligation to comply with the CWA or any other Federal or State laws or regulations, nor does it preclude further enforcement action pursuant to 33 U.S.C. § 1319 for the violations cited herein or any other violations committed by you.

Under the Order, you have the right to request an informal conference with EPA within ten (10) calendar days of receipt of this Order. Any such conference shall be held within ten (10) calendar days from the date of the request, unless extended by the agreement of the parties.

Assistance with constructing structures necessary to comply with this order may be available through the Environmental Quality Incentives Program (EQIP). The Farm Security and Rural Investment Act of 2008 (Farm Bill) authorized the National Resource Conservation Service (NRCS) to provide voluntary conservation program for farmers and ranchers that promotes agricultural production and environmental quality as compatible national goals. EQIP offers financial and technical help to assist eligible participants install or implement structural and management practices on eligible agricultural land. EQIP is a competitive program. In order to sign up for EQIP, the Natural Resources Conservation Service (NRCS) must determine the applicant to be an eligible producer, and the land to be eligible. NRCS assistance is available at any USDA Service Center.

Also enclosed is a copy of the EPA inspection report on the Concentrated Animal Feeding Operation inspection that EPA conducted on April 18, 2013. If you have any questions concerning this matter, please contact Donald R. Schwer III of my staff at (312) 353-8752, or your attorney may contact Catherine Garypie, EPA Region 5, Office of Regional Counsel at (312) 886-5825.

Sincerely,

Peter Swenson

for Tinka G. Hyde
Director, Water Division

Enclosures

cc: Tom Bauman, WDNR
Jay Schiefelbein, WDNR

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

IN THE MATTER OF:	)	
	)	**ORDER FOR COMPLIANCE**
	)	**UNDER SECTIONS 308 AND 309(a)**
[redacted] Farms LLC	)	**OF THE CLEAN WATER ACT**
[redacted]	)	
De Pere, Wisconsin 54115	)	
	)	
	)	
Respondent.	)	DOCKET NO: V-W-13-AO-22
	)	

The U.S. Environmental Protection Agency (EPA) issues this Order (Order) to [redacted] Farms LLC (Respondent) under the authority of Sections 308 and 309(a) of the Clean Water Act (CWA), 33 U.S.C. §§ 1318 and 1319(a). The Administrator of EPA has delegated the authority to issue such orders to the Regional Administrator of EPA Region 5, who has redelegated this authority to the Director of the Water Division, EPA, Region 5.

I. INTRODUCTION

1. Section 301(a) of the CWA, 33 U.S.C. § 1311(a), prohibits the discharge of pollutants to the waters of the United States except in compliance with, *inter alia*, a National Pollutant Discharge Elimination System (NPDES) permit issued pursuant to Section 402 of the CWA, 33 U.S.C. § 1342.

2. Pursuant to the CWA and EPA regulations, the owner or operator of a concentrated animal feeding operation (CAFO) which discharges must seek coverage under an NPDES permit. 33 U.S.C. § 1318; 40 C.F.R. § 122.23(d). Pursuant to 33 U.S.C. § 1318, the owner or operator must also provide other information as reasonably required by EPA.

3. EPA has authorized the State of Wisconsin to issue NPDES permits under Section 402(b) of the CWA, 33 U.S.C § 1342(b). The Wisconsin Department of Natural Resources (WDNR) is the NPDES permitting authority for the State of Wisconsin. WDNR refers to the NPDES permits that it issues as "WPDES permits." EPA retains the authority to enforce the CWA in Wisconsin.

II. DEFINITIONS

4. All terms used but not defined in this Order shall have the meanings provided to them in the CWA and EPA regulations promulgated under the CWA.

5. "Animal feeding operation" or "AFO" means, among other things, "a lot or facility where . . . (i) Animals (other than aquatic animals) have been, are, or will be stabled or confined and fed or maintained for a total of 45 calendar days or more in any 12 month period and, (ii) Crops,

vegetation, forage growth, or post harvest residues are not sustained in the normal growing season over any portion of the lot or facility." *See* 40 C.F.R. § 122.23(b)(1).

6. "Concentrated animal feeding operation" or "CAFO" means an AFO that is defined as, *inter alia*, a Large CAFO or Medium CAFO. Two or more AFOs under common ownership are considered to be a single AFO for the purpose of determining the number of animals at an operation, if they adjoin each other or if they use a common area or system for the disposal of wastes. *See* 40 C.F.R. § 122.23(b)(2).

7. "Discharge" or "discharge of a pollutant" means, among other things, any addition of any pollutant to navigable waters from any point source. *See* Sections 502(12), 502(16) of the CWA, 33 U.S.C. §§ 1362(12), 1362(16); 40 C.F.R. § 122.2.

8. "Land application area" means land under the control of the Respondent, whether that land is owned, rented, or leased, to which manure, litter or process wastewater from the production area is or may be applied. *See* 40 C.F.R. § 122.23(b)(3).

9. "Manure" means manure, bedding, compost, and raw materials or other materials commingled with manure or set aside for disposal. *See* 40 C.F.R. § 122.23(b)(5).

10. "Medium CAFO" means, among other things, an AFO that stables or confines 200 to 699 mature dairy cows, whether milked or dry, and meets either one of the following conditions: (A) pollutants are discharged into waters of the United States through a man-made ditch, flushing system, or other similar man-made device; or (B) pollutants are discharged directly into waters of the United States which originate outside of and pass over, across, or through the facility or otherwise come into direct contact with the animals confined in the operation. 40 C.F.R. § 122.23(b)(6).

11. "Navigable waters" means the waters of the United States. *See* Section 502(7) of the CWA, 33 U.S.C. § 1362(7).

12. "Nutrient management plan" means the plan described in and required by Sections IV.C. and IV.D. of this Order.

13. "Overflow" means the discharge of manure or process wastewater resulting from the filling of wastewater or manure storage structures beyond the point at which no more manure, process wastewater, or stormwater can be contained by the structure.

14. "Person" means, among other things, an individual, association, partnership, or corporation. *See* Section 502(5) of the CWA, 33 U.S.C. § 1362(5); 40 C.F.R. § 122.2.

15. "Point source" means, among other things, "any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, ... [or] concentrated animal feeding operation ... from which pollutants are or may be discharged." *See* Section 502(14) of the CWA, 33 U.S.C. § 1362(14); 40 C.F.R. § 122.2.

16. "Pollutant" means, among other things, solid waste, sewage, garbage, sewage sludge, chemical wastes, biological materials, wrecked or discarded equipment, rock, sand, cellar dirt, and agricultural waste discharged into water. *See* Section 502(6) of the CWA, 33 U.S.C. § 1362(6); 40 C.F.R. § 122.2.

17. "Process wastewater" means water directly or indirectly used in the operation of the animal feeding operation for any or all of the following: spillage or overflow from animal or poultry watering systems; washing, cleaning, or flushing pens, barns, manure pits, or other animal feeding operation facilities; direct contact swimming, washing, or spray cooling of animals; or dust control. Process wastewater also includes any water which comes into contact with any raw materials, products, or byproducts including manure, litter, feed, milk, eggs or bedding. *See* 40 C.F.R. § 122.23(b)(7).

18. "Production area" means that part of the Site that includes the animal confinement area, the manure storage area, the raw materials storage area, and the waste containment area. The animal confinement area includes but is not limited to open lots, housed lots, feedlots, confinement houses, stall barns, free stall barns, milkrooms, milking centers, cowyards, barnyards, medication pens, walkers, animal walkways, and stables. The manure storage area includes but is not limited to lagoons, runoff ponds, storage sheds, stockpiles, under house or pit storages, liquid impoundments, static piles, and composting piles. The raw materials storage area includes but is not limited to feed silos, silage bunkers, and bedding materials. The waste containment area includes but is not limited to settling basins, and areas within berms and diversions which separate uncontaminated storm water. Also included in the definition of production area is any egg washing or egg processing facility, and any area used in the storage, handling, treatment, or disposal of mortalities. *See* 40 C.F.R. § 122.23(b)(8).

19. "Site" shall mean the facility or facilities owned or operated by Respondent located at or about [redacted] De Pere, WI 54115 (the "Home Site") and [redacted] De Pere, WI 54311 (the "Satellite Site") including but not limited to the land application area, the production area, and adjacent land issued in connection with the land application area and/or production area.

20. "Waters of the United States" means, in accordance with 40 C.F.R. § 122.2, among other things:

    a) all waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce;

    b) all interstate waters, including interstate wetlands;

    c) all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes or natural ponds, the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce, including any such waters:

(1) which are or could be used by interstate or foreign travelers for recreational or other purposes;

(2) from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

(3) which are or could be used for industrial purposes by industries in interstate commerce;

d) all impoundments of waters otherwise defined as waters of the United States under this definition;

e) tributaries of waters identified in Subparagraphs (a) through (d) of this definition; and

f) wetlands adjacent to the waters identified above.

III. FINDINGS

21. Respondent is a person who owns or operates a dairy cow facility located at the Site.

22. The Site is an animal feeding operation because:

a) the Site includes lots or facilities where animals have been, are or will be stabled or confined and fed or maintained for a total of 45 calendar days or more in any 12 month period, within the meaning of 40 C.F.R. § 122.23(b)(1)(i); and

b) crops, vegetation, forage growth, or post harvest residues are not sustained in the normal growing season over any portion of those lots or facilities, within the meaning of 40 C.F.R. § 122.23(b)(1)(ii).

23. The Site is a CAFO and a medium CAFO because it stables or confines 200 to 699 mature dairy cows, whether milked or dry, and: (A) pollutants are discharged into waters of the United States through manmade conveyances including a hole in a concrete pit, a pathway that contained rip-rap, a paved open lot, and roadside ditches; and (B) pollutants are discharged directly into waters of the United States which originate outside of and pass over, across, or through the facility or otherwise come into direct contact with the animals confined in the operation. 40 C.F.R. § 122.23(b)(6).

24. On February 19, 2009, the Wisconsin Department of Natural Resources issued Respondent a Notice of Violation for failure to obtain WPDES permit coverage for a large CAFO. In order to resolve that Notice of Violation, Respondent indicated that it would stay below 1,000 animal units and would apply for a WPDES permit for a CAFO.

25. On April 18, 2013, personnel from EPA conducted an inspection at the Site (the Inspection). A copy of the report generated by EPA as a result of the Inspection (Inspection Report) is included as Attachment 1 to this Order.

26. During the Inspection, EPA personnel identified the following:

a) At the Home Site, septic looking waste and process wastewater was leaking out of a hole in the east concrete pit and flowing to the unnamed tributary. The hole in the east concrete pit was a manmade conveyance that facilitates the flow of process wastewater to the unnamed tributary on the east end of the Site.

b) At the Home Site, manure and process waste water from the feed bunker and the open lot west of the Milk Cow Barn did not have containment and was flowing north through pathways that led to the unnamed tributary on the west end of the Site. The rip rap pathway, paved open lot and access road are manmade conveyances that facilitate the flow of process wastewater to the unnamed tributary on the west end of the Site.

c) At the Home Site, animals had direct access to the unnamed tributary on the east end of the Site.

d) At the Satellite Site, manure and process wastewater runoff generated at the open lot and feed bunkers were flowing east to the [redacted] ditch. The [redacted] ditch and culverts are manmade conveyances that facilitate the flow of process wastewater to an unnamed tributary.

27. On June 20, 2013, EPA was contacted by an individual who reported that a day hiker was walking along the unnamed tributary that abuts the west side of the Home Site in April 2013. While hiking along the unnamed tributary, north of [redacted] the hiker ended up knee-deep in manure in a location adjacent to the Home Site.

28. During the April 2013 EPA inspection, surface runoff from the Home Site was observed flowing through pathways to unnamed tributaries that abut the east and west side of the Site. The unnamed tributary that abuts the east side of the Home Site flows to the unnamed tributary that abuts the west side of the Home Site. The unnamed tributary that abuts the west side of the Home Site flows to Bower Creek. Bower Creek flows to the East River. The East River flows to the lower Fox River. The lower Fox River flows to Green Bay in Lake Michigan.

29. During the April 2013 EPA inspection, surface runoff from the Satellite Site was observed flowing through ditches and pathways to an unnamed tributary. The unnamed tributary flows to Bower Creek. Bower Creek flows to the East River. The East River flows to the lower Fox River. The lower Fox River flows to Green Bay in Lake Michigan.

30. Lake Michigan, Green Bay, Fox River, and East River are each a navigable water and water of the United States. Bower Creek and the unnamed tributaries are each a water of the United States.

31. The Site is a point source.

32. The discharges described above are each a discharge of a pollutant(s).

33. As of April 18, 2013, Respondent did not have, and had not applied for, an NPDES permit for the discharge of pollutants from the Site.

34. As a CAFO which discharges, the Site is subject to the NPDES permitting requirements of Section 402 of the CWA, 33 U.S.C. § 1342, and 40 C.F.R. Part 122.

35. By discharging pollutants from the Site without an NPDES permit, Respondent violated Section 301(a) of the CWA, 33 U.S.C. § 1311(a).

36. By discharging pollutants from the Site without having applied for an NPDES permit, Respondent violated 33 U.S.C. § 1318 and 40 C.F.R. § 122.23(d).

IV. COMPLIANCE REQUIREMENTS

A. Notification of Intent to Comply

37. Within ten (10) calendar days of the effective date of this Order, Respondent shall submit a written certification that it intends to comply with this Order.

B. Interim Measures

38. Upon the effective date of this Order, Respondent shall cease all unpermitted discharges from the Site.

39. Upon the effective date of this Order, Respondent shall implement interim measures to eliminate all unpermitted discharges from the Site.

40. Respondent shall operate and maintain the interim measures until Respondent completes construction and begins operation of all storage structures required by the Nutrient Management Plan under Section IV.D. of this Order.

C. NPDES Permit

41. Within ninety (90) calendar days of the effective date of this Order, Respondent shall submit to EPA a detailed plan (Permit Compliance Plan) which describes the actions Respondent has taken or will take to prepare and submit a complete NPDES permit application for the Site (Permit Application) to WDNR. In the Permit Compliance Plan, Respondent shall:

    a. Provide a schedule for development of the nutrient management plan, as described in Paragraph 46.c, and for construction of all controls required by the nutrient management plan;

b. Identify all design costs, capital costs, and annual operation and maintenance, costs associated with the controls required by the nutrient management plan; and

c. Include a schedule for submitting a complete Permit Application to WDNR after construction of all controls required by the nutrient management plan.

42. The Permit Compliance Plan shall provide for submittal of the Permit Application not later than two-hundred and seventy (270) calendar days after the effective date of this Order unless approved by EPA.

43. EPA may approve, disapprove, require revisions to, or modify the draft Permit Compliance Plan in whole or in part. If EPA requires revisions, Respondent shall submit a revised draft Permit Compliance Plan within ten (10) calendar days of receipt of EPA's notification of the required revisions. Respondent shall implement the Permit Compliance Plan as approved in writing by EPA in accordance with the schedule approved by EPA. Once approved, or approved with modifications, the Permit Compliance Plan, the schedule, and any subsequent modifications shall be incorporated into and become fully enforceable under this Order.

44. Respondent shall incorporate EPA's comments into the Permit Compliance Plan, and in accordance with the schedule set forth in the Permit Compliance Plan, Respondent shall submit the Permit Application to WDNR. The Permit Application shall include all information required by this Order. At the same time that it submits the Permit Application to WDNR, Respondent shall submit a copy of the Permit Application to EPA.

45. The Permit Application may be an application for an individual permit or a Notice of Intent for Coverage under any final, effective and applicable Wisconsin general permit for CAFOs.

46. In the Permit Application, Respondent shall provide:

a) all information required by EPA Forms 1 and 2B. Those forms can be obtained on the internet at the following addresses:

Form 1: http://www.epa.gov/npdes/pubs/form_1.pdf

Form 2B: http://www.epa.gov/npdes/pubs/cafo_fedregstr_form2b.pdf;

b) a topographic map indicating the locations of the production area and land application area; and

c) a nutrient management plan that satisfies the requirements of Section IV.D. of this Order.

47. In addition to the information required by Paragraph 46, Respondent shall include in the Permit Application any additional information required by WDNR.

48. Within ten (10) calendar days of receiving a final NPDES permit from WDNR, Respondent shall submit a copy of that final permit to EPA.

D. Nutrient Management

1. General Requirements

49. The nutrient management plan must:

a) be based on a field-specific assessments of the potential for nitrogen and phosphorous transport from each field in the land application area and shall address the form, source, amount, timing, and method of application of nutrients on each field to achieve realistic production goals, while minimizing nitrogen and phosphorous movement to surface waters;

b) include procedures in accordance with Paragraphs 56-60 of this Order for the operation and maintenance of structures to ensure the adequate storage of manure, litter, and process wastewater generated at the production area;

c) ensure that mortalities (*i.e.*, dead animals) are:

(1) not disposed of in a liquid manure, storm water, or process wastewater storage or treatment system that is not specifically designed to treat mortalities; and

(2) handled in such ways as to prevent the discharge of pollutants to surface water;

d) ensure that clean water is diverted, as appropriate, from the production area;

e) prevent direct contact of confined animals with waters of the United States;

f) ensure that chemical wastes and other non-livestock wastes handled on-site are not disposed of in the production area or any manure, litter, process wastewater, or storm water storage or treatment system unless such system is specifically designed to treat such chemicals and other contaminants;

g) identify site-specific conservation practices to be implemented, including, as appropriate, buffers or equivalent practices, to control discharges of manure, litter, or process wastewater to waters of the United States;

h) identify protocols for appropriate testing of manure, litter, process wastewater, and soil, in accordance with this Order;

i) establish protocols to land apply manure, litter, or process wastewater in accordance with site specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure, litter, or process wastewater; and

j) identify specific records that will be maintained to document the implementation and management of the requirements of this Order.

2. **Land Application Requirements**

a. **Nutrient Management Limitations**

50. Upon the effective date of this Order, Respondent shall not land apply manure, litter, and process wastewater closer than 100 feet to any down-gradient surface waters, open tile line intake structures, sinkholes, agricultural well heads, or other conduits to surface waters. However, this requirement shall not apply provided that Respondent either:

a) imposes a 35-foot wide vegetated buffer on which Respondent will not land apply manure, litter, or process wastewater; or

b) demonstrates that a setback or buffer is not necessary because implementation of alternative conservation practices or field-specific conditions will provide pollutant reductions equivalent to or better than the reductions that would be achieved by the 100-foot setback.

51. The nutrient management plan must demonstrate how Respondent will comply with the provisions of 40 C.F.R. § 122.42(e)(5).

b. **Sampling for Land Application.**

52. Upon the effective date of this Order, Respondent shall conduct analyses at least annually of representative samples of any manure, litter, and process wastewater to be land applied.

53. Upon the effective date of this Order, for each field in the land application area to which Respondent applies manure, litter, or process wastewater, Respondent shall sample and analyze the soil at that field for phosphorous content a minimum of once every four years.

c. **Land Application Records**

54. Upon the effective date of this Order, Respondent shall record the following information for each day during which Respondent land applies manure, litter, or process wastewater to the land application area. These records shall separately address each field at which land application occurs:

a. the location of the field;

b. the size of the field;

c. expected crop yields;

d. the date and time manure, litter, or process wastewater is applied;

e. an estimate of the amount of precipitation 24 hours prior to, and for 24 hours after, the application;

f. soil water conditions at the time of each land application (*e.g.*, dry, saturated, flooded, frozen, snow-covered);

g. test methods used to sample and analyze manure, litter, process wastewater, and soil;

h. explanation of the basis for determining application rates for manure, litter, and process wastewater;

i. the amount of manure, litter, or process wastewater applied in either gallons, net tons, or dry tons per acre;

j. calculations showing the total nitrogen and phosphorus to be applied, including sources other than manure, litter, or process wastewater;

k. the total amount of nitrogen and phosphorus actually applied, including documentation of calculations used to determine the total amount applied; and

l. the method used to apply the manure, litter, or process wastewater (*e.g.*, surface, surface with incorporation, injection, etc.).

3. Transfers of Manure, Litter or Process Waste Water to Other Persons

55. Upon the effective date of this Order, if Respondent transfers manure, litter, or process wastewater to another person, Respondent shall create a record of the transfer. For each transfer, the transfer record shall indicate the date of the transfer, the name, and address of the recipient of the transfer, and the approximate amount of manure, litter, or process wastewater transferred.

56. Upon the effective date of this Order, prior to transferring manure, litter, or process wastewater to another person, Respondent shall provide that person with the most current annual nutrient analysis for that manure, litter, or process wastewater.

4. Storage of Manure, Litter and Process Wastewater

57. The nutrient management plan shall include protocols for the storage of manure, litter and process wastewater and shall provide for the operation and maintenance of structures (*e.g.*, anaerobic lagoon, roofed storage shed, storage ponds, underfloor pits, above ground storage tanks, below ground storage tanks, etc.) to be used at the Site for manure, litter, and process wastewater storage.

58. The storage structures shall have sufficient volume such that no manure, litter, or process wastewater discharges will occur from the production area, except when precipitation causes an overflow of manure, litter, or process wastewater from structures that are designed,

constructed, and maintained to contain all manure, litter, and process wastewater, including runoff and direct precipitation from a 25-year, 24-hour (or greater) rainfall event. At a minimum, the structures must have a volume sufficient to store all of the following amounts:

a. normal precipitation (less evaporation) on the surface of the structures during the periods contemplated in this Order;

b. normal runoff during the periods contemplated in this Order from the production area and any upslope areas from which the clean runoff is not diverted around the production area;

c. residuals that remain after materials are removed from the structures;

d. all manure, litter, and process wastewater generated during periods when land application does not occur;

e. direct precipitation on the surface of the structure and runoff to the structure from a 25-year, 24-hour rainfall event; and

f. for open surface liquid storage structures, one feet of freeboard above the capacity necessary to contain the direct precipitation and runoff from a 25- year, 24- hour rainfall event.

59. If the nutrient management plan provides for a storage volume that is less than the volume of manure, litter, and process wastewater that Respondent reasonably expects to add to the structure(s) during one-hundred and eighty (180) calendar days of continuous storage with no land application, Respondent shall include in the nutrient management plan a technical analysis which demonstrates that the lesser volume will assure compliance with this Order.

60. Dewatering and Solids Removal

a. The nutrient management plan shall include criteria and procedures for the dewatering of, and removal of solid material from, all storage structures identified in the nutrient management plan, as necessary to ensure that sufficient storage volume remains in the storage structures to comply with this Order at all times. Any land application of materials removed from the storage structures shall be performed in accordance with the requirements of this Order.

b. Respondent shall measure and record the amounts of material removed from the storage structures.

61. Capacity Depth Markers: All open surface storage structures identified in the nutrient management plan shall be equipped with permanent capacity depth markers which clearly indicates the minimum capacity necessary to contain the runoff and direct precipitation of the 25-year, 24-hour rainfall event.

E. Site Inspections

62. Upon the effective date of this Order, the Respondent shall conduct the following Inspections:

    a. daily inspections of water supply lines, including drinking water or cooling water lines;

    b. weekly inspections of all storm water diversion devices, runoff diversion structures, and devices channeling contaminated storm water to the containment structures;

    c. weekly inspections of the storage structures;

    d. weekly determinations of the depth of the manure and process wastewater (and amount of freeboard, where required) in all open surface liquid storage structures as indicated by the capacity depth markers required by this Order; and

    e. periodic inspections (at least four (4) times per year) of equipment used for the land application of manure, litter, or process wastewater.

63. Respondent shall correct any deficiencies identified through the inspections conducted pursuant to this Subsection as soon as possible.

64. Respondent shall prepare and maintain records of each inspection conducted pursuant to this Subsection. Respondent shall record the following information for each weekly inspection:

    a. the date of each inspection;

    b. the amount of freeboard in each storage structure during each inspection;

    c. any deficiencies noted during each inspection and the actions taken to correct those deficiencies; and

    d. for any deficiencies not corrected within thirty (30) calendar days of discovery, an explanation of the factors preventing immediate correction.

F. Discharge Minimization and Notification

65. Within thirty (30) calendar days of the effective date of this Order, Respondent shall post at the Home Site and Satellite Site procedures to effectively respond to any spill or discharge to waters of the United States, and shall ensure that all employees are aware of, and follow, those procedures. The posted procedures shall contain detailed response instructions which shall include, but not be limited to, the names of officials to be notified, state and federal agencies to be notified, local or downstream public water supply and public health entities to be notified, appropriate phone numbers, addresses, safety precautions, and immediate actions to abate the occurrence.

66. This Order does not authorize Respondent to discharge pollutants to waters of the United States at or from the Site, and any such discharges are subject to enforcement. If for any reason Respondent discharges pollutants to waters of the United States, Respondent must visually monitor the discharge, and immediately notify the EPA by contacting Donald R. Schwer III by telephone at 312-353-8752, and by fax at 312-886-6090 or email at schwer.don@epa.gov. Respondent must also immediately notify the WDNR at 1-800-943-0003. In addition, Respondent must document the following information and submit a written report containing such information to EPA and WDNR within five (5) calendar days of becoming aware of the discharge:

a. the cause of the discharge, including an estimate of the discharge volume, an estimate of the flow rate if the discharge is continuing, and any analytical data;

b. a description of the area receiving the discharge (*i.e.*, field, ditch, stream, or other description);

c. the specific location of the discharge;

d. the period of discharge, including exact begin and end dates and times, and if not corrected, the anticipated time the discharge is expected to continue;

e. steps taken or to be taken to respond to, contain, and mitigate the discharge;

f. corrective action taken to prevent recurrences of the discharge; and

g. apparent impacts to health or the environment resulting from the discharge, including, but not limited to, threats to surface water supplies, water supply wells, recreational areas, and water quality.

G. Record Retention and Reporting

67. Recordkeeping: Upon the effective date of this Order, Respondent shall maintain at the Site and shall make available to EPA and WDNR personnel upon request copies of records created pursuant to this Order. Such records include:

a. a complete copy of the Permit Application, including a copy of the nutrient management plan;

b. all records required by the nutrient management plan;

c. reports of the depth of the manure and process wastewater in storage structures as indicated by the capacity depth markers required by Section IV.D. of this Order;

d. records documenting the current design of any storage structures, including volume for solids accumulation, design treatment volume, total design volume, and approximate number of calendar days of storage capacity;

e. records of the date, time, and estimated volume of any overflow;

f. all results of sampling required by this Order;

g. all land application records required by this Order;

h. records required by this Order documenting transfers of manure, litter, or process waste water to other persons;

i. the criteria and procedures for the solids removal and dewatering of storage structures required by this Order;

j. records of materials removed from storage structures; and

k. inspection records required by this Order.

68. Interim measures: Within thirty (30) calendar days after the effective date of this Order, Respondent shall submit to EPA and WDNR the following documentation concerning the interim measures implemented pursuant to Section IV.B. of this Order:

a. a detailed description of the interim measures;

b. documentation (*e.g.,* as-built diagrams, photographs, affidavits, etc.) showing that Respondent completed installation of the interim measures; and

c. an accounting of the costs incurred by Respondent to install, implement, and maintain the interim measures.

69. Annual Reports: Respondent shall submit an annual report to EPA and WDNR not later than March 15 of each calendar year following the effective date of this Order. In each annual report, Respondent shall include the following information for the previous calendar year prior to submittal of that annual report:

a. the maximum number and type of animals confined, whether in open confinement or housed under roof;

b. the estimated amount of total manure, litter, and process wastewater generated at the Site in the previous 12 months;

c. the estimated amount of total manure, litter, and process wastewater transferred to another person from the Site in the previous 12 months (tons/gallons);

d. the total number of acres for land application covered by the nutrient management plan;

e. the total number of acres under the control of Respondent that were used for land application of manure, litter, and process wastewater in the previous 12 months;

f. a summary of all manure, litter, and process wastewater discharges from the production area that have occurred in the previous 12 months, including the date, time, and approximate volume of such discharges; and

g. a statement indicating whether the current version of the nutrient management plan was developed or approved by a certified nutrient management planner.

V. SUBMITTALS

70. Any documents or notifications required by this Order to be submitted to EPA shall be submitted by Respondent to the following address:

Water Enforcement Compliance Assurance Branch (WC-15J)
U.S. EPA Region 5
Attn: Donald R. Schwer III
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

71. Any documents or notifications required by this Order to be submitted to WDNR shall be submitted by Respondent to the following address:

Wisconsin Department of Natural Resources
Agricultural Runoff Program
Attn: Thomas Bauman
PO Box 7921
WT/3, 101 South Webster Street
Madison, Wisconsin 53707

72. All submittals made pursuant to this Order shall be returned under an authorized signature containing the following certification:

> I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false statements and information, including the possibility of fines and imprisonment for knowing violations.

73. If the signatory finds at any time after submittal of information that any portion of the submittal is false or incorrect, the signatory shall notify EPA immediately. Knowing submittal of false information to EPA in response to this Order may subject Respondent to criminal prosecution under Section 309(c) of the CWA, 33 U.S.C. § 1319(c), and 18 U.S.C. §§ 1001 and 1341.

Confidentiality of Submissions

74. You may not withhold information because you claim it is confidential. However, pursuant to 40 C.F.R. Part 2, Subpart B, you may assert a claim of business confidentiality regarding any portion of the information submitted in response to this Order, as provided in 40 C.F.R. § 2.302(a)(2). The regulations provide that a person may assert a business confidentiality claim covering part or all of the information furnished to EPA when that person submits the information. The manner of asserting such claims is specified in 40 C.F.R. § 2.203(b). Effluent data (as defined in 40 C.F.R. § 2.302(A)(2)) and information in NPDES permit applications is not entitled to confidential treatment. 40 C.F.R. § 122.7. Information subject to a business confidentiality claim is available to the public only to the extent, and by means of the procedures, set forth in 40 C.F.R. Part 2, Subpart B.

75. If you do not assert a claim of business confidentiality when you submit the information, EPA may make the information available to the public without further notice.

76. EPA may use any information submitted in response to this Order in support of an administrative, civil or criminal action against Respondent.

VI. OPPORTUNITY TO CONFER

77. Respondent has the opportunity to confer with and to submit information to EPA concerning this Order.

78. Such information may include evidence (*i.e.*, documentation), arguments and comments regarding the legal and factual determinations on which the Order is based, its applicability to Respondent, the appropriateness of its terms or any other relevant and material issue.

79. If Respondent seeks to confer with EPA, it shall request a conference within ten (10) calendar days of the date of signature of this Order by the Water Division Director. To request a conference, contact Donald R. Schwer III at (312) 353-8752, or Respondent's attorney may contact Catherine Garypie, EPA Region 5, Office of Regional Counsel at (312) 886-5825.

a. Any conference held pursuant to this Paragraph shall take place within ten (10) calendar days from the date of the request, unless the time period is extended by agreement of the

parties. Respondent may appear in person, participate by telephone or be represented by an attorney or other representative.

b. Respondent is responsible for reducing all oral information it presents at the conference, including comments and arguments, to writing and submitting that document to EPA within five (5) calendar days following the conference, unless the time period is extended by agreement of the parties.

c. Such a conference is not a formal evidentiary hearing and does not constitute a proceeding to challenge this Order. EPA will not make a formal transcript of the conference.

80. Regardless of whether Respondent requests a conference, Respondent may submit written information to EPA, as provided in Paragraph 77, above, within ten (10) calendar days of the date of signature of this Order by the Water Division Director, unless the time period is extended by agreement of the parties. Respondent shall submit any written information according to the instructions in Section V of this Order.

81. EPA shall deem a failure to either request a conference or submit written information within ten (10) calendar days of the date of signature of this Order by the Water Division Director as a waiver of the opportunity to confer.

82. EPA shall consider all relevant and material written information submitted by Respondent pursuant to this Section and determine that: (1) this Order should become final as originally issued; (2) this Order should be modified; or (3) this Order should be withdrawn.

83. If EPA determines that this Order should become final as originally issued or should be modified, then EPA shall address the material and relevant information submitted by Respondent in a responsiveness summary.

a. All written information submitted by Respondent and EPA's responsiveness summary shall be included in the administrative record supporting this Order.

b. The administrative record shall be available for public review under the Freedom of Information Act.

84. If EPA determines that this Order should become final as originally issued, EPA will notify Respondent of that decision in writing and shall provide Respondent with a copy of the responsiveness summary.

85. If EPA determines that this Order should be modified, then EPA will modify the Order and issue a modified order to Respondent and shall provide Respondent with a copy of the responsiveness summary.

86. If EPA determines that this Order should be withdrawn, EPA will provide Respondent with written notice of the withdrawal of this Order.

87. No modification or withdrawal of this Order shall be effective unless and until it is issued in writing by EPA.

VII. EFFECTIVE DATE

88. If Respondent does not request a conference or submit written information pursuant to this Section, this Order shall become final and effective fifteen (15) calendar days after its date of signature by the Water Division Director.

89. If Respondent does request a conference or submit written information pursuant to this Section, and EPA nonetheless determines that this Order should become final as originally issued, this Order shall become final and effective seven (7) calendar days after the date of EPA's signature of the written notification to Respondent of that determination.

90. If EPA modifies this Order, the modified order shall become final and effective seven (7) calendar days after the date of EPA's signature of the modified Order.

VIII. GENERAL PROVISIONS

91. This Order is not a permit under the CWA, and does not waive or modify Respondent's ongoing obligation and responsibility to ascertain and comply with all other applicable federal, state or local laws, regulations, ordinances, permits, or licenses.

92. EPA reserves all rights and remedies, legal and equitable, available to address any violation cited in this Order, any other violation of the CWA, and to enforce this Order. Neither issuance of this Order by EPA nor compliance with its terms precludes further enforcement action pursuant to Section 309 of the CWA, 33 U.S.C. § 1319, for the violations cited herein, for any other violations of the CWA committed by Respondent, or to enforce this Order.

93. Respondent may seek federal judicial review of the Order pursuant to Chapter 7 of the Administrative Procedure Act, 5 U.S.C. §§ 701-706. Section 706, which is set forth at http://uscode.house.gov/download/pls/05C7.txt, states the scope of such review.

94. Administrative, Civil and Criminal Enforcement

The CWA includes provisions for administrative penalties, for civil injunctive relief and penalties, and for criminal sanctions for violations of the CWA. Specifically, EPA may take one or more of the following actions:

a. assess civil administrative penalties under 33 U.S.C. § 1319(g) and 40 C.F.R. Part 19 of $11,000 per day for each violation that occurred after March 15, 2004 through January 12, 2009 and $16,000 per day for each violation that occurred after January 12, 2009. An administrative penalty action may total up to $177,500 for actions filed after January 12, 2009;

b. seek civil injunctive relief and penalties under 33 U.S.C. § 1319(d) and 40 C.F.R. Part 19. EPA may seek civil judicial penalties of $32,500 per day for each violation that occurred after March 15, 2004 through January 12, 2009, and may seek civil judicial penalties of $37,500 per day for each violation that occurs after January 12, 2009; or

c. seek criminal sanctions, including fines and imprisonment, for negligent or knowing violations of the CWA under 33 U.S.C. § 1319(c).

95. The information required to be submitted pursuant to this Order is not subject to the approval requirements of the Paperwork Reduction Act of 1995, 44 U.S.C. § 3501 *et seq.*

IX. CERTIFICATION OF COMPLETION

96. Within thirty (30) calendar days after Respondent has received coverage under a WPDES permit and concludes that it has complied with all requirements of this Order, Respondent shall submit a written certification of completion describing actions taken to comply with all requirements of this Order.

97. After receipt and review of Respondent's certification of completion submitted pursuant to Paragraph 96 of this Order, EPA shall notify Respondent whether all requirements of this Order have been satisfied.

98. This Order shall be effective until EPA notifies Respondent that Respondent has complied with all requirements of this Order.

Date: 9-13-13

Peter Swenson

for Tinka G. Hyde
Director, Water Division

ATTACHMENT 1

CWA COMPLIANCE EVALUATION INSPECTION REPORT
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 5
FOR [redacted] FARMS

CWA COMPLIANCE EVALUATION INSPECTION REPORT
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 5

Purpose:	Compliance Evaluation Inspection
Facility:	[redacted]
NPDES Permit Number:	None
Date of Inspection:	April 18, 2013
EPA Representatives:	Donald R. Schwer III, Enforcement Officer schwer.don@epa.gov, 312-353-8752 Michael Lukowich, Environmental Engineer 312-353-4645
State Representatives:	NA
Facility Representatives:	[redacted]
Report Prepared by:	Donald R. Schwer III, Enforcement Officer
Report Date:	May 16, 2013

Inspector Signature D R Schwer III

1. BACKGROUND

The purpose of this report is to describe, evaluate and document [redacted] Farms compliance with the Clean Water Act (CWA) at its De Pere, Wisconsin facility on April 18, 2013. This inspection was performed pursuant to Section 308(a) of the Federal Water Pollution Control Act, as amended.

[redacted] Farms is a Limited Liability Company (LLC) dairy operation in Brown County, Wisconsin. It owned and operated by Mr. [redacted] ([redacted] Mr. [redacted] ([redacted] and Mr. [redacted] ([redacted] The operation consists of two facilities that operate under the same nutrient management plan (NMP). The Home site is at [redacted] De Pere, Wisconsin. A Satellite site is northeast of the Home location at [redacted] De Pere, Wisconsin. At the time of inspection, April 18, 2013, the Home site was at capacity with 365 milking and dry cows. The Home site also housed 140 calfs. The satellite location housed 100 heifers and 200 steers. Heifers were housed in total confinement; all other cattle were under partial confinement and had access to open lot or pasture. Mr. [redacted] stated that the facility does not deviate significantly from the number of cattle confined at the facility year round. [redacted] Farms is considered a medium dairy Animal Feeding Operation (AFO) due to the number of mature dairy cows maintained on the facility. There is currently no National Pollutant Discharge Elimination System (NPDES) permit allowing discharge from the site and the facility has never applied for one.

Surface runoff from the [redacted] Farms Home site flowed through pathways to unnamed tributaries that abut the east and west side of the site. The unnamed tributary that abuts the east side of the Home site flows to the unnamed tributary that abuts the west side of the Home site. The unnamed tributary that abuts the west side of the Home site flows to Bower Creek. Bower Creek flows to the East River. The East River flows to the lower Fox River. The lower Fox River flows to Green Bay.

Surface runoff from the [redacted] Farms Satellite site flowed through ditches and pathways to an unnamed tributary. The unnamed tributary flows to Bower Creek. Bower Creek flows to the East River. The East River flows to the lower Fox River. The lower Fox River flows to Green Bay.

2. SITE INSPECTION

Prior to beginning the inspection, I conducted a visual reconnaissance of the [redacted] Farms sites and its surroundings from the public right-of-way. This included [redacted] for the Home site and [redacted] for the Satellite site. During my reconnaissance, I searched for areas of environmental concern, discharges, drainage patterns, flow directions, distance and direction of nearest perennial waters, visual condition of perennial waters, facility location and layout.

I arrived at [redacted] Farms Home site at approximately 8:30 a.m. on April 18, 2013. I parked the vehicle near the entrance of the facility. The temperature was approximately

40° F and it was raining. The weather station, Green Bay 5.3 SSW, WI US (US1WIBN0010), in Green Bay, Wisconsin had an observed rainfall of 0.2 in. on April 18, 2013. Upon arrival, Mr. Lukowich and I put on disposable boots. I introduced myself and Mr. Lukowich and we presented our credentials to Mr. [redacted] I asked Mr. [redacted] if he was able to act as the official facility representative for [redacted] Farms. He said that he would represent the facility and that his [redacted] Mr. [redacted] was sick. I asked him what he was responsible for and how long he had those responsibilities. Mr. [redacted] said that he is responsible for the general management of the facility.

I explained to Mr. [redacted] that I would be conducting a Concentrated Animal Feeding Operation (CAFO) inspection to evaluate [redacted] Farms compliance with the requirements of the CWA and determine whether or not they require a permit. I explained that the inspection would consist of a review of facility operations, required records, waste generation and management practices, and a visual inspection of the site. I stated that I would document my findings and observations by taking photographs, obtaining statements from facility staff, and by collecting samples if necessary.

2.1 Interview, Nutrient Management Plan (NMP) and Records Review

Mr. [redacted] stated that the facility employs seven full time employees. He said that [redacted] Farms is owned by [redacted] and [redacted] He said that there is a Satellite site at [redacted] De Pere, Wisconsin. He said the facility consistently maintains the approximate number of cattle in Table 1. He said the number of cows may fluctuate by 20 -30 animals periodically, but, this is approximately the maximum amount of cattle the facility maintains.

When I asked Mr. [redacted] if any of the animals had direct access to waters of the United States and/or its tributaries, Mr. [redacted] stated that the Dry Cows have access to five acres of pasture that has a gulley run through it, however, he was unsure if it was a water of the United States.

Table 1: Animal Numbers

Type of Animal	Number of Animals	Site	Type of Confinement
Milking Cow	320	Home	Total
Dry Cow	45	Home	Partial
Heifer	100	Satellite	Total
Calf (<250 lbs)	140	Home	Partial
Steer	200	Satellite	Partial

Livestock Waste Management

Mr. [redacted] said manure and used bedding in the barns that house the milking and dry cows is scrapped to an auger. The manure and used bedding is then hauled to concrete pits on the northeast side of the facility. The manure and used bedding from the barns

that house the calves are scrapped, loaded, and hauled to the concrete pits on the northeast side of the facility. The milkhouse wastewater flows to a pit on the northwest corner of the milkhouse and is pumped near the auger which is then transferred to the concrete pits.

Mr. [redacted] said on the Satellite site, manure and used bedding is self contained in the barn for the heifers and is loaded out when needed. The steers have access to an open lot in which runoff flows to and is contained in a pit on the west end of the lot. When the pit is full it is pumped out and transferred to the concrete pit at the Home site.

The cattle are provided drinking water through Ritchie waterers and pales are used for calfs. The source of the drinking water is from a well. Waste drinking water is contained with manure and used bedding. Plate-cooler water is reused for drinking water for the animals. Cleaning of the milk house uses approximately 600 gallons per day. The facility uses sawdust, sand and straw bedding. Used bedding is handled with the manure.

Mr. [redacted] did not know how much manure was generated annually. He said mortalities are taken by Circle R mink farm. Mr. [redacted] said the facility has a nutrient management plan that covers the land application of manure. He said the facility has approximately 2,200 acres available for land application. He said records of land application were kept with the nutrient management plan.

Feed is stored in bunkers on both the Home and Satellite site. Mr. [redacted] said wastewater from the feed bunkers flows into the fields.

Table 2: Livestock Waste Storage

Type of Storage	Site	Storage Capacity	Type of Liner	Depth Markers Present	Last Time Waste was Removed	Days of Storage
Two Pits	Home	?	Concrete	No	March 2013	?
Pit	Satellite	?	Concrete	No	-	?
Records at site of storage structure design?				No		
Additional Information:				East pit had a hole in it.		

Receiving Surface Waters

Mr. [redacted] said the unnamed tributary that abuts the west side of the Home site flows year round and that the unnamed tributary that abuts the east side of the Home site flows during the spring melt and during precipitation.

2.2 Walkthrough of the Facility

To facilitate the walkthrough section of this report, overview photographs are included in Attachment 1 which includes building labels, outlines of drainage pathways, and waterway locations. The inspection photographs are in Attachment 2.

Home Site

I began the walkthrough portion of the inspection by walking east along the south side of the facility. I observed some bedding and manure material that was tracked out of the south side of the Calf Barn 1. Calf Barn 2 had open lots that did not have containment for manure or process wastewater. Runoff from portions of the open lots could flow to the east. A pile of used bedding was located at the east side of Calf Barn 2 (Attachment 2: IMGP0254, IMGP0255). Runoff from the used bedding could flow northeast to the unnamed tributary.

I continued north toward the concrete pits. Much of the area along the east end of the production area flowed toward the east. I observed manure and bedding material through the access ways along the east end of the production area due to poor housekeeping. I observed the west concrete pit; it was approximately half full (Attachment 2: IMGP0256, IMGP0262). The east pit was nearly empty (Attachment 2: IMGP0257). The water in the east pit was dark and smelled septic.

I continued north along the east end of the concrete pits and crossed into the pasture/open lot. The unnamed tributary that abuts the east end of the production area flowed through the pasture/open lot (Attachment 2: IMGP0258, IMGP 0259). There was no vegetation on much of the south side of the pasture. Cattle had direct access to the unnamed tributary. I observed manure patties in and around the unnamed tributary.

On the northeast corner of the concrete pit, I observed a hole in the concrete pit (Attachment 2: IMGP0260). Process wastewater was flowing out of the hole in the concrete pit. The process wastewater smelled septic and was dark in color (Attachment 2: IMGP0261). I observed saw marks along the hole in the pit.

I continued back south and then west along an access way along the north side of Calf Barn 2. I continued to the silage and commodity storage area along the west end of the Milk Cow Barn. The access ways around this area contained waste feed material (Attachment 2: IMGP0263, IMG0264, IMGP0265). Process wastewater runoff flowed to the north. Cattle had access to an open lot along the west end of the Milk Cow Barn (Attachment 2: IMGP0265, IMGP0266). Runoff from the open lot flowed north. There was no containment for manure or process wastewater generated from the feed bunker, access ways, and the open lot. I observed runoff from the access way and open lot flowing north into the field north of the Milk Cow Barn (Attachment 2: IMGP0267, IMGP0268). I observed pathways throughout the field north of the Milk Cow Barn (Attachment 2: IMGP0269). I observed process wastewater on the north end of the feed bunker which drained west to the unnamed tributary (Attachment 2: IMGP0270, IMGP0271).

I observed waste feed, bedding, and manure solids that were covering the surface of the field north of the Milk Cow Barn; wastewater was ponded in several locations of the field (Attachment 2: IMGP0272-IMGP0274). The wastewater flow concentrated into two main pathways which drop approximately ten feet down the ledge (Attachment 2:

IMGP0276-IMGP0281). The west pathway contained rip rap material. The east pathway dispersed into a ponded area before meeting up again with the other pathway (Attachment 2: IMGP0282). The flowing wastewater in the pathways was dark in color and smelled of manure. The flowing wastewater in the pathways looked like a liquid manure slurry that would normally be stored in a wastewater pond or slurry storage structure. The pathway turned west and formed a gulley where it dropped down the ledge into the unnamed tributary (Attachment 2: IMGP0283-IMGP0287). I observed water flowing down the ledge to the unnamed tributary.

Satellite Site

I began the walkthrough of the Satelite site on the east side the feed lot and feed bunkers. I observed process wastewater and feed solids around the east side of the feed bunkers (Attachment 2: IMGP0288-IMGP0291). The process wastewater was flowing east into a grassed area north of the Heifer Barn and continueing northeast into the [redacted] ditch (Attachment 2: IMGP0291). I observed water flowing through the culvert east under [redacted] The water contnued flowing north along the east side of [redacted] until [redacted] The water then flowed east along [redacted] approximately one hundred feet before continuing north through a culvert under [redacted] The water continued flowing northeast through a field and wooded area and connected with the unnamed tributary east of the Satellilite site. The water flowed along the approximate pathway traced in Attachment 1: Figure 1.2.

I continued to the east end of the open lot. The eastern portion of the open lot drained to the east. I observed manure and process wastewater in a pathway leading to the grassed area north of the Heifer Barn (Attachment 2: IMGP0293, IMGP0294). The grassed area flowed to the [redacted] ditch. I continued walking west along the south end of the open lot (Attachment 2: IMGP0295-IMGP0297). At the west end of the open lot was a concrete pit to collect manure and process wastewater generated on the open lot (Attachment 2: IMGP0298-IMGP0300).

2.3 Closing Conference and Post-Inspection

At the conclusion of the walkthrough, I summarized my findings and observations to Mr. [redacted] I expressed the following areas of concern:

1. At the Satellite site, manure and process wastewater runoff generated at the open lot and feed bunkers were flowing east to the [redacted] ditch.
2. At the Home site, septic looking waste and process wastewater was leaking out of a hole in the east concrete pit and flowing to the unnamed tributary on the east end of the site.
3. At the Home site, animals had direct access to the unnamed tributary on the east end of the site.
4. At the Home site, manure and process wastewater from the feed bunker and the open lot west of the Milk Cow Barn did not have containment and

was flowing north through pathways that led to the unnamed tributary on the west end of the site.

5. At the Home site, the used bedding stockpile and open lots at Calf Barn 2 could flow east to the unnamed tributary on the east end of the site.
6. The Home site contained waste feed, manure, and process wastewater in many of the access ways.

I offered Mr. [redacted] my business card; however, he declined to take it. I explained [redacted] Farm's right to make a claim of business confidentiality and presented Mr. [redacted] with a Confidentiality Notice (Attachment 3). Mr. [redacted] did not make any confidentiality claims at the time of the inspection.

2.4 Sampling Information

Sampling was conducted at various locations of the production area to determine the presence of pollutants that could impact the applicable unnamed tributaries. Mr. [redacted] did not accompany EPA during sampling. I offered to split samples with Mr. [redacted] Mr. [redacted] declined splitting samples. Samples were tested for fecal coliform, biochemical oxygen demand (BOD), total dissolved solids (TDS), total suspended solids (TSS), ammonia nitrogen, nitrate- nitrite nitrogen, total Kjeldahl nitrogen (TKN), and total phosphorus (TP).

Sample SO1 was taken at 11:40 am as a field blank. Sample SO2 was taken at 11:46 am of process wastewater pathway adjacent to the open lot on the Satellite site (Attachment 2: IMGP0303-IMGP0304). Sample SO3 was taken at 11:56 am of process wastewater in the roadside ditch at the Satellite site (Attachment 2: IMGP0305-IMGP0306). Sample SO4 was taken at 12:40 pm of process wastewater flowing down the ledge at the Home site (Attachment 2: IMGP0311-IMGP0312). Sample SO5 was taken at 12:48 pm from the process wastewater in the pathway that drains to the unnamed tributary on the west side of the Home site (Attachment 2: IMGP0313-IMGP0314). Sample S06 was taken at 1:08 pm of process wastewater from the concrete pit that drains to the unnamed tributary on the east side of the Home site (Attachment 2: IMGP0320-IMGP0321). Sampling locations can be seen in Attachment 1: Figure 1 and Figure 2.

Sampling concluded at 1:10 pm. All samples were taken by Mr. Lukowich. Samples were preserved at 1:30 pm according to EPA Region 5 Field Sampling Plan. Fecal coliform samples were transported to Pace Analytical Services, Inc. at 1241 Bellevue Street, Green Bay, Wisconsin. All other samples were hand delivered to the EPA Region 5 Chicago Regional Laboratory. All samples met holding time according to the EPA Region 5 Field Sampling Plan developed for the inspection.

The results of the sampling, summarized in Table 3, indicate multiple areas contribute pollutants into the unnamed tributaries. All of the samples had significant quantities of fecal coliform (500,000 to 14,500,000 colony forming units (CFU) per 100 milliliter). Additionally, several forms of nitrogen are contained in the process wastewater samples, as indicated by the TKN, nitrate- nitrite nitrogen, and ammonia nitrogen sampling results.

Total Phosphorus, TDS, and TSS were present in the samples. The laboratory results are in Attachment 4.

Table 3: Field Sampling Results

Sample ID	Fecal Coliform** (CFU/100ml)	Biochemical Oxygen Demand (BOD)*** (mg/L)	Total Kjeldahl Nitrogen (TKN) (mg/L)	Nitrate-Nitrite Nitrogen (mg/L)	Ammonia Nitrogen (mg/L)	Total Phosphorus (mg/L)	Total Dissolved Solids (TDS) (mg/L)	Total Suspended Solids (TSS) (mg/L)
SO1	-	U	.77	.07	0.03	U	U	U
SO2	11500000	2700	12.9	U	93.3	134	4450	2930
SO3	500000	1700	113	U	43.2	27.0	2230	204
SO4	14500000	5400	1180	0.78	459	135	7710	3100
SO5	1460000	940	222	0.75	130	47.1	2520	180
SO6	2400000	400	96.6	U	35.5	27.2	1420	2060

U-Undetectable

3. POTENTIAL VIOLATIONS

According to Section 301(a) of the Clean Water Act, it is a violation to discharge pollutants from a CAFO to waters of the United States without a permit.

EPA observed discharges in the following locations:

1. At the Home site, septic looking waste and process wastewater was leaking out of a hole in the east concrete pit and flowing to the unnamed tributary. The hole in the east concrete pit was a manmade conveyance that facilitates the flow of process wastewater to the unnamed tributary.

2. At the Home site, manure and process wastewater from the feed bunker and the open lot west of the Milk Cow Barn did not have containment and was flowing north through pathways that led to the unnamed tributary. The rip rap pathway, paved open lot and access road are manmade conveyances that facilitate the flow of process wastewater to the unnamed tributary.

3. At the Home site, animals had direct access to the unnamed tributary.

4. At the Satellite site, manure and process wastewater runoff generated at the open lot and feed bunkers were flowing east to the [redacted] ditch. The [redacted] ditch and culverts are manmade conveyances that facilitate the flow of process wastewater to the unnamed tributary.

4. AREAS OF CONCERN

EPA observed these areas of concern whereby pollutants have the potential to reach waters of the United States:

1. At the Home site, runoff from the used bedding stockpile and open lots at Calf Barn 2 could flow east to the unnamed tributary on the east end of the site.

2. The Home site contained waste feed, manure, and process wastewater in many of the access ways.

LIST OF ATTACHMENTS

1. Aerial photographs of [redacted] Farms
2. Inspection Photographs
3. Confidentiality Notice
4. Field Sampling Results

ATTACHMENT 1: AERIAL PHOTOGRAPHS OF [redacted] FARMS

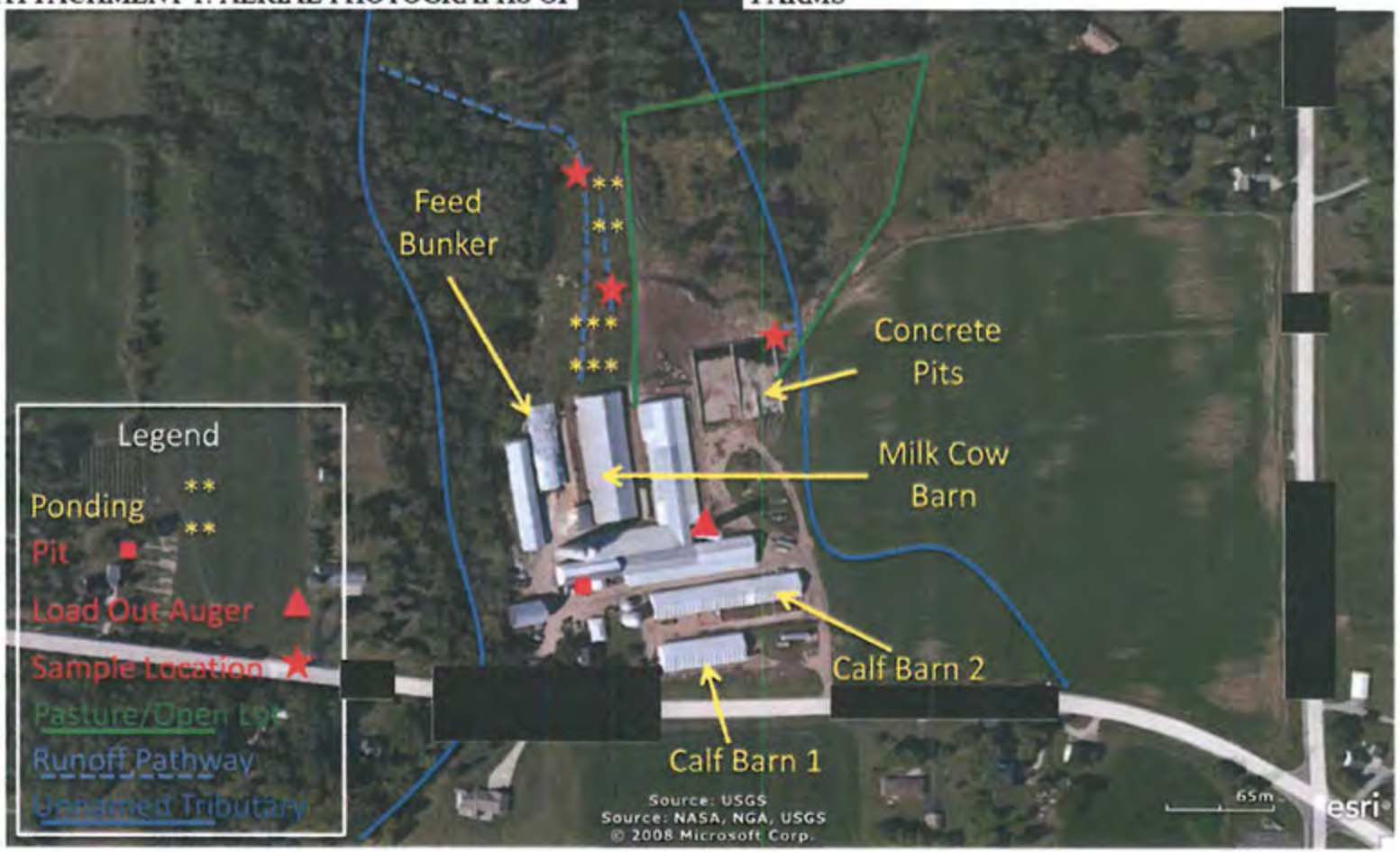


Figure 1.1: Aerial Photograph of [redacted] Farms Home Site

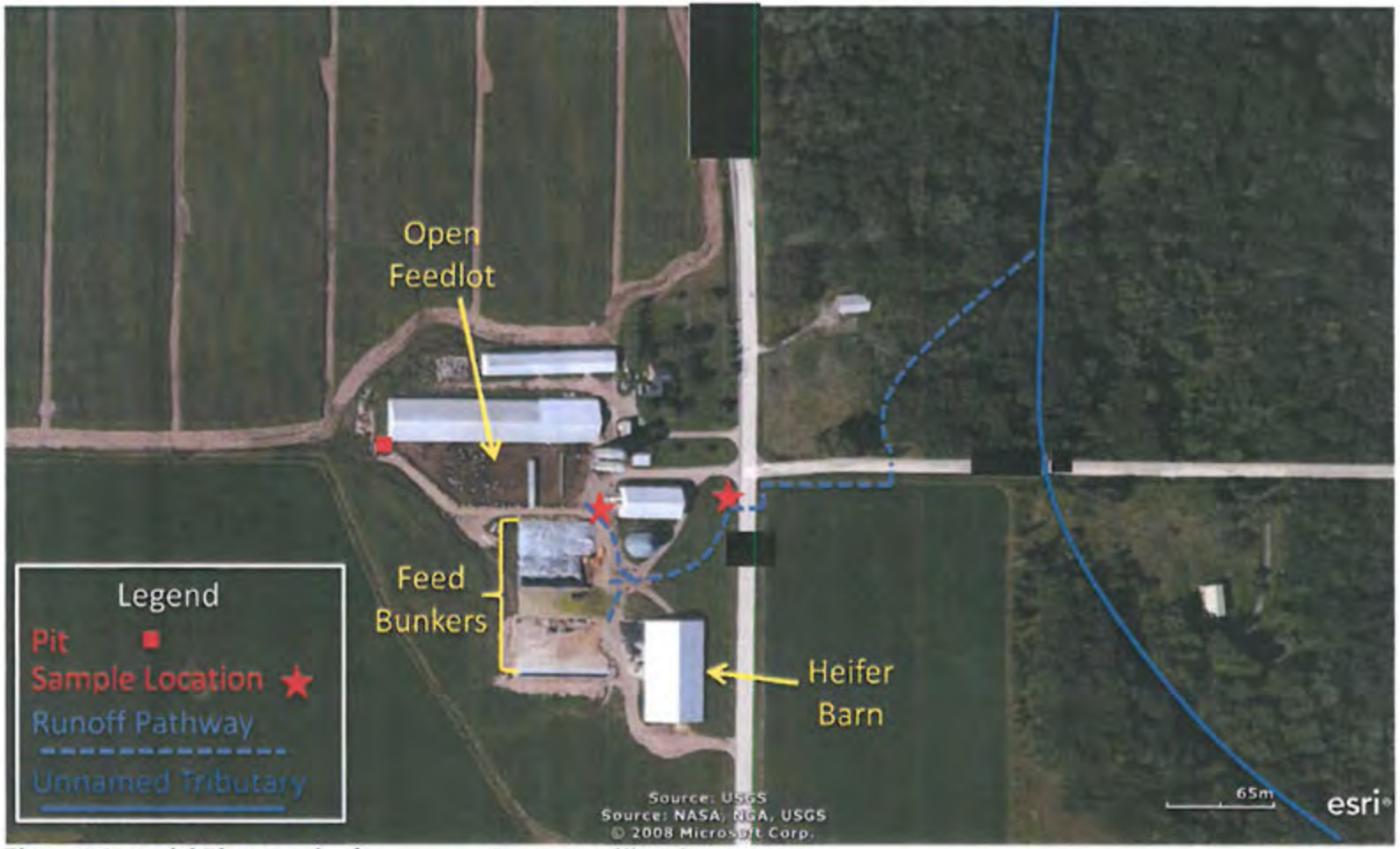


Figure 1.2: Aerial Photograph of [redacted] Farms Satellite Site

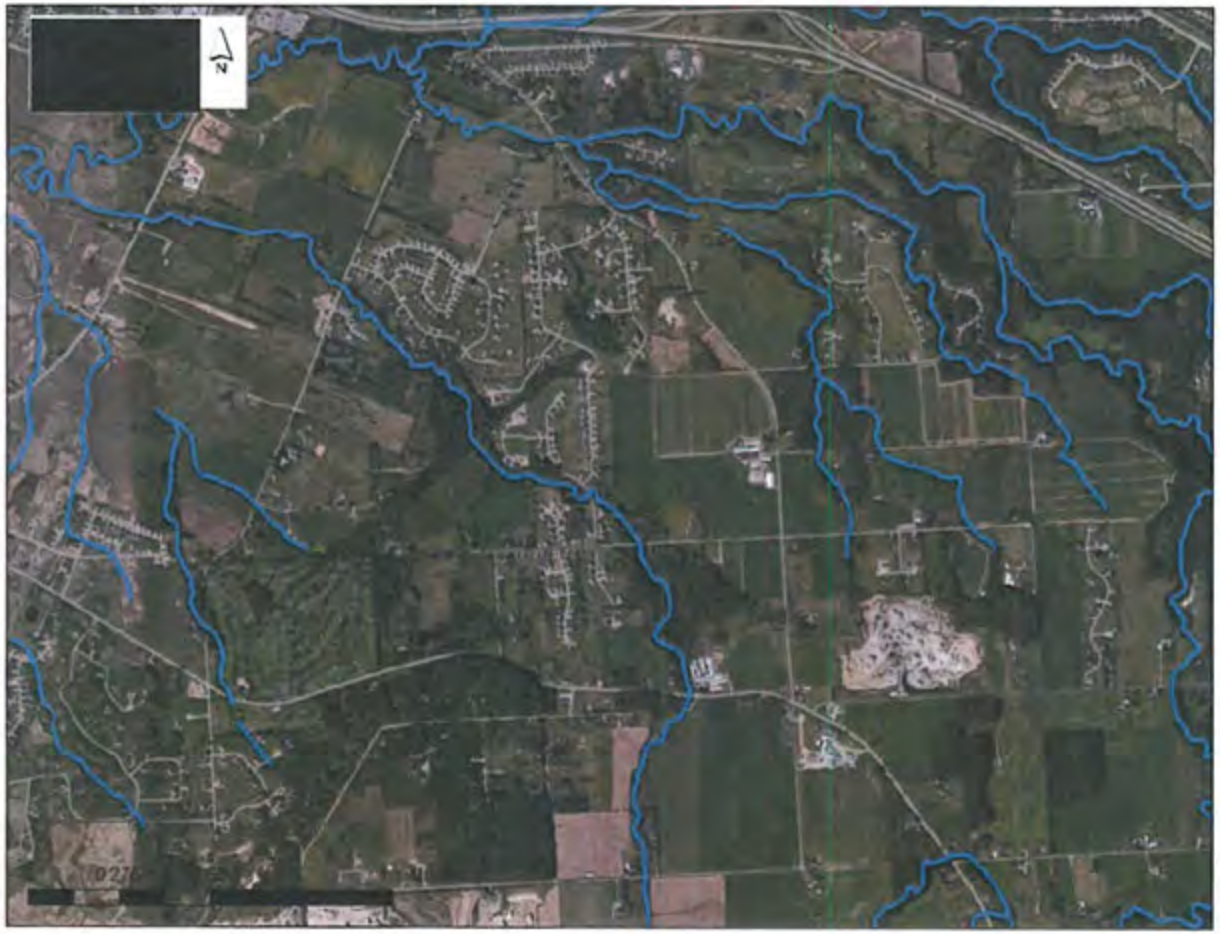


Figure 1.3: Aerial Photograph of National Hydrography Dataset (NHD) Waterways from the United States Geological Survey (USGS)

Charlotte Nagel

From: Cullen Peltier <cpeltier@ledgeviewwisconsin.com>
Sent: Wednesday, May 30, 2018 10:54 AM
To: Charlotte Nelson
Subject: Fwd: Town Board Meeting Agenda

Sent from my iPad

Begin forwarded message:

From: Robert Kim <robkimstl@gmail.com>
Date: May 29, 2018 at 8:30:03 AM CDT
To: pdanen@ledgeviewwisconsin.com, rvanrossum@ledgeviewwisconsin.com, kgeurts@ledgeviewwisconsin.com, cpeltier@ledgeviewwisconsin.com, mdanen@ledgeviewwisconsin.com
Cc: Anna <annalabounty@gmail.com>
Subject: Town Board Meeting Agenda

Dear Phil Danen and fellow town board members,

I understand that the Town Board will vote on whether or not to approve the proposed application to increase Ledgeview Farms LLC's herd size to nearly 3,500 cows and to also build a 5-million-gallon manure pit at their location on Lime Kiln and GV as well as a 12-million-gallon manure pit on their field at the corner of Lime Kiln and Copper Lane.

I fully expect that the Town will follow its passed ordinance that prohibits and manure pits within a specified distance from a residential area and not approve the application.

As CFO of Green Bay Packaging, I am constantly reminded that a business has the right to operate profitably while respecting its neighbors. This has been representative of the culture that the Kress family has instilled over the 80 years that it has operated in the Green Bay area. We have always collaborated and worked with the DNR to find balance in terms of our growth plans while respecting our neighbors.

I am concerned in terms of the level of ethics (or lack thereof) that the Farm has represented over the past several years. The Farm has been in violation with the DNR because it had illegally grown its business to the CAFO level without the proper waste maintenance. In addition, the Farm has illegally spread excessive waste onto its farm fields. The Farm has refused to find a middle ground solution that would satisfy all interested parties.

My family (Anna-wife, Lucy – 8-year-old daughter and Grace – 5-year-old daughter) moved into the wonderful town of Ledgeview last year primarily because of the favorable school district and most importantly, the people. In light of events, the town has always supported its fellow neighbors in events where it was required including the accident that occurred several years ago at the Ledgeview Farms facility.

We are deeply concerned that should the project go through that it would have a significant negative impact on the town regards to property value. I have noticed the wonderful expansion on the Municipal facilities and can't help to wonder if such projects in the future can be properly funded should property values decrease in the city of Ledgeview as potential home buyers pick other areas with comparable school districts within the fox valley area.

I am concerned that manure pits are dangerous and should not be located so close to homes and families, particularly with so many young children. To address this regard, the town approved a setback longer than what was required by the state and the Brown County.

If you have any questions, feel free to contact me at 920-784-1667 or robkimstl@gmail.com.

Sincerely,

Rob Kim
3665 Beachmont Rd
De Pere, WI 54115

Charlotte Nagel

From: Renee Vanrossum <rvanrossum@ledgeviewwisconsin.com>
Sent: Tuesday, May 29, 2018 5:29 PM
To: cnagel@ledgeviewwisconsin.com
Subject: Fwd: Manure Pit Hearing

Follow Up Flag: Follow up
Flag Status: Flagged

Sent from my iPad

Begin forwarded message:

From: Sean Moran <sdmoran2@hotmail.com>
Date: May 29, 2018 at 5:13:29 PM CDT
To: "mdanen@ledgeviewwisconsin.com" <mdanen@ledgeviewwisconsin.com>, "pjdanen@ledgeviewwisconsin.com" <pjdanen@ledgeviewwisconsin.com>, "rvanrossum@ledgeviewwisconsin.com" <rvanrossum@ledgeviewwisconsin.com>, "kgeurts@ledgeviewwisconsin.com" <kgeurts@ledgeviewwisconsin.com>, "cpeltier@ledgeviewwisconsin.com" <cpeltier@ledgeviewwisconsin.com>
Cc: Jenni Moran <moranfam97@yahoo.com>
Subject: Manure Pit Hearing

Hello Phil, Renee, Ken, Cullen, and Mark,

My family and I live in Ledgeview, on Iron Horse Way, and our three children attend the DePere Schools. Unfortunately, I am traveling for work tonight and am unable to attend the hearing regarding the proposed manure pit(s) for the Pansiers' farm.

My hope in writing is to convey our concerns regarding the manure pit. Since you may be reading a few of these letters, I will keep it brief.

First, If I understand correctly, Pansiers' expanded their herd without obtaining the proper regulatory approvals. And absent the herd expansion, there would be no need for a manure pit.

Second, there are plenty of examples of the health effects these pits can have on those who live in proximity to them. Both the CDC and OSHA websites have documentation of this (as well as others). In this case, there are neighborhoods filled with families with young children on three sides of the proposed pit.

Based on these two points, we oppose the building of this pit in the proposed location.

We understand the farm was there first. But the farm that was there first did not have enough cattle for a manure pit to be needed, or to make economic sense. The pit was only proposed after the farm expanded illegally.

On behalf of myself, my wife Jenni, and my children....Sam, Ellen, and Kate....we ask you to

please oppose the building of this manure pit so close to our home.

Thank you for your consideration,

Sean Moran

Sent from my iPad

Charlotte Nagel

From: Mark Danen <mdanen@ledgeviewwisconsin.com>
Sent: Tuesday, May 29, 2018 5:29 PM
To: cnagel@ledgeviewwisconsin.com
Subject: Fwd: Ledgeview Manure Pit

Follow Up Flag: Follow up
Flag Status: Flagged

Sent from my iPad

Begin forwarded message:

From: Jennifer Sullivan <jenniferhoener@hotmail.com>
Date: May 29, 2018 at 5:06:17 PM CDT
To: "mdanen@ledgeviewwisconsin.com" <mdanen@ledgeviewwisconsin.com>
Subject: Ledgeview Manure Pit

Hello, my name is Jennifer Sullivan and I live on Beachmont Road, the block closest to the proposed manure pit. In fact, my house will be the closest house to the manure pit; it will essentially be in my backyard. I urge you to please reject Ledgeview Farm's permit for the manure pit and its expansion. I'm not going to pretend to be a medical expert and I know that you have probably heard from many of them but I do know what they have shared with me and as a mother of 3 girls – Samantha (6), Mia (4) and Cecilia (2) I can't begin to imagine a world where this type of thing would be allowed just about a football field away from where my girls play every day. I can't fathom that the town would decide to expand an area residentially and then place all of the people who invested in that community in danger. I've read the farms EPA reports and it is beyond bizarre and disturbing to me that this particular farm is still allowed to do business period. It has illegally expanded and had any of us known the true extent of his herd we would not have purchased these homes.

Beachmont Road is an idyllic setting, where the people are even nicer than the new homes being built. I've only lived here for one year, but I've already celebrated holidays and birthdays with my neighbors. We have BBQ's and throw baby showers for each other. We help each other in times of need, whether it be giving a neighbor some milk when they run out during a snow storm or fundraising for a child's medical needs. During the last big snow storm, my husband was working. I was alone with my three young daughters, when a neighbor plowed my driveway and checked that all my vents were clear. Up and down my block neighbors were helping each other with the snow.

As a child, I lived more places than I can count...some good, some bad, but nothing has come close to the community that lives on Beachmont Road. It is an amazing place to raise a family, which is exactly why people want to live in Ledgeview.

If you allow the manure pit to be built and the farm to expand, you will destroy this. Our family will have no choice but to leave our home. My children will leave the block where they have made some of their best friends. The reason we will leave is because of how close you will be putting a 15 million gallon manure pit that emits toxic gases and can explode. I know we've talked about setbacks in regard feet and inches, but I want you to really see how close this will be to my children. It is incomprehensible that someone would want to do this and that we are still discussing this issue. As a mother and a proud resident of Ledgeview, I ask you to protect your residents. Please reject this application and continue to grow Ledgeview in a safe, healthy way, so more families can enjoy blocks like Beachmont Road.

Thank you,

Jennifer Sullivan

Sent from Mail for Windows 10

Sent from Mail for Windows 10

Charlotte Nagel

From: Renee Vanrossum <rvanrossum@ledgeviewwisconsin.com>
Sent: Tuesday, May 29, 2018 5:11 PM
To: cnagel@ledgeviewwisconsin.com
Subject: Fwd: Opposition Manure Pit

Follow Up Flag: Follow up
Flag Status: Flagged

Sent from my iPad

Begin forwarded message:

> **From:** Shelly Weigandt <shelly@weigandt.com>
> **Date:** May 29, 2018 at 12:42:31 PM CDT
> **To:** mdanen@ledgeviewwisconsin.com, cpeltier@ledgeviewwisconsin.com, kgeurts@ledgeviewwisconsin.com, rvanrossum@ledgeviewwisconsin.com, pjdanen@ledgeviewwisconsin.com
> **Subject: Opposition Manure Pit**
>
> Hello, I have questions/concerns regarding Ledgeview Farms.
>
> I'm strongly opposed to the manure pits and increase in cattle that the town will be voting on tonight!
>
> Please answer my questions and consider my concerns....
>
> 1. According to the application there are approximately 2750 acres available for spreading. How many of those available acres is the farm regularly/consistently using to spread the manure?
>
> 2. How many of those acres does the farm intend to use if the manure pit and cattle increase is approved?
>
> 3. What are the terms of the rental agreements on the spreadable acres, and has a town board member reviewed the rental agreements for the land the farm intends for spreading manure?
>
> If circumstances in the rental agreements change...
>
> 4. Is there a "backup" plan to RESPONSIBLY dispose of the mass quantities of toxic waste? Let's remember this farm is in the center of residential neighborhoods-children & elderly included.
>
> 5. If the town approves the manure pits, how will the health and safety of its residents be protected? Enforceable practices- please note fining the farm for not complying doesn't protect the health and safety of the residents.

6. Will the town be vulnerable to legal action if people get sick/develop medical conditions by allowing a known health & safety hazard to be placed so close to residences? -especially when Ledgeview Farms has a reputation for not complying with regulations and human error is commonly cited for the problems that accompany manure pits.

7. This is strongly opposed by many residents, and for good reason the information on the application should be verified. Has anyone verified the accuracy of information provided in the application?

6. Does the town view Ledgeview Farms as having a history of complying with regulations?

From a residents perspective, the answer is no.

The manure application maps submitted by Ledgeview Farms, show many roads as areas not to apply(manure).

Manure applied to roads:
I drive on those roads and there is manure spilled all over them. Often, there is so much of it that there is no possible way for me to drive around it...and the rain water cleans off the roadways - contaminating the water! I understand spills happen. However, the farm is responsible for taking these spills seriously and cleaning up after it...not Mother Nature!

Unsafe tractor operation:
They have had tractors on the road with their 'slow moving vehicle' sign completely covered w manure - having no bright orange/red coloring visible, or having no 'slow moving vehicle' sign at all. Their equipment has also been on the roadways after dark without being properly lit. Certainly a more dangerous situation for the small vehicle/bicyclist/pedestrian than whoever is driving the tractor.
I (and many other residents) have personally witnessed these negligences (of the communities safety).

The operating practices of Ledgeview Farms does not indicate they can handle the ethical responsibility that comes with dangerous and toxic manure pits under their operation.

Ledgeview Farms should adhere to operating standards that show genuine concern for the rest of the community.
Perhaps, they could operate within the regulations that it currently has before it is allowed to take their business to the next level. Common sense tells us that giving "more", when one isn't responsible w what they already have is disastrous. Failures that involve the manure pit will impact the community -not just the farm.

Please use discretion when voting on these issues tonight. They shouldn't be allowed to bring in more cattle, produce more toxic waste, and expose the community to a more concentrated level of toxicity than what we are already dealing with.

The health and safety of Ledgeview residents are at risk!

Residing in Ledgeview,
Shelly Weigandt

Charlotte Nagel

From: Phil Wittman <wordpress@ledgeviewwisconsin.com>
Sent: Tuesday, May 29, 2018 5:37 PM
To: cnagel@ledgeviewwisconsin.com
Subject: Message From Site

Follow Up Flag: Follow up
Flag Status: Flagged

From: Phil Wittman <pwittman@condoncompanies.com>
Subject: Town Meeting

Message Body:
Calendar Feature is not working....Need to do a better job informing residents of issues on the agenda' s.
Large issues such as allowing manure pits should be done by mailing a letter.
Also, why do you zone farm land for housing development and then allow farms to expand . Either you make it farmland or residential , because no one wants what we have today! I blame your team not the farmers for your poor planning.
You cannot have your "cake" (residential property taxes) and eat it too".

—
This e-mail was sent from a contact form on ledgeview (http://ledgeviewwisconsin.com/)

File

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Matthew Frank, Secretary
Ronald W. Kazmierczak, Regional Director

Northeast Region Headquarters
2984 Shawano Ave., P.O. Box 10448
Green Bay, Wisconsin 54307-0448
Telephone 920-662-5100
FAX 920-662-5413
TTY Access via relay - 711

September 12, 2007

Roy and Glen Pansier
3870 Dickinson Road
De Pere, WI 54115-0796

Dear Messrs. Pansier:

The purpose of this letter is to inform you that the Department of Natural Resources (Department) believes your livestock operations have more than 1000 animal units. As such, an Animal Units Calculation Worksheet is enclosed for you to fill out, sign, and return. The total number of animal units to be included will be based on all animal units for all livestock located at all of your operations. These calculations must also include the animals from any satellite facilities under common ownership or management (e.g., Lime Kiln Rd.).

If you are currently over or near the Concentrated Animal Feeding Operation (CAFO) threshold of 1000 animal units, an initial site visit will be arranged, at which time a Wisconsin Pollutant Discharge Elimination System (WPDES) permit application package will be provided.

If you are currently below 1000 animal units but are considering reaching permit size in the future, an initial application must be received at least **12 months** prior to reaching the threshold. If you do not expect to reach or exceed 1000 animal units, a permit is not required; however, the enclosed Animal Unit Calculation Worksheet still needs to be returned.

I look forward to receiving the Animal Unit Calculation Worksheet by **October 12, 2007**.

Please call me at (920) 662-5400 with any questions.

Sincerely,

Craig Webster
Watershed Expert and Program Coordinator

C: Brown County LWCD

Enclosure

ANIMAL UNITS CALCULATION WORKSHEET
INSTRUCTIONS Form 3400-25A Rev. 04/07

2132

This worksheet must be submitted regardless of whether a permit is required.
Notice: Use this worksheet to calculate the number of animal units on your operation, both at the current time and after any proposed expansions planned within the next five years. You are required to complete these calculations to determine if you must apply for a Wisconsin Pollutant Discharge Elimination System (WPDES) permit under NR 243, Wis. Admin. Code. A WPDES permit is required for all livestock/poultry operations that will contain 1,000 or more animal units.

- If you do expect your operation to reach or exceed 1,000 animal units, a permit is required and you must complete and submit an initial Livestock/Poultry Operation WPDES Permit Application consisting of Form 3400-25 at least 12 months prior to reaching the 1,000 animal unit threshold. In addition, you will need to submit other WPDES application materials as part of a complete final permit application at least 6 months prior to reaching the 1,000 animal unit threshold. Please contact your regional DNR contact for more information on what is required as part of a final permit application.

- If you do not expect to reach or exceed 1,000 animal units, a WPDES permit is not required. However, if you have received an Animal Unit Verification Report (Form 3400-181), return it along with this worksheet to your regional DNR contact.

Completing AU worksheet using Microsoft Excel or Word:

1. To begin calculations using Microsoft Excel or Word, double-click on table below. If completing this form by hand see directions below.
   a. For existing operations, enter the current number of each animal type on your operation in the **Current Number** column. Count the highest number of animals on-site at any time during the past year, and include all animals that are part of your operation that are at adjacent locations or under common management.
   b. If you plan to expand within the next five years, also enter your proposed animal numbers in the **Projected Number** column on Page 2.
   c. For brand new operations where there currently aren't any animals present, enter 0 for Total Mixed and Non-Mixed Animal Units on Page 1. On Page 2 enter your proposed animal numbers in the **Projected Number** columns.
   d. Note: For some animal types (for example, dairy cattle and swine), animal categories are combined as part of non-mixed AU calculations.
2. The worksheet will automatically calculate the number of Mixed and Non-Mixed Animal Units (AU) on the operation. If either "Total Animal Units" is 1000 or more, you are required to obtain a WPDES permit.
3. Enter the dates of all proposed expansions, if applicable, within the next five years on Page 2.
4. To quit editing click anywhere outside of the table within the document.

Completing AU worksheet by hand:

1. Print out both pages of this document
   a. For existing operations, enter the current number of each animal type on your operation in the **Current Number** columns. Count the highest number of animals on-site at any time during the past year, and include all animals that are part of your operation that are at adjacent locations or under common management.
   b. If you plan to expand within the next five years, also enter your proposed animal numbers in the **Projected Number** columns on Page 2.
   c. For brand new operations where there currently aren't any animals present, enter 0 for Total Mixed and Non-Mixed Animal Units on Page 1. On Page 2 enter your proposed animal numbers in the **Projected Number** columns.
   d. Note: For some animal types (for example, dairy cattle and swine), animal categories are combined as part of non-mixed AU calculations.
2. Multiply the number entered in columns in the projected number by the appropriate equivalency factor to determine the equivalent number of animal units for each animal type.
3. Add all values in column d together. This equals the Total Mixed Animal Units. For column g, enter the equivalent animal unit number from the row with the highest animal unit number in Total Non-mixed AU.
4. If either "Total Animal Units" is 1000 animal units or more, you are required to obtain a WPDES permit
5. Enter the dates of all proposed expansions, if applicable, within the next five years on Page 2.

Animal Unit Calculations: Current Number of AUs on Operation

Animal Type		I. Mixed Animal Units			II. Non-mixed Animal Units		
		b. Equiv. factor	c. Current Number	d. No. of AUs	e. Equiv. factor	f. Current Number	g. No. of Aus
Example - Broilers (non-liquid manure):		*0.005 x*	*150,000*	*= 750*	*0.008 x*	*150,000*	*= 1200*
Dairy/Beef Calves (under 400 lbs)		0.20 x		=	*Fed numbers in this column comply with 40 CFR s. 122.23*		
Dairy Cattle	Milking & Dry Cows	1.40 x		=	1.43 x		=
	Heifers (800 lbs to 1200 lbs)	1.10 x		=			
	Heifers (400 lbs to 800 lbs)	0.60 x		=	1.00 x		=
Beef	Steers or Cows (400 lbs to market)	1.00 x		=			
	Bulls (each)	1.40 x		=	1.00 x		=
Veal Calves		0.50 x		=	1.00 x		=
Swine	Pigs (up to 55 lbs)	0.10 x		=	0.10 x		=
	Pigs (55 lbs to market)	0.40 x		=			
	Sows (each)	0.40 x		=			
	Boars (each)	0.50 x		=	0.40 x		=
Chickens	Layers (each) -non-liquid manure system	0.01 x		=	0.0123 x		=
	Broilers/Pullets (each) -non-liquid manure system	0.005 x		=	0.008 x		=
	Per Bird -liquid manure system	0.033 x		=	0.0333 x		=
Ducks	Ducks (each) -liquid manure system	0.2 x		=	0.2 x		=
	Ducks (each) -non-liquid manure system	0.01 x		=	0.0333 x		=
Turkeys (each)		0.018 x		=	0.018 x		=
Sheep (each)		0.1 x		=	0.1 x		=
Horses (each)		2 x		=	2 x		=

Total Animal Units:

Total Mixed Animal Units = (add all rows above)

Total Non-Mixed Animal Units = (Enter the single highest number from any row above; DO NOT add the totals)

Does operation need a WPDES permit? _____

Animal Unit Calculations: Projected Number of AUs on Operation

Animal Type		I. Mixed Animal Units			II. Non-mixed Animal Units		
		b. Equiv. factor	c. Current Number	d. No. of AUs	e. Equiv. factor	f. Current Number	g. No. of Aus
Example - Broilers (non-liquid manure):		*0.005 x*	*150,000*	*= 750*	*0.008 x*	*150,000*	*= 1200*
Dairy/Beef Calves (under 400 lbs)		0.20 x		=	*Fed numbers in this column comply with 40 CFR s. 122.23*		
Dairy Cattle	Milking & Dry Cows	1.40 x		=	1.43 x		=
	Heifers (800 lbs to 1200 lbs)	1.10 x		=			
	Heifers (400 lbs to 800 lbs)	0.60 x		=	1.00 x		=
Beef	Steers or Cows (400 lbs to market)	1.00 x		=			
	Bulls (each)	1.40 x		=	1.00 x		=
Veal Calves		0.50 x		=	1.00 x		=
Swine	Pigs (up to 55 lbs)	0.10 x		=	0.10 x		=
	Pigs (55 lbs to market)	0.40 x		=			
	Sows (each)	0.40 x		=			
	Boars (each)	0.50 x		=	0.40 x		=
Chickens	Layers (each) -non-liquid manure system	0.01 x		=	0.0123 x		=
	Broilers/Pullets (each) -non-liquid manure system	0.005 x		=	0.008 x		=
	Per Bird -liquid manure system	0.033 x		=	0.0333 x		=
Ducks	Ducks (each) -liquid manure system	0.2 x		=	0.2 x		=
	Ducks (each) -non-liquid manure system	0.01 x		=	0.0333 x		=
Turkeys (each)		0.018 x		=	0.018 x		=
Sheep (each)		0.1 x		=	0.1 x		=
Horses (each)		2 x		=	2 x		=

Total Animal Units:

Total Mixed Animal Units = (add all rows above)

Total Non-Mixed Animal Units = (Enter the single highest number from any row above; DO NOT add the totals)

Does operation need a WPDES permit? _____

Dates of Proposed Expansions (within the next 5 years) **MM/YY** 1_____ 2_____ 3_____

WISCONSIN
DEPT. OF NATURAL RESOURCES

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Matthew Frank, Secretary
Ronald W. Kazmierczak, Regional Director

Northeast Region Headquarters
2984 Shawano Ave., P.O. Box 10448
Green Bay, Wisconsin 54307-0448
Telephone 920-662-5100
FAX 920-662-5413
TTY Access via relay - 711

October 24, 2007

Roy and Glen Pansier
3870 Dickinson Road
De Pere, WI 54115-0796

Dear Messrs. Pansier:

The purpose of this letter is to inform you that the Department of Natural Resources (Department) believes your livestock operations have more than 1000 animal units. As such, an Animal Units Calculation Worksheet is enclosed for you to fill out, sign, and return. The total number of animal units to be included will be based on all animal units for all livestock located at all of your operations. These calculations must also include the animals from any satellite facilities under common ownership or management (e.g., Lime Kiln Rd.).

If you are currently over or near the Concentrated Animal Feeding Operation (CAFO) threshold of 1000 animal units, an initial site visit will be arranged, at which time a Wisconsin Pollutant Discharge Elimination System (WPDES) permit application package will be provided.

If you are currently below 1000 animal units but are considering reaching permit size in the future, an initial application must be received at least **12 months** prior to reaching the threshold. If you do not expect to reach or exceed 1000 animal units, a permit is not required; however, the enclosed Animal Unit Calculation Worksheet still needs to be returned.

This is the Department's second attempt to contact you. If you have already submitted the requested materials, or have any other questions, please contact me immediately at (920) 662-5400.

I look forward to receiving the Animal Unit Calculation Worksheet by **November 2, 2007**.

Sincerely,

Craig Webster
Watershed Expert and Program Coordinator

C: Brown County LWCD

Enclosure

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Matthew J. Frank, Secretary
Ronald W. Kazmierczak, Regional Director

Northeast Region Headquarters
2984 Shawano Ave., P.O. Box 10448
Green Bay, Wisconsin 54307-0448
Telephone 920-662-5100
FAX 920-662-5413
TTY Access via relay - 711

July 15, 2008

Roy & Glen Pansier
3870 Dickinson Road
DePere, WI 54115

SUBJECT: WPDES Permit Application Materials

Dear Roy & Glen–

This letter is regards to applying for a Wisconsin Pollutant Discharge Elimination System (WPDES) permit for your farm. Enclosed is a packet of information for you to review. This information can also be found on the Department of Natural Resource's website at:

http://dnr.wi.gov/runoff/ag/permits.htm.

The Department believes your operation may have more than 1,000 animal units. Please complete the enclosed Livestock/Poultry Operation WPDES Permit Application (Form 3400-25) and Animal Units Calculation Worksheet (Form 3400-25A) and send to me at the letterhead address above by **August 8, 2008** in order to start the process of obtaining a permit.

Once I have received the above mentioned forms, we can set up a meeting to tour the farm and identify any potential problem areas that may require attention prior to receiving a WPDES permit. This is a good meeting to have your crop advisor and engineer/consultant present as well as County Land Conservation and NRCS staff if needed.

If you have any questions, please contact me at (920) 662-5407 or Casey.Jones@wisconsin.gov.

Sincerely,

Casey L. Jones
Agricultural Runoff Management Specialist
WI DNR—Green Bay

Enclosures: WPDES Permit Application Packet

cc: Dan Helf – DNR
Bill Hafs, Brown County LCD
File

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

WISCONSIN
DEPT. OF NATURAL RESOURCES

FACILITY CONTACT FORM

DATE: 10-7-08

TIME: 8:30 am

FACILITY NAME/TYPE: Pansier Farm

CONTACT NAME/POSITION: Brent Petersen - Brown Co LCD

PHONE: 920-391-4643

METHOD: X Phone _____ In Person

DNR CONTACT: Casey Jones

SUMMARY:

Jones contacted Petersen regarding Pansier's farm - info obtained from Petersen!

- Pansiers are over 1000 animal units (main farm + heifer farm)
- Environmental concerns are the milkhouse waste into nearby stream and runoff from lot at heifer farm
- Pansiers are planning manure storage
- Pansiers were told by Petersen they needed to get a WPDES permit →

Petersen suggested Jones call Jason Pansier to discuss the permit and explain enforcement process. Petersen would attend any meetings DNR has with Pansiers.

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

WISCONSIN
DEPT. OF NATURAL RESOURCES

FACILITY CONTACT FORM

DATE: 10-10-08

TIME: 2:30 pm

FACILITY NAME/TYPE: Pansiers Farm

CONTACT NAME/POSITION: Joan Pansier

PHONE: 920-336-7919

METHOD: X **Phone** _____ **In Person**

DNR CONTACT: Casey Jones

SUMMARY:

Jones called Pansiers back again since they had not called Jones back as requested. Pansier stated that Jason had called someone back - Jones informed Pansier that Jason had not called Jones, Jones informed Pansier that if Jason or another farm manager/owner did not contact Jones that a letter would be sent to have them attend an enforcement conference at the DNR office. Pansier →

replied that she would rather have
DNR come out there. Jones told Pansier
to have Jason call her back on Monday
10-13-08. Pansier would not give Jones
a cell phone number to reach Jason.

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

WISCONSIN
DEPT. OF NATURAL RESOURCES

FACILITY CONTACT FORM

DATE: 10-13-08

TIME: 8:30

FACILITY NAME/TYPE: Pansiens farm

CONTACT NAME/POSITION: Jason Pansier

PHONE: 920-655-1344 (cell)

METHOD: X **Phone** _____ **In Person**

DNR CONTACT: Casey Jones

SUMMARY:

Pansrer called Jones back after Jones left message on cell phone (Pansier had called Jones on 10-10-08 and left cell #). Pansier mentioned that Brent Petersen was working on manure storage but hasn't gotten back to him. Jones told Pansier she'd like to stop by farm to discuss permit. Pansier said today was fine, just to call him prior. Jones said she would see if Petersen was available.

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Matthew J. Frank, Secretary
Ronald W. Kazmierczak, Regional Director

Northeast Region Headquarters
2984 Shawano Ave., P.O. Box 10448
Green Bay, Wisconsin 54307-0448
Telephone 920-662-5100
FAX 920-662-5413
TTY Access via relay - 711

October 15, 2008

Jason Pansier
Ledgeview Farms, LLC
3870 Dickinson Road
DePere, WI 54115

SUBJECT: WPDES Permit Application Materials

Dear Jason –

Thank you for meeting with me on Tuesday October 14, 2008 to discuss the permit process. Because your farm numbers are already over 1000 animal units, it is important that you continue to work with the Department to get your Wisconsin Pollutant Discharge Elimination System (WPDES) permit issued as soon as possible. I have filled in the blanks for the initial application forms, please review and sign and return to me at the address in the letterhead by October 22, 2008. If there are any corrections, please make them and initial next to the correction. Just a reminder that this is not optional—all farms over 1000 animal units are required by law to obtain a WPDES permit and operate according to those requirements.

Although we went over some things during the meeting you will be required to fill out and submit the Environmental Analysis Questionnaire (attached). All maps need to be provided and all questions need to be answered. If you find you do not have time to do this, you should hire a consultant to help you with the application process. This information needs to be submitted by November 14, 2008. If more time is needed to gather information; contact me and propose another due date.

I have requested a copy of your nutrient management plan from Jon Anderson, the manager of Agri-Partners (also known as Progressive Farmers). However, it is your responsibility to have them send me a copy. There will be modifications required for the plan to meet the additional requirements of permitted farms. Please contact your nutrient management planner and request they update your plan to meet these requirements—this updated plan can be submitted to me at a later date.

Once you have a permit the farm is not allowed to have any discharges from the production areas (main farm and heifer farm locations). Some areas will need to be addressed prior to issuing the permit; others can be addressed within the first year of the permit term (under a compliance schedule). Areas that need attention now are as follows:

- Manure from the outdoor lot area at the heifer farm is actively discharging into a waterway. Containment of the runoff from this area will be required. As mentioned, roof gutters would help eliminate the volume of runoff from this area—however, a designed manure storage structure will be required to eliminate the discharge into the waterway.

- Manure/soil runoff from the outdoor lots at the main farm may be discharging into the waterway. This area needs to be managed to sustain vegetation to prevent erosion/runoff into adjacent stream. Containment around outdoor concrete lane and feeding areas may be necessary to ensure manure does not discharge to groundwater or surface water.

- All farms over 1000 animal units will be required to have six months of storage beginning January 1, 2010. Your farm currently has 2-3 months of manure storage. You have stated you will not be hiring a consultant for designing manure storage—please continue to work with Brown County and NRCS staff to move forward with designing this structure. Plans and specifications for any proposed manure storage (for main farm as well as heifer farm) will need to be submitted to the Department for review prior to being built. Three copies of the plans should be sent to me. These should be sent in as soon as possible to ensure the structure can be built in 2009.

Please submit the requested items above in a timely manner. If you have any questions regarding this letter or the permit issuance process, I can be contacted at 920-662-5407. Thank you.

Sincerely,

Casey L. Jones

Casey L. Jones
Agricultural Runoff Management Specialist
DNR Northeast Region

Enclosure: Application materials

CC: Dan Helf—DNR
Brent Petersen—Brown County

Recd 10-21-08 by CJ

State of Wisconsin
Department of Natural Resources
Bureau of Watershed Management
P.O. Box 7921, Madison WI 53707-7921

Livestock/Poultry Operation WPDES* Permit Application
*Wisconsin Pollutant Discharge Elimination System

Form 3400-25 Rev. 05/07

WPDES Permit Number WI-	Expiration Date

NOTICE: Use of this form is required by the Department for any application filed pursuant to chapter NR 243, Wis. Adm. Code, and section 283.53(3), Wis. Stats. The Department will not consider your application complete unless you complete and submit this application form. Penalties for failure to submit a completed form are established in ss. 283.89 and 283.91, Wis. Stats.

Section 283.91(4), Wis. Stats., provides that: Any person who knowingly makes any false statement, representation or certification in this application shall upon conviction be punished by a fine of not more than $10,000 or by imprisonment for not more than 6 months or both. Personally identifiable information collected will be used for program administration. The Department may also provide this information to requesters under Wisconsin's open records law [ss. 19.31-19.39, Wis. Stats.].

- Read the attached instructions before filling out this form.
- Print or type the requested information, except for the signature.
- Return this form with your completed WPDES application to your regional Department contact.

A. LEGAL NAME FOR PERMIT ISSUANCE

Legal name of the operation or parent company to which the permit will be issued
Ledgeview Facility LLC Ledgeview Farms LLC

B. OPERATOR CONTACT INFORMATION

1. Legal Name of Farm/Operation: Ledgeview Facility LLC
2. Name of Operator or Manager: Jason Pansier — Title: Co-owner — 336-7919
3. Mailing Address-Street, Route or Box: 3870 Dickinson Rd — City/Town, State, Zip Code: Depere WI 54115
4. Telephone Number (include area code): 920-336-7919 — Cell Phone: 920-655-1344 — Fax Number — E-mail Address

C. PHYSICAL LOCATION OF OPERATION

1. Location Address (if different from mailing address in B3 above): 3870 Dickinson Rd
2. County: Brown — Township Name: Ledgeview — Latitude — Longitude
3. Town Number: 23 N — Range Number (E or W): 21 E — Section: 32 & 33 — Quarter — Quarter/Quarter

D. PARENT COMPANY/OWNER INFORMATION (if applicable)

1. Name of Parent Company/Owner (if different from operator in B2 above)
2. Contact Person — Title
3. Mailing Address-Street, Route or Box — City/Town, State, Zip Code
4. Telephone Number (include area code) — Cell Phone — Fax Number — E-mail Address

E. CROP CONSULTANT

1. Name of Crop Consultant: Steve Kiehl — Company/Title: Agri-Partners (Progressive Farms)
2. Mailing Address-Street, Route or Box — City/Town, State, Zip Code
3. Telephone Number (include area code): 920-756-9999 — Cell Phone: OR — Fax Number: 920-849-9213 (main office) — E-mail Address

F. DESIGN ENGINEER

1. Name of Design Engineer — Company/Title
2. Mailing Address-Street, Route or Box — City/Town, State, Zip Code
3. Telephone Number (include area code) — Cell Phone — Fax Number — E-mail Address

tank for milkhouse wastewater 6000 gallons land apply

2-3 mos storage at main farm

Livestock/Poultry Operation WPDES* Permit Application

*Wisconsin Pollutant Discharge Elimination System

Form 3400-25 Rev. 5/07 Page 2 of 2

Spreadsx - main

Sand - freestalls

G. ANIMAL UNITS

1. Use the Animal Units Calculation Worksheet on page three of this form to determine the number of animal units held in confinement or feeding facilities for more than 45 days in a 12 month period. Include all sites under common ownership that a) are adjacent to the main farm, or b) share manure management, storage facilities, or spreading fields with the main farm. Be sure to include the date of any proposed expansions.

☑ Check here after completing the Animal Unit Calculation Worksheet. **The Calculation Worksheet must be included with the application.**

2. List dates of all proposed expansions within the next five years (MM/YY): (Internal growth only)
Expansion 1: _____ Expansion 2: _____ Expansion 3: _____

H. TYPE OF CONFINEMENT FACILITIES/OUTDOOR VEGETATED AREAS

1. Animals at this operation are currently: ☐ In outdoor barnyard or feedlot

☐ Housed under roof ☒ Both outdoor and partially housed under roof ☐ Outdoor vegetated area

2. Approximate area of outdoor lots:

Area 1: 24 ft x 200 ft Area 2: 70 ft x 260 ft Area 3: _____ ft x _____ ft

I. TYPES OF MANURE STORAGE

1. Indicate all existing and proposed manure storage facility types. These may include earthen, earthen with a concrete floor, synthetically lined, concrete, steel above ground tank, below ground storage tank, anaerobic lagoon, roofed storage shed, underfloor storage, stacking slab (clay or concrete), unconfined manure stack, or other (specify).

	Existing or Proposed?	Storage type (see above)	Year built	Dimensions (ft)	Capacity (gals/tons)	Days of storage avail.
Facility 1	existing	concrete	1996	80'140'8'		(2-3 months total)
Facility 2	existing	concrete	1999	80'140'8'		
Facility 3	existing	tank			60000 gal	
Facility 4						
Facility 5						
Facility 6						
				Totals:		

J. MANURE DISPOSAL/TREATMENT

1. How much manure, litter and wastewater is generated annually by the operation? _____ tons/gallons (circle one)

How many tons of manure or litter, or gallons of wastewater produced by the CAFO will not be land applied but will be disposed of in an alternate manner? _____ tons/gallons (circle one) Describe alternate method: _____

2. Main Methods of Manure Disposal: ☑ Land application ☐ Composting ☐ Other (Specify) _____

3. Method of Land Application: ☑ Surface applied ☑ Incorporated ☐ Injected ☐ Spray irrigation

4. Average acreage available for spreading on an annual basis 1993 Acres

Total acres covered by the Nutrient Management Plan 1410 Acres

This application must be signed by an individual who is either an owner of the operation identified in B2 above or a corporate officer if the operation is incorporated.

I certify that I am familiar with the information contained in this application and that to the best of my knowledge and belief such information is true, complete and accurate.

Printed or Typed Name of Official Representative	Title
Jason R Pansier	co-Owner
Signature of Official Representative	**Date Application Signed**
Jason R. Pansier	10-17-08

(7-8% annual growth) 10%

Animal Unit Calculations: Current Number of AUs on Operation

Animal Type		I. Mixed Animal Units			II. Non-mixed Animal Units		
		b. Equiv. factor	c. Current Number	d. No. of AUs	e. Equiv. factor	f. Current Number	g. No. of Aus
Example: Broilers (not liquid manure)		0.005 x	50,000	= 250	0.008 x	50,000	= 400
Dairy/Beef Calves (under 400 lbs)		0.20 x	200	= 40			
Dairy Cattle	Milking & Dry Cows	1.40 x	530	= 742	1.43 x		=
	Heifers (800 lbs to 1200 lbs)	1.10 x	170	= 187			
	Heifers (400 lbs to 800 lbs)	0.60 x	250	= 90	1.00 x		=
Beef	Steers or Cows (400 lbs to market)	1.00 x	300	= 300			
	Bulls (each)	1.40 x	~15	= 21	1.00 x		=
Veal Calves		0.50 x		=	1.00 x		=
Swine	Pigs (up to 55 lbs)	0.10 x		=	0.10 x		=
	Pigs (55 lbs to market)	0.40 x		=			
	Sows (each)	0.40 x		=			
	Boars (each)	0.50 x		=	0.40 x		=
Chickens	Layers (each) -non-liquid manure system	0.01 x		=	0.0123 x		=
	Broilers/Pullets (each) -non-liquid manure system	0.005 x		=	0.008 x		=
	Per Bird -liquid manure system	0.033 x		=	0.0333 x		=
Ducks	Ducks (each) -liquid manure system	0.2 x		=	0.2 x		=
	Ducks (each) -non-liquid manure system	0.01 x		=	0.0333 x		=
Turkeys (each)		0.018 x		=	0.018 x		=
Sheep (each)		0.1 x		=	0.1 x		=
Horses (each)		2 x		=	2 x		=
			Total Mixed Animal Units = (add all rows above) 1380			Total Non-Mixed Animal Units = (Enter the single highest number from any row above; DO NOT add the totals)	

Total Animal Units:

Does operation need a WPDES permit? yes

at 8% annual growth over 5 YRS

Animal Unit Calculations: Projected Number of AUs on Operation							
Animal Type		I. Mixed Animal Units			II. Non-mixed Animal Units		
		b. Equiv. factor	c. Current Number	d. No. of AUs	e. Equiv. factor	f. Current Number	g. No. of Aus
Example - Broilers (non-liquid manure)		0.005 x	[illegible]	= [illegible]	0.008 x	[illegible]	= [illegible]
Dairy/Beef Calves (under 400 lbs)		0.20 x	280	= 56	[illegible]		
Dairy Cattle	Milking & Dry Cows	1.40 x	742	= 1039	1.43 x		=
	Heifers (800 lbs to 1200 lbs)	1.10 x	238	= 262			
	Heifers (400 lbs to 800 lbs)	0.60 x	210	= 126	1.00 x		=
Beef	Steers or Cows (400 lbs to market)	1.00 x	420	= 420			
	Bulls (each)	1.40 x	15	= 21	1.00 x		=
Veal Calves		0.50 x		=	1.00 x		=
Swine	Pigs (up to 55 lbs)	0.10 x		=	0.10 x		=
	Pigs (55 lbs to market)	0.40 x		=			
	Sows (each)	0.40 x		=			
	Boars (each)	0.50 x		=	0.40 x		=
Chickens	Layers (each) -non-liquid manure system	0.01 x		=	0.0123 x		=
	Broilers/Pullets (each) -non-liquid manure system	0.005 x		=	0.008 x		=
	Per Bird -liquid manure system	0.033 x		=	0.0333 x		=
Ducks	Ducks (each) -liquid manure system	0.2 x		=	0.2 x		=
	Ducks (each) -non-liquid manure system	0.01 x		=	0.0333 x		=
Turkeys (each)		0.018 x		=	0.018 x		=
Sheep (each)		0.1 x		=	0.1 x		=
Horses (each)		2 x		=	2 x		=
Total Animal Units:		Total Mixed Animal Units = (add all rows above) 1924			Total Non-Mixed Animal Units = (Enter the single highest number from any row above; DO NOT add the totals)		

Does operation need a WPDES permit? yes

Dates of Proposed Expansions (within the next 5 years) **MM/YY** 1________ 2________ 3________

8% annual internal growth
x 5 YRS ...

WISCONSIN
DEPT. OF NATURAL RESOURCES

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Matthew J. Frank, Secretary
Ronald W. Kazmierczak, Regional Director

Northeast Region Headquarters
2984 Shawano Ave., P.O. Box 10448
Green Bay, Wisconsin 54307-0448
Telephone 920-662-5100
FAX 920-662-5413
TTY Access via relay - 711

November 25, 2008

Jason Pansier
Ledgeview Farms, LLC
3870 Dickinson Road
DePere, WI 54115

Certified Mail-
Return Receipt Requested

Subject: WPDES Permit Application Status Update Request

Dear Mr. Pansier:

The Department of Natural Resources (DNR) received your initial WPDES permit application forms (3400-25 & 3400-25A) on October 21, 2008. The Department requested the Environmental Analysis Questionnaire be completed and submitted by November 14, 2008—this has not been received to date.

The following table in this letter contains a summary of application items needed. Completing all application items is needed for a complete WPDES permit application determination and permit issuance. Because you are already over 1000 animal units it is imperative that you continue submitting your application. You are currently operating without a permit which is a violation of state and federal regulations.

DNR or other agency staff may be available to assist with completing your permit application. Please be aware that:

1. Some application items (e.g. Nutrient Management Plan and Waste Storage Facilities) may take considerable amounts of time to prepare, review and, when necessary, amend to meet all state or federal requirements.
2. Application items submitted that are vague, unclear or general may be responded to by DNR with requests for additional information.

For your assistance, agency contacts and other information that may be related to permit applications are enclosed with this letter.

WPDES Permit Application Status Report

Received	Complete	Incomplete	Under Review	Application Item
Part 1: General Operation Requirements				
	X			Livestock/Poultry Operation WPDES Permit Application Form 3400-25
	X			Animal Units Calculation Worksheet Form 3400-25A

Received	Complete	Incomplete	Under Review	Application Item
				Narrative with historical, current, and future operational information including planned construction/expansion
				Scaled drawing(s) identifying the following existing and/or proposed items:
				• Animal housing
				• Waste storage facilities
				• Groundwater monitoring wells
				• Permanent spray irrigation or other land spreading systems
				• Feed storage structures
				• Raw material storage
				• Loafing or outside lot areas
				• Ancillary service and storage areas
				• Water supply well(s)
				• Treatment systems or structures
				• Runoff controls
				• CAFO outdoor vegetated areas
				Written descriptions of the structures and areas identified above (including number of animals, projected number of days in use and type/percent of vegetative cover for outdoor lots and CAFO outdoor vegetated areas)
				Site Location Maps – Existing & Proposed
				• Aerial Photograph
				• Soil Survey Maps
				Manure Flow Diagram identifying where manure goes to/from at the production site
Part 2: Environmental Analysis Questionnaire				
				Environmental Analysis Questionnaire with each question fully addressed
Part 3: Nutrient Management Plan				
590 plan received		Complete plan due 3-1-09		Nutrient Management Plan meets all the requirements in NRCS Technical Standard 590 and Ch. NR 243.14, Wis. Adm. Code
Part 4: Plans & Specifications for New Structures				
				Proposed Waste Storage Facilities plans and specifications (1 copy to local staff, 2 copies to Madison)
				Proposed Runoff Control System(s) plans & specifications (1 copy to local staff, 2 copies to Madison)

Received	Complete	Incomplete	Under Review	Application Item
Part 5: Post Construction Documentation for Existing Structures				
				Existing Waste Storage Facilities as-built information or engineering evaluation (1 copy to local staff, 2 copies to Madison)
				Existing Runoff Control System(s) as-built information or engineering evaluation (1 copy to local staff, 2 copies to Madison)

Please submit unchecked items to my attention at the address on the top of the letter head by January 16, 2009. If the requested materials will not be ready by that date, please contact me as soon as possible with an alternative timeline. If a consultant is hired to complete your application, have them contact me once they are retained.

Upon receiving a complete permit application, I will need to set up another visit to tour your facility and get a better understanding of your operation as well as discuss the remainder of the permit process. I will contact you once I receive the requested materials to set up this meeting. If you have any questions, please contact me at 920-662-5407 or Casey.Jones@Wisconsin.gov

Sincerely,

Casey L. Jones

Casey L. Jones
Agricultural Runoff Management Specialist
DNR—Northeast Region

CC: Dan Helf – DNR Green Bay
Tom Bauman – DNR Madison
Andrew Craig – DNR Madison
Bill Hafs – Brown County Land Conservation
Steve Keil – Agripartners Cooperative

Permit Application Assistance

Nutrient Management Plans

DNR Madison and Regional staff as well as DATCP staff review Nutrient Management Plans (NMP). The NMP must contain information necessary to document how land application activities will comply with the restrictions in s. NR 243.14 and NRCS Standard 590. Wisconsin Conservation Planning Tech Note WI-1- contains additional guidance and detail on what items need to be included in a NMP as well as useful background information for nutrient management planning.

NR 243 - (NR 243 [PDF 221KB])
NRCS 590 - http://efotg.nrcs.usda.gov/references/public/WI/590.pdf
WI Conservation Planning Tech Note WI-1- http://www.wi.nrcs.usda.gov/technical/technotes.html

Please note Chapter NR 243 Wis. Adm. Code was amended in July 2007 with new requirements for CAFO's. These include:

- General application restrictions - setbacks and other best management practices to protect surface and ground water quality;
- Nutrient crediting;
- Surface Water Quality Management Area (SWQMA) application restrictions;
- Phosphorus Delivery;
- Solid manure winter restrictions – including the need for any solid manure stacking locations; and
- Liquid manure winter restrictions – including identification of specific fields for applications and certification that manure storage facilities provide a minimum of 180 days storage capacity.

Nutrient Management Contacts

Madison
Andrew Craig, DNR Nutrient Management Specialist, Madison – (608) 267-7695. andrew.craig@wisconsin.gov
Stephanie Schneider, DATCP Nutrient Management Specialist, Madison – (608)224-4511.

DNR Regional Staff
Casey Jones, Agricultural Runoff Management Specialist, Green Bay – 920-662-5407. casey.jones@wisconsin.gov

NRCS – Brown County
Green Bay Service Center – 920-884-8910

County Land and Water
Bills Hafs, County Conservationist, Green Bay – 920-391-4633. Hafs_BC@co.brown.wi.us

Plans & Specifications for New Structures

DNR engineers in Madison conduct full reviews for completeness of plan and specification submittals and follow-up with the operation as needed for additional information. Review and approval of plans and specifications are also completed by DNR engineers in Madison. By statute, there is a 90-day review period for this information once it is deemed complete. Part of the completeness review involves determining if other portions of the WPDES permit application packet are complete (i.e. Environmental Analysis Questionnaire).

Post Construction Documentation for Existing Structures

Information for existing materials may not be available. A compliance schedule for the evaluation of existing structures and runoff controls may be required in the first year of permit issuance. Post construction documentation for new structures is required to be submitted within 60 days of completion.

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: December 29, 2008

FILE REF: Ledgeview Farms

TO: NER Ag Program File

FROM: Casey Jones, Agricultural Specialist CJ

SUBJECT: Phone conversation with Jason Pansier, Farm Co-owner

On December 19, 2008 Pansier contacted Jones to request that Jones send animal units information to Steve (?) at NRCS. Jones stated she would provide copies of forms 3400-25 & 25A to Steve Kellermann as Jones thought that was the "Steve" that Pansier would be working with in regards to the manure storage design. Jones asked what the status of Ledgeview Farms' WPDES application was and Pansier asked what was still needed. Jones referred to the letter sent in late November that outlined all the items that were still needed. Pansier said he would try to find it. Jones stated application materials were due in January and told Pansier to ask his nutrient management planner if they could help with this process. Pansier stated that his nutrient management planner had prepared an emergency response plan. Jones said that more was needed to complete the WPDES application (environmental analysis questionnaire was referenced as an example of what was still needed).

Follow-up: If nothing is received by January 31, 2009, an NOV should be issued requesting Roy, Glenn and Jason Pansier attend an enforcement conference to discuss WPDES permit application requirements.

JAN 3 0 2009

EMERGECY ACTION PLAN SUMMARY

Farm Name: Ledgeview Farms

Owner/Operators: Roy Pansier
Glen Pansier

Farm Address: 3870 Dickinson Road De Pere, WI 54115

Farm Location (T.R.1/4 Section): NW1/4, Section 33, T. 23N, R. 21E (Cow/calf)
SW1/4, Section 28, T. 23N, R. 21E (Heifer)

Directions to Farm (emergency coordinates): From Town of Ledgeview Fire Station #1 take County Hwy. G east 1/4 mile.(Cow/calf or main farmstead) The farm is on the north side of the road. From Town of Ledgeview Fire Station #1 take County Hwy. G east 1/2 mile to the intersection with County V (Lime Kilm). Turn left or go north on County V .75 mile. Heifer farmstead is on the west side of the road.

Primary Farm Contacts and Telephone Numbers:

Name:	Roy Pansier	Telephone:	(920)-336-7919
Name:	Glen Pansier	Telephone:	(920)-983-1061
Name:	Jason Pansier	Telephone:	(920)-655-1344

Emergency Responder	Name	Telephone
Fire/Rescue	Town of Ledgeview Fire Dept.	911 (920)-336-3360, non-emergency
	De Pere Rescue	911 (920)-339-4086, non-emergency
County Sheriff	Brown County Sheriff's Dept.	911 (920)-448-4200, non-emergency
Farm Emergency Coordinator	Dan Treml	(920)-864-7484
Veterinarian	De Pere Veterinary Service	(920)-336-7233
Manure Hauler	Dan Treml	Above
On-farm Equipment Operator (skid loader)	Jason Pansier	(920)-655-1344
Excavation Contractor	Jason Pansier	Above
DNR WPDES Permit Contact		
DNR Hazardous Spill Line:		1-800-943-0003
Mortality Disposal Contractor	Sandy Bay Mink Ranch	1-800-999-2834
	Circle R Mink Ranch	1-800-925-2736

I- PERSONAL INJURY/FIRE EMERGENCY

Contact Information:

Emergency fire/rescue telephone number: 911

Farm address/911 coordinates: 3870 Dickinson Road De Pere, WI 54115

Location of nearest emergency services provider: De Pere, WI

Directions to farm from nearest emergency services provider: From Town of Ledgeview Fire Station #1 take County Hwy. G east 1/4 mile.(Cow/calf or main farmstead). The farm is on the north side of the road.
For the heifer farmstead go from the Town of Ledgeview Fire Station #1 on County Hwy. G east 1/2 mile to the intersection with County V (Lime Kilm). Turn left or go north on County V .75 mile. The heifer farmstead is on the west side of the road.

Emergency Information:

Location of first aid equipment on farm: First aid kit is located in the machine shed(shop).

Location of fire suppression equipment on farm: Fire extinguishers are located in the machine shed, cow barn, milkhouse, and some pickup trucks.

Location of hazardous/flammable materials on farm: Above ground fuel tanks are located within a containment area south of the machine shed. A tank for 28%(UAN) is also within this containment area. Oil is stored in the machine shed. Wash solution is stored in the milkhouse. Copper sulfate is in an area of the barn. Propane tanks are located by the fuel tank containment area and between the house and garage shed.

Emergency Actions:

Determine nature of emergency and type of assistance required.

Call 911.

Attempt to stabilize injured person without moving unless absolutely necessary.

Implement CPR if required.

Implement evacuation of people and livestock according to the farm's emergency response plan.

Identify potential locations of hazardous or flammable material and notify emergency personnel when they arrive.

MANURE SPILL DURING TRANSPORT & LAND APPLICATION EMERGENCY

Contact Information:

Farm emergency coordinator name and telephone number:
Dan Treml 920-864-7484

Manure hauler emergency coordinator name and telephone number:
Dan Treml 920-864-7484

Skid loader authorized operator name and telephone number:
Jason Pansier 920-655-1344

Sheriff's department non-emergency telephone number:
Brown County Sheriff Department 920-448-4200

Fire department non-emergency telephone number:
Town of Ledgeview Fire Department 920-336-3360

DNR Spill Hotline: 1-800-943-0003. Spill reporting is mandatory by state law.

Emergency Information:

Location of spill:

Clean up equipment needed: skid loader/front end loader, manure spreader, sawdust or chop straw or bale straw.

Emergency Actions:

1. **Turn off All pumps or power to spreading equipment.**
2. **Stop the flow or spread.**
3. **Assess the situation and make appropriate calls.**
4. **Notify the DNR Spill Hotline: 1-800-943-0003**
5. **Begin clean-up.**
6. **Document your actions.**

Stop land applying manure.

Park spreading equipment or truck out of traffic if possible.

Assess needs and call for help including sheriff's department if traffic control is needed.

Attempt to stop leak if possible.

Incorporate manure or use tillage equipment to roughen soil downslope of manure runoff.

Construct temporary berm to prevent manure from leaving the spill site or application site if necessary.

Transfer manure remaining in spreading equipment,tanker, or truck to another spreader, tanker, or truck.

Clean up spilled manure and contaminated top soil. Land apply manure and contaminated top soil to fields approved for manure application at rates established in the nutrient management plan.

Contact fire department to wash remaining manure off of road surface if safety hazard remains and runoff will not discharge directly to surface water. If washing manure off of road is not feasible use sawdust or chopped straw to absorb remaining manure, collect with loader/skid steer and land apply.

HAZARDOUS MATERIAL SPILL EMERGENCY

Contact Information:

Fire/rescue/hazardous material response telephone number: 911

Farm Emergency coordinator name and telephone number:
Dan Treml 920-864-7484

DNR Spill Hotline: 1-800-943-0003 Spill reporting is mandatory by state law.

Sherriff's department non-emergency telephone number:
Brown County Sherriff Department 920-448-4200

Fire/Rescue department non-emergency telephone number:
Town of Ledgeview Fire Department 920-336-3360
De Pere Rescue 920-339-4086

Emergency Information:

Location of farm first aid equipment: First aid kit in the machine shed(shop).

Location of fire supression equipment on farm: Fire extinguishers are located in the machine shed, cow barn, milkhouse, and some pickup trucks.

Location of hazardous/flammable materials on farm: Above ground fuel tanks are located south of the machine shed. A tank for 28%(UAN) is also within the containment area that the fuel tanks are in. Oil is stored in the machine shed. Wash solution is stored in the milkhouse. Copper sulfate is in an area of the barn. Propane tanks are located by the fuel tank containment area and between the house and garage shed.

Location of personal protection equipment and spill containment materials: Gloves in the milkhouse, gloves and other PPE in the house's garage on the cow/calf farm.... Sawdust located on the south side of the milking barn and next to the silos at the heifer farm.

Emergency Actions:

1. **Turn off All pumps or power to equipment.**
2. **Flammable materials:**
   a. **Shut off electrical power to area from a remote location and eliminate sources of ignition such as open flame without entering area where these materials have concentrated.**
   b. **Evacuate people and livestock from area as appropriate.**
3. **Stop the flow or spread.**
4. **Assess the situation and make appropriate calls.**
5. **Notify the DNR Spill Hotline: 1-800-943-0003**
6. **Begin clean-up.**
7. **Document your actions.**

(continue on next page)

Prevent hazardous materials from leaving spill site by constructing temporary dikes if necessary.

Once the situation has been stabilized, collect hazardous material using approved methods and dispose of contaminated soil according to regulations.

ACCIDENTAL ENTRY MANURE STORAGE and TRANSPORT EMERGENCY

Contact Information:

Fire/rescue telephone number: 911

Farm emergency coordinator name and telephone number:
Dan Treml 920-864-7484

Emergency Information:

Type and location of rescue equipment: Pole and ladder are in the machine shed and rope can be found in the old barn on the cow/calf farm.

Fire/rescue telephone number: 911

Emergency Actions:

Call for help.

Locate emergency rescue equipment (grab pole, ladder, flotation device) and attempt to reach victim.

Attempt to reach victim with emergency rescue equipment (ladder, rope).

Initiate CPR if necessary.

Call 911.

CATASTROPHIC MORTALITY DISPOSAL EMERGENCY

Contact Information:

Farm Emergency Coordinator:
Dan Treml 920-864-7484

Mortality disposal contractor name and telephone number:
Sandy Bay Mink Ranch 800-999-2834
Circle R Mink Ranch 800-925-2736

Veterinarian: De Pere Veterinary Service 920-336-7233

Excavation Contractor: Jason Pansier 920-655-1344

Skid loader Operator: Jason Pansier 920-655-1344

Emergency Information:

Location of mortality storage area—On the pavement outside of the east end of the freshing pen which is on the east end of the cow barn.

Location of catastrophic mortality burial area—For the cow/calf farm in Field 11 M 1 or Field 11 S 2. For the heifer farm in Field 11 G 4 or 11 G 1.

Emergency Actions:

Contact Veterinarian if death is suspicious or animal displayed unusual symptoms.

Remove mortalities from the livestock production area and place in mortality storage area.

Contact mortality disposal contractor to arrange pickup within 24 hours in summer and 48 hours in winter.

If many mortalities exceed mortality contractor's ability to remove, prompt burial may be necessary.

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: 2-5-09

FILE REF: Ledgeview Farms LLC / Pansiers

TO: NER Ag File

FROM: Casey Jones – Ag Specialist CJ

SUBJECT: Phone conversation with Jason Pansier – Ledgeview Farms co-owner

On February 5, 2009 Pansier left a message on Jones' voicemail regarding NRCS staff (John Malvitz?) and Steve Keil (the farm's agronomist) being onsite today to discuss the proposed manure storage. Pansier said that NRCS could draw up the plans for the manure storage but it may take up to 6 months. Pansier also mentioned his agronomist calculated out the farm's annual manure production (roughly 22,000 tons).

Jones called Pansier back the same day to talk about the manure storage plans and status of WPDES permit. Jones stated that it was up to Pansier to keep checking on the status of the plans for manure storage if Pansier wanted NRCS to do the work. Jones asked about the permit application and Pansier implied that Keil was working on getting that information together. Pansier mentioned that gutters were going to be put up at both farms to stop roof runoff from mixing with feedlot manure. Jones told Pansier to keep things moving forward with the permit application.

WISCONSIN
DEPT. OF NATURAL RESOURCES

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Matthew J. Frank, Secretary
Ronald W. Kazmierczak, Regional Director

Northeast Region Headquarters
2984 Shawano Avenue
Green Bay, Wisconsin 54313-6727
Telephone 920-662-5100
FAX 920-662-5413
TTY Access via relay - 711

February 19, 2009

CERTIFIED MAIL
Return Receipt Requested
CT: 2009-NEEE-016

Ledgeview Farms, LLC
Mr. Roy Pansier, Registered Agent
3875 Dickenson Road
DePere, WI 54115

Subject: **Notice of Violation - Chapter 283, Wis. Statutes**
Enforcement Conference – March 9, 2009

Dear Mr. Pansier:

The Department of Natural Resources (Department) has reason to believe Ledgeview Farms, LLC (Ledgeview) is in violation of Wisconsin's wastewater discharge permit requirements. Ledgeview is located at 3870 Dickinson Road, T23N-21E-R25E Sections 29, 32, & 33, Town of Ledgeview, Brown County, Wisconsin (the Site).

The Department alleges the following specific violation by Ledgeview:

Section 283.31(1), Wis. Stats. - Water Pollutant Discharge Elimination System Permits. The discharge of any pollutant into any waters of the state or the disposal of sludge from a treatment work by any person is unlawful unless such discharge or disposal is done under a permit issued by the department under this section or s. 283.33.

Section NR 243.11(3)(a), Wis. Adm. Code. Large Concentrated Feeding Operations. Any person owning or operating a large CAFO that stores manure or process wastewater in a structure that is at or below grade or that land applies manure or process wastewater shall have a WPDES permit. A discharge of pollutants from manure or process wastewater to waters of the state by an unpermitted animal feeding operation with 1,000 animal units or more is prohibited.

Section NR 243.03(12)(a), Wis. Adm. Code, "concentrated animal feeding operation" or "CAFO" means an animal feeding operation that has 1,000 animal units or more at any time and stores manure or process wastewater in a below or at grade level storage structure or land applies manure or process wastewater.

Section NR 243.03(31), Wis. Adm. Code, "Large CAFO" means an animal feeding operation that has 1,000 animal units or more at any time.

Section NR 243.03(4), Wis. Adm. Code, "Animal feeding operation" means a lot or facility, other than a pasture or grazing area, where animals have been, are or will be stabled or confined, and will be fed or maintained for a total of 45 days or more in any 12-month period. Two or more animal

feeding operations under common ownership or common management are a single operation if *at least one* of the following is true: (a) The operations are adjacent. (b) The operations utilize common systems for the landspreading of manure or other wastes, including a nutrient management plan or landspreading acreage. (c) Manure, barnyard runoff or other wastes are commingled in a common storage facility prior to landspreading.

In correspondence dated September 12, 2007, the Department stated its belief that Ledgeview had more than 1,000 animal units and requested Ledgeview complete an Animal Units Calculation Worksheet no later than October 12, 2007. Ledgeview did not respond to this request.

On July 15, 2008, the Department mailed to Ledgeview a permit application packet to obtain a WPDES permit. Ledgeview was requested to complete the application materials as well as the Animal Units Calculation Worksheet by August 8, 2008. Ledgeview did not respond to this request.

On October 13, 2008, after several unsuccessful attempts, the Department contacted Mr. Jason Pansier by telephone to discuss the WPDES permit and scheduled a time to visit Ledgeview.

In correspondence dated October 15, 2008, the Department documented the results of an October 14, 2008, visit to Ledgeview. Enclosed with the letter was a WPDES permit application for Ledgeview to review and sign and a copy of an Animal Units Calculation Worksheet completed by the Department during the site visit. The letter requested Ledgeview sign the permit application and return it to the Department by October 22, 2008, and submit an Environmental Analysis Questionnaire by November 14, 2008. The letter also identified several areas of immediate concern with the farming operations at Ledgeview:

1) Manure from the outdoor lot area at the heifer farm is actively discharging into a waterway. A designed manure storage structure will be required to eliminate this discharge.
2) The outdoor lots at the main farm need increased management to sustain vegetation and prevent erosion/runoff that may be discharging into the waterway. Containment around outdoor concrete lane and feeding areas may be necessary to ensure manure does not discharge to groundwater or surface water.
3) Ledgeview needs to begin planning immediately for the design of its six-month manure storage facility that is required to be in place no later than January 1, 2010. Plans and specifications for any proposed manure storage (for the main farm as well as the heifer farm) will need to be submitted to the Department for review and approval prior to being constructed.

In a letter dated November 25, 2008, the Department notified Ledgeview that it had received Ledgeview's initial permit application forms on October 21, 2008, but that it had not received the Environmental Analysis Questionnaire as requested. The letter also informed Ledgeview of the specific items that were needed to complete Ledgeview's initial WPDES permit application and for the permit review process to begin. The remaining items were requested by January 16, 2009.

On December 19, 2008, Mr. Jason Pansier of Ledgeview contacted Department Agricultural Runoff Specialist Casey Jones to request animal units information be sent to NRCS. Mr. Pansier also stated that he would attempt to locate the Department's November 25, 2008, letter to see what items were still needed for the permit application. Ms. Jones noted that the application materials were requested to be submitted by mid-January 2009.

On February 5, 2009, the Department returned a phone call to Mr. Jason Pansier. Mr. Pansier indicated Ledgeview was working on getting the necessary permit information together.

To date, the Department has not received the required permit application materials from Ledgeview. Therefore, the Department alleges Ledgeview to be discharging wastewater without a WPDES permit in violation of s. 283.31(1), Wis. Stats.

Enforcement Conference

The Department is concerned about the unauthorized discharges at Ledgeview and the continued failure to respond to permit application requests. The Department has therefore scheduled an enforcement conference to discuss this matter. **The meeting will be held at 1:00 p.m. on Monday, March 9, 2009, at the Department of Natural Resources Northeast Region Headquarters located at 2984 Shawano Avenue in Green Bay.** A map showing the office location is enclosed for your use. Please contact me immediately if you need to reschedule the meeting to a more convenient time.

- Please be prepared to discuss the current status of Ledgeview's permit application and any progress made toward addressing the items described in the Department's October 15, 2008, correspondence. On several occasions we have suggested Ledgeview retain the services of a consulting service to assist with completing the permit application materials. We strongly encourage you to have your consultant attend this meeting.

Please be advised the Department is authorized to seek injunctive or other appropriate relief for violations of pollution discharge elimination laws, including forfeitures of no more than $10,000 per day of violation pursuant to s. 283.91(2), Wis. Stats. Any person who willfully or negligently violates laws relating to pollution discharge elimination may be fined not more than $25,000 per day of violation or imprisoned for not more than 6 months or both, pursuant to s. 283.91(3), Wis. Stats. Each day of violation is considered a separate offense. Additionally, s. 283.87, Wis. Stats., allows the Department to recover the cost of removing, terminating, or remedying the adverse effects upon the water/environment, including the cost of replacing fish or other wildlife destroyed by the discharge.

If you have any technical questions regarding your compliance responsibilities, please contact Department Agricultural Runoff Specialist Casey Jones at (920) 662- 5407. If you have questions concerning this letter or if you need to reschedule our meeting, please contact me at (920) 662-5444.

Sincerely,

Judy Polczynski

Judy Polczinski
Environmental Enforcement Specialist

Cc: C. Jones- NER/Green Bay
D. Helf – NER / Green Bay
M. Hoefer – LC/8
T. Bauman – WT/3
Bill Hafs – Brown Co. Land & Water Conservation Dept., 1150 Bellevue St., Green Bay, WI 54302

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Matthew J. Frank, Secretary
Ronald W. Kazmierczak, Regional Director

Northeast Region Headquarters
2984 Shawano Avenue
Green Bay, Wisconsin 54313-6727
Telephone 920-662-5100
FAX 920-662-5413
TTY Access via relay - 711

March 5, 2009

CT: 2009-NEEE-016

Ledgeview Farms, LLC
Mr. Roy Pansier, Registered Agent
3875 Dickenson Road
DePere, WI 54115

Subject: **Rescheduled Enforcement Conference – March 19, 2009**

Dear Mr. Pansier:

This letter confirms that the enforcement conference to discuss alleged violations of Wisconsin's wastewater discharge permit requirements has been rescheduled per your request. The meeting has been rescheduled to **10:30 a.m. on Thursday, March 19, 2009** and will be held at the Department of Natural Resources Northeast Region Headquarters, 2984 Shawano Avenue, Green Bay, Wisconsin.

As stated in the February 19, 2009 Notice of Violation, you should be prepared to discuss the current status of Ledgeview's permit application and any progress made toward addressing the items described in the Department's October 15, 2008, correspondence.

We look forward to a productive meeting. If you have any technical questions in the interim, please contact Department Agricultural Runoff Specialist Casey Jones at (920) 662- 5407.

Sincerely,

Judy Polczinski
Environmental Enforcement Specialist

Enclosure - Map
Cc: C. Jones- NER/Green Bay
D. Helf – NER / Green Bay
M. Hoefer – LC/8
T. Bauman – WT/3
Bill Hafs – Brown Co. Land & Water Conservation Dept., 1150 Bellevue St., Green Bay, WI 54302

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Matthew J. Frank, Secretary
Ronald W. Kazmierczak, Regional Director

Northeast Region Headquarters
2984 Shawano Avenue
Green Bay, Wisconsin 54313-6727
Telephone 920-662-5100
FAX 920-662-5413
TTY Access via relay - 711

March 24, 2009

CT: 2009-NEEE-016

Ledgeview Farms, LLC
Mr. Jason Pansier
3875 Dickenson Road
DePere, WI 54115

Subject: **Enforcement Conference Summary**
Written Response Due March 27, 2009

Dear Mr. Pansier:

Thank you for meeting with us on March 19, 2009, to discuss alleged violations of Wisconsin's wastewater discharge permit requirements at Ledgeview Farms, LLC (Ledgeview) located at 3870 Dickinson Road, T23N-21E-R25E Sections 29, 32, & 33, Town of Ledgeview, Brown County, Wisconsin. An attendance roster is enclosed for your reference.

Meeting Agreement
By March 27, 2009, Ledgeview will submit in writing their intention for future operations at Ledgeview. Specifically, the response will state whether Ledgeview intends to continue operating with greater than 1,000 animal units or whether Ledgeview will change its operations to go below this State regulatory and permitting threshold.

If Ledgeview intends to remove animals from its operation so that a WPDES permit is no longer necessary from the Department, Ledgeview's response will state which animals will be removed to go below 1,000 animal units and by what date this will be completed.

If Ledgeview should determine it will continue operating at or above the 1,000 animal unit threshold, Ledgeview will indicate this in the response and proceed with the WPDES permitting process which includes submittal of previously specified application materials. It is understood that as part of the permitting process, a manure storage facility with six-month capacity will need to be constructed by January 1, 2010.

Meeting Summary
Judy Polczinski began the meeting with introductions and requested Jason Pansier of Ledgeview give a history of Ledgeview. Mr. Pansier stated that he is a partner of Ledgeview along with his father and uncle. The farm has been operating in the family since the early 1960's. Ledgeview operations take place on both owned and rented land in Brown and Manitowoc Counties. The animal operations are housed in Brown County. Mr. Pansier stated that future correspondence should be sent to his attention at the 3875 Dickenson Road address.

Dan Helf briefly reviewed the wastewater permitting rules for confined animal feeding operations (CAFO) and the ultimate goal of protecting ground and surface water.

Mr. Pansier stated that gutters have been installed on the calf barn last week and that the remaining gutters were to be installed this week or next. Mr. Pansier also said that Ledgeview would be constructing a concrete barrier to contain runoff from the heifer farm feedlot.

Mr. Pansier then stated that Ledgeview did not have the financial resources to construct the required manure storage facility this year with the current milk pricing. He was told by Manitowoc County NRCS that there is no cost-sharing available for Ledgeview due to ongoing violations with tile lines installed in a wetland. Mr. Pansier said that he was also told by NRCS that Ledgeview could correct the violation by removing the tile lines.

Casey Jones, Brent Petersen, and Jon Bechle described for Mr. Pansier that an engineer would need to develop the plans and specifications for a manure storage facility and that the engineer would also verify the facility is constructed as designed and provide the necessary documentation to both the Department and the Brown County Land Conservation Department (LCD).

Ms. Jones explained that once Ledgeview has its permit, it can expand its operations (within certain limits) under the then-current permit. However, Ledgeview would need to ensure that it has six months of manure storage capacity for the number of animals at any given time.

Mr. Helf stated that permitted farming operations over 1,000 animal units are not allowed to land apply liquid manure or process wastewater during the months of February and March or at any time there is frozen or snow-covered ground.

Mr. Bechle informed Mr. Pansier that there are multiple offices that Ledgeview will need to work with; at the county level there is both the Brown County LCD and the Manitowoc County LCD and at the federal level, both the Brown County NRCS and Manitowoc County NRCS offices. In addition, if Ledgeview operates with 1,000 or more animal units it will be subject to regulation by the Department at the state level. Mr. Bechle only provided information on the activities for which Brown County LCD has authority.

If Ledgeview should decide to operate with less than 1,000 animal units, it will no longer need a WPDES permit from the Department. However, even if Ledgeview goes below this threshold, Brown County LCD will still regulate operations at or above 500 animal units. Mr. Bechle stated that any work done in the yard that effects manure or its runoff, such as gutter installation or feedlot construction, will require a permit by Brown County LCD. The County permit is required prior to any construction activities. Should Ledgeview install any practices without the required County permit and approvals, the activities would be considered a violation and would require after-the-fact permitting by the County. In addition, any unauthorized activities may be subject to a monetary penalty from the County.

Mr. Pansier was provided a copy of the NRCS Ch. 313 – Waste Storage Facility specifications and a copy of the Brown County Animal Waste Management Ordinance. Mr. Pansier stated that he was already given a copy of a listing of agricultural consulting firms. A copy of the Animal Unit Calculation worksheet is enclosed with this letter.

Ms. Jones stated the Department is not requiring Ledgeview to remove animals from its operations, that this is a business decision by Ledgeview. Regardless of Ledgeview's decision to get a permit or go below the permitting threshold, Ledgeview will need to work with Brown County LCD to address the

current runoff issues at the heifer farm outdoor lot area. The Main Farm outdoor lot area also needs attention.

Mr. Pansier stated that Ledgeview would get rid of animals to go below the 1,000 animal unit threshold. Ms. Polczinski encouraged Mr. Pansier to discuss today's meeting with his partners and then provide Ledgeview's intentions in writing.

If you have any technical questions regarding your compliance responsibilities with state requirements, please contact Department Agricultural Runoff Specialist Casey Jones at (920) 662- 5407. For any questions regarding your compliance responsibilities with the Brown County ordinance, please contact either Mr. Bechle (920-391-4620) or Mr. Petersen (920-391-4643).

We look forward to receiving your response by March 27, 2009.

Sincerely,

Judy Polczinski
Environmental Enforcement Specialist

Enclosure – Attendance roster, Animal Unit Calculation Worksheet
Cc: C. Jones- NER/Green Bay
D. Helf – NER / Green Bay
M. Hoefer – LC/8
J. Bechle – Brown Co. Land Conservation Dept., 1150 Bellevue St., Green Bay, WI 54302
B. Petersen - Brown Co. Land Conservation Dept., 1150 Bellevue St., Green Bay, WI 54302

ENFORCEMENT CONFERENCE ATTENDANCE

Ledgeview Farms, LLC
10:30 a.m., Thursday, March 19, 2009
DNR Northeast Region Headquarters

Name	Title/Representing	Phone Number
Judy Olejniczak	Enforcement Specialist / DNR	920-662-5444
Casey Jones	DNR	920-662-5407
Julie Parsin	Ledgeview Farms	920-655-13??
Jon Bechle	Brown Co. Land & Water	920-391-4638
Brent Peterse	Brown Co. LCD	920-391-4643
Dan Helf	DNR	920 662-5141

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: 4-17-09 FILE REF: Ledgeview Farms/Pansiers

TO: Ag Program File

FROM: Casey Jones, Agricultural Specialist CJ

SUBJECT: Ledgeview Farms Production Site Runoff Concerns

MAIN FARM LOCATION

Current runoff concerns at the Main Farm location are in regards to the outdoor cattle areas. There are outdoor walkways around the perimeters of the barns that do not provide any containment of manure and storm water runoff. Outdoor "exercise areas" for cows are also utilized to the north of the barns. This area is not vegetated and has steep grades sloping toward the stream (unnamed tributary of Bower Creek) that runs along the western edge of the farm. Please see attachment of photos of Main Farm provided by Brown County Land Conservation.

HEIFER FARM LOCATION

Printed on Recycled Paper

The Heifer Farm has a large feedlot area in which all runoff drains to the west and flows off the feedlot and into a nearby drainage ditch. This ditch connects to the tributary to Bower Creek. The farm owners have recently installed roof gutters to prevent clean storm water from the roof from adding additional runoff water that flushes the manure off of the feedlot. Jason Pansier, co-owner, also indicated they were adding additional straw to help soak up and keep the manure on the feedlot. Permanent measures at the low end of the feedlot need to be installed. Pansier indicated they could do this, however, do not want to submit plans to the county as is required by Brown County ordinance and would be required under a CAFO permit.

MANURE STORAGE

A large problem is that the farm only has 2 months of manure storage capacity for the manure generated at the Main Farm and Heifer Farm. This means the farm is daily hauling and land spreading manure throughout the winter months when the ground is frozen and snow-covered. Per Brown County Land Conservation Department, the farm has been provided with a winter spreading plan that outlines the lower risk fields in which they should land apply on in the winter to avoid runoff.

There has not been any documented well contamination or runoff events from farm fields operated by Ledgeview Farms. However, there are fields that may have a separation of less than 2 feet to bedrock and potential karst features to areas in which fields may drain. The Main Farm production area also has little separation to bedrock.

Jason Pansier stated they cannot afford to hire a professional engineer to design the needed manure storage. To operate over 1000 animal units (as they have been without a permit) the farm needs to have a minimum of 6 months of manure storage. Pansier stated because of other violations with NRCS, the farm is not eligible for federal EQIP grant monies to aid in financing the needed storage. Because of the operation's size they are also currently ineligible for any state grant program funding.

KEY FOLLOW-UP ELEMENTS / SUGGESTIONS

If Ledgeview Farms intend to remove animals to drop below the 1000 animal unit threshold, they need to submit a more reasonable timeframe in which to drop below 1000 animal units (no later than mid-summer?) Records will need to be provided from the farm indicating the amount of animals sold/shipped. Field verification may also need to be done by DNR staff. A plan will need to be provided by the farm indicating how they intend to stay below 1000 animal units (how they will address internal growth) and reiterate that they will need to apply for a permit prior to going over 1000 animal units. The runoff concerns at the production areas (Main and Heifer Farms) need to be addressed prior to closing out enforcement. Ledgeview needs to follow the requirements of Brown County's Feedlot Permit and then provide documentation to DNR that the runoff issues have been addressed.

ATTACHMENT: Photo log

Attachment: Main Farm photos dated May 6, 2008 provided by Brown County Land Conservation Staff
(descriptions provided by Jones based on site visit recollection)

Looking west at outdoor lot areas. Manure storage is the concrete structure in the foreground. The free stall barns are in the background. The background tree line is where the stream tributary runs.

Looking northwest at outdoor lot areas. Areas are just west and north of the free stall barns. Note fill material that has been dumped along the edge of the drop off to the tributary.

Outdoor feedlot area fenced along the free stall barn. Note that none of the manure and runoff from this area is contained.

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Matthew J. Frank, Secretary
Ronald W. Kazmierczak, Regional Director

Northeast Region Headquarters
2984 Shawano Avenue
Green Bay, Wisconsin 54313-6727
Telephone 920-662-5100
FAX 920-662-5413
TTY Access via relay - 711

May 13, 2009

CT: 2009-NEEE-016

Ledgeview Farms, LLC
Mr. Jason Pansier
3875 Dickenson Road
DePere, WI 54115

Subject: **Runoff and Permitting Issues at Ledgeview Farms, LLC**
Written Responses due: May 28, 2009, July 15, 2009, January 1, 2010, and Monthly Status Reporting

Dear Mr. Pansier:

Thank you for your response letter dated March 26, 2009. In it you propose to downsize the operations at Ledgeview Farms (Ledgeview) below a level that requires a WPDES wastewater discharge permit from the Department. Your letter however does not address the runoff concerns that have been identified at both the Main Farm and the Heifer Farm. The purpose of this letter is to provide the actions Ledgeview needs to take to return to compliance on both issues.

Runoff Issues
It is very important that Ledgeview address the ongoing runoff concerns at the production areas at the Main Farm and at the Heifer Farm. Please understand that even if Ledgeview goes below the 1,000 animal unit large CAFO permitting threshold and still has unauthorized discharges to waters of the state, Ledgeview can be classified as a medium-size CAFO; In this situation Ledgeview would stilll need to apply for a WPDES permit and be subject to the same requirements as a large CAFO. Therefore, these runoff concerns must be addressed if Ledgeview intends to operate without State-required permits. Ledgeview also needs to follow the requirements of Brown County's Feedlot Permit as it deals with these runoff issues.

Actions requested to address runoff issues

1. Ledgeview should immediately install temporary best management practices (BMPs) to control runoff until permanent measures can be installed. These could include total confinement of animals or installation of silt fence or straw bales along the feedlot perimeter to prevent runoff from discharging offsite.

2. By **May 27, 2009**, Ledgeview should submit a written response that details the temporary BMPs that have been installed. The submittal should identify the engineer or engineering firm hired to draw plans and specifications for permanent runoff controls.

3. By **July 15, 2009**, Ledgeview should submit the plans and specification for runoff controls for Department review and approval. The submittal should include a proposed completion date showing final construction by the end of this summer.

4. Temporary and permanent controls will need to be consistent with the requirements of Brown County's ordinances, including obtaining the appropriate County permits. County staff may be able to assist you with determining what temporary and permanent BMPs will work best for site conditions.

Permitting Issues

Ledgeview has proposed that by December 20, 2009, Ledgeview will down-size its operations (by removing twenty steers and ten cows per month) to go below the 1,000 animal unit (AU) threshold for obtaining a WPDES wastewater discharge permit. As we discussed at the March 19, 2009, enforcement conference, the Department does not require that you remove animals from your operation, only that Ledgeview return to and maintain compliance with state statutes and rules.

We believe that December 20, 2009, is an overly long time for Ledgeview to operate in noncompliance without further information as to why Ledgeview needs longer than three months to accomplish the down-sizing. Additionally, Ledgeview will need to provide documentation to show the number of animals it has removed and a plan for how Ledgeview intends to stay below the 1,000 AU threshold.

Actions requested to address permitting issues

1. By **May 27, 2009**, Ledgeview should submit written justification for the length of time it has proposed to remove animals from the farm.

2. Beginning for the month of May 2009, Ledgeview will need to submit a written report on a monthly basis detailing the animals it has removed in the previous month along with an updated AU calculation worksheet to show the current AU status at Ledgeview. The report and updated AU calculation worksheet is due **June 15, 2009, and then on the 15th day of each following month** until it has reduced operations to below 1,000 AUs (For example, the June 15th report will include information for May 2009).

3. Ledgeview will need to submit a final report by **January 1, 2010**. The final report will include records of animals shipped / sold and a final AU calculation worksheet. The final report needs to also include a detailed plan for how Ledgeview intends to stay below the 1,000 animal units and how Ledgeview will address internal growth.

4. At the time Ledgeview notifies it is operating with fewer than 1,000 AUs, the Department will consider visiting your farm to confirm Ledgeview no longer needs a permit.

We look forward to receiving Ledgeview's first response to the runoff and permitting compliance issues by May 27, 2009, the plans and specifications for permanent runoff controls by July 15, 2009, and the monthly AU status reports and final report.

We advise Ledgeview to work closely with the Department and with the Brown County LCD to avoid any further compliance concerns as you move forward to address these runoff and permitting issues.

If you have any technical questions regarding your compliance responsibilities with state requirements, please contact Department Agricultural Runoff Specialist Casey Jones at (920) 662- 5407. For any

questions regarding your compliance responsibilities with the Brown County ordinance, please contact either Jon Bechle (920-391-4638) or Brent Petersen (920-391-4643).

Sincerely,

Judy Polczinski

Judy Polczinski
Environmental Enforcement Specialist

Enclosure – Animal Unit Calculation Worksheet
Cc: C. Jones - NER/Green Bay
D. Helf – NER / Green Bay
J. Pfender – WT/3
M. Hoefer – LC/8
J. Bechle – Brown Co. Land Conservation Dept., 1150 Bellevue St., Green Bay, WI 54302
B. Petersen - Brown Co. Land Conservation Dept., 1150 Bellevue St., Green Bay, WI 54302

May 20, 2009

Northeast Region Headquarters
Judy Polczinski
2984 Shawano Avenue
Green Bay, WI 54313-6727

RECEIVED JUN 05 2009

Judy Polczinski,

We have placed temporary bales pertaining to water running out of cow yard on the heifer facility, until a pit is built.

A fence has been placed beyond main barn to keep dry livestock away from main barn, and planted grass to absorb water runoff.

We are working with David from Land Conservation Department (391-4639) following regulations and for suggestions of any thing else that could help.

Ledgeview Farms

Animal Unit Calculations: Current Number of AUs on Operation

Animal Type		I. Mixed Animal Units			II. Non-mixed Animal Units		
		b. Equiv. factor	c. Current Number	d. No. of AUs	e. Equiv. factor	f. Current Number	g. No. of Aus
Example - Broilers (non-liquid manure)		*0.005 x*	*150,000*	*= 750*	*0.008 x*	*150,000*	*= 1200*
Dairy/Beef Calves (under 400 lbs)		0.20 x	338	= 67.6	*Fed numbers in this column comply with 40 CFR s. 122.23*		
Dairy Cattle	Milking & Dry Cows	1.40 x	320	= 448	1.43 x		=
	Heifers (800 lbs to 1200 lbs)	1.10 x	110	= 121			
	Heifers (400 lbs to 800 lbs)	0.60 x	120	= 768	1.00 x		=
Beef	Steers or Cows (400 lbs to market)	1.00 x	220	= 220			
	Bulls (each)	1.40 x	10	= 14	1.00 x		=
Veal Calves		0.50 x		=	1.00 x		=
Swine	Pigs (up to 55 lbs)	0.10 x		=	0.10 x		=
	Pigs (55 lbs to market)	0.40 x		=			
	Sows (each)	0.40 x		=			
	Boars (each)	0.50 x		=	0.40 x		=
Chickens	Layers (each) -non-liquid manure system	0.01 x		=	0.0123 x		=
	Broilers/Pullets (each) -non-liquid manure system	0.005 x		=	0.008 x		=
	Per Bird -liquid manure system	0.033 x		=	0.0333 x		=
Ducks	Ducks (each) -liquid manure system	0.2 x		=	0.2 x		=
	Ducks (each) -non-liquid manure system	0.01 x		=	0.0333 x		=
Turkeys (each)		0.018 x		=	0.018 x		=
Sheep (each)		0.1 x		=	0.1 x		=
Horses (each)		2 x		=	2 x		=

Total Animal Units:

Total Mixed Animal Units = (add all rows above)	Total Non-Mixed Animal Units = (Enter the single highest number from any row above; DO NOT add the totals)
947.4	

Does operation need a WPDES permit? _____

Jones, Casey L - DNR

From: Polczinski, Judy M - DNR
Sent: Wednesday, June 17, 2009 2:55 PM
To: Jones, Casey L - DNR
Subject: Ledgeview Phone Contact

Casey -
I called Jason Pansier today at 2:45 pm. He confirmed that they are planning to go ahead with manure storage but need some "geo-assessment" because of the water they found where he wants to put the manure storage. Jason said he is continuing to work with the County. I asked him if they were going to get a permit if they were going through with the manure storage. He said he couldn't get a permit because the price of milk is so low. I told him that he has to be below the 1,000 AU threshold or he needs a permit and then asked him if he understood that. I then asked about the AU calculations we got from them on 6/4/09 whether that was a current status or a projection. He said it was probably lower than that now because they just got rid of 70 steers. I said the last sheet showed they were at 947 and said is that still accurate and he said its "somewhere like that". I again told him that if they were over the 1,000 AU he needs to get a permit. I asked if he was going to be sending another calculation worksheet for June and he said he would if I sent him a blank one. I told him I'd send him one but that he needed to make his own copies for the future.

I'll send the worksheet and we'll see what we get back. Stay tuned.

Judy Polczinski
Environmental Enforcement Specialist
Wisconsin Department of Natural Resources
2984 Shawano Avenue
Green Bay, WI 54313-6727
(☎) phone: (920) 662-5444
(☎) fax: (920) 662-5413
(✉) e-mail: Judy.Polczinski@Wi.gov

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Matthew J. Frank, Secretary
Ronald W. Kazmierczak, Regional Director

Northeast Region Headquarters
2984 Shawano Avenue
Green Bay, Wisconsin 54313-6727
Telephone 920-662-5100
FAX 920-662-5413
TTY Access via relay - 711

October 1, 2009

CT: 2009-NEEE-016

Ledgeview Farms, LLC
Mr. Jason Pansier
3875 Dickenson Road
DePere, WI 54115

Subject: **Written Response Deadline - October 15, 2009**

Dear Mr. Pansier:

This purpose of this letter is to request certain specific information from you regarding the status of run-off controls, manure storage, and the number of animal units (AUs) at Ledgeview Farms, LLC (Ledgeview). Please submit a written response no later than **October 15, 2009** that contains the following:

1. Animal Unit Calculation Worksheet. In response to your decision to operate Ledgeview below the WPDES permitting threshold of less than 1,000 AU, the Department has requested monthly status reports to show Ledgeview is continuously operating below that level. We received an AU worksheet from Ledgeview on June 25, 2009, and have not received further information. You should complete the enclosed AU worksheet for the current number of animals at Ledgeview and return it by October 15, 2009. The AU calculation worksheet form is available at the Department's web site at http://dnr.wi.gov/runoff/pdf/ag/cafo/form340025a.pdf.

As per my June 18, 2009 correspondence, monthly status reports will need to be submitted on the 15th of each subsequent month until such time when Ledgeview has documented it is *continuously* operating below 1,000 AUs and Ledgeview has received notice from the Department that it may discontinue the monthly reporting.

I caution you to be as accurate as possible when completing the AU calculation worksheet since your permit status is dependent on this information. Failure to provide accurate information may subject you to penalties pursuant to s. 283.91(4), Wis. Stats.

2. Plans and Specifications for Runoff Controls. Your June 24, 2009, letter indicates Ledgeview is working with the Brown County Land Conservation Department on plans for runoff issues at both Ledgeview's Main Farm and the Heifer Farm. Your written response due by October 15, 2009, should also include a description of the current status of these plans.

3. Manure Storage. Ledgeview has been working with Brown County LCD to determine options for manure storage at Ledgeview. Your written response due October 15, 2009, should also describe the current status of this effort.

Please contact Department Agricultural Runoff Specialist Casey Jones at (920) 662- 5407 if you have any technical questions regarding your compliance responsibilities with state requirements. For any questions regarding your compliance responsibilities with the Brown County ordinance, please contact either Jon Bechle (920-391-4638) or Brent Petersen (920-391-4643). Please contact me at (920) 662-5444 if you have questions about this letter.

Sincerely,

Judy Polczinski
Environmental Enforcement Specialist

Cc: C. Jones - NER/Green Bay
J. Bechle – Brown Co. Land Conservation Dept., 1150 Bellevue St., Green Bay, WI 54302
B. Petersen - Brown Co. Land Conservation Dept., 1150 Bellevue St., Green Bay, WI 54302

Ledgeview Farms
3875 Dickinson Road
De Pere, WI 54115
September 30, 2009

OCT 09 2009

Ledgeview Farms Update:

Facility Below:
Retaining wall combined with the pit.

Facility Above:
No cattle behind cow yard.
Grass planted.

August

Animal Unit Calculations: Current Number of AUs on Operation

Animal Type		I. Mixed Animal Units			II. Non-mixed Animal Units		
		b. Equiv. factor	c. Current Number	d. No. of AUs	e. Equiv. factor	f. Current Number	g. No. of Aus
Example - Broilers (non-liquid manure)		*0.005 x*	*150,000*	*= 750*	*0.008 x*	*150,000*	*= 1200*
Dairy/Beef Calves (under 400 lbs)		0.20 x	403	= 80	*Fed numbers in this column comply with 40 CFR s. 122.23*		
Dairy Cattle	Milking & Dry Cows	1.40 x	320	= 448	1.43 x		=
	Heifers (800 lbs to 1200 lbs)	1.10 x	118	= 130			
	Heifers (400 lbs to 800 lbs)	0.60 x	94	= 57	1.00 x		=
Beef	Steers or Cows (400 lbs to market)	1.00 x	198	= 198			
	Bulls (each)	1.40 x	4	= 5.6	1.00 x		=
Veal Calves		0.50 x		=	1.00 x		=
Swine	Pigs (up to 55 lbs)	0.10 x		=	0.10 x		=
	Pigs (55 lbs to market)	0.40 x		=			
	Sows (each)	0.40 x		=			
	Boars (each)	0.50 x		=	0.40 x		=
Chickens	Layers (each) -non-liquid manure system	0.01 x		=	0.0123 x		=
	Broilers/Pullets (each) -non-liquid manure system	0.005 x		=	0.008 x		=
	Per Bird -liquid manure system	0.033 x		=	0.0333 x		=
Ducks	Ducks (each) -liquid manure system	0.2 x		=	0.2 x		=
	Ducks (each) -non-liquid manure system	0.01 x		=	0.0333 x		=
Turkeys (each)		0.018 x		=	0.018 x		=
Sheep (each)		0.1 x		=	0.1 x		=
Horses (each)		2 x		=	2 x		=

Total Animal Units:

Total Mixed Animal Units = (add all rows above) 919

Total Non-Mixed Animal Units = (Enter the single highest number from any row above; DO NOT add the totals)

Does operation need a WPDES permit? _____

Setembir

Animal Unit Calculations: Projected Number of AUs on Operation

Animal Type		I. Mixed Animal Units			II. Non-mixed Animal Units		
		b. Equiv. factor	c. Current Number	d. No. of AUs	e. Equiv. factor	f. Current Number	g. No. of Aus
Example - Broilers (non-liquid manure)		*0.005 x*	*150,000*	*= 750*	*0.008 x*	*150,000*	*= 1200*
Dairy/Beef Calves (under 400 lbs)		0.20 x	440	= 88	*Fed numbers in this column comply with 40 CFR § 122.23*		
Dairy Cattle	Milking & Dry Cows	1.40 x	318	= 446	1.43 x		=
	Heifers (800 lbs to 1200 lbs)	1.10 x	120	= 132			
	Heifers (400 lbs to 800 lbs)	0.60 x	99	= 60	1.00 x		=
Beef	Steers or Cows (400 lbs to market)	1.00 x	205	= 205			
	Bulls (each)	1.40 x	2	= 3	1.00 x		=
Veal Calves		0.50 x		=	1.00 x		=
Swine	Pigs (up to 55 lbs)	0.10 x		=	0.10 x		=
	Pigs (55 lbs to market)	0.40 x		=			
	Sows (each)	0.40 x		=			
	Boars (each)	0.50 x		=	0.40 x		=
Chickens	Layers (each) -non-liquid manure system	0.01 x		=	0.0123 x		=
	Broilers/Pullets (each) -non-liquid manure system	0.005 x		=	0.008 x		=
	Per Bird -liquid manure system	0.033 x		=	0.0333 x		=
Ducks	Ducks (each) -liquid manure system	0.2 x		=	0.2 x		=
	Ducks (each) -non-liquid manure system	0.01 x		=	0.0333 x		=
Turkeys (each)		0.018 x		=	0.018 x		=
Sheep (each)		0.1 x		=	0.1 x		=
Horses (each)		2 x		=	2 x		=
Total Animal Units:		Total Mixed Animal Units = (add all rows above) 934			Total Non-Mixed Animal Units = (Enter the single highest number from any row above; DO NOT add the totals)		

Does operation need a WPDES permit? _____

Dates of Proposed Expansions (within the next 5 years) **MM/YY** 1_____ 2_____ 3_____

October

Animal Unit Calculations: Current Number of AUs on Operation

Animal Type		I. Mixed Animal Units			II. Non-mixed Animal Units		
		b. Equiv. factor	c. Current Number	d. No. of AUs	e. Equiv. factor	f. Current Number	g. No. of Aus
Example - Broilers (non-liquid manure)		*0.005 x*	*150,000*	*= 750*	*0.008 x*	*150,000*	*= 1200*
Dairy/Beef Calves (under 400 lbs)		0.20 x	390	= 78	*Red numbers in this column comply with 40 CFR s. 122.23*		
Dairy Cattle	Milking & Dry Cows	1.40 x	320	= 448	1.43 x		=
	Heifers (800 lbs to 1200 lbs)	1.10 x	110	= 121			
	Heifers (400 lbs to 800 lbs)	0.60 x	132	= 80	1.00 x		=
Beef	Steers or Cows (400 lbs to market)	1.00 x	208	= 208			
	Bulls (each)	1.40 x	7	= 10	1.00 x		=
Veal Calves		0.50 x		=	1.00 x		=
Swine	Pigs (up to 55 lbs)	0.10 x		=	0.10 x		=
	Pigs (55 lbs to market)	0.40 x		=			
	Sows (each)	0.40 x		=			
	Boars (each)	0.50 x		=	0.40 x		=
Chickens	Layers (each) -non-liquid manure system	0.01 x		=	0.0123 x		=
	Broilers/Pullets (each) -non-liquid manure system	0.005 x		=	0.008 x		=
	Per Bird -liquid manure system	0.033 x		=	0.0333 x		=
Ducks	Ducks (each) -liquid manure system	0.2 x		=	0.2 x		=
	Ducks (each) -non-liquid manure system	0.01 x		=	0.0333 x		=
Turkeys (each)		0.018 x		=	0.018 x		=
Sheep (each)		0.1 x		=	0.1 x		=
Horses (each)		2 x		=	2 x		=

Total Animal Units:

Total Mixed Animal Units = (add all rows above)	Total Non-Mixed Animal Units = (Enter the single highest number from any row above; DO NOT add the totals)
945	

Does operation need a WPDES permit? _____

Livestock Inc.

Date:	Tag:	Live	Number	
09/02/2008	725	1405	1	651342
09/03/2008	723	1685	3	651363
	751	1165		
	753	1610		
09/04/2008	127	1210	2	651079
	141	1250		
09/08/2008	501	1390	1	668216
09/11/2008	201	1510	72	651146
	202	1605		651137
	203	1480		
	204	1395		
	205	1545		
	206	1500		
	207	1330		
	208	1575		
	209	1405		
	210	1390		
	211	1420		
	212	1615		
	213	1855		
	214	1415		
	215	1500		
	216	1530		
	217	1435		
	218	1520		
	219	1585		
	220	1400		
	221	1495		
	222	1300		
	223	1500		
	224	1780		
	225	1425		
	226	1500		
	227	1475		
	228	1540		
	229	1540		
	230	1550		
	231	1210		
	232	1490		
	233	1260		
	234	1660		
	235	1310		
	236	1605		

	237	1425		
	238	1535		
	239	1445		
	240	1650		
	241	1435		
	242	1610		
	243	1475		
	244	1505		
	245	1385		
	246	1590		
	247	1370		
	248	1450		
	249	1630		
	250	1460		
	251	1550		
	252	1520		
	253	1440		
	254	1485		
	255	1505		
	256	1635		
	257	1470		
	258	1620		
	259	1470		
	260	1490		
	261	1510		
	262	1620		
	263	1290		
	264	1490		
	265	1375		
	266	1570		
	267	1470		
	268	1610		
	269	1405		
	270	1420		
	713	1855		
	715	1670		
09/25/2008	513	1595	2	651293
	515	1295		
09/29/2009	865	1925	2	668413
	867	1820		
09/29/2008	869	1045	1	668398
10/06/2008	586	1560	31	668485
	588	1515		
	601	1575		
	602	1325		
	603	1320		

	604	1480		
	605	1345		
	606	1585		
	607	1510		
	608	1690		
	609	1405		
	610	1210		
	611	1345		
	612	1420		
	613	1325		
	614	1535		
	615	1495		
	616	1460		
	617	1685		
	618	1370		
	619	1595		
	620	1320		
	621	1480		
	622	1590		
	623	1360		
	624	1495		
	625	1280		
	626	1485		
	594	1430		
	582	1300		
	584	1170		
10/06/2008	590	1635	2	668463
	592	1660		
10/13/2008	895	1680	4	668535
	892	940		
	894	990		
	893	1085		
11/13/08	147	1020	1	668864
11/17/08	360	1155	1	668903
11/30/2008	040	1265	24	668768
	041	1535		
	042	1595		
	043	1320		
	044	1465		
	045	1435		
	046	1505		
	047	1515		
	048	1425		
	049	1495		
	050	1390		
	051	1350		

	052	1180		
	053	1420		
	054	1525		
	055	1465		
	056	1275		
	057	1295		
	058	1260		
	059	1295		
	034	1595		
	035	1745		
	032	1080		
	033	1490		
12/08/2008	198	1665	2	671528
	199	1595		
12/08/2008	246	1615	23	671542
	247	1710		
	901	1355		
	902	1315		
	903	1295		
	904	1325		
	905	1270		
	906	1320		
	907	1550		
	908	1340		
	909	1220		
	910	1325		
	911	1455		
	912	1480		
	913	1370		
	914	1410		
	915	1455		
	916	1540		
	917	1490		
	918	1360		
	919	1425		
	920	1400		
	197	1095		
12/15/2008	321	1480	4	671600
	322	1490		
	323	1615		
	324	1500		
12/17/2008	942	1290	2	671625
	943	1060		
12/22/2008	656	1625	1	669940
12/23/2008	657	1475	2	671651
	655	1520		

12/29/2008	262	1185	5	671684
	263	1245		
	264	1430		
	265	1325		
	266	1250		
12/30/2008	257	1735	5	671701
	258	1685		
	259	1835		
	260	1570		
	261	1425		
01/05/2009	037	1700	2	671806
	039	1760		
01/06/2009	040	1400	20	671779
	041	1395		
	042	1385		
	043	1410		
	044	1455		
	051	1475		
	052	1395		
	053	1265		
	054	1490		
	055	1225		
	059	1285		
	060	1340		
	061	1420		
	062	1500		
	063	1250		
	064	1475		
	065	1220		
	066	1400		
	067	1325		
	068	1425		
01/19/2009	351	1010	3	671852
	352	1400		
	353	1255		
1/20/2009	354	1435	1	671872
02/16/2009	598	690	5	672084
	594	1775		
	597	1780		
	596	2000		
	595	1655		
02/23/2009	201	1340	28	672130
	202	1335		
	203	1515		
	204	1500		
	205	1460		

	206	1340		
	207	1345		
	208	1365		
	210	1250		
	211	1360		
	212	1340		
	214	1415		
	215	1400		
	216	1330		
	217	1440		
	218	1455		
	219	1575		
	220	1475		
	221	1495		
	222	1445		
	223	1475		
	224	1430		
	225	1495		
	898	1255		
	900	1200		
	899	1780		
03/14/2009	304	1585	2	677577
	305	1650		
03/16/2009	301	1195	18	677550
	302	1645		
	303	1125		
	401	1295		
	402	1375		
	403	1360		
	404	1375		
	405	1565		
	406	1360		
	407	1435		
	408	1520		
	409	1680		
	410	1655		
	411	1340		
	412	1395		
	413	1515		
	414	1525		
	415	1435		
03/23/2009	330	1550	5	677677
	331	1575		
	332	1715		
	333	1640		
	334	1555		

03/30/2009	101	1480	25	677761
	102	1510		
	103	1335		
	104	1500		
	105	1610		
	106	1530		
	107	1560		
	108	1515		
	109	1345		
	110	1400		
	111	1530		
	112	1325		
	113	1395		
	114	1480		
	115	1490		
	116	1500		
	117	1450		
	118	1475		
	119	1405		
	120	1580		
	121	1485		
	122	1360		
	123	1505		
	124	1555		
	125	1410		
04/06/2009	147	1315	1	677812
04/07/2009	145	1690	1	677832
04/10/2009	147	1015	1	678195
04/11/2009	146	1775	1	678187
		1355	70	678196
		65645		
		33120		
		2980		
04/13/2009	511	875	26	677890
	514	1615		
	515	1330		
	516	1375		
	517	1445		
	518	1535		
	519	1395		
	520	1445		
	521	1440		
	522	1325		
	523	1355		
	524	1445		
	525	1250		

	526	1575		
	527	1595		
	528	1515		
	529	1450		
	530	1480		
	531	1385		
	532	1330		
	533	1605		
	534	1445		
	535	1575		
	536	1285		
	537	1490		
	538	1495		
04/14/2009	508	1905	2	677918
	509	1995		
04/15/2009	510	1810	1	677914
04/20/2009	401	1020	2	677980
	402	1025		
04/21/2009	446	1970	1	678046
04/27/2009	447	1750	4	678043
	448	1540		
	449	1300		
	450	1620		
5/27/2009	729	1035	2	681936
	730	1200		
06/01/2009	744	1975	2	681982
	745	1035		
06/02/2009	746	1615	1	681984
06/09/2009	507	1450	1	682063
06/15/2009	529	1645	2	682153
	530	1710		
06/18/2009	565	1575	1	682356
06/19/2009	566	1465	1	682355
06/25/2009	613	1420	2	682186
	614	1385		
07/06/2009	683	1620	1	682270
07/07/2009	684	1770	1	682267
07/08/2009	685	1070	1	682296
07/20/2009	809	1260	1	682483
07/23/2009	845	1035	1	682523
07/24/2009	846	1870	1	682538
07/27/2009	847	1925	1	682576
07/27/2009	848	1030	1	682582
07/29/2009	672	1130	1	687824
	807	1900	1	682505

08/03/2009	698	1730	2	687866
	699	1650		
08/17/2009	435	1395	34	687994
	436	1320		
	437	1590		
	438	1600		
	439	1550		
	440	1675		
	441	1535		
	442	1500		
	443	1590		
	444	1375		
	445	1475		
	446	1525		
	447	1340		
	448	1285		
	449	1590		
	450	1470		
	451	1690		
	452	1445		
	453	1420		
	454	1530		
	455	1350		
	456	1435		
	457	1560		
	458	1485		
	459	1335		
	460	1330		
	461	1380		
	462	1490		
	463	1520		
	464	1540		
	465	1295		
	466	1440		
	467	1675		
	468	1635		
08/17/2009	401	1365	34	687985
	402	1480		
	403	1330		
	404	1380		
	405	1390		
	406	1365		
	407	1495		
	408	1305		
	409	1530		
	410	1265		

	411	1460		
	412	1330		
	413	1480		
	414	1390		
	415	1350		
	416	1580		
	417	1465		
	418	1525		
	419	1320		
	420	1280		
	421	1600		
	422	1165		
	423	1500		
	424	1545		
	425	1560		
	426	1165		
	427	1380		
	428	1590		
	429	1550		
	430	1175		
	431	1505		
	432	1465		
	433	1375		
	434	1420		
08/17/2009	469	1680	35	687995
	470	1370		
	471	1410		
	472	1415		
	473	1545		
	474	1395		
	475	1370		
	476	1435		
	477	1215		
	478	1435		
	479	1515		
	480	1370		
	481	1410		
	482	1570		
	483	1230		
	484	1580		
	485	1625		
	486	1505		
	487	1295		
	488	1570		
	489	1520		
	490	1345		

	491	1320		
	492	1365		
	493	1455		
	494	1345		
	495	1260		
	496	1470		
	497	1410		
	498	1495		
	499	1510		
	500	1440		
	501	1770		
	502	1460		
	503	1330		
08/17/2009	001	1520	41	700617
	002	1565		
	003	1430		
	004	1505		
	005	1400		
	006	1515		
	007	1295		
	008	1525		
	009	1340		
	010	1365		
	011	1305		
	012	1460		
	013	1340		
	014	1395		
	015	1630		
	016	1540		
	017	1410		
	018	1435		
	019	1470		
	020	1500		
	021	1435		
	022	1400		
	023	1400		
	024	1430		
	025	1325		
	026	1420		
	027	1440		
	028	1420		
	029	1500		
	030	1385		
	031	1455		
	032	1450		
	033	1460		

	034	1420		
	035	1530		
	036	1250		
	037	1485		
	038	1360		
	039	1365		
	040	1440		
	041	1010		
08/18/2009	2041	1910	1	687972
08/19/2009	203	1915	1	687975
08/19/2009	202	1130	1	687989
08/19/2009	852	1175	7	688568
	853	785		
	697	1665		
	698	1595		
	690	1740		
	700	1285		
	851	1935		
08/26/2009	243	1275	1	688108
09/10/2009	855	1415	1	688219
09/24/2009	094	1110	1	688374
09/25/2009	093	1325	1	688378
09/29/2009	364	905	1	688433
09/29/2009	363	1605	1	688430
09/14/2009	865	1280	1	688265
09/14/2009	864	1780	1	688271
09/15/2009	866	1025	1	688304
09/10/2009	854	1330	1	688215

Jones, Casey L - DNR

From: Jones, Casey L - DNR
Sent: Monday, October 19, 2009 9:44 AM
To: Polczinski, Judy M - DNR
Cc: Petersen_BA; 'Wetenkamp_DL'
Subject: Ledgeview/Pansiers

Judy,

Just a status update regarding Ledgeview Farms. I spoke with Jason Pansier this morning regarding setting up an inspection to verify runoff controls were in place. Jason indicated I should come out after the plans were drawn up for the manure storage by Dave at the county. Jason stated a fence was put up at the dairy and the area had been seeded. Jason stated a retaining wall was in place at the heifer farm to keep runoff from discharging off the concrete lot. I indicated I would come out in mid-November to inspect the site and discuss future plans. I asked what their plans were regarding size and getting a permit--Jason said they would get everything done (manure storage built, runoff controls, etc.) prior to applying for a WPDES permit. Jason said he would continue to work with the county LCD.

Thanks,

Casey L. Jones
Agricultural Runoff Management Specialist
(Brown, Marinette, Menominee, Oconto & Shawano Counties)
Wisconsin Department of Natural Resources
2984 Shawano Ave*
Green Bay, WI 54313
(☎) phone: (920) 662-5407
(☎) fax: (920) 662-5498
(✉) e-mail: Casey.Jones@Wisconsin.gov

*Note: The DNR Green Bay Service Center no longer has a PO Box address, the new zip code is 54313.

Runoff Management homepage http://dnr.wi.gov/runoff/
CAFO FAQs http://dnr.wi.gov/runoff/ag/faq_cafo.htm
CAFO Permits http://dnr.wi.gov/runoff/ag/permits.htm

Jones, Casey L - DNR

From: Polczinski, Judy M - DNR
Sent: Wednesday, October 28, 2009 3:55 PM
To: Jones, Casey L - DNR
Subject: Phone Contact - Ledgeview

Casey -
I just got off the phone with Jason Pansier. I reminded him that we wanted the AU worksheet for October by 11/15. He said that he would just send it all with the plan you want for the runoff controls. I asked him when the plan would be done and he said that he needed to meet with Dave from the County and then Dave would need some time so he agreed to send the AU worksheet separately. I mentioned to him that back in May we'd told him we needed him to verify the AU numbers with sales receipts and he didn't object to sending them to me, although he did say he'd cut off the prices because that info wasn't any of our business. I told him that as an alternative he could send the milk records and he responded that the milk records wouldn't tell us anything. Jason did say that you'd told him he'd need to send the AU numbers for at least a year so he seems willing to do that. None of this seemed like a surprise to him so I'm expecting the Oct AU numbers and sales receipts by 11/15. We'll see what is actually submitted. Also, he said that the plan for the manure storage was already done, in case you didn't know that.

I also asked if he wanted a followup letter to our call and he declined.

Judy Polczinski
Environmental Enforcement Specialist
Wisconsin Department of Natural Resources
2984 Shawano Avenue
Green Bay, WI 54313-6727
(☎) phone: (920) 662-5444
(☎) fax: (920) 662-5413
(✉) e-mail: Judy.Polczinski@Wi.gov

CASE ACTIVITY REPORT
Form 4100-182 9-99

State of Wisconsin
Department of Natural Resources
Environmental Enforcement

Case Number	Case Title
2009-NEEE-016	Ledgeview Farms, LLC

Activity	Date of Activity
Telephone Contact – Jason Pansier	November 11, 2009

Narrative

At 10:25 a.m. on Wednesday, November 11, 2009, EE Specialist Judy Polczinski called Jason Pansier of Ledgeview Farms, LLC on his mobile telephone (920)655-1344. The purpose of the call was to clarify the information Pansier submitted on November 5, 2009.

Polczinski asked what "Livestock Inc." meant on the listing of animals sold. Pansier said that is the farmer's association that the cows are sold through. Polczinski said that the name doesn't show up in the state's records of incorporated businesses. Pansier said that's what it says on their cards and paperwork.

When asked about distinguishing between steers and cows, Pansier stated that whenever less than 30 or 35 are sold it's always cows and that includes the single animal sales. Pansier recalled that 150-180 total cows were sold during the past year. They sold cows when the prices were as good as they could get and then sold steers to get and stay below the 1,000 Animal Units (AUs). Whenever lots of animals (70+) are sold at a time, that is always steers.

Pansier stated that Ledgeview is working with Dave at the County to take care of all the issues that are needed to get a DNR permit because then Ledgeview can work on one thing at a time instead of submitting a permit application and "having to fix 15 things at once". Then when Ledgeview wanted to get a permit and go over the 1,000 AUs they'd just have the paperwork to deal with. Dave told Pansier that he (County) could get everything done to meet DNR codes.

Polczinski told Pansier that we need to ensure the discharge issues have been addressed and asked for photos of the controls in place at the Main Farm outdoor feedlot and at the Heifer Farm. Pansier said that the Heifer Farm controls were all done and working. Pansier also stated that the channel at the Main Farm had been repaired by filling and that the fencing had been removed from that area so no animals are there. Pansier said he would take photos as requested. Polczinski asked that the photos be submitted with the next monthly report due on December 15th and Pansier agreed provided Polczinski would put it in a letter since Pansier was out cutting corn and didn't take notes during the call.

Pansier asked if we wanted the animals sold with the next report and Polczinski replied affirmatively and then described the contents for the final report due on January 10, 2010 (a summary of animals sold since September 2008, a final AU worksheet, and status of any remaining runoff issues.)

Cc: C. Jones

Enforcement Specialist Reporting	Date of Report	Exhibit Reference
Judy Polczinski	November 11, 2009	

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Matthew J. Frank, Secretary
Ronald W. Kazmierczak, Regional Director

Northeast Region Headquarters
2984 Shawano Avenue
Green Bay, Wisconsin 54313-6727
Telephone 920-662-5100
FAX 920-662-5413
TTY Access via relay - 711

CT: 2009-NEEE-016

November 18, 2009

Ledgeview Farms, LLC
Mr. Jason Pansier
3875 Dickenson Road
DePere, WI 54115

Subject: **Response Due – December 15, 2009**

Dear Mr. Pansier:

This letter follows our conversation on November 11, 2009, when we discussed whether corrective measures had been taken at Ledgeview Farms to address runoff issues at Ledgeview's Main Farm and Heifer Farm.

You told me that the walls and gutters had been installed at the Heifer Farm and that they were working to control runoff. You also said the fencing had been removed from the outdoor lot at the Main Farm and that animals are no longer kept there. In addition, you have filled the channel but that it was not yet stabilized.

As we discussed, we are requesting photos documenting the runoff controls that were installed at the Heifer farm and the repairs that were made at the Main Farm. The photos, along with a short description of what was done at each location, should be sent with your monthly Animal Unit (AU) calculation worksheet due on December 15, 2009. The report should also include the animals sold since the last report you submitted in October.

This letter also serves as a reminder that Ledgeview will need to submit a final report by January 1, 2010, that includes a summary report of the number of animals sold since September 2008 (numbers by type), an AU worksheet for December 2009, a description of how Ledgeview will maintain its herd numbers below 1,000 AUs until Ledgeview has determined it will obtain WPDES permit coverage, and the status of any remaining runoff issues.

Please contact Department Agricultural Runoff Specialist Casey Jones at (920) 662- 5407 if you have any technical questions regarding your compliance responsibilities with state requirements. For any questions regarding your compliance responsibilities with the Brown County ordinance, please contact

either Jon Bechle (920-391-4638) or Brent Petersen (920-391-4643). Please contact me at (920) 662-5444 if you have questions about this letter.

Sincerely,

Judy Polczinski
Environmental Enforcement Specialist

Cc: C. Jones - NER/Green Bay
J. Bechle – Brown Co. Land Conservation Dept., 1150 Bellevue St., Green Bay, WI 54302
B. Petersen - Brown Co. Land Conservation Dept., 1150 Bellevue St., Green Bay, WI 54302

LAND & WATER CONSERVATION DEPARTMENT

DEC 07 2009 by CJ

Brown County

1150 BELLEVUE ST.
GREEN BAY, WI 54302

BILL HAFS

PHONE (920) 391-4620 FAX (920) 391-4617 WEB: www.co.brown.wi.us

COUNTY CONSERVATIONIST

DAVE WETENKAMP

PHONE (920) 391-4639 FAX (920) 391-4617 EMAIL: wetenkamp_dl@co.brown.wi.us

ENGINEERING TECHNICIAN

Re: As Built Construction Document & Update

To:

WDNR
Attn: Casey Jones
2984 Shawano Ave.
P.O. Box 10448
Green Bay, WI 54307

This letter is to document the construction that has taken place in 2009 on Pansier's (Ledgeview Farms) lower farm on Lime Kiln Rd. in Brown County, Township of Ledgeview. The family owned and operated facility is in the process of staying in compliance with WDNR requirements regarding its pending WPDES status. The farm owners/managers are Roy, Glen and Jason Pansier. I have been in contact with these individuals during the summer/fall of 2009 while addressing feedlot runoff on the farms and investigating soils, location and designs for a large manure storage structure to meet WDNR 180 day storage requirement for WPDES farms. At the time of this letter Ledgeview Farms is believed to be under the 1000 A.U. threshold as stated in documents submitted to the agency.

As part of their requirements Ledgeview Farms was told to reduce/eliminate runoff from the outside feedlots on both upper and lower farms. To date Brown County LWCD has only worked with the lower farm through on-site evaluations and discussions about the problem and possible solutions to address the runoff. Roof gutters were suggested to reduce runoff and keep clean water inputs off the lower farms large concrete feedlot. The landowners designed and installed custom made 10" steel gutters attached to the existing building with heavy duty brackets and welding. This system is sturdy and is working very well. It is all sloped to the west and empties into a 12" tile inlet outside of the feedlot and discharges to the waterway west of the feedlot. Soils investigations to the south of the existing lower feedlot were conducted and found excellent clay, but artesian water pressures 13' down resulted in making construction of a large storage structure cost prohibitive and/or environmentally risky. Soils investigations on the upper farm revealed an earthen manure storage structure could be built in existing pasture land and design options are being pursued. Brown County suggested installing a reception tank and pump which would provide short term storage for runoff controls on the lower lot, but they did not like the idea of pumps which fail and would not work in winter.

After manure storage options were ruled out at the lower farm the Pansier's suggested they block off the yard with a 2' wall and contain all the runoff on the concrete lot. They would increase bedding on the yard to soak up excess water and waste and then haul it out as needed. The Pansier's over the summer installed a concrete collection pit, auger and effluent pump area on the end of the lower farms concrete lot. It was done on their own without any design input from the county. I was told they were pouring the wall on the end of the lot one day and was asked to stop in and take a look at it. I thought it was going to be a wall poured across the end of the lots discharge point as stated above, but it was quite different. The Pansier's are very resourceful and have done all of their own concrete work for the farms buildings, slabs, walls and footings over the years as they have expanded. They have even worked with Brown County LWCD in the past in constructing a large permitted concrete manure pit on the upper farm that was inspected by Brown County and met specifications. However, the structure built on the end of the lower lot was not designed or approved by and engineer. The existing lower feedlot concrete slab and 2' walls were constructed by the Pansiers' and are still in good condition with some minor cracking and damage by machinery functioning without signs of failure. In my

opinion based on the location, soils, materials and methods used as well as visual appearance of the construction project after-the-fact, this fix will work and appears to be structurally sound for containing runoff from events and prevent discharges from 10 -25 year runoff events. I have been designing, installing and inspecting structural bmp's for runoff control for the last 17 years, but I have no engineering license and can not give a structural engineering evaluation on this project. It is working now and will need a professional evaluation by a qualified engineering firm or consultant if required by DNR. I have documented the size of the structure, materials and methods used by the landowners in constructing their solution to the discharges from the lower feedlot.

Description of structure:
(See attached air photo view of site showing location, dimensions and drawing of structure and pictures below.)

This structure was added onto the existing walls and slabs of the lower farms concrete lot. The old concrete was exposed and doweled into approximately every 18" on the slab and into the existing walls. Then #4 rebar was pounded into the old concrete and tied into the new concrete wall steel and slab. The 10" thick concrete walls consisted of 3' and 7'-6" walls that were stepped for ease of ramp installation. The 7.5' walls were poured on a 20" wide by 8"-10" thick footing with 3 - #5 rebars placed longitudinally and 2' x 6' - #5 L-bars placed 12" O.C. vertically in the footing. For horizontal steel 4 - #4 rebars were distributed in the wall with 2 being near the top and 2 being near the bottom of the walls, with and undisclosed amount of extra #5 rebar in the corners of the walls for extra strength. The 3' walls were built with the same footing w/ 2 - #4 rebar running longitudinally in the footing and had #4 L-bars placed 12" O.C. vertically and 2 - #4 rebar running horizontally in the wall. Steel spacing is from general description from interviewing Jason and Roy Pansier. Steel overlap for splices is unknown and estimated to be random. The slab and small sump were poured on in place clay soils with over 50% fines and P.I. estimated to be over 12. The slab has no reinforcement and has minimal to no gravel sub-base below it, just enough to smooth out the ground for slab thickness of about 5"-6". The walls were backfilled with clay and 2"-3" breaker type stone on the 7.5' walls. Tar was used to patch one area of poor concrete consolidation that took place where the wall and slab met to prevent leaking. No sealants or waterstop were used at joint interfaces. No concrete curing compound or curing procedures were followed. The small sump estimated to be 18" wide by 48" long and 12" deep was formed to hold a farm built manure auger to evacuate manure semi-solids. A small electric submersible 2" trash pump is also installed in the structure to aid in times of mostly liquid runoff that the auger may have trouble removing. Please review the picture documents as well.

Runoff Collection Sump
(Leak area shown with arrow, patched with roofing tar)

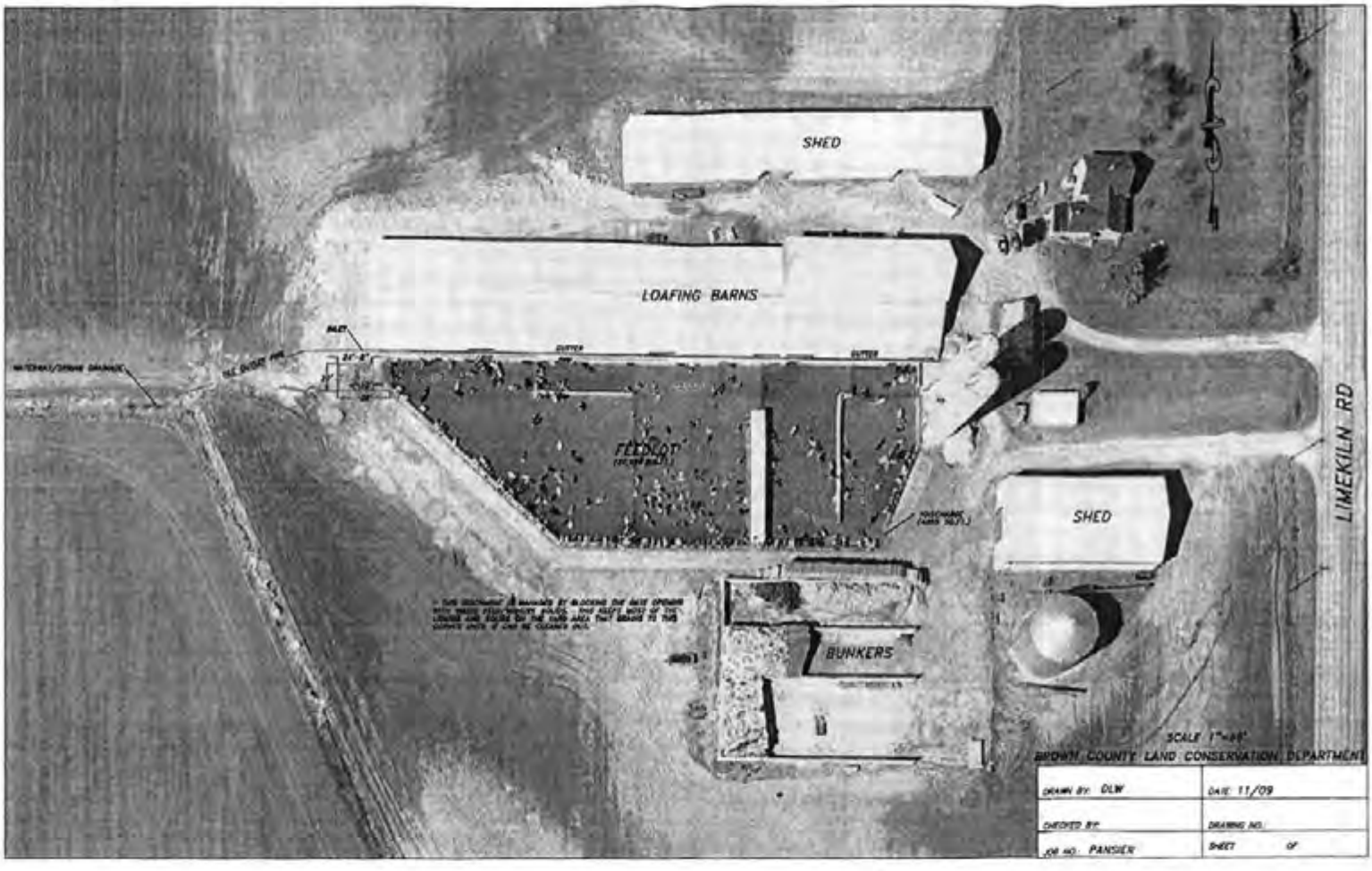
Auger/Sump/Pump

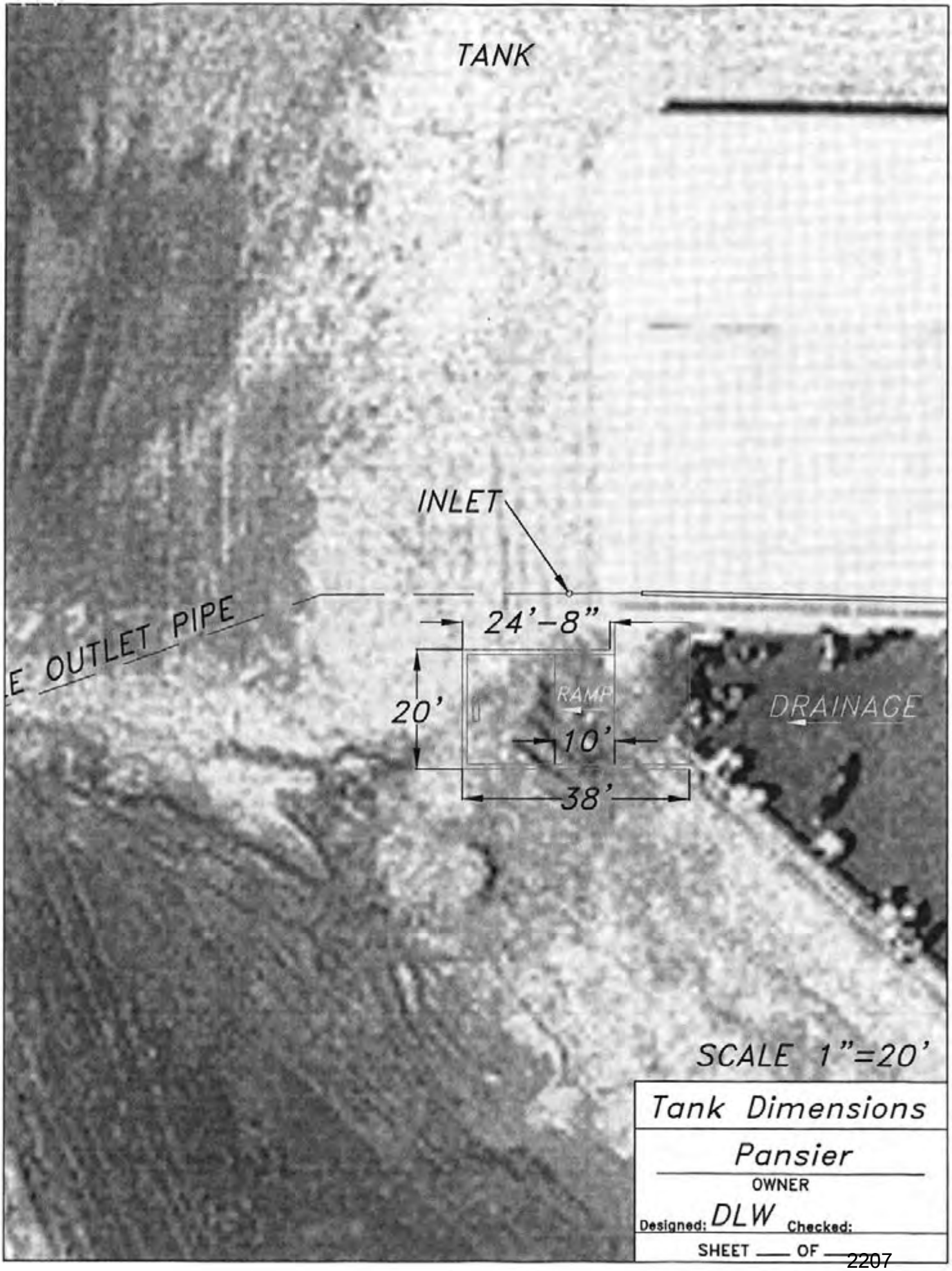
Gutters

Gutters, Open Downspout/Tile Inlet

Dave Wetenkamp

Brown County Land & Water Conservation Department


SHED
LOAFING BARNS
SHED
BUNKERS
LIMEKILN RD
SCALE 1"=40'
BROWN COUNTY LAND CONSERVATION DEPARTMENT
DRAWN BY: DLW
DATE: 11/09
CHECKED BY:
DRAWING NO.
JOB NO: PANSIER
SHEET OF



Tank Dimensions

Pansier

OWNER

Designed: DLW Checked:

SHEET ___ OF ___

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Matthew J. Frank, Secretary
Ronald W. Kazmierczak, Regional Director

Northeast Region Headquarters
2984 Shawano Avenue
Green Bay, Wisconsin 54313-6727
Telephone 920-662-5100
FAX 920-662-5413
TTY Access via relay - 711

May 10, 2010

CT: 2009-NEEE-016

Ledgeview Farms, LLC
Mr. Jason Pansier
3875 Dickenson Road
DePere, WI 54115

Subject: **No Further Enforcement Action**
Preparation for WPDES Permit Coverage

Dear Mr. Pansier:

On February 19, 2009, the Department of Natural Resources (Department) issued Ledgeview Farms, LLC (Ledgeview) a Notice of Violation for failure to obtain WPDES permit coverage for a large concentrated animal feeding operation (CAFO). An enforcement conference was held on March 19, 2009, to discuss the matter.

Ledgeview subsequently decided to reduce animal numbers and stay below the permitting threshold of 1,000 animal units (AUs). As a result, the Department considered the initial WPDES permit application Ledgeview had submitted on October 21, 2008 as withdrawn and did not continue the permitting process.

Ledgeview has since submitted periodic documentation to support its claim that Ledgeview continues to operate below the 1,000 AU permitting threshold. The most recent submittals show the number of animals sold during calendar year 2009 and an AU calculation worksheet mailed early April 2010. The AU calculation states a total of 933 mixed AUs to be present.

Ledgeview also submitted in early April 2010 photos showing current site conditions and corrective measures that have been taken at the main farm. Brown County LCD previously submitted documentation of corrective measures completed at the heifer farm.

Based on the actions Ledgeview has taken in response to the February 19, 2009, Notice of Violation, the Department has determined it will take no further enforcement action on the violations alleged in that Notice. We reserve the right to reconsider this decision should violations occur in the future.

The Department is aware that you plan to apply for a WPDES permit for a CAFO once Ledgeview has the required 6 months of liquid manure storage and process wastewater. Please understand Ledgeview will need to stay below 1000 AUs until the permit is issued. It is a violation of s. 283.01, Wis. Stats., for a facility to operate above the permit threshold of 1,000 AUs without first obtaining permit coverage. Should that occur, the Department will consider escalated enforcement action which may include referral to the Department of Justice for operating without a permit.

For your information, this letter includes a table which summarizes application items needed to start the permitting process. All listed application items are needed for a WPDES permit application to be considered complete.

Please be aware that:

1. Some application items (e.g. Nutrient Management Plan and Waste Storage Facilities) may take considerable amounts of time to prepare, review and, when necessary, amend to meet all state or federal requirements.
2. Application items submitted that are vague, unclear or general may be responded to by DNR with requests for additional information.
3. A site inspection of the facility must also be done prior to permit issuance.

WPDES Permit Application Status Report

Received	Complete	Incomplete	Under Review	Application Item
Part 1: General Operation Requirements				
				Livestock/Poultry Operation WPDES Permit Application Form 3400-25
				Animal Units Calculation Worksheet Form 3400-25A
				Narrative with historical, current, and future operational information including planned construction/expansion
				Scaled drawing(s) identifying the following existing and/or proposed items:
				• Animal housing
				• Waste storage facilities
				• Groundwater monitoring wells
				• Permanent spray irrigation or other land spreading systems
				• Feed storage structures
				• Raw material storage
				• Loafing or outside lot areas
				• Ancillary service and storage areas
				• Water supply well(s)
				• Treatment systems or structures
				• Runoff controls
				• CAFO outdoor vegetated areas
				Written descriptions of the structures and areas identified above (including number of animals, projected number of days in use and type/percent of vegetative cover for outdoor lots and CAFO outdoor vegetated areas)
				Site Location Maps – Existing & Proposed

Received	Complete	Incomplete	Under Review	Application Item
				• Aerial Photograph
				• Soil Survey Maps
				Manure Flow Diagram identifying where manure goes to/from at the production site
Part 2: Environmental Analysis Questionnaire				
				Environmental Analysis Questionnaire with each question fully addressed
Part 3: Nutrient Management Plan				
				Nutrient Management Plan meets all the requirements in NRCS Technical Standard 590 and Ch. NR 243.14, Wis. Adm. Code
Part 4: Plans & Specifications for New Structures				
				Proposed Waste Storage Facilities plans and specifications (1 copy to local staff, 2 copies to Madison)
				Proposed Runoff Control System(s) plans & specifications (1 copy to local staff, 2 copies to Madison)
Part 5: Post Construction Documentation for Existing Structures				
				Existing Waste Storage Facilities as-built information or engineering evaluation (1 copy to local staff, 2 copies to Madison)
				Existing Runoff Control System(s) as-built information or engineering evaluation (1 copy to local staff, 2 copies to Madison)

Please contact Department Agricultural Runoff Specialists Casey Jones at (920) 303-5426 or Amanda Owens at (920) 662-5407 if you have technical questions regarding your compliance responsibilities with state requirements. For questions regarding your compliance responsibilities with the Brown County ordinance, please contact Jon Bechle at (920) 391-4638. Please contact me at (920) 662-5444 if you have questions about this letter.

Sincerely,

Judy Polczinski

Judy Polczinski
Environmental Enforcement Specialist

Cc: C. Jones, Amanda Owens - NER/Green Bay
J. Bechle – Brown Co. Land Conservation Dept., 1150 Bellevue St., Green Bay, WI 54302
B. Petersen - Brown Co. Land Conservation Dept., 1150 Bellevue St., Green Bay, WI 54302

1/25/13

State of Wisconsin
Department of Natural Resources

Animal Numbers Verification Form

Notice: Complete and submit this form to the DNR to document whether or not you are required obtain a WPDES permit under Ch. NR 243, Wis. Adm. Code. This form is not an application for a WPDES permit. Personally identifiable information collected will be used for program administration. The Department may also provide this information to requesters under Wisconsin's public records law [ss. 19.31-19.39, Wis. Stats.]

1. LEGAL NAME OF "MAIN" OPERATION & CONTACT INFORMATION

Legal Name of Operation: LEDGEVIEW FARMS

Name of Owner or Operator: JASON PANSIER

Phone Number(s): 920 336-7919

Mailing Address – Street, Route or Box: 3870 DICKINSON DE PERE

City/Town, State, Zip Code: WI 54115

2. OTHER SITES

	Name of Farm/Operation	Physical Location Address	County
1.	Main Farm	3870 Dickinson Rd	
2.	3688	Lime Kiln Rd	
3.			
4.			
5.			

Current Animal Numbers

Animal Type	Main	Site 1	Site 2	Site 3	Site 4	Site 5
Milking & Dry Cows		328				
Heifers (800 – 1200 lbs)			112			
Heifers (400 – 800 lbs)			78			
Steers (400lbs to market)			~~420~~ 104			
Bulls						
Calves (less than 400 lbs)		234				
Other:						

$(328 \times 1.4) + (112 \times 1.1) + (78 \times 0.6) + 104 + (234 \times 0.2)$

$459.2 + 123.2 + 46.8 + 104 + 46.8 = 780$ AU

Does the operation identified in the previous tables have any plans of expansion in the next 2-3 years (circle one)? **Yes** (No) we just want too stop my runoff and keep cows inside

If you circled yes, please fill out the table below to the expected number of animals at each site.

Projected Animal Numbers

Animal Type	Main	Site 1	Site 2	Site 3	Site 4	Site 5
Milking & Dry Cows						
Heifers (800 – 1200 lbs)						
Heifers (400 – 800 lbs)						
Steers (400lbs to market)						
Bulls						
Calves (less than 400 lbs)						
Other:						

I certify that I am familiar with the information contained in the previous tables and that to the best of my knowledge and belief such information is true, complete and accurate. This application must be signed by an individual who is either an owner of the operation identified above or a corporate officer if the operation is incorporated.

Printed Name of Official Representative	Title
Jason Pursier	Owner
Signature of Official Representative	Date Application Signed
[signature]	1-25-13

Schiefelbein, Jeremiah J - DNR

From: Schiefelbein, Jeremiah J - DNR
Sent: Friday, February 01, 2013 10:53 AM
To: Petersen_BA (Petersen_BA@co.brown.wi.us); Hanson, Erin E - DNR
Cc: Lundin, Andrew F - DNR
Subject: Informational: Ledgeview Farms (Pansier's) Spreading/Stacking Complaint

Hi Brent,
I spoke with the complainant regarding the winter spreading at Pansier's. She stated that manure is spread multiple times on field 11S2 (south of the main dairy T23N R21E, Sec 33). She stated that manure is applied all over this field and that the Pansier's run the field all the way to Whisper Lane. If in fact the Pansier's is spreading on the field north of Scray Hill Road and adjacent to Whisper Lane, that would be an issue as this field is not listed in the plan. She also stated that manure is spread on the field south of Scray Hill Road right up to the quarry (T22N. R21E, Sec 5). This field is not listed in the winter spreading plan.

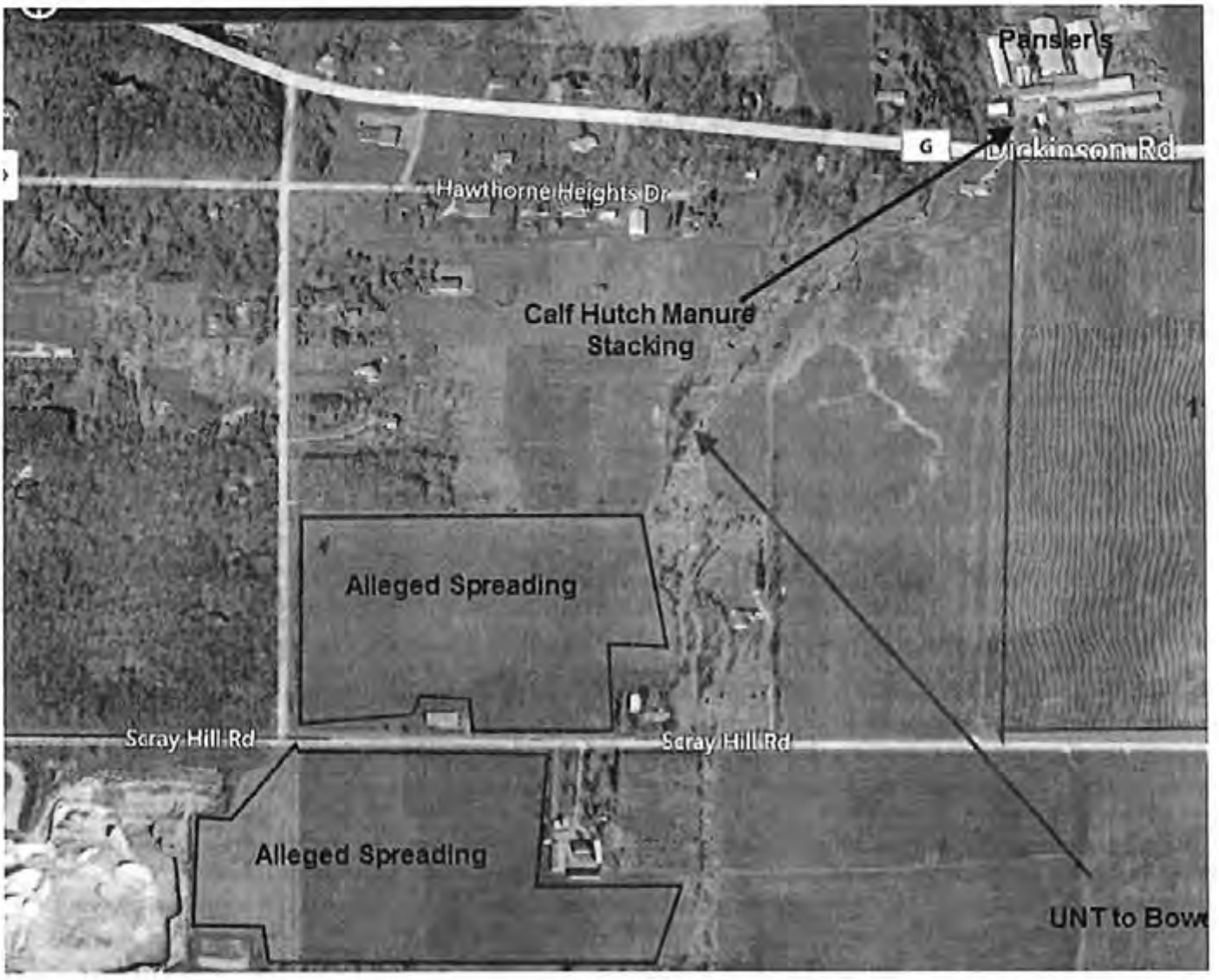
I explained the essential components of the NMP to her and although not happy, she did understand. She is concerned with the number of times that 11S2 is spread on, but based on the plan, 11S2 could accept cow manure 47 days ((3 loads/day (approx. 24 ton)) at a rate of 12 ton/acre over 95 acres.

Another concern was how all of the calf hutch manure is stacked near the end of their driveway and how the runoff is impacting the UNT to Bower Creek. Depending on the exact location of the alleged stack, there may be a 151 violation for unconfined manure stack within a water quality management area (WQMA) (300' from the trib). The western edge of the driveway is approximately 125' from the trib to Bower Creek.

Observing recent spreading activity of course is nearly impossible. However, I will try to drive by to confirm the presence any unconfined stacks in the WQMA. **At this time the complainant wishes us to be aware of the neighborhood concerns and, that Pansier's are following all applicable rules, and that the calf manure stack is not impacting the trib to Bower Creek.**

We recently received the AU verification form from Pansier's and we calculated 780 animal units. On the form they stated 328 milking and dry cows while the NMP indicated approximately 500. The AU verification worksheet stated 528 youngstock while the NMP stated approximately 400. If we use 500 milking and dry cows and 528 young stock there is a total of 1020 animal units. Keep in mind that is using the highest numbers that were reported.

Below is a visual of the description above.



Jay Schiefelbein
Wisconsin Department of Natural Resources
Agricultural Runoff Management Specialist
(☎) phone: (920) 662-5407 (Green Bay)
(🖷) fax: (920) 662-5413 (Green Bay)
(✉) e-mail: Jeremiah.Schiefelbein@wisconsin.gov

Schiefelbein, Jeremiah J - DNR

From: Schiefelbein, Jeremiah J - DNR
Sent: Wednesday, February 27, 2013 3:08 PM
To: 'Petersen_BA'
Cc: Hanson, Erin E - DNR
Subject: RE: Pansier's Stacking complaint

Sounds good, thank you,

Jay Schiefelbein
Wisconsin Department of Natural Resources Agricultural Runoff Management Specialist
(*) phone: (920) 662-5407 (Green Bay)
(*) fax: (920) 662-5413 (Green Bay)
(*) e-mail: Jeremiah.Schiefelbein@wisconsin.gov

-----Original Message-----
From: Petersen_BA [mailto:Petersen_BA@co.brown.wi.us]
Sent: Wednesday, February 27, 2013 3:07 PM
To: Schiefelbein, Jeremiah J - DNR
Cc: Hanson, Erin E - DNR
Subject: RE: Pansier's Stacking complaint

Hey Jay,

I have a call into Jason. I'm waiting for him to get back to me. I told him he needs to move it to their storage, or we need to talk about other options. Enforcement is on the table without cooperation.

Thanks

Brent

Brent Petersen
Brown County LWCD
Agronomist
1150 Bellevue St.
Green Bay, WI 54302
920-391-4643
920-606-3068

-----Original Message-----
From: Schiefelbein, Jeremiah J - DNR
[mailto:Jeremiah.Schiefelbein@wisconsin.gov]

Sent: Wednesday, February 27, 2013 12:56 PM
To: Petersen_BA
Cc: Hanson, Erin E - DNR
Subject: Pansier's Stacking complaint

Hi Brent,
The initial concern regarding the spreading and stacking of bed-pack material came in of February 1, 2013. Attached are the photographs that I took that confirming the complainant's concern that material is stacked within the WQMA. I ask that you copy the Department on any correspondence that you send regarding this alleged violation of County Ordinance and 151. If you need any assistance from the Department, let us know.

* Jay Schiefelbein
Wisconsin Department of Natural Resources Agricultural Runoff Management Specialist
(*) phone: (920) 662-5407 (Green Bay)
(*) fax: (920) 662-5413 (Green Bay)
(*) e-mail: Jeremiah.Schiefelbein@wisconsin.gov

CORRESPONDENCE/MEMORANDUM — **State of Wisconsin**

DATE: 02/28/2013 FILE REF: Pansier's (Ledgeview Farms)

TO: File

FROM: Jay Schiefelbein

SUBJECT: Spreading complaint/Stacking solids in a WQMA

On approximately 1-18-13 Schief spoke with Brent Peterson regarding spreading complaints and stacking of solid manure in a WQMA. Peterson explained that Pansier's have a winter spreading plan developed by Kevin Beckard and that they are limited to 20 ton/acre for solid applications and 5,000 gallons/acre of liquid manure. Additionally, no manure may be applied within a SWQMA (300' from perennial or intermittent streams). Pansier's has mostly solid manure . Peterson provided Schief with the winter spreading plan.

Schiefelbein, Jeremiah J - DNR

From: Kevin Beckard <kbeckard@agsource.com>
Sent: Monday, August 05, 2013 11:55 AM
To: Schiefelbein, Jeremiah J - DNR
Subject: Ledgeview (Pansiers) Farms Info

Morning Jay,
I talked to Dan Treml from Ledgeview Farms regarding the manure applications that have been made to field 11E4. This is the field you identified as having had some complaints levied due to the manure applications made to this field.

Basically field 11E4 is an older alfalfa field that was used for manure application in late July to early August. It was used over a time period of approximately 1 week or so. There were approximately 26 loads of manure applied to this field. Ledgeview Farms is a daily haul operation at this point and they typically generate and haul approximately 2 to 4 loads of manure daily that is land applied onto cropland they operate. An average load of heifer or cow manure weighs about 8 tons and a load of milkhouse waste is about 1500 gallons. Field 11E4 received about 4 loads of milkhouse waste, ~8 loads of heifer manure and ~14 loads of cow manure over the time period this field was being used for manure application. These application rates equal about a 20 ton per acre application rate for the cow/heifer manure and ~650 gal/acre for the milkhouse waste. Total nutrients applied per acre are approximately 70#N-60#P2O5-124#K2O. I recommended that this field be disked to work in the manure. Not sure if it will be or not.

Ledgeview Farms is done using field 11E4 at this point for manure application. Wheat has been harvested on other fields and now wheat fields that will be seeded to alfalfa in mid August are being used for manure application. As a side note field 11P (~10 ac) is receiving some manure this week. It is a harvested wheat field at the intersection of Scray Hill Road and Hawthorne Heights Road and is next to a park. Last year we received a couple of complaints on this field as well. Recommended manure application rate on this field is about 12 to 15 tons per acre. This field will be seeded to alfalfa in the next 10 days.

This is a summary of information I got from the farm and I hope it helps. If you need anything else let me know.

Thank You,
Kevin

Kevin Beckard
NMP/GPS Specialist
AgSource Laboratories
920-309-1948

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

SEP 13 2013

REPLY TO THE ATTENTION OF:

WC-15J

CERTIFIED MAIL 7009 1680 0000 7678 5778
RETURN RECEIPT REQUESTED

Mr. Roy Pansier, Registered Agent
Ledgeview Farms LLC
3870 Dickinson Road
De Pere, Wisconsin 54115

Subject: Order for Compliance Pursuant to 33 U.S.C. §§ 1318 and 1319(a).
Docket No. V-W-13-AO-22

Dear Mr. Pansier:

Protecting water quality is a high priority of the U.S. Environmental Protection Agency. Pollutants such as excessive nutrients and pathogens discharged to waterways from animal feeding operations contribute to poor water quality and impairment of uses of those waterways.

As you know, EPA inspected your facility on April 18, 2013. During the inspection, we observed violations of the Clean Water Act (CWA). Enclosed is the above referenced Order for Compliance (Order). This Order requires you to immediately cease all unauthorized discharges and to construct the necessary structures to comply with the CWA. This Order also requires you to submit a complete Wisconsin Pollutant Discharge Elimination System permit application to the Wisconsin Department of Natural Resources (WDNR).

You must comply with this Order within the time periods specified in the Order. Failure to comply with the Order may subject you to further enforcement action pursuant to Section 309 of the CWA, 33 U.S.C. § 1319(a).

Please be advised that neither the issuance of this Order by EPA nor compliance with its terms affects your obligation to comply with the CWA or any other Federal or State laws or regulations, nor does it preclude further enforcement action pursuant to 33 U.S.C. § 1319 for the violations cited herein or any other violations committed by you.

Under the Order, you have the right to request an informal conference with EPA within ten (10) calendar days of receipt of this Order. Any such conference shall be held within ten (10) calendar days from the date of the request, unless extended by the agreement of the parties.

Assistance with constructing structures necessary to comply with this order may be available through the Environmental Quality Incentives Program (EQIP). The Farm Security and Rural Investment Act of 2008 (Farm Bill) authorized the National Resource Conservation Service (NRCS) to provide voluntary conservation program for farmers and ranchers that promotes agricultural production and environmental quality as compatible national goals. EQIP offers financial and technical help to assist eligible participants install or implement structural and management practices on eligible agricultural land. EQIP is a competitive program. In order to sign up for EQIP, the Natural Resources Conservation Service (NRCS) must determine the applicant to be an eligible producer, and the land to be eligible. NRCS assistance is available at any USDA Service Center.

Also enclosed is a copy of the EPA inspection report on the Concentrated Animal Feeding Operation inspection that EPA conducted on April 18, 2013. If you have any questions concerning this matter, please contact Donald R. Schwer III of my staff at (312) 353-8752, or your attorney may contact Catherine Garypie, EPA Region 5, Office of Regional Counsel at (312) 886-5825.

Sincerely,

Tinka Hyde

for Tinka G. Hyde
Director, Water Division

Enclosures

cc: Tom Bauman, WDNR
Jay Schiefelbein, WDNR

bcc: Catherine Garypie, ORC
Cheryl Burdett, WECA
Don Schwer, WECA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

IN THE MATTER OF: Ledgeview Farms LLC 3875 Dickinson Road De Pere, Wisconsin 54115 **Respondent.**	)	**ORDER FOR COMPLIANCE UNDER SECTIONS 308 AND 309(a) OF THE CLEAN WATER ACT** DOCKET NO: V-W-13-AO-22

The U.S. Environmental Protection Agency (EPA) issues this Order (Order) to Ledgeview Farms LLC (Respondent) under the authority of Sections 308 and 309(a) of the Clean Water Act (CWA), 33 U.S.C. §§ 1318 and 1319(a). The Administrator of EPA has delegated the authority to issue such orders to the Regional Administrator of EPA Region 5, who has redelegated this authority to the Director of the Water Division, EPA, Region 5.

I. INTRODUCTION

1. Section 301(a) of the CWA, 33 U.S.C. § 1311(a), prohibits the discharge of pollutants to the waters of the United States except in compliance with, *inter alia*, a National Pollutant Discharge Elimination System (NPDES) permit issued pursuant to Section 402 of the CWA, 33 U.S.C. § 1342.

2. Pursuant to the CWA and EPA regulations, the owner or operator of a concentrated animal feeding operation (CAFO) which discharges must seek coverage under an NPDES permit. 33 U.S.C. § 1318; 40 C.F.R. § 122.23(d). Pursuant to 33 U.S.C. § 1318, the owner or operator must also provide other information as reasonably required by EPA.

3. EPA has authorized the State of Wisconsin to issue NPDES permits under Section 402(b) of the CWA, 33 U.S.C § 1342(b). The Wisconsin Department of Natural Resources (WDNR) is the NPDES permitting authority for the State of Wisconsin. WDNR refers to the NPDES permits that it issues as "WPDES permits." EPA retains the authority to enforce the CWA in Wisconsin.

II. DEFINITIONS

4. All terms used but not defined in this Order shall have the meanings provided to them in the CWA and EPA regulations promulgated under the CWA.

5. "Animal feeding operation" or "AFO" means, among other things, "a lot or facility where . . . (i) Animals (other than aquatic animals) have been, are, or will be stabled or confined and fed or maintained for a total of 45 calendar days or more in any 12 month period and, (ii) Crops,

vegetation, forage growth, or post harvest residues are not sustained in the normal growing season over any portion of the lot or facility." *See* 40 C.F.R. § 122.23(b)(1).

6. "Concentrated animal feeding operation" or "CAFO" means an AFO that is defined as, *inter alia,* a Large CAFO or Medium CAFO. Two or more AFOs under common ownership are considered to be a single AFO for the purpose of determining the number of animals at an operation, if they adjoin each other or if they use a common area or system for the disposal of wastes. *See* 40 C.F.R. § 122.23(b)(2).

7. "Discharge" or "discharge of a pollutant" means, among other things, any addition of any pollutant to navigable waters from any point source. *See* Sections 502(12), 502(16) of the CWA, 33 U.S.C. §§ 1362(12), 1362(16); 40 C.F.R. § 122.2.

8. "Land application area" means land under the control of the Respondent, whether that land is owned, rented, or leased, to which manure, litter or process wastewater from the production area is or may be applied. *See* 40 C.F.R. § 122.23(b)(3).

9. "Manure" means manure, bedding, compost, and raw materials or other materials commingled with manure or set aside for disposal. *See* 40 C.F.R. § 122.23(b)(5).

10. "Medium CAFO" means, among other things, an AFO that stables or confines 200 to 699 mature dairy cows, whether milked or dry, and meets either one of the following conditions: (A) pollutants are discharged into waters of the United States through a man-made ditch, flushing system, or other similar man-made device; or (B) pollutants are discharged directly into waters of the United States which originate outside of and pass over, across, or through the facility or otherwise come into direct contact with the animals confined in the operation. 40 C.F.R. § 122.23(b)(6).

11. "Navigable waters" means the waters of the United States. *See* Section 502(7) of the CWA, 33 U.S.C. § 1362(7).

12. "Nutrient management plan" means the plan described in and required by Sections IV.C. and IV.D. of this Order.

13. "Overflow" means the discharge of manure or process wastewater resulting from the filling of wastewater or manure storage structures beyond the point at which no more manure, process wastewater, or stormwater can be contained by the structure.

14. "Person" means, among other things, an individual, association, partnership, or corporation. *See* Section 502(5) of the CWA, 33 U.S.C. § 1362(5); 40 C.F.R. § 122.2.

15. "Point source" means, among other things, "any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, ... [or] concentrated animal feeding operation ... from which pollutants are or may be discharged." *See* Section 502(14) of the CWA, 33 U.S.C. § 1362(14); 40 C.F.R. § 122.2.

16. "Pollutant" means, among other things, solid waste, sewage, garbage, sewage sludge, chemical wastes, biological materials, wrecked or discarded equipment, rock, sand, cellar dirt, and agricultural waste discharged into water. *See* Section 502(6) of the CWA, 33 U.S.C. § 1362(6); 40 C.F.R. § 122.2.

17. "Process wastewater" means water directly or indirectly used in the operation of the animal feeding operation for any or all of the following: spillage or overflow from animal or poultry watering systems; washing, cleaning, or flushing pens, barns, manure pits, or other animal feeding operation facilities; direct contact swimming, washing, or spray cooling of animals; or dust control. Process wastewater also includes any water which comes into contact with any raw materials, products, or byproducts including manure, litter, feed, milk, eggs or bedding. *See* 40 C.F.R. § 122.23(b)(7).

18. "Production area" means that part of the Site that includes the animal confinement area, the manure storage area, the raw materials storage area, and the waste containment area. The animal confinement area includes but is not limited to open lots, housed lots, feedlots, confinement houses, stall barns, free stall barns, milkrooms, milking centers, cowyards, barnyards, medication pens, walkers, animal walkways, and stables. The manure storage area includes but is not limited to lagoons, runoff ponds, storage sheds, stockpiles, under house or pit storages, liquid impoundments, static piles, and composting piles. The raw materials storage area includes but is not limited to feed silos, silage bunkers, and bedding materials. The waste containment area includes but is not limited to settling basins, and areas within berms and diversions which separate uncontaminated storm water. Also included in the definition of production area is any egg washing or egg processing facility, and any area used in the storage, handling, treatment, or disposal of mortalities. *See* 40 C.F.R. § 122.23(b)(8).

19. "Site" shall mean the facility or facilities owned or operated by Respondent located at or about 3875 Dickinson Road, De Pere, WI 54115 (the "Home Site") and 3688 County Road V, De Pere, WI 54311 (the "Satellite Site") including but not limited to the land application area, the production area, and adjacent land issued in connection with the land application area and/or production area.

20. "Waters of the United States" means, in accordance with 40 C.F.R. § 122.2, among other things:

    a) all waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce;

    b) all interstate waters, including interstate wetlands;

    c) all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes or natural ponds, the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce, including any such waters:

(1) which are or could be used by interstate or foreign travelers for recreational or other purposes;

(2) from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

(3) which are or could be used for industrial purposes by industries in interstate commerce;

d) all impoundments of waters otherwise defined as waters of the United States under this definition;

e) tributaries of waters identified in Subparagraphs (a) through (d) of this definition; and

f) wetlands adjacent to the waters identified above.

III. FINDINGS

21. Respondent is a person who owns or operates a dairy cow facility located at the Site.

22. The Site is an animal feeding operation because:

a) the Site includes lots or facilities where animals have been, are or will be stabled or confined and fed or maintained for a total of 45 calendar days or more in any 12 month period, within the meaning of 40 C.F.R. § 122.23(b)(1)(i); and

b) crops, vegetation, forage growth, or post harvest residues are not sustained in the normal growing season over any portion of those lots or facilities, within the meaning of 40 C.F.R. § 122.23(b)(1)(ii).

23. The Site is a CAFO and a medium CAFO because it stables or confines 200 to 699 mature dairy cows, whether milked or dry, and: (A) pollutants are discharged into waters of the United States through manmade conveyances including a hole in a concrete pit, a pathway that contained rip-rap, a paved open lot, and roadside ditches; and (B) pollutants are discharged directly into waters of the United States which originate outside of and pass over, across, or through the facility or otherwise come into direct contact with the animals confined in the operation. 40 C.F.R. § 122.23(b)(6).

24. On February 19, 2009, the Wisconsin Department of Natural Resources issued Respondent a Notice of Violation for failure to obtain WPDES permit coverage for a large CAFO. In order to resolve that Notice of Violation, Respondent indicated that it would stay below 1,000 animal units and would apply for a WPDES permit for a CAFO.

25. On April 18, 2013, personnel from EPA conducted an inspection at the Site (the Inspection). A copy of the report generated by EPA as a result of the Inspection (Inspection Report) is included as Attachment 1 to this Order.

26. During the Inspection, EPA personnel identified the following:

a) At the Home Site, septic looking waste and process wastewater was leaking out of a hole in the east concrete pit and flowing to the unnamed tributary. The hole in the east concrete pit was a manmade conveyance that facilitates the flow of process wastewater to the unnamed tributary on the east end of the Site.

b) At the Home Site, manure and process waste water from the feed bunker and the open lot west of the Milk Cow Barn did not have containment and was flowing north through pathways that led to the unnamed tributary on the west end of the Site. The rip rap pathway, paved open lot and access road are manmade conveyances that facilitate the flow of process wastewater to the unnamed tributary on the west end of the Site.

c) At the Home Site, animals had direct access to the unnamed tributary on the east end of the Site.

d) At the Satellite Site, manure and process wastewater runoff generated at the open lot and feed bunkers were flowing east to the County Road V ditch. The County Road V ditch and culverts are manmade conveyances that facilitate the flow of process wastewater to an unnamed tributary.

27. On June 20, 2013, EPA was contacted by an individual who reported that a day hiker was walking along the unnamed tributary that abuts the west side of the Home Site in April 2013. While hiking along the unnamed tributary, north of Dickinson Road, the hiker ended up knee-deep in manure in a location adjacent to the Home Site.

28. During the April 2013 EPA inspection, surface runoff from the Home Site was observed flowing through pathways to unnamed tributaries that abut the east and west side of the Site. The unnamed tributary that abuts the east side of the Home Site flows to the unnamed tributary that abuts the west side of the Home Site. The unnamed tributary that abuts the west side of the Home Site flows to Bower Creek. Bower Creek flows to the East River. The East River flows to the lower Fox River. The lower Fox River flows to Green Bay in Lake Michigan.

29. During the April 2013 EPA inspection, surface runoff from the Satellite Site was observed flowing through ditches and pathways to an unnamed tributary. The unnamed tributary flows to Bower Creek. Bower Creek flows to the East River. The East River flows to the lower Fox River. The lower Fox River flows to Green Bay in Lake Michigan.

30. Lake Michigan, Green Bay, Fox River, and East River are each a navigable water and water of the United States. Bower Creek and the unnamed tributaries are each a water of the United States.

31. The Site is a point source.

32. The discharges described above are each a discharge of a pollutant(s).

33. As of April 18, 2013, Respondent did not have, and had not applied for, an NPDES permit for the discharge of pollutants from the Site.

34. As a CAFO which discharges, the Site is subject to the NPDES permitting requirements of Section 402 of the CWA, 33 U.S.C. § 1342, and 40 C.F.R. Part 122.

35. By discharging pollutants from the Site without an NPDES permit, Respondent violated Section 301(a) of the CWA, 33 U.S.C. § 1311(a).

36. By discharging pollutants from the Site without having applied for an NPDES permit, Respondent violated 33 U.S.C. § 1318 and 40 C.F.R. § 122.23(d).

IV. COMPLIANCE REQUIREMENTS

A. Notification of Intent to Comply

37. Within ten (10) calendar days of the effective date of this Order, Respondent shall submit a written certification that it intends to comply with this Order.

B. Interim Measures

38. Upon the effective date of this Order, Respondent shall cease all unpermitted discharges from the Site.

39. Upon the effective date of this Order, Respondent shall implement interim measures to eliminate all unpermitted discharges from the Site.

40. Respondent shall operate and maintain the interim measures until Respondent completes construction and begins operation of all storage structures required by the Nutrient Management Plan under Section IV.D. of this Order.

C. NPDES Permit

41. Within ninety (90) calendar days of the effective date of this Order, Respondent shall submit to EPA a detailed plan (Permit Compliance Plan) which describes the actions Respondent has taken or will take to prepare and submit a complete NPDES permit application for the Site (Permit Application) to WDNR. In the Permit Compliance Plan, Respondent shall:

    a. Provide a schedule for development of the nutrient management plan, as described in Paragraph 46.c, and for construction of all controls required by the nutrient management plan;

b. Identify all design costs, capital costs, and annual operation and maintenance, costs associated with the controls required by the nutrient management plan; and

c. Include a schedule for submitting a complete Permit Application to WDNR after construction of all controls required by the nutrient management plan.

42. The Permit Compliance Plan shall provide for submittal of the Permit Application not later than two-hundred and seventy (270) calendar days after the effective date of this Order unless approved by EPA.

43. EPA may approve, disapprove, require revisions to, or modify the draft Permit Compliance Plan in whole or in part. If EPA requires revisions, Respondent shall submit a revised draft Permit Compliance Plan within ten (10) calendar days of receipt of EPA's notification of the required revisions. Respondent shall implement the Permit Compliance Plan as approved in writing by EPA in accordance with the schedule approved by EPA. Once approved, or approved with modifications, the Permit Compliance Plan, the schedule, and any subsequent modifications shall be incorporated into and become fully enforceable under this Order.

44. Respondent shall incorporate EPA's comments into the Permit Compliance Plan, and in accordance with the schedule set forth in the Permit Compliance Plan, Respondent shall submit the Permit Application to WDNR. The Permit Application shall include all information required by this Order. At the same time that it submits the Permit Application to WDNR, Respondent shall submit a copy of the Permit Application to EPA.

45. The Permit Application may be an application for an individual permit or a Notice of Intent for Coverage under any final, effective and applicable Wisconsin general permit for CAFOs.

46. In the Permit Application, Respondent shall provide:

a) all information required by EPA Forms 1 and 2B. Those forms can be obtained on the internet at the following addresses:

Form 1: http://www.epa.gov/npdes/pubs/form_1.pdf

Form 2B: http://www.epa.gov/npdes/pubs/cafo_fedregstr_form2b.pdf;

b) a topographic map indicating the locations of the production area and land application area; and

c) a nutrient management plan that satisfies the requirements of Section IV.D. of this Order.

47. In addition to the information required by Paragraph 46, Respondent shall include in the Permit Application any additional information required by WDNR.

48. Within ten (10) calendar days of receiving a final NPDES permit from WDNR, Respondent shall submit a copy of that final permit to EPA.

D. Nutrient Management

1. General Requirements

49. The nutrient management plan must:

a) be based on a field-specific assessments of the potential for nitrogen and phosphorous transport from each field in the land application area and shall address the form, source, amount, timing, and method of application of nutrients on each field to achieve realistic production goals, while minimizing nitrogen and phosphorous movement to surface waters;

b) include procedures in accordance with Paragraphs 56-60 of this Order for the operation and maintenance of structures to ensure the adequate storage of manure, litter, and process wastewater generated at the production area;

c) ensure that mortalities (*i.e.*, dead animals) are:

(1) not disposed of in a liquid manure, storm water, or process wastewater storage or treatment system that is not specifically designed to treat mortalities; and

(2) handled in such ways as to prevent the discharge of pollutants to surface water;

d) ensure that clean water is diverted, as appropriate, from the production area;

e) prevent direct contact of confined animals with waters of the United States;

f) ensure that chemical wastes and other non-livestock wastes handled on-site are not disposed of in the production area or any manure, litter, process wastewater, or storm water storage or treatment system unless such system is specifically designed to treat such chemicals and other contaminants;

g) identify site-specific conservation practices to be implemented, including, as appropriate, buffers or equivalent practices, to control discharges of manure, litter, or process wastewater to waters of the United States;

h) identify protocols for appropriate testing of manure, litter, process wastewater, and soil, in accordance with this Order;

i) establish protocols to land apply manure, litter, or process wastewater in accordance with site specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure, litter, or process wastewater; and

j) identify specific records that will be maintained to document the implementation and management of the requirements of this Order.

2. Land Application Requirements

a. Nutrient Management Limitations

50. Upon the effective date of this Order, Respondent shall not land apply manure, litter, and process wastewater closer than 100 feet to any down-gradient surface waters, open tile line intake structures, sinkholes, agricultural well heads, or other conduits to surface waters. However, this requirement shall not apply provided that Respondent either:

a) imposes a 35-foot wide vegetated buffer on which Respondent will not land apply manure, litter, or process wastewater; or

b) demonstrates that a setback or buffer is not necessary because implementation of alternative conservation practices or field-specific conditions will provide pollutant reductions equivalent to or better than the reductions that would be achieved by the 100-foot setback.

51. The nutrient management plan must demonstrate how Respondent will comply with the provisions of 40 C.F.R. § 122.42(e)(5).

b. Sampling for Land Application.

52. Upon the effective date of this Order, Respondent shall conduct analyses at least annually of representative samples of any manure, litter, and process wastewater to be land applied.

53. Upon the effective date of this Order, for each field in the land application area to which Respondent applies manure, litter, or process wastewater, Respondent shall sample and analyze the soil at that field for phosphorous content a minimum of once every four years.

c. Land Application Records

54. Upon the effective date of this Order, Respondent shall record the following information for each day during which Respondent land applies manure, litter, or process wastewater to the land application area. These records shall separately address each field at which land application occurs:

a. the location of the field;

b. the size of the field;

c. expected crop yields;

d. the date and time manure, litter, or process wastewater is applied;

e. an estimate of the amount of precipitation 24 hours prior to, and for 24 hours after, the application;

f. soil water conditions at the time of each land application (*e.g.*, dry, saturated, flooded, frozen, snow-covered);

g. test methods used to sample and analyze manure, litter, process wastewater, and soil;

h. explanation of the basis for determining application rates for manure, litter, and process wastewater;

i. the amount of manure, litter, or process wastewater applied in either gallons, net tons, or dry tons per acre;

j. calculations showing the total nitrogen and phosphorus to be applied, including sources other than manure, litter, or process wastewater;

k. the total amount of nitrogen and phosphorus actually applied, including documentation of calculations used to determine the total amount applied; and

l. the method used to apply the manure, litter, or process wastewater (*e.g.*, surface, surface with incorporation, injection, etc.).

3. Transfers of Manure, Litter or Process Waste Water to Other Persons

55. Upon the effective date of this Order, if Respondent transfers manure, litter, or process wastewater to another person, Respondent shall create a record of the transfer. For each transfer, the transfer record shall indicate the date of the transfer, the name, and address of the recipient of the transfer, and the approximate amount of manure, litter, or process wastewater transferred.

56. Upon the effective date of this Order, prior to transferring manure, litter, or process wastewater to another person, Respondent shall provide that person with the most current annual nutrient analysis for that manure, litter, or process wastewater.

4. Storage of Manure, Litter and Process Wastewater

57. The nutrient management plan shall include protocols for the storage of manure, litter and process wastewater and shall provide for the operation and maintenance of structures (*e.g.*, anaerobic lagoon, roofed storage shed, storage ponds, underfloor pits, above ground storage tanks, below ground storage tanks, etc.) to be used at the Site for manure, litter, and process wastewater storage.

58. The storage structures shall have sufficient volume such that no manure, litter, or process wastewater discharges will occur from the production area, except when precipitation causes an overflow of manure, litter, or process wastewater from structures that are designed,

constructed, and maintained to contain all manure, litter, and process wastewater, including runoff and direct precipitation from a 25-year, 24-hour (or greater) rainfall event. At a minimum, the structures must have a volume sufficient to store all of the following amounts:

a. normal precipitation (less evaporation) on the surface of the structures during the periods contemplated in this Order;

b. normal runoff during the periods contemplated in this Order from the production area and any upslope areas from which the clean runoff is not diverted around the production area;

c. residuals that remain after materials are removed from the structures;

d. all manure, litter, and process wastewater generated during periods when land application does not occur;

e. direct precipitation on the surface of the structure and runoff to the structure from a 25-year, 24-hour rainfall event; and

f. for open surface liquid storage structures, one feet of freeboard above the capacity necessary to contain the direct precipitation and runoff from a 25- year, 24- hour rainfall event.

59. If the nutrient management plan provides for a storage volume that is less than the volume of manure, litter, and process wastewater that Respondent reasonably expects to add to the structure(s) during one-hundred and eighty (180) calendar days of continuous storage with no land application, Respondent shall include in the nutrient management plan a technical analysis which demonstrates that the lesser volume will assure compliance with this Order.

60. Dewatering and Solids Removal

a. The nutrient management plan shall include criteria and procedures for the dewatering of, and removal of solid material from, all storage structures identified in the nutrient management plan, as necessary to ensure that sufficient storage volume remains in the storage structures to comply with this Order at all times. Any land application of materials removed from the storage structures shall be performed in accordance with the requirements of this Order.

b. Respondent shall measure and record the amounts of material removed from the storage structures.

61. Capacity Depth Markers: All open surface storage structures identified in the nutrient management plan shall be equipped with permanent capacity depth markers which clearly indicates the minimum capacity necessary to contain the runoff and direct precipitation of the 25-year, 24-hour rainfall event.

E. **Site Inspections**

62. Upon the effective date of this Order, the Respondent shall conduct the following Inspections:

a. daily inspections of water supply lines, including drinking water or cooling water lines;

b. weekly inspections of all storm water diversion devices, runoff diversion structures, and devices channeling contaminated storm water to the containment structures;

c. weekly inspections of the storage structures;

d. weekly determinations of the depth of the manure and process wastewater (and amount of freeboard, where required) in all open surface liquid storage structures as indicated by the capacity depth markers required by this Order; and

e. periodic inspections (at least four (4) times per year) of equipment used for the land application of manure, litter, or process wastewater.

63. Respondent shall correct any deficiencies identified through the inspections conducted pursuant to this Subsection as soon as possible.

64. Respondent shall prepare and maintain records of each inspection conducted pursuant to this Subsection. Respondent shall record the following information for each weekly inspection:

a. the date of each inspection;

b. the amount of freeboard in each storage structure during each inspection;

c. any deficiencies noted during each inspection and the actions taken to correct those deficiencies; and

d. for any deficiencies not corrected within thirty (30) calendar days of discovery, an explanation of the factors preventing immediate correction.

F. **Discharge Minimization and Notification**

65. Within thirty (30) calendar days of the effective date of this Order, Respondent shall post at the Home Site and Satellite Site procedures to effectively respond to any spill or discharge to waters of the United States, and shall ensure that all employees are aware of, and follow, those procedures. The posted procedures shall contain detailed response instructions which shall include, but not be limited to, the names of officials to be notified, state and federal agencies to be notified, local or downstream public water supply and public health entities to be notified, appropriate phone numbers, addresses, safety precautions, and immediate actions to abate the occurrence.

66. This Order does not authorize Respondent to discharge pollutants to waters of the United States at or from the Site, and any such discharges are subject to enforcement. If for any reason Respondent discharges pollutants to waters of the United States, Respondent must visually monitor the discharge, and immediately notify the EPA by contacting Donald R. Schwer III by telephone at 312-353-8752, and by fax at 312-886-6090 or email at schwer.don@epa.gov. Respondent must also immediately notify the WDNR at 1-800-943-0003. In addition, Respondent must document the following information and submit a written report containing such information to EPA and WDNR within five (5) calendar days of becoming aware of the discharge:

a. the cause of the discharge, including an estimate of the discharge volume, an estimate of the flow rate if the discharge is continuing, and any analytical data;

b. a description of the area receiving the discharge (*i.e.*, field, ditch, stream, or other description);

c. the specific location of the discharge;

d. the period of discharge, including exact begin and end dates and times, and if not corrected, the anticipated time the discharge is expected to continue;

e. steps taken or to be taken to respond to, contain, and mitigate the discharge;

f. corrective action taken to prevent recurrences of the discharge; and

g. apparent impacts to health or the environment resulting from the discharge, including, but not limited to, threats to surface water supplies, water supply wells, recreational areas, and water quality.

G. Record Retention and Reporting

67. Recordkeeping: Upon the effective date of this Order, Respondent shall maintain at the Site and shall make available to EPA and WDNR personnel upon request copies of records created pursuant to this Order. Such records include:

a. a complete copy of the Permit Application, including a copy of the nutrient management plan;

b. all records required by the nutrient management plan;

c. reports of the depth of the manure and process wastewater in storage structures as indicated by the capacity depth markers required by Section IV.D. of this Order;

d. records documenting the current design of any storage structures, including volume for solids accumulation, design treatment volume, total design volume, and approximate number of calendar days of storage capacity;

e. records of the date, time, and estimated volume of any overflow;

f. all results of sampling required by this Order;

g. all land application records required by this Order;

h. records required by this Order documenting transfers of manure, litter, or process waste water to other persons;

i. the criteria and procedures for the solids removal and dewatering of storage structures required by this Order;

j. records of materials removed from storage structures; and

k. inspection records required by this Order.

68. Interim measures: Within thirty (30) calendar days after the effective date of this Order, Respondent shall submit to EPA and WDNR the following documentation concerning the interim measures implemented pursuant to Section IV.B. of this Order:

a. a detailed description of the interim measures;

b. documentation (*e.g.*, as-built diagrams, photographs, affidavits, etc.) showing that Respondent completed installation of the interim measures; and

c. an accounting of the costs incurred by Respondent to install, implement, and maintain the interim measures.

69. Annual Reports: Respondent shall submit an annual report to EPA and WDNR not later than March 15 of each calendar year following the effective date of this Order. In each annual report, Respondent shall include the following information for the previous calendar year prior to submittal of that annual report:

a. the maximum number and type of animals confined, whether in open confinement or housed under roof;

b. the estimated amount of total manure, litter, and process wastewater generated at the Site in the previous 12 months;

c. the estimated amount of total manure, litter, and process wastewater transferred to another person from the Site in the previous 12 months (tons/gallons);

d. the total number of acres for land application covered by the nutrient management plan;

e. the total number of acres under the control of Respondent that were used for land application of manure, litter, and process wastewater in the previous 12 months;

f. a summary of all manure, litter, and process wastewater discharges from the production area that have occurred in the previous 12 months, including the date, time, and approximate volume of such discharges; and

g. a statement indicating whether the current version of the nutrient management plan was developed or approved by a certified nutrient management planner.

V. SUBMITTALS

70. Any documents or notifications required by this Order to be submitted to EPA shall be submitted by Respondent to the following address:

Water Enforcement Compliance Assurance Branch (WC-15J)
U.S. EPA Region 5
Attn: Donald R. Schwer III
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

71. Any documents or notifications required by this Order to be submitted to WDNR shall be submitted by Respondent to the following address:

Wisconsin Department of Natural Resources
Agricultural Runoff Program
Attn: Thomas Bauman
PO Box 7921
WT/3, 101 South Webster Street
Madison, Wisconsin 53707

72. All submittals made pursuant to this Order shall be returned under an authorized signature containing the following certification:

> I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false statements and information, including the possibility of fines and imprisonment for knowing violations.

73. If the signatory finds at any time after submittal of information that any portion of the submittal is false or incorrect, the signatory shall notify EPA immediately. Knowing submittal of false information to EPA in response to this Order may subject Respondent to criminal prosecution under Section 309(c) of the CWA, 33 U.S.C. § 1319(c), and 18 U.S.C. §§ 1001 and 1341.

Confidentiality of Submissions

74. You may not withhold information because you claim it is confidential. However, pursuant to 40 C.F.R. Part 2, Subpart B, you may assert a claim of business confidentiality regarding any portion of the information submitted in response to this Order, as provided in 40 C.F.R. § 2.302(a)(2). The regulations provide that a person may assert a business confidentiality claim covering part or all of the information furnished to EPA when that person submits the information. The manner of asserting such claims is specified in 40 C.F.R. § 2.203(b). Effluent data (as defined in 40 C.F.R. § 2.302(A)(2)) and information in NPDES permit applications is not entitled to confidential treatment. 40 C.F.R. § 122.7. Information subject to a business confidentiality claim is available to the public only to the extent, and by means of the procedures, set forth in 40 C.F.R. Part 2, Subpart B.

75. If you do not assert a claim of business confidentiality when you submit the information, EPA may make the information available to the public without further notice.

76. EPA may use any information submitted in response to this Order in support of an administrative, civil or criminal action against Respondent.

VI. OPPORTUNITY TO CONFER

77. Respondent has the opportunity to confer with and to submit information to EPA concerning this Order.

78. Such information may include evidence (*i.e.*, documentation), arguments and comments regarding the legal and factual determinations on which the Order is based, its applicability to Respondent, the appropriateness of its terms or any other relevant and material issue.

79. If Respondent seeks to confer with EPA, it shall request a conference within ten (10) calendar days of the date of signature of this Order by the Water Division Director. To request a conference, contact Donald R. Schwer III at (312) 353-8752, or Respondent's attorney may contact Catherine Garypie, EPA Region 5, Office of Regional Counsel at (312) 886-5825.

a. Any conference held pursuant to this Paragraph shall take place within ten (10) calendar days from the date of the request, unless the time period is extended by agreement of the

parties. Respondent may appear in person, participate by telephone or be represented by an attorney or other representative.

b. Respondent is responsible for reducing all oral information it presents at the conference, including comments and arguments, to writing and submitting that document to EPA within five (5) calendar days following the conference, unless the time period is extended by agreement of the parties.

c. Such a conference is not a formal evidentiary hearing and does not constitute a proceeding to challenge this Order. EPA will not make a formal transcript of the conference.

80. Regardless of whether Respondent requests a conference, Respondent may submit written information to EPA, as provided in Paragraph 77, above, within ten (10) calendar days of the date of signature of this Order by the Water Division Director, unless the time period is extended by agreement of the parties. Respondent shall submit any written information according to the instructions in Section V of this Order.

81. EPA shall deem a failure to either request a conference or submit written information within ten (10) calendar days of the date of signature of this Order by the Water Division Director as a waiver of the opportunity to confer.

82. EPA shall consider all relevant and material written information submitted by Respondent pursuant to this Section and determine that: (1) this Order should become final as originally issued; (2) this Order should be modified; or (3) this Order should be withdrawn.

83. If EPA determines that this Order should become final as originally issued or should be modified, then EPA shall address the material and relevant information submitted by Respondent in a responsiveness summary.

a. All written information submitted by Respondent and EPA's responsiveness summary shall be included in the administrative record supporting this Order.

b. The administrative record shall be available for public review under the Freedom of Information Act.

84. If EPA determines that this Order should become final as originally issued, EPA will notify Respondent of that decision in writing and shall provide Respondent with a copy of the responsiveness summary.

85. If EPA determines that this Order should be modified, then EPA will modify the Order and issue a modified order to Respondent and shall provide Respondent with a copy of the responsiveness summary.

86. If EPA determines that this Order should be withdrawn, EPA will provide Respondent with written notice of the withdrawal of this Order.

87. No modification or withdrawal of this Order shall be effective unless and until it is issued in writing by EPA.

VII. EFFECTIVE DATE

88. If Respondent does not request a conference or submit written information pursuant to this Section, this Order shall become final and effective fifteen (15) calendar days after its date of signature by the Water Division Director.

89. If Respondent does request a conference or submit written information pursuant to this Section, and EPA nonetheless determines that this Order should become final as originally issued, this Order shall become final and effective seven (7) calendar days after the date of EPA's signature of the written notification to Respondent of that determination.

90. If EPA modifies this Order, the modified order shall become final and effective seven (7) calendar days after the date of EPA's signature of the modified Order.

VIII. GENERAL PROVISIONS

91. This Order is not a permit under the CWA, and does not waive or modify Respondent's ongoing obligation and responsibility to ascertain and comply with all other applicable federal, state or local laws, regulations, ordinances, permits, or licenses.

92. EPA reserves all rights and remedies, legal and equitable, available to address any violation cited in this Order, any other violation of the CWA, and to enforce this Order. Neither issuance of this Order by EPA nor compliance with its terms precludes further enforcement action pursuant to Section 309 of the CWA, 33 U.S.C. § 1319, for the violations cited herein, for any other violations of the CWA committed by Respondent, or to enforce this Order.

93. Respondent may seek federal judicial review of the Order pursuant to Chapter 7 of the Administrative Procedure Act, 5 U.S.C. §§ 701-706. Section 706, which is set forth at http://uscode.house.gov/download/pls/05C7.txt, states the scope of such review.

94. Administrative, Civil and Criminal Enforcement

The CWA includes provisions for administrative penalties, for civil injunctive relief and penalties, and for criminal sanctions for violations of the CWA. Specifically, EPA may take one or more of the following actions:

a. assess civil administrative penalties under 33 U.S.C. § 1319(g) and 40 C.F.R. Part 19 of $11,000 per day for each violation that occurred after March 15, 2004 through January 12, 2009 and $16,000 per day for each violation that occurred after January 12, 2009. An administrative penalty action may total up to $177,500 for actions filed after January 12, 2009;

b. seek civil injunctive relief and penalties under 33 U.S.C. § 1319(d) and 40 C.F.R. Part 19. EPA may seek civil judicial penalties of $32,500 per day for each violation that occurred after March 15, 2004 through January 12, 2009, and may seek civil judicial penalties of $37,500 per day for each violation that occurs after January 12, 2009; or

c. seek criminal sanctions, including fines and imprisonment, for negligent or knowing violations of the CWA under 33 U.S.C. § 1319(c).

95. The information required to be submitted pursuant to this Order is not subject to the approval requirements of the Paperwork Reduction Act of 1995, 44 U.S.C. § 3501 *et seq.*

IX. CERTIFICATION OF COMPLETION

96. Within thirty (30) calendar days after Respondent has received coverage under a WPDES permit and concludes that it has complied with all requirements of this Order, Respondent shall submit a written certification of completion describing actions taken to comply with all requirements of this Order.

97. After receipt and review of Respondent's certification of completion submitted pursuant to Paragraph 96 of this Order, EPA shall notify Respondent whether all requirements of this Order have been satisfied.

98. This Order shall be effective until EPA notifies Respondent that Respondent has complied with all requirements of this Order.

Date: 9-13-13

Peter Swenson
for Tinka G. Hyde
Director, Water Division

ATTACHMENT 1

CWA COMPLIANCE EVALUATION INSPECTION REPORT
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 5
FOR LEDGEVIEW FARMS

CWA COMPLIANCE EVALUATION INSPECTION REPORT
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 5

Purpose:	Compliance Evaluation Inspection
Facility:	Ledgeview Farms 3875 Dickonson Road De Pere, Wisconsin 54115 44.4249N, 87.9695W
NPDES Permit Number:	None
Date of Inspection:	April 18, 2013
EPA Representatives:	Donald R. Schwer III, Enforcement Officer schwer.don@epa.gov, 312-353-8752 Michael Lukowich, Environmental Engineer 312-353-4645
State Representatives:	NA
Facility Representatives:	Jason Pansier, Owner, 920-655-1344
Report Prepared by:	Donald R. Schwer III, Enforcement Officer
Report Date:	May 16, 2013

Inspector Signature D R Schwer III

1. BACKGROUND

The purpose of this report is to describe, evaluate and document Ledgeview Farms compliance with the Clean Water Act (CWA) at its De Pere, Wisconsin facility on April 18, 2013. This inspection was performed pursuant to Section 308(a) of the Federal Water Pollution Control Act, as amended.

Ledgeview Farms is a Limited Liability Company (LLC) dairy operation in Brown County, Wisconsin. It owned and operated by Mr. Glenn Pansier (father), Mr. Roy Pansier (uncle), and Mr. Jason Pansier (son). The operation consists of two facilities that operate under the same nutrient management plan (NMP). The Home site is at 3875 Dickinson Road, De Pere, Wisconsin. A Satellite site is northeast of the Home location at 3688 County Road V, De Pere, Wisconsin. At the time of inspection, April 18, 2013, the Home site was at capacity with 365 milking and dry cows. The Home site also housed 140 calfs. The satellite location housed 100 heifers and 200 steers. Heifers were housed in total confinement; all other cattle were under partial confinement and had access to open lot or pasture. Mr. Jason Pansier stated that the facility does not deviate significantly from the number of cattle confined at the facility year round. Ledgeview Farms is considered a medium dairy Animal Feeding Operation (AFO) due to the number of mature dairy cows maintained on the facility. There is currently no National Pollutant Discharge Elimination System (NPDES) permit allowing discharge from the site and the facility has never applied for one.

Surface runoff from the Ledgeview Farms Home site flowed through pathways to unnamed tributaries that abut the east and west side of the site. The unnamed tributary that abuts the east side of the Home site flows to the unnamed tributary that abuts the west side of the Home site. The unnamed tributary that abuts the west side of the Home site flows to Bower Creek. Bower Creek flows to the East River. The East River flows to the lower Fox River. The lower Fox River flows to Green Bay.

Surface runoff from the Ledgeview Farms Satellite site flowed through ditches and pathways to an unnamed tributary. The unnamed tributary flows to Bower Creek. Bower Creek flows to the East River. The East River flows to the lower Fox River. The lower Fox River flows to Green Bay.

2. SITE INSPECTION

Prior to beginning the inspection, I conducted a visual reconnaissance of the Ledgeview Farms sites and its surroundings from the public right-of-way. This included Dickinson Road for the Home site and County Road V for the Satellite site. During my reconnaissance, I searched for areas of environmental concern, discharges, drainage patterns, flow directions, distance and direction of nearest perennial waters, visual condition of perennial waters, facility location and layout.

I arrived at Ledgeview Farms Home site at approximately 8:30 a.m. on April 18, 2013. I parked the vehicle near the entrance of the facility. The temperature was approximately

40° F and it was raining. The weather station, Green Bay 5.3 SSW, WI US (US1WIBN0010), in Green Bay, Wisconsin had an observed rainfall of 0.2 in. on April 18, 2013. Upon arrival, Mr. Lukowich and I put on disposable boots. I introduced myself and Mr. Lukowich and we presented our credentials to Mr. Jason Pansier. I asked Mr. Pansier if he was able to act as the official facility representative for Ledgeview Farms. He said that he would represent the facility and that his father Mr. Glenn Pansier was sick. I asked him what he was responsible for and how long he had those responsibilities. Mr. Jason Pansier said that he is responsible for the general management of the facility.

I explained to Mr. Jason Pansier that I would be conducting a Concentrated Animal Feeding Operation (CAFO) inspection to evaluate Ledgeview Farms compliance with the requirements of the CWA and determine whether or not they require a permit. I explained that the inspection would consist of a review of facility operations, required records, waste generation and management practices, and a visual inspection of the site. I stated that I would document my findings and observations by taking photographs, obtaining statements from facility staff, and by collecting samples if necessary.

2.1 Interview, Nutrient Management Plan (NMP) and Records Review

Mr. Pansier stated that the facility employs seven full time employees. He said that Ledgeview Farms is owned by Roy and Glenn Pansier. He said that there is a Satellite site at 3688 County Road V, De Pere, Wisconsin. He said the facility consistently maintains the approximate number of cattle in Table 1. He said the number of cows may fluctuate by 20 -30 animals periodically, but, this is approximately the maximum amount of cattle the facility maintains.

When I asked Mr. Pansier if any of the animals had direct access to waters of the United States and/or its tributaries, Mr. Pansier stated that the Dry Cows have access to five acres of pasture that has a gulley run through it, however, he was unsure if it was a water of the United States.

Table 1: Animal Numbers

Type of Animal	Number of Animals	Site	Type of Confinement
Milking Cow	320	Home	Total
Dry Cow	45	Home	Partial
Heifer	100	Satellite	Total
Calf (<250 lbs)	140	Home	Partial
Steer	200	Satellite	Partial

Livestock Waste Management

Mr. Pansier said manure and used bedding in the barns that house the milking and dry cows is scrapped to an auger. The manure and used bedding is then hauled to concrete pits on the northeast side of the facility. The manure and used bedding from the barns

that house the calves are scrapped, loaded, and hauled to the concrete pits on the northeast side of the facility. The milkhouse wastewater flows to a pit on the northwest corner of the milkhouse and is pumped near the auger which is then transferred to the concrete pits.

Mr. Pansier said on the Satellite site, manure and used bedding is self contained in the barn for the heifers and is loaded out when needed. The steers have access to an open lot in which runoff flows to and is contained in a pit on the west end of the lot. When the pit is full it is pumped out and transferred to the concrete pit at the Home site.

The cattle are provided drinking water through Ritchie waterers and pales are used for calfs. The source of the drinking water is from a well. Waste drinking water is contained with manure and used bedding. Plate-cooler water is reused for drinking water for the animals. Cleaning of the milk house uses approximately 600 gallons per day. The facility uses sawdust, sand and straw bedding. Used bedding is handled with the manure.

Mr. Pansier did not know how much manure was generated annually. He said mortalities are taken by Circle R mink farm. Mr. Pansier said the facility has a nutrient management plan that covers the land application of manure. He said the facility has approximately 2,200 acres available for land application. He said records of land application were kept with the nutrient management plan.

Feed is stored in bunkers on both the Home and Satellite site. Mr. Pansier said wastewater from the feed bunkers flows into the fields.

Table 2: Livestock Waste Storage

Type of Storage	Site	Storage Capacity	Type of Liner	Depth Markers Present	Last Time Waste was Removed	Days of Storage
Two Pits	Home	?	Concrete	No	March 2013	?
Pit	Satellite	?	Concrete	No	-	?
Records at site of storage structure design?				No		
Additional Information:				East pit had a hole in it.		

Receiving Surface Waters

Mr. Pansier said the unnamed tributary that abuts the west side of the Home site flows year round and that the unnamed tributary that abuts the east side of the Home site flows during the spring melt and during precipitation.

2.2 Walkthrough of the Facility

To facilitate the walkthrough section of this report, overview photographs are included in Attachment 1 which includes building labels, outlines of drainage pathways, and waterway locations. The inspection photographs are in Attachment 2.

Home Site

I began the walkthrough portion of the inspection by walking east along the south side of the facility. I observed some bedding and manure material that was tracked out of the south side of the Calf Barn 1. Calf Barn 2 had open lots that did not have containment for manure or process wastewater. Runoff from portions of the open lots could flow to the east. A pile of used bedding was located at the east side of Calf Barn 2 (Attachment 2: IMGP0254, IMGP0255). Runoff from the used bedding could flow northeast to the unnamed tributary.

I continued north toward the concrete pits. Much of the area along the east end of the production area flowed toward the east. I observed manure and bedding material through the access ways along the east end of the production area due to poor housekeeping. I observed the west concrete pit; it was approximately half full (Attachment 2: IMGP0256, IMGP0262). The east pit was nearly empty (Attachment 2: IMGP0257). The water in the east pit was dark and smelled septic.

I continued north along the east end of the concrete pits and crossed into the pasture/open lot. The unnamed tributary that abuts the east end of the production area flowed through the pasture/open lot (Attachment 2: IMGP0258, IMGP 0259). There was no vegetation on much of the south side of the pasture. Cattle had direct access to the unnamed tributary. I observed manure patties in and around the unnamed tributary.

On the northeast corner of the concrete pit, I observed a hole in the concrete pit (Attachment 2: IMGP0260). Process wastewater was flowing out of the hole in the concrete pit. The process wastewater smelled septic and was dark in color (Attachment 2: IMGP0261). I observed saw marks along the hole in the pit.

I continued back south and then west along an access way along the north side of Calf Barn 2. I continued to the silage and commodity storage area along the west end of the Milk Cow Barn. The access ways around this area contained waste feed material (Attachment 2: IMGP0263, IMG0264, IMGP0265). Process wastewater runoff flowed to the north. Cattle had access to an open lot along the west end of the Milk Cow Barn (Attachment 2: IMGP0265, IMGP0266). Runoff from the open lot flowed north. There was no containment for manure or process wastewater generated from the feed bunker, access ways, and the open lot. I observed runoff from the access way and open lot flowing north into the field north of the Milk Cow Barn (Attachment 2: IMGP0267, IMGP0268). I observed pathways throughout the field north of the Milk Cow Barn (Attachment 2: IMGP0269). I observed process wastewater on the north end of the feed bunker which drained west to the unnamed tributary (Attachment 2: IMGP0270, IMGP0271).

I observed waste feed, bedding, and manure solids that were covering the surface of the field north of the Milk Cow Barn; wastewater was ponded in several locations of the field (Attachment 2: IMGP0272-IMGP0274). The wastewater flow concentrated into two main pathways which drop approximately ten feet down the ledge (Attachment 2:

IMGP0276-IMGP0281). The west pathway contained rip rap material. The east pathway dispersed into a ponded area before meeting up again with the other pathway (Attachment 2: IMGP0282). The flowing wastewater in the pathways was dark in color and smelled of manure. The flowing wastewater in the pathways looked like a liquid manure slurry that would normally be stored in a wastewater pond or slurry storage structure. The pathway turned west and formed a gulley where it dropped down the ledge into the unnamed tributary (Attachment 2: IMGP0283-IMGP0287). I observed water flowing down the ledge to the unnamed tributary.

Satellite Site

I began the walkthrough of the Satelite site on the east side the feed lot and feed bunkers. I observed process wastewater and feed solids around the east side of the feed bunkers (Attachment 2: IMGP0288-IMGP0291). The process wastewater was flowing east into a grassed area north of the Heifer Barn and continueing northeast into the County Road V ditch (Attachment 2: IMGP0291). I observed water flowing through the culvert east under County Road V. The water contnued flowing north along the east side of County Road V until Silver Lane. The water then flowed east along Silver Lane approximately one hundred feet before continuing north through a culvert under Silver Lane. The water continued flowing northeast through a field and wooded area and connected with the unnamed tributary east of the Satellilite site. The water flowed along the approximate pathway traced in Attachment 1: Figure 1.2.

I continued to the east end of the open lot. The eastern portion of the open lot drained to the east. I observed manure and process wastewater in a pathway leading to the grassed area north of the Heifer Barn (Attachment 2: IMGP0293, IMGP0294). The grassed area flowed to the County Road V ditch. I continued walking west along the south end of the open lot (Attachment 2: IMGP0295-IMGP0297). At the west end of the open lot was a concrete pit to collect manure and process wastewater generated on the open lot (Attachment 2: IMGP0298-IMGP0300).

2.3 Closing Conference and Post-Inspection

At the conclusion of the walkthrough, I summarized my findings and observations to Mr. Pansier. I expressed the following areas of concern:

1. At the Satellite site, manure and process wastewater runoff generated at the open lot and feed bunkers were flowing east to the County Road V ditch.
2. At the Home site, septic looking waste and process wastewater was leaking out of a hole in the east concrete pit and flowing to the unnamed tributary on the east end of the site.
3. At the Home site, animals had direct access to the unnamed tributary on the east end of the site.
4. At the Home site, manure and process wastewater from the feed bunker and the open lot west of the Milk Cow Barn did not have containment and

was flowing north through pathways that led to the unnamed tributary on the west end of the site.

5. At the Home site, the used bedding stockpile and open lots at Calf Barn 2 could flow east to the unnamed tributary on the east end of the site.
6. The Home site contained waste feed, manure, and process wastewater in many of the access ways.

I offered Mr. Jason Pansier my business card; however, he declined to take it. I explained Ledgeview Farm's right to make a claim of business confidentiality and presented Mr. Pansier with a Confidentiality Notice (Attachment 3). Mr. Pansier did not make any confidentiality claims at the time of the inspection.

2.4 Sampling Information

Sampling was conducted at various locations of the production area to determine the presence of pollutants that could impact the applicable unnamed tributaries. Mr. Pansier did not accompany EPA during sampling. I offered to split samples with Mr. Pansier. Mr. Pansier declined splitting samples. Samples were tested for fecal coliform, biochemical oxygen demand (BOD), total dissolved solids (TDS), total suspended solids (TSS), ammonia nitrogen, nitrate- nitrite nitrogen, total Kjeldahl nitrogen (TKN), and total phosphorus (TP).

Sample SO1 was taken at 11:40 am as a field blank. Sample SO2 was taken at 11:46 am of process wastewater pathway adjacent to the open lot on the Satellite site (Attachment 2: IMGP0303-IMGP0304). Sample SO3 was taken at 11:56 am of process wastewater in the roadside ditch at the Satellite site (Attachment 2: IMGP0305-IMGP0306). Sample SO4 was taken at 12:40 pm of process wastewater flowing down the ledge at the Home site (Attachment 2: IMGP0311-IMGP0312). Sample SO5 was taken at 12:48 pm from the process wastewater in the pathway that drains to the unnamed tributary on the west side of the Home site (Attachment 2: IMGP0313-IMGP0314). Sample S06 was taken at 1:08 pm of process wastewater from the concrete pit that drains to the unnamed tributary on the east side of the Home site (Attachment 2: IMGP0320-IMGP0321). Sampling locations can be seen in Attachment 1: Figure 1 and Figure 2.

Sampling concluded at 1:10 pm. All samples were taken by Mr. Lukowich. Samples were preserved at 1:30 pm according to EPA Region 5 Field Sampling Plan. Fecal coliform samples were transported to Pace Analytical Services, Inc. at 1241 Bellevue Street, Green Bay, Wisconsin. All other samples were hand delivered to the EPA Region 5 Chicago Regional Laboratory. All samples met holding time according to the EPA Region 5 Field Sampling Plan developed for the inspection.

The results of the sampling, summarized in Table 3, indicate multiple areas contribute pollutants into the unnamed tributaries. All of the samples had significant quantities of fecal coliform (500,000 to 14,500,000 colony forming units (CFU) per 100 milliliter). Additionally, several forms of nitrogen are contained in the process wastewater samples, as indicated by the TKN, nitrate- nitrite nitrogen, and ammonia nitrogen sampling results.

Total Phosphorus, TDS, and TSS were present in the samples. The laboratory results are in Attachment 4.

Table 3: Field Sampling Results

Sample ID	Fecal Coliform** (CFU/100ml)	Biochemical Oxygen Demand (BOD)*** (mg/L)	Total Kjeldahl Nitrogen (TKN) (mg/L)	Nitrate-Nitrite Nitrogen (mg/L)	Ammonia Nitrogen (mg/L)	Total Phosphorus (mg/L)	Total Dissolved Solids (TDS) (mg/L)	Total Suspended Solids (TSS) (mg/L)
SO1	-	U	.77	.07	0.03	U	U	U
SO2	11500000	2700	12.9	U	93.3	134	4450	2930
SO3	500000	1700	113	U	43.2	27.0	2230	204
SO4	14500000	5400	1180	0.78	459	135	7710	3100
SO5	1460000	940	222	0.75	130	47.1	2520	180
SO6	2400000	400	96.6	U	35.5	27.2	1420	2060

U-Undetectable

2250

3. POTENTIAL VIOLATIONS

According to Section 301(a) of the Clean Water Act, it is a violation to discharge pollutants from a CAFO to waters of the United States without a permit.

EPA observed discharges in the following locations:

1. At the Home site, septic looking waste and process wastewater was leaking out of a hole in the east concrete pit and flowing to the unnamed tributary. The hole in the east concrete pit was a manmade conveyance that facilitates the flow of process wastewater to the unnamed tributary.

2. At the Home site, manure and process wastewater from the feed bunker and the open lot west of the Milk Cow Barn did not have containment and was flowing north through pathways that led to the unnamed tributary. The rip rap pathway, paved open lot and access road are manmade conveyances that facilitate the flow of process wastewater to the unnamed tributary.

3. At the Home site, animals had direct access to the unnamed tributary.

4. At the Satellite site, manure and process wastewater runoff generated at the open lot and feed bunkers were flowing east to the County Road V ditch. The County Road V ditch and culverts are manmade conveyances that facilitate the flow of process wastewater to the unnamed tributary.

4. AREAS OF CONCERN

EPA observed these areas of concern whereby pollutants have the potential to reach waters of the United States:

1. At the Home site, runoff from the used bedding stockpile and open lots at Calf Barn 2 could flow east to the unnamed tributary on the east end of the site.

2. The Home site contained waste feed, manure, and process wastewater in many of the access ways.

LIST OF ATTACHMENTS

1. Aerial photographs of Ledgeview Farms
2. Inspection Photographs
3. Confidentiality Notice
4. Field Sampling Results

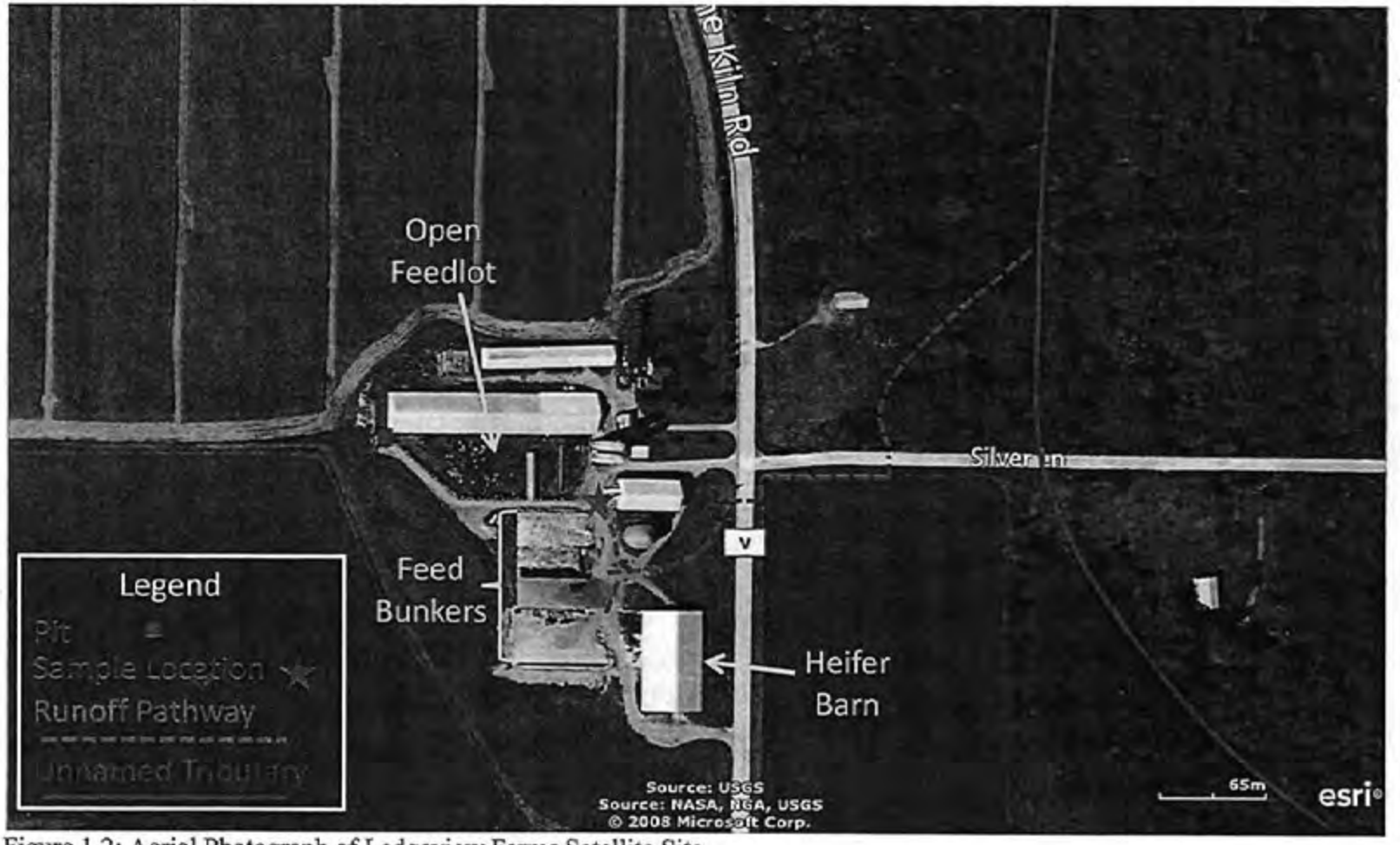


Figure 1.2: Aerial Photograph of Ledgeview Farms Satellite Site

ATTACHMENT 1: AERIAL PHOTOGRAPHS OF LEDGEVIEW FARMS

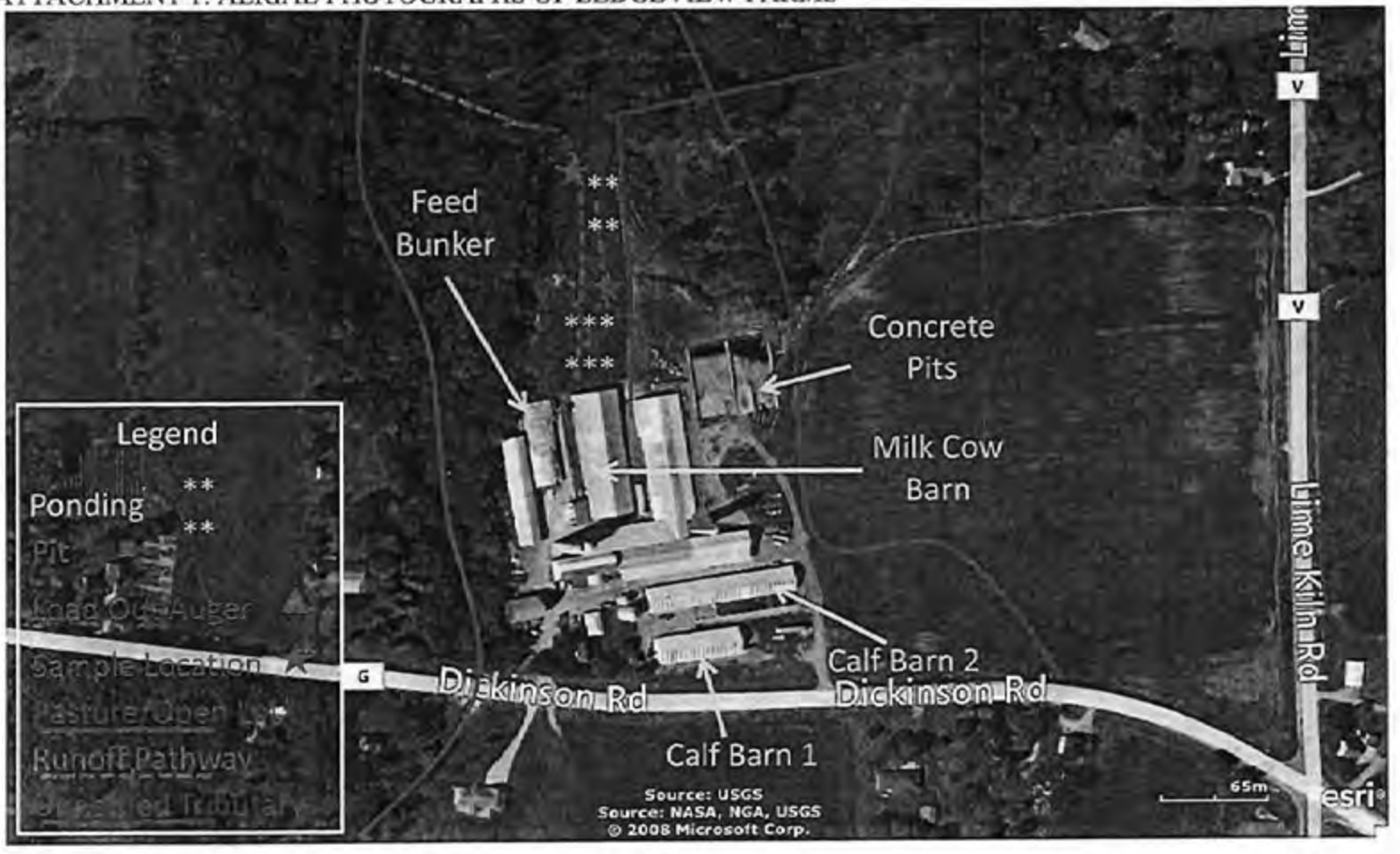


Figure 1.1: Aerial Photograph of Ledgeview Farms Home Site

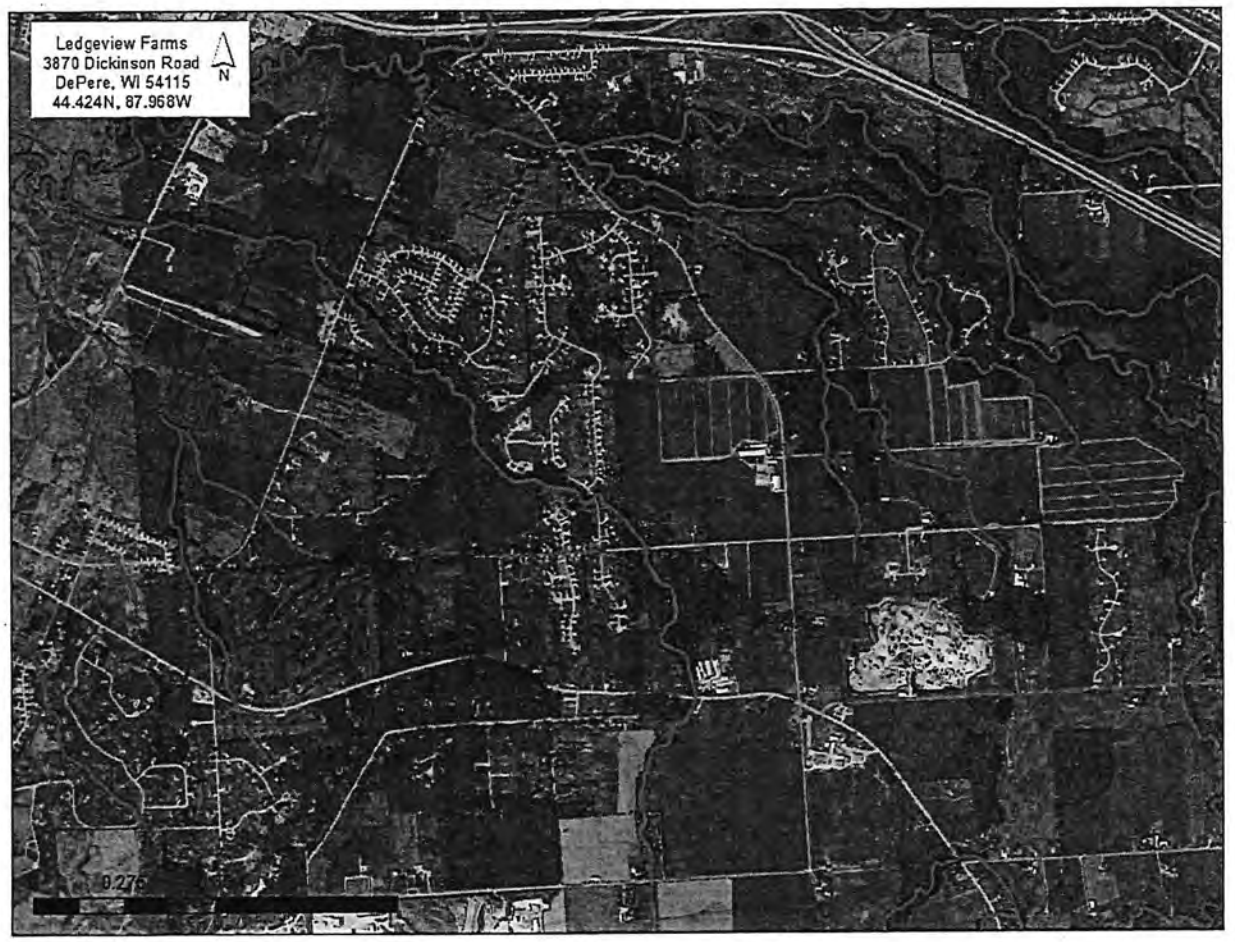


Figure 1.3: Aerial Photograph of National Hydrography Dataset (NHD) Waterways from the United States Geological Survey (USGS)

ATTACHMENT 2: INSPECTION PHOTOGRAPHS

1: IMGP0254.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: North

Description: A stockpile of used bedding material was located east of Calf Barn 2. The process wastewater from the open lot and stockpile had no containment and could flow east off site to unnamed tributary on the east side of the site.

2: IMGP0255.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: West

Description: A stockpile of used bedding material was located east of Calf Barn 2. The process wastewater from the open lot and stockpile had no containment and could flow east off site to unnamed tributary.

3: IMGP0256.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: North

Description: The west concrete pit was approximately half full. The east concrete pit was nearly empty. The water in the east pit was dark and smelled septic.

4: IMGP0257.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: North

Description: The west concrete pit was approximately half full. The east concrete pit was nearly empty. The water in the east pit was dark and smelled septic.

5: IMGP0258.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: East

Description: An unnamed tributary flows along the east end of the production area. Cattle had direct access to the unnamed tributary through an open lot. Manure was observed in and around the tributary.

6: IMGP0259.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: North

Description: An unnamed tributary flows along the east end of the production area. Cattle had direct access to the unnamed tributary through an open lot. Manure was observed in and around the tributary.

7: IMGP0260.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: Southeast

Description: A hole was observed in the corner of the east concrete pit. Mr. Pansier said the pit was currently not used for manure storage. The discharge from the hole in the pit was dark in color and had a septic smell of wastewater. The flow from the hole in the east concrete pit flowed east and entered the unnamed tributary.

8: IMGP0261.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: Southeast

Description: A hole was observed in the corner of the east concrete pit. Mr. Pansier said the pit was currently not used for manure storage. The discharge from the hole in the pit was dark in color and had a septic smell of wastewater. The flow from the hole in the east concrete pit flowed east and entered the unnamed tributary.

9: IMGP0262.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: North

Description: The west concrete manure storage pit was approximately half full.

10: IMGP0263.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: Northeast

Description: Track out of feed was located on the access way from the commodity storage area. The process wastewater flowed north.

11: IMGP0264.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: North

Description: The feed storage bunker did not have containment for process wastewater. Feed was observed on the ground throughout the area. The area drains to the north.

12: IMGP0265.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: North

Description: The access way contained feed solids and process wastewater that flowed to the north. The open lot did not have containment for manure and process waste water; the runoff flows north.

13: IMGP0266.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: Northeast

Description: The manure and process wastewater from the open lot drains north.

14: IMGP0267.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: North

Description: Feed solids, bedding, manure, and process waste water flowed north between the Feed Bunker and Milk Cow Barn and outlet into a field that was once used as an open lot. Feed, manure, and process wastewater were ponded in the field.

15: IMGP0268.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: East

Description: The open lot drained to the north.

16: IMGP0269.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: North

Description: Feed, bedding, and manure solids were observed throughout the field north of the Milk Cow Barn. The field sloped to the north.

17: IMGP0270.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: Down/South

Description: Leachate was observed at the north end of the Feed Bunker.

18: IMGP0271.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: West

Description: The leachate from the Feed Bunker looked as if could flow west off the ledge at the north end of the Feed Bunker.

19: IMGP0272.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: South

Description: Feed, bedding, manure, and process waste water flowed to the north. Feed and manure solids were observed throughout the field on the north end of the Milk Cow Barn.

20: IMGP0273.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: North

Description: Feed, bedding, and manure solids were observed throughout the field north of the Milk Cow Barn. Manure and process wastewater were ponded throughout the field. The area drained to the north.

21: IMGP0274.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: North

Description: Feed, bedding, and manure solids were observed throughout the field north of the Milk Cow Barn. Manure and process wastewater were ponded throughout the field. The area drained to the north.

22: IMGP0275.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: Down

Description: Flow from the field concentrated into multiple pathways.

23: IMGP0276.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: Down/North

Description: A pathway flows to the north through the field north of the Milk Cow Barn. Rip rap was placed throughout the pathway along the elevation drop.

24: IMGP0277.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: North

Description: The pathway continues north through the field north of the Milk Cow Barn and then continues west near the two small trees in the background. The pathway flows to the unnamed tributary.

25: IMGP0278.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: Down

Description: Flow in the pathway in the field north of the Milk Cow Barn.

26: IMGP0279.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: South

Description: Another flow pathway/gulley was observed on the east end of the field north of the Milk Cow Barn. Manure, feed, and bedding material were observed throughout the pathway. The flow in the pathway looked like the liquid that would be in a manure storage pond or slurry storage.

27: IMGP0280.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: South

Description: Another flow pathway/gulley was observed on the east end of the field north of the Milk Cow Barn. Manure, feed, and bedding material were observed throughout the pathway. The flow in the pathway looked like the liquid that would be in a manure storage pond or slurry storage.

28: IMGP0281.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: North

Description: Flow continued north from the pathway/gulley on the east end of the field north of the Milk Cow Barn.

29: IMGP0282.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: North

Description: The flow from the east pathway ponded at the end of the field. Portions of this area drained to the west and connected with the other pathway. Other portions of the flow continued north in a pathway that eventually dissipated. On the east side of the ponded area there was an eroded pathway that continued east, however, flow was not observed in this pathway during the inspection.

30: IMGP0283.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: Down/West

Description: The flow in the pathway continued west and dropped down the ledge into the unnamed stream bordering the west end of the facility.

31: IMGP0284.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: Down

Description: The flow in the pathway continued west and dropped down the ledge into the unnamed stream bordering the west end of the facility.

32: IMGP0285.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: Down/North

Description: A large eroded area was observed were the flow pathway drops down the ledge and continues to the unnamed stream.

33: IMGP0286.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: Down/west

Description: A large eroded area was observed were the flow pathway drops down the ledge and continues to the unnamed stream. The steam can be observed down the ledge.

34: IMGP0287.JPG

Location: Ledgeview Farms-Home Site

Photographer: Mike Lukowich

Camera Direction: Down/West

Description: The unnamed tributary.

35: IMGP0288.JPG

Location: Ledgeview Farms- Satellite Site

Photographer: Mike Lukowich

Camera Direction: South

Description: Process wastewater and feed solids were observed around the feed bunkers. The process wastewater was ponded and flowed east into a grassed area.

36: IMGP0289.JPG

Location: Ledgeview Farms- Satellite Site

Photographer: Mike Lukowich

Camera Direction: South

Description: Process wastewater and feed solids were observed around the feed bunkers. The process wastewater was ponded and flowed east into a grassed area.

37: IMGP0290.JPG

Location: Ledgeview Farms- Satellite Site

Photographer: Mike Lukowich

Camera Direction: Down

Description: Process wastewater and feed solids flowing out the east end of the feed bunkers.

38: IMGP0291.JPG

Location: Ledgeview Farms- Satellite Site

Photographer: Mike Lukowich

Camera Direction: Down

Description: The process wastewater continued through the grassed area and outlet into the ditch. The culvert collected the flow which continued east under County Road V and east along the Silver Lane then north and continued northeast before connecting with an unnamed tributary.

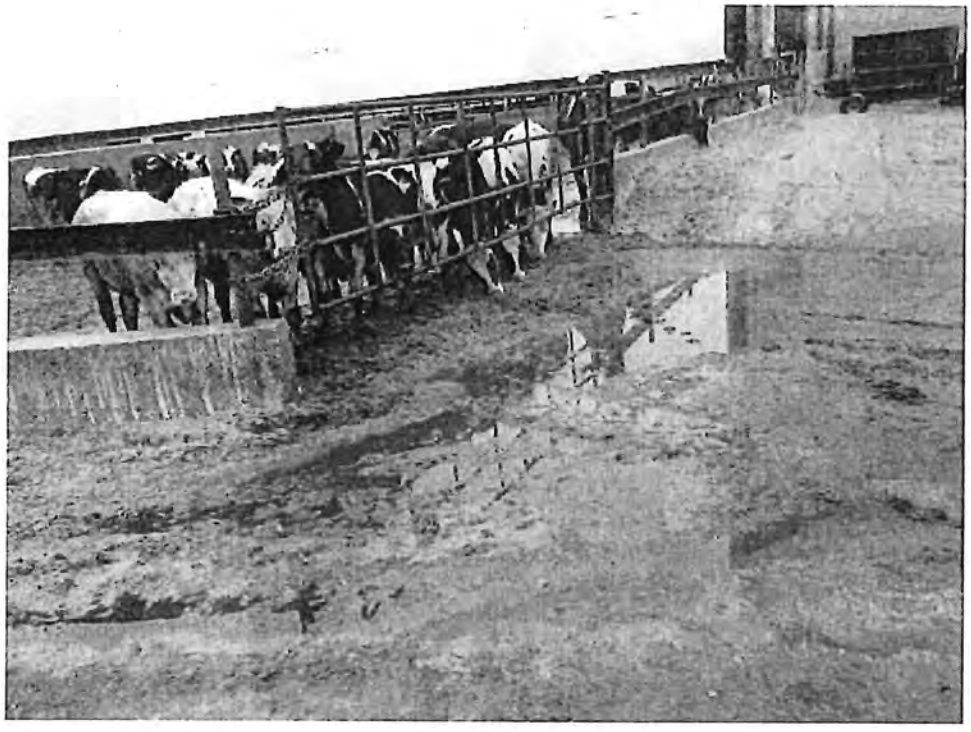
39: IMGP0292.JPG

Location: Ledgeview Farms- Satellite Site

Photographer: Mike Lukowich

Camera Direction: Down/South

Description: Flow in the ditch.



40: IMGP0293.JPG

Location: Ledgeview Farms- Satellite Site

Photographer: Mike Lukowich

Camera Direction: North

Description: Portions of the open feedlot drained to the east through the grassed area and to the ditch.

41: IMGP0294.JPG

Location: Ledgeview Farms- Satellite Site

Photographer: Mike Lukowich

Camera Direction: North

Description: Feed, manure and process wastewater flowed southeast to the grassed area near the southeast corner of the open feedlot.

42: IMGP0295.JPG

Location: Ledgeview Farms- Satellite Site

Photographer: Mike Lukowich

Camera Direction: Southeast

Description: Feed and process wastewater had no containment along the south end of the open feedlot.

43: IMGP0296.JPG

Location: Ledgeview Farms- Satellite Site

Photographer: Mike Lukowich

Camera Direction: North

Description: Portions of the open feedlot flowed to the west.

44: IMGP0297.JPG

Location: Ledgeview Farms- Satellite Site

Photographer: Mike Lukowich

Camera Direction: North

Description: Portions of the open feedlot flowed to the west.

45: IMGP0298.JPG

Location: Ledgeview Farms- Satellite Site

Photographer: Mike Lukowich

Camera Direction: Northwest

Description: Portions of the open feedlot flowed to the west. The manure and process wastewater is contained in a concrete pit which is pumped out when needed and transferd to the concrete manure pits on the Home site or land applied.

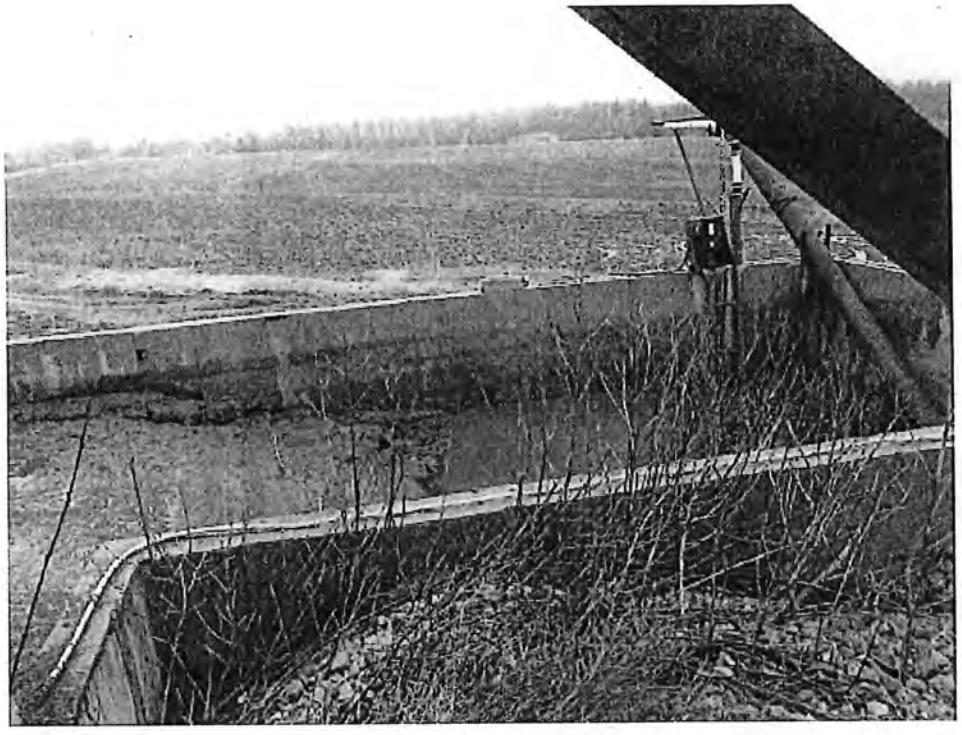
46: IMGP0299.JPG

Location: Ledgeview Farms- Satellite Site

Photographer: Mike Lukowich

Camera Direction: Southeast

Description: Concrete pit and feed pathway.



47: IMGP0300.JPG

Location: Ledgeview Farms- Satellite Site

Photographer: Mike Lukowich

Camera Direction: North/Down

Description: Concrete pit

48: IMGP0301.JPG

Location: Ledgeview Farms- Satellite Site

Photographer: Mike Lukowich

Camera Direction: North

Description: Cornstalk and woodchip bedding material east of the open feedlot.

49: IMGP0302.JPG

Location: Ledgeview Farms- Satellite Site

Photographer: Mike Lukowich

Camera Direction: Northwest

Description: Feed in pathways adjacent to the south end of the open feedlot.

50: IMGP0303.JPG

Location: Ledgeview Farms- Satellite Site

Photographer: Mike Lukowich

Camera Direction: West

Description: Sample S02, collected in puddle/pathway adjacent to the open feedlot.

51: IMGP0304.JPG

Location: Ledgeview Farms- Satellite Site

Photographer: Mike Lukowich

Camera Direction: West

Description: Sample S02, collected in puddle/pathway adjacent to the open feedlot.

52: IMGP0305.JPG

Location: Ledgeview Farms- Satellite Site

Photographer: Mike Lukowich

Camera Direction: Down/South

Description: Sample S03, in ditch before flow enters the culvert under County Road V.

53: IMGP0306.JPG

Location: Ledgeview Farms- Satellite Site

Photographer: Mike Lukowich

Camera Direction: Down/South

Description: Sample S03, in ditch before flow enters the culvert under County Road V.

54: IMGP0307.JPG

Location: Ledgeview Farms- Satellite Site

Photographer: Mike Lukowich

Camera Direction: West

Description: Flow from portions of the open lots and process wastewater from the feed flowed through the culvert and under the County Road V to the east. The flow then turns north through another culvert under Silver Lane.

55: IMGP0308.JPG

Location: Ledgeview Farms- Satellite Site

Photographer: Mike Lukowich

Camera Direction: North

Description: The flow continues north under Silver Lane and through the field to the northeast and connects with an unnamed tributary.

56: IMGP0309.JPG

Location: Ledgeview Farms

Photographer: Mike Lukowich

Camera Direction: South

Description: Unnamed tributary flows North to Bower Creek. The culvert was approximately 8-10 ft in diameter at the crossing under Copper Lane.

57: IMGP0310.JPG

Location: Ledgeview Farms

Photographer: Mike Lukowich

Camera Direction: North

Description: Unnamed tributary flows north to Bower Creek. The culvert was approximately 8-10 ft in diameter at the crossing under Copper Lane.

58: IMGP0311.JPG

Location: Ledgeview Farms- Home Site

Photographer: Mike Lukowich

Camera Direction: Down

Description: Sample S04, in east pathway near the elevation change in the field north of the Milk Cow Barn.

59: IMGP0312.JPG

Location: Ledgeview Farms- Home Site

Photographer: Mike Lukowich

Camera Direction: Down

Description: Sample S04, in east pathway near the elevation change in the field north of the Milk Cow Barn.

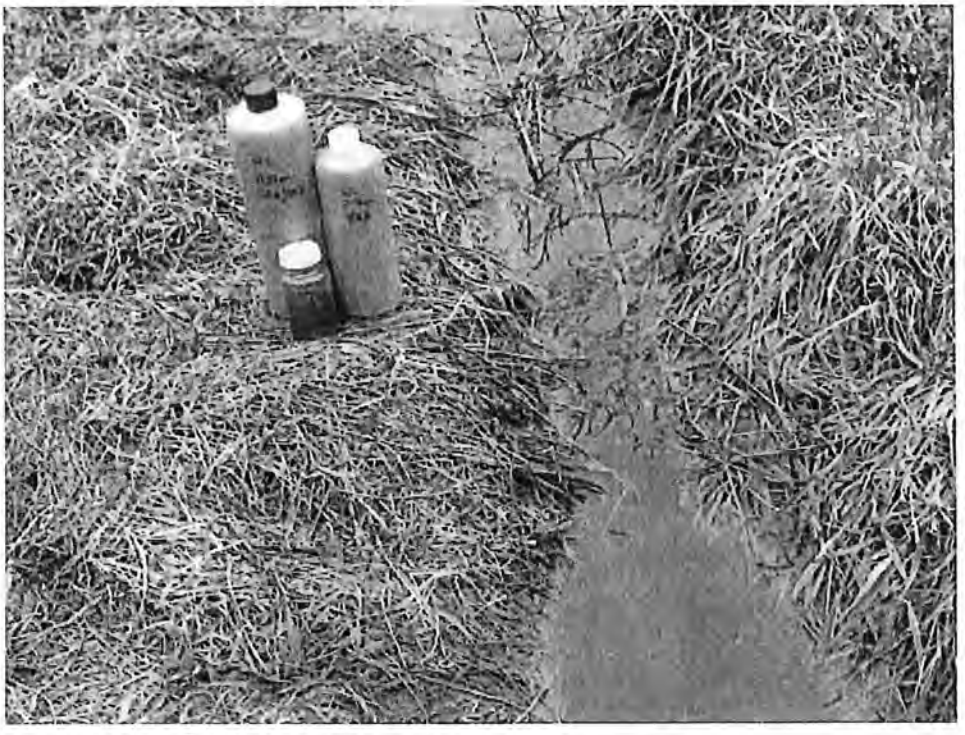
60: IMGP0313.JPG

Location: Ledgeview Farms- Home Site

Photographer: Mike Lukowich

Camera Direction: Down/South

Description: Sample S05, in flow pathway through field north of the Milk Cow Barn.



61: IMGP0314.JPG

Location: Ledgeview Farms- Home Site

Photographer: Mike Lukowich

Camera Direction: Down

Description: Sample S05, in flow pathway through field north of the Milk Cow Barn.

62: IMGP0315.JPG

Location: Ledgeview Farms- Home Site

Photographer: Don Schwer

Camera Direction: Down

Description: Portion of pathway on the north end of the field north of the Milk Cow Barn leading to unnamed tributary.

63: IMGP0316.JPG

Location: Ledgeview Farms- Home Site

Photographer: Don Schwer

Camera Direction: Down

Description: Portion of pathway on the north end of the field north of the Milk Cow Barn leading to unnamed tributary.

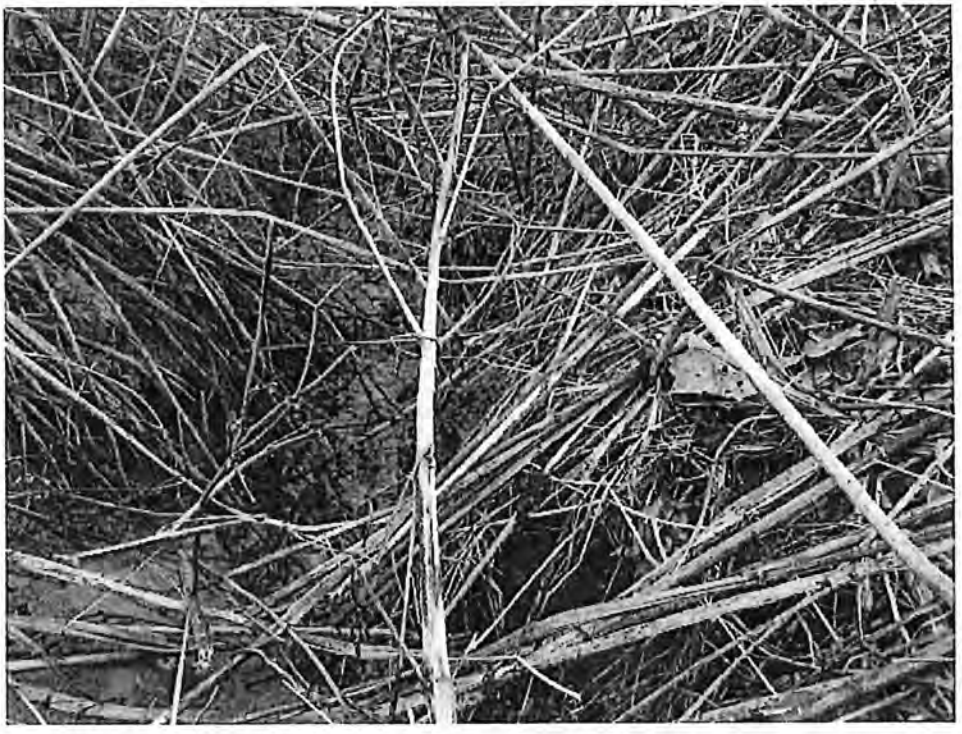
64: IMGP0317.JPG

Location: Ledgeview Farms- Home Site

Photographer: Don Schwer

Camera Direction: Down

Description: Portion of pathway on the north end of the field north of the Milk Cow Barn leading to unnamed tributary.



65: IMGP0318.JPG

Location: Ledgeview Farms- Home Site

Photographer: Don Schwer

Camera Direction: Down

Description: Portion of pathway on the north end of the field north of the Milk Cow Barn leading to unnamed tributary.

66: IMGP0319.JPG

Location: Ledgeview Farms- Home Site

Photographer: Don Schwer

Camera Direction: West

Description: Portion of pathway on the north end of the field north of the Milk Cow Barn leading to unnamed tributary.

67: IMGP0320.JPG

Location: Ledgeview Farms- Home Site

Photographer: Mike Lukowich

Camera Direction: Down

Description: Sample S06, wastewater from hole in the concrete manure pit. During the inspection the facility owner placed a pile of fill over the hole in the concrete pit.

68: IMGP0321.JPG

Location: Ledgeview Farms- Home Site

Photographer: Mike Lukowich

Camera Direction: Down

Description: Sample S06, wastewater from hole in the concrete pit.

69: IMGP0322.JPG

Location: Ledgeview Farms- Home Site

Photographer: Mike Lukowich

Camera Direction: East

Description: Flow pathway from drainage of the concrete pit to the unnamed tributary.

70: IMGP0323.JPG

Location: Ledgeview Farms- Home Site

Photographer: Mike Lukowich

Camera Direction: Down

Description: Cattle had direct access to unnamed tributary which flows north through the east side of the production area.

71: IMGP0324.JPG

Location: Ledgeview Farms- Home Site

Photographer: Mike Lukowich

Camera Direction: North

Description: Cattle had direct access to unnamed tributary which flows north through the east side of the production area.

72: IMGP0325.JPG

Location: Ledgeview Farms- Home Site

Photographer: Mike Lukowich

Camera Direction: Northeast

Description: Dead cow in the open lot.

73: IMGP0326.JPG

Location: Ledgeview Farms- Home Site

Photographer: Mike Lukowich

Camera Direction: Northeast

Description: Dead cow in the open lot.

74: IMGP0327.JPG

Location: Ledgeview Farms- Home Site

Photographer: Mike Lukowich

Camera Direction: Northeast

Description: Dead cow in the open lot.

75: IMGP0328.JPG

Location: Ledgeview Farms- Home Site

Photographer: Mike Lukowich

Camera Direction: Northeast

Description: Dead cow in the open lot.

76: IMGP0329.JPG

Location: Ledgeview Farms- Home Site

Photographer: Mike Lukowich

Camera Direction: Northeast

Description: Cattle had direct access to unnamed tributary which flows north through the east side of the production area.

77: IMGP0330.JPG

Location: Ledgeview Farms- Home Site

Photographer: Mike Lukowich

Camera Direction: Down

Description: Cattle had direct access to unnamed tributary which flows north through the east side of the production area.

78: IMGP0331.JPG

Location: Ledgeview Farms- Home Site

Photographer: Mike Lukowich

Camera Direction: North

Description: Cattle had direct access to unnamed tributary which flows north through the east side of the production area

79: IMGP0332.JPG

Location: Ledgeview Farms- Home Site

Photographer: Mike Lukowich

Camera Direction: North

Description: Cattle had direct access to unnamed tributary which flows north through the east side of the production area

Image	Size (byte)	Date and Time
IMGP0254.JPG	2,180,517	4/18/2013 9:51:36 AM
IMGP0255.JPG	2,306,940	4/18/2013 9:51:54 AM
IMGP0256.JPG	2,162,849	4/18/2013 9:55:38 AM
IMGP0257.JPG	2,271,740	4/18/2013 9:55:52 AM
IMGP0258.JPG	2,244,326	4/18/2013 9:59:32 AM
IMGP0259.JPG	2,268,900	4/18/2013 9:59:36 AM
IMGP0260.JPG	2,289,380	4/18/2013 10:00:44 AM
IMGP0261.JPG	2,325,429	4/18/2013 10:00:54 AM
IMGP0262.JPG	2,195,612	4/18/2013 10:03:48 AM
IMGP0263.JPG	2,199,804	4/18/2013 10:21:28 AM
IMGP0264.JPG	2,353,702	4/18/2013 10:21:36 AM
IMGP0265.JPG	2,260,318	4/18/2013 10:22:18 AM
IMGP0266.JPG	2,129,158	4/18/2013 10:23:54 AM
IMGP0267.JPG	2,341,101	4/18/2013 10:24:08 AM
IMGP0268.JPG	2,231,247	4/18/2013 10:25:06 AM
IMGP0269.JPG	2,249,912	4/18/2013 10:25:20 AM
IMGP0270.JPG	2,259,764	4/18/2013 10:25:46 AM
IMGP0271.JPG	2,413,670	4/18/2013 10:25:54 AM
IMGP0272.JPG	2,288,738	4/18/2013 10:26:32 AM
IMGP0273.JPG	2,242,460	4/18/2013 10:26:38 AM
IMGP0274.JPG	2,223,412	4/18/2013 10:27:32 AM
IMGP0275.JPG	2,415,920	4/18/2013 10:28:26 AM
IMGP0276.JPG	2,342,676	4/18/2013 10:28:34 AM
IMGP0277.JPG	2,241,823	4/18/2013 10:28:40 AM
IMGP0278.JPG	2,335,742	4/18/2013 10:28:56 AM
IMGP0279.JPG	2,290,426	4/18/2013 10:30:16 AM
IMGP0280.JPG	2,359,906	4/18/2013 10:30:28 AM
IMGP0281.JPG	2,310,134	4/18/2013 10:30:32 AM
IMGP0282.JPG	2,324,965	4/18/2013 10:31:26 AM
IMGP0283.JPG	2,412,287	4/18/2013 10:33:26 AM
IMGP0284.JPG	2,336,961	4/18/2013 10:34:22 AM
IMGP0285.JPG	2,339,707	4/18/2013 10:34:28 AM
IMGP0286.JPG	2,367,499	4/18/2013 10:34:34 AM
IMGP0287.JPG	2,348,061	4/18/2013 10:34:50 AM
IMGP0288.JPG	2,351,792	4/18/2013 10:55:20 AM
IMGP0289.JPG	2,252,253	4/18/2013 10:55:24 AM
IMGP0290.JPG	2,423,121	4/18/2013 10:55:32 AM
IMGP0291.JPG	2,360,028	4/18/2013 11:01:04 AM
IMGP0292.JPG	2,303,770	4/18/2013 11:01:12 AM
IMGP0293.JPG	2,268,663	4/18/2013 11:04:12 AM
IMGP0294.JPG	2,395,326	4/18/2013 11:04:24 AM
IMGP0295.JPG	2,287,028	4/18/2013 11:06:28 AM

IMGP0296.JPG	2,230,721	4/18/2013 11:06:36 AM
IMGP0297.JPG	2,304,531	4/18/2013 11:06:42 AM
IMGP0298.JPG	2,186,029	4/18/2013 11:06:48 AM
IMGP0299.JPG	2,165,695	4/18/2013 11:08:14 AM
IMGP0300.JPG	2,124,487	4/18/2013 11:08:26 AM
IMGP0301.JPG	2,281,351	4/18/2013 11:13:26 AM
IMGP0302.JPG	2,174,120	4/18/2013 11:14:26 AM
IMGP0303.JPG	2,204,898	4/18/2013 11:54:02 AM
IMGP0304.JPG	2,266,734	4/18/2013 11:54:10 AM
IMGP0305.JPG	2,333,495	4/18/2013 12:00:06 PM
IMGP0306.JPG	2,354,073	4/18/2013 12:00:16 PM
IMGP0307.JPG	2,306,211	4/18/2013 12:05:18 PM
IMGP0308.JPG	2,290,626	4/18/2013 12:05:44 PM
IMGP0309.JPG	2,286,209	4/18/2013 12:10:28 PM
IMGP0310.JPG	2,334,777	4/18/2013 12:10:54 PM
IMGP0311.JPG	2,413,221	4/18/2013 12:43:18 PM
IMGP0312.JPG	2,359,218	4/18/2013 12:43:26 PM
IMGP0313.JPG	2,335,623	4/18/2013 12:52:14 PM
IMGP0314.JPG	2,325,627	4/18/2013 12:52:26 PM
IMGP0315.JPG	2,214,397	4/18/2013 12:53:28 PM
IMGP0316.JPG	2,333,812	4/18/2013 12:53:36 PM
IMGP0317.JPG	2,305,930	4/18/2013 12:53:44 PM
IMGP0318.JPG	2,369,581	4/18/2013 12:53:56 PM
IMGP0319.JPG	2,329,509	4/18/2013 12:54:02 PM
IMGP0320.JPG	2,400,326	4/18/2013 1:12:30 PM
IMGP0321.JPG	2,333,031	4/18/2013 1:12:40 PM
IMGP0322.JPG	2,320,901	4/18/2013 1:13:48 PM
IMGP0323.JPG	2,334,498	4/18/2013 1:14:24 PM
IMGP0324.JPG	2,339,719	4/18/2013 1:14:30 PM
IMGP0325.JPG	1,892,294	4/18/2013 1:16:42 PM
IMGP0326.JPG	1,855,465	4/18/2013 1:16:50 PM
IMGP0327.JPG	2,330,681	4/18/2013 1:17:02 PM
IMGP0328.JPG	2,168,800	4/18/2013 1:17:14 PM
IMGP0329.JPG	2,338,488	4/18/2013 1:17:28 PM
IMGP0330.JPG	2,290,072	4/18/2013 1:17:52 PM
IMGP0331.JPG	2,393,412	4/18/2013 1:20:50 PM
IMGP0332.JPG	2,422,372	4/18/2013 1:21:00 PM

ATTACHMENT 3: CONFIDENTIALITY NOTICE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
CONFIDENTIALITY NOTICE

Facility Name Ledgeview Farms	
Facility Address	
Inspector (print) Don Schuer	
U.S. EPA, Region ~~VII, 901 N. 5th St., Kansas City, KS 66101~~	Date 4/18/2013

The United States Environmental Protection Agency (EPA) is obligated, under the Freedom of Information Act, to release information collected during inspections to persons who submit requests for that information. The Freedom of Information Act does, however, have provisions that allow EPA to withhold certain confidential business information from public disclosure. To claim protection for information gathered during this inspection you must request that the information be held CONFIDENTIAL and substantiate your claim in writing by demonstrating that the information meets the requirements in 40 CFR 2, Subpart B. The following criteria in Subpart B must be met:

1. Your company has taken measures to protect the confidentiality of the information, and it intends to continue to take such measures.
2. No statute specifically requires disclosure of the information.
3. Disclosure of the information would cause substantial harm to your company's competitive position.

Information that you claim confidential will be held as such pending a determination of applicability by EPA.

I have received this Notice and DO NOT want to make a claim of confidentiality at this time.	
Facility Representative Provided Notice (print) Jason Pansier	Signature/Date

I have received this Notice and DO want to make a claim of confidentiality.	
Facility Representative Provided Notice (print) Jason Pansier	Signature/Date

Information for which confidential treatment is requested:

(Rev: 11/15/99)

ATTACHMENT 4: FIELD SAMPLING RESULTS

Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

April 25, 2013

Kimberly O'neil
SAIC
McLean/Enterprise Center
8301 Greensboro Drive
Mc Lean, VA 22102

RE: Project: 13DS02 LEDGEVIEW FARM
Pace Project No.: 4076523

Dear Kimberly O'neil:
Enclosed are the analytical results for sample(s) received by the laboratory on April 18, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Steven Mleczko

steve.mleczko@pacelabs.com
Project Manager

Enclosures

Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 13DS02 LEDGEVIEW FARM
Pace Project No.: 4076523

Green Bay Certification IDs
1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 11888
North Dakota Certification #: R-150
South Carolina Certification #: 83006001
US Dept of Agriculture #: S-76505
Wisconsin Certification #: 405132750

Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: 13DS02 LEDGEVIEW FARM
Pace Project No.: 4076523

Lab ID	Sample ID	Matrix	Date Collected	Date Received
4076523001	S02 SATELLITE 1	Water	04/18/13 11:46	04/18/13 14:35
4076523002	S03 SATELLITE 2	Water	04/18/13 11:56	04/18/13 14:35
4076523003	S04 MAIN 1	Water	04/18/13 12:40	04/18/13 14:35
4076523004	S05 MAIN 2	Water	04/18/13 12:48	04/18/13 14:35
4076523005	S06 MAIN 3	Water	04/18/13 13:08	04/18/13 14:35

Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE ANALYTE COUNT

Project: 13DS02 LEDGEVIEW FARM
Pace Project No.: 4076523

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
4076523001	S02 SATELLITE 1	SM 9222D	HKV	1	PASI-G
4076523002	S03 SATELLITE 2	SM 9222D	HKV	1	PASI-G
4076523003	S04 MAIN 1	SM 9222D	HKV	1	PASI-G
4076523004	S05 MAIN 2	SM 9222D	HKV	1	PASI-G
4076523005	S06 MAIN 3	SM 9222D	HKV	1	PASI-G

Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 13DS02 LEDGEVIEW FARM
Pace Project No.: 4076523

Sample: S02 SATELLITE 1 Lab ID: **4076523001** Collected: 04/18/13 11:46 Received: 04/18/13 14:35 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
9222D MICRO Fecal Coli by MF	Analytical Method: SM 9222D Preparation Method: SM 9222D								
Fecal Coliforms	**11500000**	CFU/100 mL	100000	100000	100000	04/25/13 12:39	04/18/13 17:50		

Sample: S03 SATELLITE 2 Lab ID: **4076523002** Collected: 04/18/13 11:56 Received: 04/18/13 14:35 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
9222D MICRO Fecal Coli by MF	Analytical Method: SM 9222D Preparation Method: SM 9222D								
Fecal Coliforms	**500000**	CFU/100 mL	100000	100000	100000	04/25/13 12:39	04/18/13 17:50		

Sample: S04 MAIN 1 Lab ID: **4076523003** Collected: 04/18/13 12:40 Received: 04/18/13 14:35 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
9222D MICRO Fecal Coli by MF	Analytical Method: SM 9222D Preparation Method: SM 9222D								
Fecal Coliforms	**14500000**	CFU/100 mL	90900	90900	90900	04/25/13 12:39	04/18/13 17:50		

Sample: S05 MAIN 2 Lab ID: **4076523004** Collected: 04/18/13 12:48 Received: 04/18/13 14:35 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
9222D MICRO Fecal Coli by MF	Analytical Method: SM 9222D Preparation Method: SM 9222D								
Fecal Coliforms	**1460000**	CFU/100 mL	9090	9090	9090	04/25/13 12:39	04/18/13 17:50		

Sample: S06 MAIN 3 Lab ID: **4076523005** Collected: 04/18/13 13:08 Received: 04/18/13 14:35 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
9222D MICRO Fecal Coli by MF	Analytical Method: SM 9222D Preparation Method: SM 9222D								
Fecal Coliforms	**2400000**	CFU/100 mL	100000	100000	100000	04/25/13 12:39	04/18/13 17:50		

Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 13DS02 LEDGEVIEW FARM
Pace Project No.: 4076523

QC Batch: MBIO/2817 Analysis Method: SM 9222D
QC Batch Method: SM 9222D Analysis Description: 9222D MICRO Fecal Coliform by MF
Associated Lab Samples: 4076523001, 4076523002, 4076523003, 4076523004, 4076523005

METHOD BLANK: 779725 Matrix: Water
Associated Lab Samples: 4076523001, 4076523002, 4076523003, 4076523004, 4076523005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fecal Coliforms	CFU/100 mL	<1	1.0	04/18/13 17:50	

SAMPLE DUPLICATE: 779726

Parameter	Units	4076523001 Result	Dup Result	RPD	Max RPD	Qualifiers
Fecal Coliforms	CFU/100 mL	11500000	13900000			

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: 13DS02 LEDGEVIEW FARM
Pace Project No.: 4076523

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-G Pace Analytical Services - Green Bay

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 13DS02 LEDGEVIEW FARM
Pace Project No.: 4076523

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
4076523001	S02 SATELLITE 1	SM 9222D	MBIO/2816	SM 9222D	MBIO/2817
4076523002	S03 SATELLITE 2	SM 9222D	MBIO/2816	SM 9222D	MBIO/2817
4076523003	S04 MAIN 1	SM 9222D	MBIO/2816	SM 9222D	MBIO/2817
4076523004	S05 MAIN 2	SM 9222D	MBIO/2816	SM 9222D	MBIO/2817
4076523005	S06 MAIN 3	SM 9222D	MBIO/2816	SM 9222D	MBIO/2817

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5 CHICAGO REGIONAL LABORATORY
536 SOUTH CLARK STREET
CHICAGO, ILLINOIS 60605

LABORATORY ACCREDITATION BUREAU
ACCREDITED ISO/IEC 17025
Certificate # L2230 Testing

Date: 5/6/2013

Subject: Review of Region 5 Data for Legdeview Farm

From: Colin Breslin, Chemist
Region 5 Chicago Regional Laboratory CB

To: Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604

The data being transmitted under this cover memo successfully passed CRL's internal data review procedures as documented in our current Quality Management Plan (QMP) and appropriate Standard Operating Procedures (SOPs). Please be aware that CRL does not perform data validation which is based on your data quality objectives. This function must be performed independently of the laboratory generating the data.

Results in this report represent only the samples analyzed.

Please have the U.S. EPA Project Manager/Officer call the CRL Sample Coordinator at (312) 353-0375 for any comments or questions.

Attached are Results for: Legdeview Farm

_____ / / _____
Data Management Coordinator and Date Received

Date Transmitted: ____/____/_____

Analyses included in this report:
BOD

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Legdeview Farm	
77 West Jackson Boulevard	Project Number: 13DS02	Reported:
Chicago IL, 60604	Project Manager: Don Schwer	May-06-13 12:25

ANALYSIS CASE NARRATIVE

Analyst Phone Number: (312) 886 - 2912

General Information

Six water samples were analyzed for 5 day biochemical oxygen demand (BOD5). Initial dissolved oxygen (DO) readings were taken on April 19, 2013 and final DO readings were taken on April 24, 2013. All holding times were met.

Sample Analysis and Results

The six samples were prepared and analyzed according to CRL SOP AIG006, Revision No: 4.0 (SM 5210B). For sample 1304017-01 (S01), the final dissolved oxygen (DO) readings did not result in valid final depletions of at least 2 mg/L DO below the initial DO values for all dilution levels analyzed. The sample result for 1304017-01 (S01) was reported as "U – not detected" at the reporting limit of 2 mg/L BOD5. Samples 1304017-02 (S02), 1304017-03 (S03), 1304017-04 (S04), 1304017-05 (S05), and 1304017-06 (S06) were flagged "J – The identification of the analyte is acceptable; the reported value is an estimate". See below under Quality Control for an explanation.

Quality Control

All quality control (QC) audits were within CRL limits, except as follows:

Laboratory Control Samples (LCS):
The glucose-glumatic acid (GGA) check standards were recovered at 71.8% and 63.9%, which were both below the lower control limit of 84.6%. Low recovery of the GGA check standard may indicate a weak seed solution or a degraded GGA solution. The observed seed strength was acceptable. Therefore, the low GGA recoveries were likely due to degradation in the GGA solutions used for analysis. Because the GGA recoveries were below the lower control limit the results for samples 1304017-02 (S02), 1304017-03 (S03), 1304017-04 (S04), 1304017-05 (S05), and 1304017-06 (S06) were flagged "J". This was the only impact expected for the overall dataset from this QC excursion.

CB 5/6/13
Colin Breslin, Chemist

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Legdeview Farm	
77 West Jackson Boulevard	Project Number: 13DS02	Reported:
Chicago IL, 60604	Project Manager: Don Schwer	May-06-13 12:25

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S01	1304017-01	Water	Apr-18-13 11:40	Apr-19-13 10:15
S02	1304017-02	Water	Apr-18-13 11:46	Apr-19-13 10:15
S03	1304017-03	Water	Apr-18-13 11:56	Apr-19-13 10:15
S04	1304017-04	Water	Apr-18-13 12:40	Apr-19-13 10:15
S05	1304017-05	Water	Apr-18-13 12:48	Apr-19-13 10:15
S06	1304017-06	Water	Apr-18-13 13:08	Apr-19-13 10:15

CB 5/6/13
Colin Breslin, Chemist

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Legdeview Farm	
77 West Jackson Boulevard	Project Number: 13DS02	Reported:
Chicago IL, 60604	Project Manager: Don Schwer	May-06-13 12:25

BOD, 5 day, SM 5210 B (modified)

US EPA Region 5 Chicago Regional Laboratory

S01 (1304017-01) Water Sampled: Apr-18-13 11:40 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Biochemical Oxygen Demand	U			2.0	mg/L	1	B304064	Apr-19-13	Apr-19-13

S02 (1304017-02) Water Sampled: Apr-18-13 11:46 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Biochemical Oxygen Demand	2700	J		2.0	mg/L	1	B304064	Apr-19-13	Apr-19-13

S03 (1304017-03) Water Sampled: Apr-18-13 11:56 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Biochemical Oxygen Demand	1700	J		2.0	mg/L	1	B304064	Apr-19-13	Apr-19-13

S04 (1304017-04) Water Sampled: Apr-18-13 12:40 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Biochemical Oxygen Demand	5400	J		2.0	mg/L	1	B304064	Apr-19-13	Apr-19-13

S05 (1304017-05) Water Sampled: Apr-18-13 12:48 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Biochemical Oxygen Demand	940	J		2.0	mg/L	1	B304064	Apr-19-13	Apr-19-13

S06 (1304017-06) Water Sampled: Apr-18-13 13:08 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Biochemical Oxygen Demand	400	J		2.0	mg/L	1	B304064	Apr-19-13	Apr-19-13

CB 5/6/13
Colin Breslin, Chemist

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5 77 West Jackson Boulevard Chicago IL, 60604	Project: Legdeview Farm Project Number: 13DS02 Project Manager: Don Schwer	Reported: May-06-13 12:25

Notes and Definitions

J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Not Detected
NR	Not Reported

CB 5/6/13
Colin Breslin, Chemist

Items for Project Manager Review

LabNumber	Analysis	Analyte	Exception
			Default Report (not modified)
			VERSION 6.11:2005
	BOD	(Water)	Special Units: (mg/L)
B304064-BS1	BOD	Biochemical Oxygen Demand	Exceeds lower control limit
B304064-BS2	BOD	Biochemical Oxygen Demand	Exceeds lower control limit

CB 5/6/13

Sample, Log and Extraction Comments

1304017-01
BOD

pH = 5
pH = 5

1304017-02
BOD

pH = 6
pH = 6

1304017-03
BOD

pH = 7
pH = 7

1304017-04
BOD

pH = 8
pH = 8

1304017-05
BOD

pH = 8
pH = 8

1304017-06
BOD

pH = 7
pH = 7

CB 5/6/13

CB 5/6/13

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5 CHICAGO REGIONAL LABORATORY
536 SOUTH CLARK STREET
CHICAGO, ILLINOIS 60605

LABORATORY ACCREDITATION BUREAU
ACCREDITED ISO/IEC 17025
Certificate # L2230 Testing

Date: 5/6/2013

Subject: Review of Region 5 Data for Legdeview Farm

From: Colin Breslin, Chemist
Region 5 Chicago Regional Laboratory CB

To: Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604

The data being transmitted under this cover memo successfully passed CRL's internal data review procedures as documented in our current Quality Management Plan (QMP) and appropriate Standard Operating Procedures (SOPs). Please be aware that CRL does not perform data validation which is based on your data quality objectives. This function must be performed independently of the laboratory generating the data.

Results in this report represent only the samples analyzed.

Please have the U.S. EPA Project Manager/Officer call the CRL Sample Coordinator at (312) 353-0375 for any comments or questions.

Attached are Results for: Legdeview Farm

_____ / /
Data Management Coordinator and Date Received

Date Transmitted: ____/____/_____

Analyses included in this report:

Solids, TDS Solids, TSS

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5 77 West Jackson Boulevard Chicago IL, 60604	Project: Legdeview Farm Project Number: 13DS02 Project Manager: Don Schwer	Reported: May-06-13 13:23

ANALYSIS CASE NARRATIVE

Analyst Phone Number: (312) 886 - 2912

General Information

Six water samples were analyzed for total dissolved solids (TDS) on April 23, 2013. All holding times were met.

Note: All supporting data are archived with Work Order 1304016.

Sample Analysis and Results

The six samples for TDS were prepared and analyzed according to CRL SOP AIG017 Revision No: 4.6 (SM 2540 C). The results for samples 1304017-04 (S04) and 1304017-05 (S05) were flagged as "J – The identification of the analyte is acceptable; the reported value is an estimate". See below under Quality Control for an explanation.

Quality Control

All quality control (QC) audits were within CRL limits, except as follows:

Constant Drying Weight:
Samples 1304017-04 (S04) and 1304017-05 (S05) did not reach a constant dried weight of less than a difference of 0.5 mg after three consecutive drying cycles. The samples likely did not reach a constant weight because of the complex sample matrix, and were flagged "J". These were the only samples significantly impacted from this QC excursion.

General Information

Six water samples were analyzed for total suspended solids (TSS) on April 23, 2013. All holding times were met.

Note: All supporting data are archived with Work Order 1304016.

Sample Analysis and Results

The samples for TSS were prepared and analyzed according to CRL SOP AIG018 Revision No: 3.6 (SM 2540 D).

CB 5/6/13
Colin Breslin, Chemist

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Legdeview Farm	
77 West Jackson Boulevard	Project Number: 13DS02	Reported:
Chicago IL, 60604	Project Manager: Don Schwer	May-06-13 13:23

Quality Control

All quality control (QC) audits were within CRL limits.

CB 5/6/13
Colin Breslin, Chemist

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5 77 West Jackson Boulevard Chicago IL, 60604	Project: Legdeview Farm Project Number: 13DS02 Project Manager: Don Schwer	Reported: May-06-13 13:23

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S01	1304017-01	Water	Apr-18-13 11:40	Apr-19-13 10:15
S02	1304017-02	Water	Apr-18-13 11:46	Apr-19-13 10:15
S03	1304017-03	Water	Apr-18-13 11:56	Apr-19-13 10:15
S04	1304017-04	Water	Apr-18-13 12:40	Apr-19-13 10:15
S05	1304017-05	Water	Apr-18-13 12:48	Apr-19-13 10:15
S06	1304017-06	Water	Apr-18-13 13:08	Apr-19-13 10:15

CB 5/6/13
Colin Breslin, Chemist

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Legdeview Farm	
77 West Jackson Boulevard	Project Number: 13DS02	Reported:
Chicago IL, 60604	Project Manager: Don Schwer	May-06-13 13:23

Dissolved Solids, SM 2540C (modified)
US EPA Region 5 Chicago Regional Laboratory

S01 (1304017-01) Water Sampled: Apr-18-13 11:40 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Dissolved Solids	U			20	mg/L	1	B304065	Apr-23-13	Apr-23-13

S02 (1304017-02) Water Sampled: Apr-18-13 11:46 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Dissolved Solids	4450			20	mg/L	1	B304065	Apr-23-13	Apr-23-13

S03 (1304017-03) Water Sampled: Apr-18-13 11:56 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Dissolved Solids	2230			20	mg/L	1	B304065	Apr-23-13	Apr-23-13

S04 (1304017-04) Water Sampled: Apr-18-13 12:40 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Dissolved Solids	7710	J		20	mg/L	1	B304065	Apr-23-13	Apr-23-13

S05 (1304017-05) Water Sampled: Apr-18-13 12:48 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Dissolved Solids	2520	J		20	mg/L	1	B304065	Apr-23-13	Apr-23-13

S06 (1304017-06) Water Sampled: Apr-18-13 13:08 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Dissolved Solids	1420			20	mg/L	1	B304065	Apr-23-13	Apr-23-13

CB 5/6/13
Colin Breslin, Chemist

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5 77 West Jackson Boulevard Chicago IL, 60604	Project: Legdeview Farm Project Number: 13DS02 Project Manager: Don Schwer	Reported: May-06-13 13:23

Total Suspended Solids, SM 2540 D (modified)
US EPA Region 5 Chicago Regional Laboratory

S01 (1304017-01) Water Sampled: Apr-18-13 11:40 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Suspended Solids	U			5	mg/L	1	B304066	Apr-23-13	Apr-23-13

S02 (1304017-02) Water Sampled: Apr-18-13 11:46 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Suspended Solids	2930			5	mg/L	1	B304066	Apr-23-13	Apr-23-13

S03 (1304017-03) Water Sampled: Apr-18-13 11:56 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Suspended Solids	204			5	mg/L	1	B304066	Apr-23-13	Apr-23-13

S04 (1304017-04) Water Sampled: Apr-18-13 12:40 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Suspended Solids	3100			5	mg/L	1	B304066	Apr-23-13	Apr-23-13

S05 (1304017-05) Water Sampled: Apr-18-13 12:48 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Suspended Solids	180			5	mg/L	1	B304066	Apr-23-13	Apr-23-13

S06 (1304017-06) Water Sampled: Apr-18-13 13:08 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Suspended Solids	2060			5	mg/L	1	B304066	Apr-23-13	Apr-23-13

CB 5/6/13
Colin Breslin, Chemist

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Legdeview Farm	
77 West Jackson Boulevard	Project Number: 13DS02	Reported:
Chicago IL, 60604	Project Manager: Don Schwer	May-06-13 13:23

Notes and Definitions

J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Not Detected
NR	Not Reported

CB 5/6/13

Colin Breslin, Chemist

Items for Project Manager Review

LabNumber	Analysis	Analyte	Exception
			Default Report (not modified)
			VERSION 6.11:2005
	Solids, TDS	(Water)	Special Units: (mg/L)
	Solids, TSS	(Water)	Special Units: (mg/L)
B304066-DUP1	Solids, TSS	Total Suspended Solids	Exceeds RPD control limit

CB 5/6/13

Sample, Log and Extraction Comments

1304017-01	
Solids, TDS	
	pH = 5
	pH = 5
Solids, TSS	
	pH = 5
	pH = 5
1304017-02	
Solids, TDS	
	pH = 6
	pH = 6
Solids, TSS	
	pH = 6
	pH = 6
1304017-03	
Solids, TDS	
	pH = 7
	pH = 7
Solids, TSS	
	pH = 7
	pH = 7
1304017-04	
Solids, TDS	
	pH = 8
	pH = 8
Solids, TSS	
	pH = 8
	pH = 8
1304017-05	
Solids, TDS	
	pH = 8
	pH = 8
Solids, TSS	
	pH = 8
	pH = 8
1304017-06	
Solids, TDS	
	pH = 7
	pH = 7
Solids, TSS	
	pH = 7
	pH = 7

CB 5/6/13

CB 5/6/13

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CHICAGO REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

LABORATORY ACCREDITATION BUREAU
ACCREDITED ISO/IEC 17025
Certificate # L2280 Testing

Date: 5/16/2013

Subject: Review of Region 5 Data for Legdeview Farm

From: Anna Aleszczyk, Chemist
Region 5 Chicago Regional Laboratory

To: Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604

The data being transmitted under this cover memo successfully passed CRL's internal data review procedures as documented in our current Quality Management Plan (QMP) and appropriate Standard Operating Procedures (SOPs). Please be aware that CRL does not perform data validation which is based on your data quality objectives. This function must be performed independently of the laboratory generating the data.

Results in this report represent only the samples analyzed.

Please have the U.S. EPA Project Manager/Officer call the CRL Sample Coordinator at (312) 353-0375 for any comments or questions.

Attached are Results for: Legdeview Farm

_____ / /

Data Management Coordinator and Date Received

Date Transmitted: ____/____/_____

Analyses included in this report:

Ammonia N DA, Distilled

Nitrate-Nitrite N DA

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Legdeview Farm	
77 West Jackson Boulevard	Project Number: 13DS02	Reported:
Chicago IL, 60604	Project Manager: Don Schwer	May-16-13 12:54

ANALYSIS CASE NARRATIVE – Distilled Ammonia Nitrogen in Water

Work order #: 1304017
Phone #: (312) 353-9467

General Information
Six water samples were prepared and analyzed for Ammonia Nitrogen on May 7 – 8, 2013. All holding times were met.

NOTE: All supporting data are archived with work order number 1304016.

Sample Analysis and Results
The samples were prepared and analyzed for Ammonia Nitrogen in water using CRL SOP AIG029A, Revision # 2.0 (Reference Method, EPA 350.1). The samples were stored in the refrigerator at all times, except when in use.

Quality Control
All quality control audits were within CRL limits.

ANALYSIS CASE NARRATIVE – Nitrate-Nitrite Nitrogen in Water

Work order #: 1304017
Phone #: (312) 353-9467

General Information
Six water samples were analyzed for Nitrate-Nitrite Nitrogen on May 14, 2013. All holding times were met.

Note: All supporting data are archived with work order number 1304016.

Sample Analysis and Results
The samples were analyzed for Nitrate-Nitrite Nitrogen in water using CRL SOP AIG031A, Revision #1.0 (Standard Method 4500 – NO3- E). The samples were stored in the refrigerator at all times except when in use. Samples 1304017 -02 (S02), -03 (S03), -04 (S04), -05 (S05), and -06 (S06) were centrifuged prior to analysis to remove particulates.

AA 5-16-13
Anna Aleszczyk, Chemist

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Legdeview Farm	
77 West Jackson Boulevard	Project Number: 13DS02	Reported:
Chicago IL, 60604	Project Manager: Don Schwer	May-16-13 12:54

Quality Control
All quality control audits were within CRL limits.

AA 5-16-13
Anna Aleszczyk, Chemist

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5 77 West Jackson Boulevard Chicago IL, 60604	Project: Legdeview Farm Project Number: 13DS02 Project Manager: Don Schwer	Reported: May-16-13 12:54

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S01	1304017-01	Water	Apr-18-13 11:40	Apr-19-13 10:15
S02	1304017-02	Water	Apr-18-13 11:46	Apr-19-13 10:15
S03	1304017-03	Water	Apr-18-13 11:56	Apr-19-13 10:15
S04	1304017-04	Water	Apr-18-13 12:40	Apr-19-13 10:15
S05	1304017-05	Water	Apr-18-13 12:48	Apr-19-13 10:15
S06	1304017-06	Water	Apr-18-13 13:08	Apr-19-13 10:15

AA 5-16-13
Anna Aleszczyk, Chemist

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Legdeview Farm	
77 West Jackson Boulevard	Project Number: 13DS02	Reported:
Chicago IL, 60604	Project Manager: Don Schwer	May-16-13 12:54

Ammonia Nitrogen, Colorimetric, EPA 350.1 (modified)
US EPA Region 5 Chicago Regional Laboratory

S01 (1304017-01) Water Sampled: Apr-18-13 11:40 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Ammonia as N	0.03	J	0.03	0.10	mg/L	1	B305038	May-07-13	May-08-13

S02 (1304017-02) Water Sampled: Apr-18-13 11:46 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Ammonia as N	93.3		3.00	10.0	mg/L	100	B305038	May-07-13	May-08-13

S03 (1304017-03) Water Sampled: Apr-18-13 11:56 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Ammonia as N	43.2		0.30	1.00	mg/L	10	B305038	May-07-13	May-08-13

S04 (1304017-04) Water Sampled: Apr-18-13 12:40 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Ammonia as N	459		15.0	50.0	mg/L	500	B305038	May-07-13	May-08-13

S05 (1304017-05) Water Sampled: Apr-18-13 12:48 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Ammonia as N	130		3.00	10.0	mg/L	100	B305038	May-07-13	May-08-13

S06 (1304017-06) Water Sampled: Apr-18-13 13:08 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Ammonia as N	35.5		0.30	1.00	mg/L	10	B305038	May-07-13	May-08-13

AA 5-16-13
Anna Aleszczyk, Chemist

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Legdeview Farm	
77 West Jackson Boulevard	Project Number: 13DS02	Reported:
Chicago IL, 60604	Project Manager: Don Schwer	May-16-13 12:54

Nitrate - Nitrite Nitrogen, SM 4500E (modified)

US EPA Region 5 Chicago Regional Laboratory

S01 (1304017-01) Water Sampled: Apr-18-13 11:40 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	0.07	J	0.07	0.25	mg/L	1	B305051	May-13-13	May-14-13

S02 (1304017-02) Water Sampled: Apr-18-13 11:46 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	U	U	0.07	0.25	mg/L	1	B305051	May-13-13	May-14-13

S03 (1304017-03) Water Sampled: Apr-18-13 11:56 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	U	U	0.07	0.25	mg/L	1	B305051	May-13-13	May-14-13

S04 (1304017-04) Water Sampled: Apr-18-13 12:40 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	0.78	J	0.70	2.50	mg/L	10	B305051	May-13-13	May-14-13

S05 (1304017-05) Water Sampled: Apr-18-13 12:48 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	0.75	J	0.35	1.25	mg/L	5	B305051	May-13-13	May-14-13

S06 (1304017-06) Water Sampled: Apr-18-13 13:08 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	U	U	0.07	0.25	mg/L	1	B305051	May-13-13	May-14-13

AA 5-16-13
Anna Aleszczyk, Chemist

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5 77 West Jackson Boulevard Chicago IL, 60604	Project: Legdeview Farm Project Number: 13DS02 Project Manager: Don Schwer	Reported: May-16-13 12:54

Notes and Definitions

J	The identification of the analyte is acceptable; the reported value is an estimate.
*	This Quality Control measure meets the requirements of the CRL SOP for this analyte.
U	Not Detected
NR	Not Reported

AA 5-16-13

Anna Aleszczyk, Chemist

Items for Project Manager Review

LabNumber	Analysis	Analyte	Exception
			Default Report (not modified)
			VERSION 6.11:2005
	Ammonia N DA, Distilled	(Water)	J-Flags used
	Ammonia N DA, Distilled	(Water)	Result calculations based on MDL
	Ammonia N DA, Distilled	(Water)	Special Units: (mg/L)
	Nitrate-Nitrite N DA	(Water)	J-Flags used
	Nitrate-Nitrite N DA	(Water)	Result calculations based on MDL
	Nitrate-Nitrite N DA	(Water)	Special Units: (mg/L)
	Nitrate-Nitrite N DA	(Water)	U-Flags used
B305038-BLK1	Ammonia N DA, Distilled	Ammonia as N	*: This Quality Control measure meets the requirements of the CRL SOP for this analyte.
B305038-BLK1	Ammonia N DA, Distilled	Ammonia as N	Blank >1 x MDL

Sample, Log and Extraction Comments

1304017-01	
Ammonia N DA, Distilled	
	pH = 1
	pH = 1
Nitrate-Nitrite N DA	
	pH = 1
	pH = 1
1304017-02	
Ammonia N DA, Distilled	
	pH = 1
	pH = 1, Initial = 5 mL
Nitrate-Nitrite N DA	
	pH = 1
	pH = 1
1304017-03	
Ammonia N DA, Distilled	
	pH = 1
	pH = 1
Nitrate-Nitrite N DA	
	pH = 1
	pH = 1
1304017-04	
Ammonia N DA, Distilled	
	pH = 1
	pH = 1, Initial = 1 mL
Nitrate-Nitrite N DA	
	pH = 1
	pH = 1
1304017-05	
Ammonia N DA, Distilled	
	pH = 1
	pH = 1, Initial = 5 mL
Nitrate-Nitrite N DA	
	pH = 1
	pH = 1
1304017-06	
Ammonia N DA, Distilled	
	pH = 1
	pH = 1, Initial = 5 mL
Nitrate-Nitrite N DA	
	pH = 1
	pH = 1

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CHICAGO REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

LABORATORY ACCREDITATION BUREAU
ACCREDITED ISO/IEC 17025
Certificate # L2220 Testing

Date: 6/5/2013

Subject: Review of Region 5 Data for Legdeview Farm

From: Nidia Fuentes, Analyst
Region 5 Chicago Regional Laboratory

To: Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604

The data being transmitted under this cover memo successfully passed CRL's internal data review procedures as documented in our current Quality Management Plan (QMP) and appropriate Standard Operating Procedures (SOPs). Please be aware that CRL does not perform data validation which is based on your data quality objectives. This function must be performed independently of the laboratory generating the data.

Results in this report represent only the samples analyzed.

Please have the U.S. EPA Project Manager/Officer call the CRL Sample Coordinator at (312) 353-0375 for any comments or questions.

Attached are Results for: Legdeview Farm

_____ / / _____

Data Management Coordinator and Date Received

Date Transmitted: ____/____/_____

Analyses included in this report:

TKN DA Total Phosphorus DA

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Legdeview Farm	
77 West Jackson Boulevard	Project Number: 13DS02	Reported:
Chicago IL, 60604	Project Manager: Don Schwer	Jun-05-13 09:53

ANALYSIS CASE NARRATIVE

312-353-9079

General Information

Total of six samples to be analyzed for Total Phosphorus (TP) were received at the Chicago Regional Laboratory on April 19, 2013.

Supportive data such as instrument raw data, reagents preparation sheet and miscellaneous items are filed with work order 1304016.

Sample Analysis and Results

The samples for TP were digested and analyzed using CRL SOP AIG034A, Revision # 3.7, (EPA method 365.4.)

Quality Control

All quality control audits were within the CRL's limits, with the exception of sample matrix spike (MS).

Sample 1304017-03 (S03) DUP and MS required additional dilution. MS sample had no recovery (limits of 60% to 126%) due to spike been diluted out. No flagged will be apply.

ANALYSIS CASE NARRATIVE
312-353-9079

General Information

A total of six water samples to be analyzed for Total Kjeldahl Nitrogen (TKN) were received at the Chicago Regional Laboratory on April 19, 2013. All holding times were met, with the exception of sample 1304017-03 (S03).

Supportive data such as instrument raw data, reagents preparation sheet and miscellaneous items are filed with work order 1304016.

Nidia Fuentes, Analyst

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Legdeview Farm	
77 West Jackson Boulevard	Project Number: 13DS02	Reported:
Chicago IL, 60604	Project Manager: Don Schwer	Jun-05-13 09:53

Sample Analysis and Results

The water samples were digested and analyzed using AIG035A, revision 3.0 (Standard method 351.2).

The RPD (148%) for sample 1304017-03 (S03) analyzed on May 6, 2013 was above the acceptance criteria (RPD ≤ 14%). The sample, DUP and MS were re- analyzed on May 16, 2013. The data was inconsistent with the results from May 6, 2013. The sample, DUP and MS were re digested and analyzed again passed the holding time. This data was comparable with the first results and all the QC (DUP and MS) data passed. The final data will be reported out and the sample is flagged 'J' as estimated for exceeding hold time.

Quality Control

All quality control audits were within the CRL limits.

Nidia Fuentes, Analyst

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5 77 West Jackson Boulevard Chicago IL, 60604	Project: Legdeview Farm Project Number: 13DS02 Project Manager: Don Schwer	Reported: Jun-05-13 09:53

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S01	1304017-01	Water	Apr-18-13 11:40	Apr-19-13 10:15
S02	1304017-02	Water	Apr-18-13 11:46	Apr-19-13 10:15
S03	1304017-03	Water	Apr-18-13 11:56	Apr-19-13 10:15
S04	1304017-04	Water	Apr-18-13 12:40	Apr-19-13 10:15
S05	1304017-05	Water	Apr-18-13 12:48	Apr-19-13 10:15
S06	1304017-06	Water	Apr-18-13 13:08	Apr-19-13 10:15

Nidia Fuentes, Analyst

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Legdeview Farm	
77 West Jackson Boulevard	Project Number: 13DS02	Reported:
Chicago IL, 60604	Project Manager: Don Schwer	Jun-05-13 09:53

Phosphorus, Colorimetric, EPA 365.4 (modified)
US EPA Region 5 Chicago Regional Laboratory

S01 (1304017-01) Water Sampled: Apr-18-13 11:40 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Phosphorus	U		0.06	0.15	mg/L	1	B305035	May-03-13	May-06-13

S02 (1304017-02) Water Sampled: Apr-18-13 11:46 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Phosphorus	134		4.80	12.0	mg/L	80	B305035	May-03-13	May-07-13

S03 (1304017-03) Water Sampled: Apr-18-13 11:56 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Phosphorus	27.0		0.60	1.50	mg/L	10	B305035	May-03-13	May-06-13

S04 (1304017-04) Water Sampled: Apr-18-13 12:40 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Phosphorus	135		3.00	7.50	mg/L	50	B305035	May-03-13	May-06-13

S05 (1304017-05) Water Sampled: Apr-18-13 12:48 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Phosphorus	47.1		1.20	3.00	mg/L	20	B305035	May-03-13	May-06-13

S06 (1304017-06) Water Sampled: Apr-18-13 13:08 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Phosphorus	27.2		1.20	3.00	mg/L	20	B305035	May-03-13	May-06-13

Nidia Fuentes, Analyst

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Legdeview Farm	
77 West Jackson Boulevard	Project Number: 13DS02	Reported:
Chicago IL, 60604	Project Manager: Don Schwer	Jun-05-13 09:53

Total Kjeldahl Nitrogen, EPA 351.2 (modified)

US EPA Region 5 Chicago Regional Laboratory

S01 (1304017-01) Water Sampled: Apr-18-13 11:40 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Kjeldahl Nitrogen	0.77		0.30	0.50	mg/L	1	B305035	May-03-13	May-06-13

S02 (1304017-02) Water Sampled: Apr-18-13 11:46 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Kjeldahl Nitrogen	12.9	J	12.0	20.0	mg/L	40	B305035	May-03-13	May-06-13

S03 (1304017-03) Water Sampled: Apr-18-13 11:56 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Kjeldahl Nitrogen	113	J	2.40	4.00	mg/L	8	B305067	May-28-13	May-29-13

S04 (1304017-04) Water Sampled: Apr-18-13 12:40 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Kjeldahl Nitrogen	1180		30.0	50.0	mg/L	100	B305035	May-03-13	May-06-13

S05 (1304017-05) Water Sampled: Apr-18-13 12:48 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Kjeldahl Nitrogen	222		12.0	20.0	mg/L	40	B305035	May-03-13	May-06-13

S06 (1304017-06) Water Sampled: Apr-18-13 13:08 Received: Apr-19-13 10:15

Analyte	Result	Flags / Qualifiers	MDL	Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Kjeldahl Nitrogen	96.6		12.0	20.0	mg/L	40	B305035	May-03-13	May-06-13

Nidia Fuentes, Analyst

Environmental Protection Agency Region 5
Chicago Regional Laboratory
536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Legdeview Farm	
77 West Jackson Boulevard	Project Number: 13DS02	Reported:
Chicago IL, 60604	Project Manager: Don Schwer	Jun-05-13 09:53

Notes and Definitions

J	The identification of the analyte is acceptable; the reported value is an estimate.
*	This Quality Control measure meets the requirements of the CRL SOP for this analyte.
U	Not Detected
NR	Not Reported

Nidia Fuentes, Analyst

Items for Project Manager Review

LabNumber	Analysis	Analyte	Exception
			Default Report (not modified)
			VERSION 6.11.2005
	TKN DA	(Water)	J-Flags used
	TKN DA	(Water)	Result calculations based on MDL
	TKN DA	(Water)	RPD calculations based on %Recovery
	TKN DA	(Water)	Special Units: (mg/L)
	Total Phosphorus DA	(Water)	J-Flags used
	Total Phosphorus DA	(Water)	Result calculations based on MDL
	Total Phosphorus DA	(Water)	RPD calculations based on %Recovery
	Total Phosphorus DA	(Water)	Special Units: (mg/L)
1304017-03	TKN DA		Sampled->Prepared > 28.00 days
B305035-BLK2	TKN DA	Total Kjeldahl Nitrogen	*: This Quality Control measure meets the requirements of the CRL SOP for this analyte.
B305035-BLK2	TKN DA	Total Kjeldahl Nitrogen	Blank >1 x MDL
B305035-MS2	TKN DA	Total Kjeldahl Nitrogen	Exceeds lower control limit
B305035-MS3	Total Phosphorus DA	Total Phosphorus	Exceeds lower control limit

Sample, Log and Extraction Comments

1304017-01	
TKN DA	pH = 1
	pH = 1
Total Phosphorus DA	pH = 1
	pH = 1
1304017-02	
TKN DA	pH = 1
	pH = 1, Initial=5ml
Total Phosphorus DA	pH = 1
	pH = 1, Initial=5ml
1304017-03	
TKN DA	pH = 1
	pH = 1, Initial=5ml
Total Phosphorus DA	pH = 1
	pH = 1
1304017-04	
TKN DA	pH = 1
	pH = 1, Initial=2ml
Total Phosphorus DA	pH = 1
	pH = 1, Initial=2ml
1304017-05	
TKN DA	pH = 1
	pH = 1, Initial=5ml
Total Phosphorus DA	pH = 1
	pH = 1, Initial=5ml
1304017-06	
TKN DA	pH = 1
	pH = 1, Initial=5ml
Total Phosphorus DA	pH = 1
	pH = 1, Initial=5ml

Land & Water Conservation Department

Brown County

1150 BELLEVUE ST.
GREEN BAY, WI 54302

JIM JOLLY

PHONE (920) 391-4620 FAX (920) 391-4617 WEB: www.co.brown.wi.us

COUNTY CONSERVATIONIST

DAVID WETENKAMP

PHONE (920) 391-4639 FAX (920) 391-4617 EMAIL: wetenkamp_dl@co.brown.wi.us

ENGR TECHNICIAN

10/15/13

This letter is in response to the Order for Compliance (Docket No. V-W-13-AO-22) received from the U.S. Environmental Protection Agency on behalf of Ledgeview Farms, LLC. Brown County was notified by Jason Pansier of the site investigation and order. A site visit and meeting was conducted on 10-08-2013 with Roy and Jason Pansier discussing the details of the order and the corrective measures needed. Roy and Jason Pansier have requested Brown County LWCD respond to the EPA with the information discussed, planned actions and generate any needed drawings, plans or documents needed for compliance requirements. Please respond if any other information is needed.

The following items are attached or are addressed in this document:

1. EPA Forms 1 & 2
2. Emergency Response Plan
3. Upper Farm Planning Map – Runoff controls implementation
4. Lower Farm Planning Map – Runoff controls implementation
5. Site Plan View WSF - NRCS 313 (Proposed plan)
6. Nutrient Management Planning/Plans are being developed by Kevin Beckard of AgSource. He will be contacting EPA and WDNR to submit documents. Email: kbeckard@agsource.com
7. WDNR – NPDES/WPDES Permit will be handled by Jay Schiefelbein, Jeremiah.Schiefelbein@wisconsin.gov (920) 662-5407. He has been contacted by EPA, Brown County LWCD and is working on setting up meetings for permit procedures.

Ledgeview Farms has already implemented interim control of runoff occurring from the upper and lower farms by ramping up cleaning operations and removing cattle off of the concrete feedlots and earthen pasture/exercise lots. Currently a 120' x 800' modern design freestall barn is being built on the upper farm to relocate and confine all milking, dry and large heifers under roof with no outside access. The existing earthen lots will be allowed to grow up with native vegetation and the areas that can be farmed will be tilled and crops planted. The gully erosion that is occurring will be addressed with designs and technical assistance from Brown County.

1. Lot A – Upper Farm Map
   This multiple use concrete area has several feeding and loafing areas. The animals have been removed and locked off of this area and are confined in the existing and new freestall barns. The doorways in the existing barns are going to be gated and 4"- 6" concrete speed bumps installed to eliminate any seepage out of the barn alleys between cleaning operations. Future use of the concrete lot will be for minimal cattle traffic if shuttling animals between barns.
2. Lot B – Upper Farm Map
   This small heifer/calf yard will be blocked with hay bales to reduce seepages and solids runoff for interim measures. Long term plans are to install a buffer area or roof the concrete area for total confinement.
3. Lot C – Upper Farm Map
   This area was a mixed pasture and earthen exercise lot. The animals have been removed and confined in existing farm buildings. This area will no longer be used by cattle and they will be confined. The areas that can be farmed in this area are going to be tilled and crops planted, while the remainder will be allowed to re-vegetate with natives. Gully erosion will be addressed by NRCS approved designs. Brown County LWCD will consult and give technical assistance to Ledgeview Farms through the process.

4. Lot D – Lower Farm Map
   A 4895 sq.ft. concrete area discharges feedlot runoff out of an access gate located on the southeast side of the lot, which eventually drains to the road ditch along County Rd V. Plans are to close off this area with a concrete wall to contain the runoff until it can be removed or confine animals from using this area. The

interim measure is to place straw bales in front of the opening reducing seepage and to hold back manure solids.

Leachate controls will need to be implemented on upper and lower farms. Site topographic surveys are scheduled for the lower farm for engineering designs meeting NRCS Standard 629. It was discussed that the single bunker located at the upper farm may be abandoned or to restrict use to dry hay only reducing/eliminating leachate issues. The outside walls will be backfilled with clay 3 feet high, top soiled and seeded to prevent seepage losses from the bunker walls and wall/slab interface. See attached planning map for locations.

1. Bunker A - Upper Farm Map
2. Bunker B – Lower Farm Map

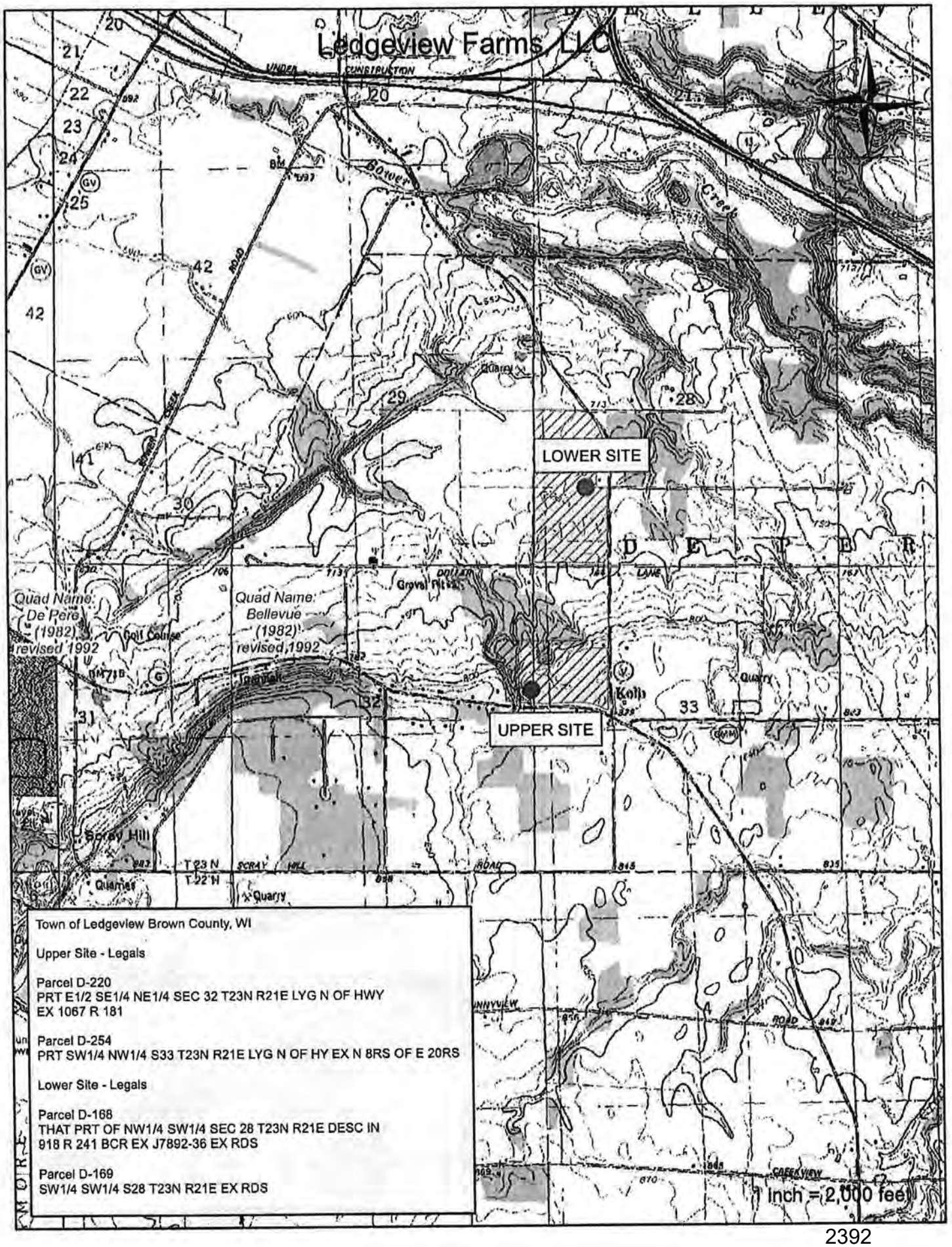
A waste storage facility/site has been surveyed, designed and drafted by Brown County for a 5-6 million gallon earthen clay lined structure meeting NRCS Standard 313. The structures bottom is planned to be lined with a reinforced concrete slab and ramp for manure management. Attached is a plan view of the proposed structure.

Please review and contact me at your convenience if you have any questions, concerns or any further requests for information regarding compliance requirements to the order.

David Wetenkamp

Brown County Land & Water Conservation Department
1150 Bellevue St.
Green Bay, WI 54302

(920) 391-4639
wetenkamp_dl@co.brown.wi.us


Ledgeview Farms, LLC
LOWER SITE
UPPER SITE
Quad Name:
De Pere
(1982)
revised 1992
Quad Name:
Bellevue
(1982)
revised 1992
Town of Ledgeview Brown County, WI
Upper Site - Legals
Parcel D-220
PRT E1/2 SE1/4 NE1/4 SEC 32 T23N R21E LYG N OF HWY
EX 1067 R 181
Parcel D-254
PRT SW1/4 NW1/4 S33 T23N R21E LYG N OF HY EX N 8RS OF E 20RS
Lower Site - Legals
Parcel D-168
THAT PRT OF NW1/4 SW1/4 SEC 28 T23N R21E DESC IN
918 R 241 BCR EX J7892-36 EX RDS
Parcel D-169
SW1/4 SW1/4 S28 T23N R21E EX RDS
1 inch = 2,000 feet

Please print or type in the unshaded areas only.

Form Approved. OMB No. 2040-0086.

FORM 1 GENERAL

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY
GENERAL INFORMATION
Consolidated Permits Program
(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER

F	110055240822		T/A	D

LABEL ITEMS

I. EPA I.D. NUMBER
III. FACILITY NAME
V. FACILITY MAILING ADDRESS
VI. FACILITY LOCATION

PLEASE PLACE LABEL IN THIS SPACE

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent *(the area to the left of the label space lists the information that should appear)*, please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI *(except VI-B which must be completed regardless)*. Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of **bold-faced terms**.

SPECIFIC QUESTIONS	Mark "X" YES	NO	FORM ATTACHED
A. Is this facility a **publicly owned treatment works** which results in a **discharge** to **waters of the U.S.**? (FORM 2A)		X	
B. Does or will this facility *(either existing or proposed)* include a **concentrated animal feeding operation** or **aquatic animal production facility** which results in a **discharge to waters of the U.S.**? (FORM 2B)	X		
C. Is this a facility which currently results in **discharges** to **waters of the U.S.** other than those described in A or B above? (FORM 2C)		X	
D. Is this a proposed facility *(other than those described in A or B above)* which will result in a **discharge** to **waters of the U.S.**? (FORM 2D)		X	
E. Does or will this facility treat, store, or dispose of **hazardous wastes**? (FORM 3)		X	
F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X	
H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
I. Is this facility a proposed **stationary source** which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	
J. Is this facility a proposed **stationary source** which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an **attainment area**? (FORM 5)		X	

III. NAME OF FACILITY

1 SKIP: Ledgeview Farms, LLC

IV. FACILITY CONTACT

A. NAME & TITLE *(last, first, & title)*	B. PHONE *(area code & no.)*
2 Roy, Joan, Glen & Jason Pansier (owners)	(920) 655-1344

V. FACILTY MAILING ADDRESS

A. STREET OR P.O. BOX: 3 3870 Dickinson Rd

B. CITY OR TOWN	C. STATE	D. ZIP CODE
4 De Pere	WI	54115

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER: 5 3875 Dickinson Rd

B. COUNTY NAME: Brown

C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE *(if known)*
6 De Pere	WI	54115	

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

VII. SIC CODES *(4-digit, in order of priority)*

A. FIRST	B. SECOND
0241 *(specify)*	*(specify)*

C. THIRD	D. FOURTH
(specify)	*(specify)*

VIII. OPERATOR INFORMATION

A. NAME

Roy, Joan, Glen & Jason Pansier

B. Is the name listed in Item VIII-A also the owner? ☑ YES ☐ NO

C. STATUS OF OPERATOR *(Enter the appropriate letter into the answer box: If "Other," specify.)*

F = FEDERAL
S = STATE
P = PRIVATE
M = PUBLIC *(other than federal or state)*
O = OTHER *(specify)*

P

(specify)

D. PHONE *(area code & no.)*

A (920) 336-7919

E. STREET OR P.O. BOX

3870 Dicksinson Rd

F. CITY OR TOWN

De Pere

G. STATE WI

H. ZIP CODE 54115

IX. INDIAN LAND

Is the facility located on Indian lands? ☐ YES ☑ NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES *(Discharges to Surface Water)*	D. PSD *(Air Emissions from Proposed Sources)*
N None (IP)	P None

B. UIC *(Underground Injection of Fluids)*	E. OTHER *(specify)*
U None	None *(specify)*

C. RCRA *(Hazardous Wastes)*	E. OTHER *(specify)*
R None	N/A *(specify)*

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers, and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS *(provide a brief description)*

This is a dairy, beef and agricultural producer that produces raw milk, beef and agricultural crops for feed and market sale.

XIII. CERTIFICATION *(see instructions)*

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE *(type or print)*	B. SIGNATURE	C. DATE SIGNED
Jason Pansier Owner		Oct. 28. 2013

COMMENTS FOR OFFICIAL USE ONLY

C

EPA Form 3510-1 (8-90)

Form Approved
OMB No. 2040-0250

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)

FORM 2B NPDES

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY
APPLICATIONS FOR PERMIT TO DISCHARGE WASTEWATER
CONCENTRATED ANIMAL FEEDING OPERATIONS AND AQUATIC ANIMAL PRODUCTION FACILITIES

I. GENERAL INFORMATION Applying for: Individual Permit ☒ Coverage Under General Permit ☐

A. TYPE OF BUSINESS	B. CONTACT INFORMATION	C. FACILITY OPERATION STATUS
☒ 1. Concentrated Animal Feeding Operation (complete items B, C, D, and section II) ☐ 2. Concentrated Aquatic Animal Production Facility (complete items B, C, and section III)	Owner/or Operator Name: Roy, Joan, Glen & Jason Pansier Telephone: (920) 336-7919 Address: 3870 Dickinson Rd Facsimile: ( ) City: De Pere State: WI Zip Code: 54115	☒ 1. Existing Facility ☐ 2. Proposed Facility

D. FACILITY INFORMATION

Name: Ledgeview Farms, LLC Telephone: (920) 655-1344
Address: 3875 Dicksinson Rd Facsimile: ( )
City: De Pere State: WI Zip Code: 54115
County: Brown Latitude: 44.4249N Longitude: 87.9695W

If contract operation: Name of Integrator:
Address of Integrator:

II. CONCENTRATED ANIMAL FEEDING OPERATION CHARACTERISTICS

A. TYPE AND NUMBER OF ANIMALS

1. TYPE	2. ANIMALS: NO. IN OPEN CONFINEMENT	2. ANIMALS: NO. HOUSED UNDER ROOF
☒ Mature Dairy Cows		350
☒ Dairy Heifers 50/50 open/confined	390	
☐ Veal Calves		
☒ Cattle (not dairy or veal calves) 50/50 open/confined	150	
☐ Swine (55 lbs. or over)		
☐ Swine (under 55 lbs.)		
☐ Horses		
☐ Sheep or Lambs		
☐ Turkeys		
☐ Chickens (Broilers)		
☐ Chickens (Layers)		
☐ Ducks		
☐ Other: Specify		
3. TOTAL ANIMALS	540	350

B. MANURE, LITTER, AND/OR WASTEWATER PRODUCTION AND USE

1. How much manure, litter, and wastewater is generated annually by the facility? 14,500 tons * 175,000 gallons
   * Milking Center Waste
2. If land applied how many acres of land under the control of the applicant are available for applying the CAFOs manure/litter/wastewater? 2100 acres
3. How many tons of manure or litter, or gallons of wastewater produced by the CAFO will be transferred annually to other persons? N/A tons N/A gallons

[redacted]

EPA Form 3510-2B (Rev. 11-08)

Form Approved
OMB No. 2040-0250

C. ☒ TOPOGRAPHIC MAP

D. TYPE OF CONTAINMENT, STORAGE AND CAPACITY

1. Type of Containment	Total Capacity (in gallons)
☐ Lagoon	
☐ Holding Pond	
☐ Evaporation Pond	
☐ Other: Specify _____	

2. Report the total number of acres contributing drainage: 2100 acres

3. Type of Storage	Total Number of Days	Total Capacity (gallons/tons)
☐ Anaerobic Lagoon		
☐ Storage Lagoon		
☐ Evaporation Pond		
☒ Aboveground Storage Tanks Manure Storage		(2) = 992,940
☒ Belowground Storage Tanks Milking Center Waste Tank		(1) =10,000
☐ Roofed Storage Shed		
☐ Concrete Pad		
☐ Impervious Soil Pad		
☐ Other: Specify _____		

E. NUTRIENT MANAGEMENT PLAN

Note: Effective February 27, 2009, a permit application is not complete until a nutrient management plan is submitted to the Permitting Authority.

1. Please indicate whether a nutrient management plan has been included with this permit application. ☒ Yes ☐ No

2. If no, please explain:

Currently being updated and developed by Ag Source - Kevin Beckard.

3. Is a nutrient management plan being implemented for the facility? ☒ Yes ☐ No

4. The date of the last review or revision of the nutrient management plan. Date: 03/27/13

5. If not land applying, describe alternative use(s) of manure, litter, and/or wastewater:

F. LAND APPLICATION BEST MANAGEMENT PRACTICES

Please check any of the following best management practices that are being implemented at the facility to control runoff and protect water quality:

☐ Buffers ☐ Setbacks ☐ Conservation tillage ☐ Constructed wetlands ☐ Infiltration field ☐ Grass filter ☐ Terrace

Form Approved
OMB No. 2040-0250

III. CONCENTRATED AQUATIC ANIMAL PRODUCTION FACILITY CHARACTERISTICS

A. For each outfall give the maximum daily flow, maximum 30-day flow, and the long-term average flow.				B. Indicate the total number of ponds, raceways, and similar structures in your facility.		
1. Outfall No.	2. Flow (*gallons per day*)			1. Ponds	2. Raceways	3. Other
	a. Maximum. Daily	b. Maximum 30 Day	c. Long Term Average	C. Provide the name of the receiving water and the source of water used by your facility.		
N/A						
	[redacted]			1. Receiving Water	2. Water Source	

D. List the species of fish or aquatic animals held and fed at your facility. For each species, give the total weight produced by your facility per year in pounds of harvestable weight, and also give the maximum weight present at any one time.

1. Cold Water Species			2. Warm Water Species		
a. Species	b. Harvestable Weight (*pounds*)		a. Species	b. Harvestable Weight (*pounds*)	
	(1) Total Yearly	(2) Maximum		(1) Total Yearly	(2) Maximum

E. Report the total pounds of food during the calendar month of maximum feeding	1. Month	2. Pounds of Food

IV. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. Name and Official Title (*print or type*)	B. Telephone (920) 655-1344
Jason Parsons	
C. Signature	D. Date Signed Oct 28 - 2013

Emergency Response Plan

Farm Name: Ledgeview Farms, LLC - Upper & Lower Farm

Owner/Operator: Roy, Joan, Glen & Jason Pansier Phone: 920-336-7919 Cell: _____

Owner/Operator: Jason Pansier Phone: _____ Cell: 920-655-1344

Farm Address: 3870 Dickinson Rd DePere, WI 54115

Farm Location: T 23 N, R 21 ⊙E ○W Section 33 County: Brown

Driving Directions or Emergency Coordinates: Located west of the intersection of Cty Hwy G (Dickinson Rd) and Cty Rd V in Kolbs Corner, Town of Ledgeview, Brown County, WI.

In Case of Injury, Fire, or Rescue Emergency, Immediately Implement the Following:

1. Assess the condition of the victim, extent of the emergency (fire, rescue) and call for help.
2. Stabilize the victim, use on-site rescue equipment, evacuate buildings, or begin fire suppression as necessary.
3. Brief emergency responders upon arrival on current status of situation.

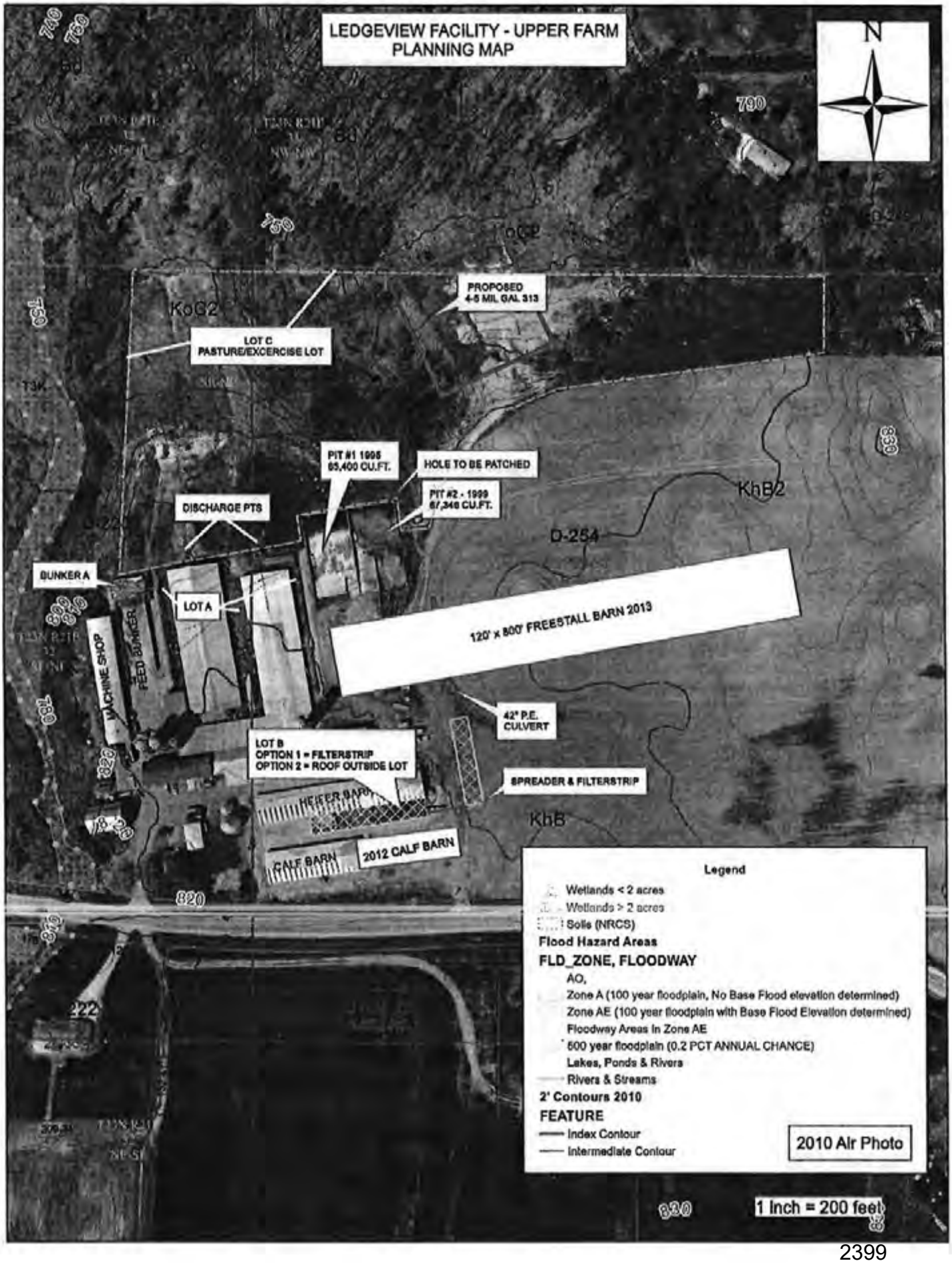
In Case of a Spill, Leak, or Failure at the Storage Facility, During Transport, or Land Application, Immediately Implement the Following:

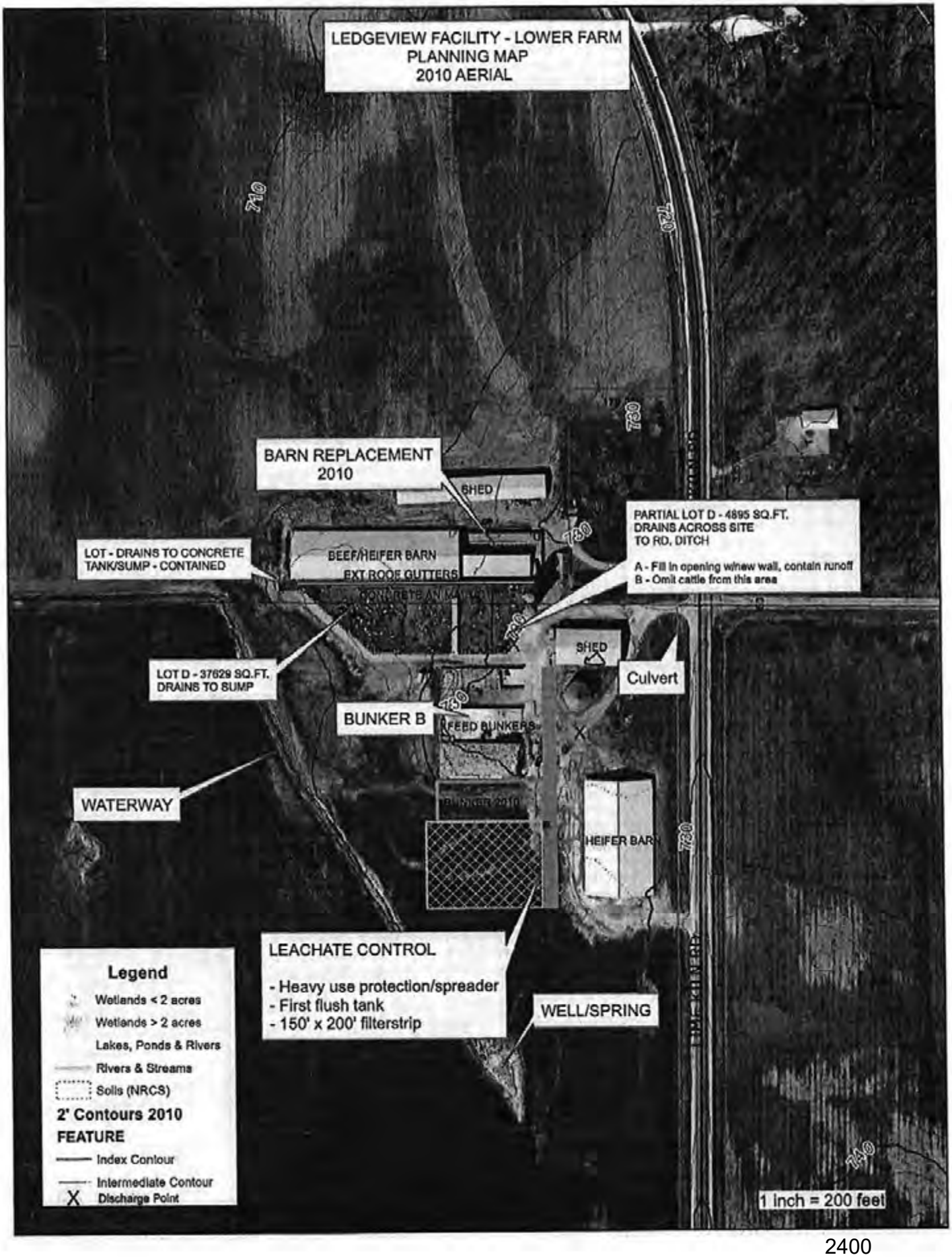
1. Stop the source of the leak or spill. For example:
   - Turn off all pumps/valves and clamp hoses or park tractor on hoses to stop the flow of manure.
2. Assess the situation and make appropriate calls for people, equipment, and materials. See contacts below.
   - Notify DNR spill hotline: 1-800-943-0003 (Spill reporting is mandatory by state law.)
   - Call sheriff's office if spilled on public roads or its right-of-ways for traffic control.
   - Clear the road and roadside of spilled material immediately.
3. Contain the spill and prevent spillage from entering surface waters, tile intakes, or waterways.
   - Use a skid loader or tractor with a blade to build dikes to contain or divert the spill or leak.
   - Insert sleeves around tile intakes (or plug/cap intakes) and block down slope culverts.
   - Use tillage implements to work up the ground ahead of the spill or use absorptive materials.
4. Begin cleanup.
   - Use pumps to recover liquids.
   - Land apply on approved cropland at appropriate rates.
5. Document your actions.

Emergency Contacts	Contact Person (or Company)	Phone Number
Fire/Rescue	Ledgeview Fire Department	911 or 920-336-3360
County Sheriff	Brown County Sheriff	911 or 920-391-7450
Farm Emergency Coordinator	Dan Treml	(920) 864-7484
DNR Hazardous Spill Line	24 Hour Spills Hotline	1-800-943-0003
DNR Permit Contact/Warden	Jay Schiefelbein(contact)/Cara Kamke(Warden)	920-662-5407 / 920-360-5979
Veterinarian	De Pere Veterinary Services	920-336-7233
Equipment/Supplies	**Contact Person (or Company)**	**Phone Number**
On-Farm Equipment Operator	Jason Pansier	920-655-1344
Excavation Contractor	Bielinski Excavating, Inc.	920-863-2662
Manure Hauler	L & M Industries Inc.	920-833-2525
Septic Tank Pumping Truck	Kiekhaefer Septic Service, LLC	920-864-7025
Mortality Disposal Contractor	Circle R Mink Ranch	920-434-0218
Local Government Contacts	**Contact Person**	**Phone Number**
Town Chairman	Marc Hess	920-737-8556
LCD County Conservationist	James Jolly	920-391-4620
NRCS District Conservationist	John Malvitz	920-884-3910 ext 102

Be prepared to provide the following information:

- Your name and contact information
- Farm address, location and other pertinent identification information.
- Nature of emergency (employee injury, fire, discharge of manure or hazardous materials).
- Emergency equipment and personnel that are needed.
- Potential for manure or hazardous materials to reach surface waters or major field drains.
- Current status of containment efforts.
- Location of hazardous/flammable materials, fire suppression equipment, emergency cut off switches or valves.


LEDGEVIEW FACILITY - UPPER FARM
PLANNING MAP
N
PROPOSED
4-5 MIL GAL 313
LOT C
PASTURE/EXCERCISE LOT
KoG2
PIT #1 1995
65,400 CU.FT.
HOLE TO BE PATCHED
PIT #2 - 1999
67,348 CU.FT.
DISCHARGE PTS
KhB2
D-254
BUNKER A
LOT A
120' x 800' FREESTALL BARN 2013
MACHINE SHOP
FEED BUNKER
42" P.E.
CULVERT
LOT B
OPTION 1 = FILTERSTRIP
OPTION 2 = ROOF OUTSIDE LOT
SPREADER & FILTERSTRIP
HEIFER BARN
KhB
CALF BARN
2012 CALF BARN
820
Legend
Wetlands < 2 acres
Wetlands > 2 acres
Soils (NRCS)
Flood Hazard Areas
FLD_ZONE, FLOODWAY
AO,
Zone A (100 year floodplain, No Base Flood elevation determined)
Zone AE (100 year floodplain with Base Flood Elevation determined)
Floodway Areas in Zone AE
500 year floodplain (0.2 PCT ANNUAL CHANCE)
Lakes, Ponds & Rivers
Rivers & Streams
2' Contours 2010
FEATURE
Index Contour
Intermediate Contour
2010 Air Photo
1 Inch = 200 feet


LEDGEVIEW FACILITY - LOWER FARM
PLANNING MAP
2010 AERIAL
BARN REPLACEMENT
2010
SHED
BEEF/HEIFER BARN
EXT ROOF GUTTERS
LOT - DRAINS TO CONCRETE TANK/SUMP - CONTAINED
PARTIAL LOT D - 4895 SQ.FT.
DRAINS ACROSS SITE
TO RD. DITCH
A - Fill in opening w/new wall, contain runoff
B - Omit cattle from this area
LOT D - 37629 SQ.FT.
DRAINS TO SUMP
SHED
Culvert
BUNKER B
FEED BUNKERS
WATERWAY
HEIFER BARN
LEACHATE CONTROL
- Heavy use protection/spreader
- First flush tank
- 150' x 200' filterstrip
WELL/SPRING
Legend
Wetlands < 2 acres
Wetlands > 2 acres
Lakes, Ponds & Rivers
Rivers & Streams
Soils (NRCS)
2' Contours 2010
FEATURE
Index Contour
Intermediate Contour
Discharge Point
1 inch = 200 feet


NO WELLS/PROPERTY LINES WITHIN 250'
PROPOSED LEDGEVIEW FACILITY 313
OWNER
BROWN
COUNTY
Designed: DLW
Checked:
SHEET ____ OF ____

Agricultural Runoff Complaint Investigation Form

I. Complaint Information

Date of Complaint: 2/5/14

Complaint Source: ☐ Spill line ☐ Citizen Complaint ☐ DNR staff ☒ Anonymous ☐ County LCD ☐ Farmer (self reporting)
Warden Tip Line

Complainant Information

Name: confidential

Address:

Phone #:

Email:

Others notified:

Complaint Location: T____ R____ S____ QQ____

Location Description: corner of Lime Kiln & Dickinson Roads

Farm Name: Pansier

Farm Address:

II. Nature of Complaint

Complainant Narrative (summary): concerned about manure spreading at night b/c fields are frozen

Source of manure/discharge:
☐ Production Area ☐ Land Application Site ☐ Drain Tile Discharge ☐ Manure Stack ☐ Other ____

Landspreading Site Information:
Date of field application: ____ Date of runoff event: ____

Impacts observed:
☐ Discharge to wetland
☐ Discharge to surface water Waterbody: ____
☐ Discharge to ditch/grassed waterway
☐ Discharge to groundwater conduit (sinkhole, fracture, unabandoned well)
☐ Well contamination (describe observations)
☐ Distance from discharge to well: ____ (ft)
☐ Alleged setback violations
☐ Alleged over application of nutrients
☐ Other: ____

III. Department Review & Field Response Determination

Parties Notified (indicate who and when):

☐ Farm Owner/Crop Consultant (if known) in person conversation	☒ County LCD notified Jon Bechle by phone & Brent Peterson & Jon Bechle on 2/5 2/6
☐ Spill Coordinator Notified	☐ Drinking Water Specialist Notified (if applicable)
☐ Local Warden Notified	☐ Others

Nutrient Management Plan Review (if available):
☐ Is field identified/approved in NMP? ☐ Apparent restrictions? (shallow bedrock/groundwater, SWQMA, wells, etc.)

Field Visit Conducted by Department: ☐ Yes ☒ No

Field Visit Conducted by Others (list who): County LCD to follow up & let DNR know if fields receiving manure are in winter spreading plan

Additional Information Received Regarding Complaint:

Jones, Casey L - DNR

From: Bauman, Thomas S - DNR
Sent: Friday, March 14, 2014 4:16 PM
To: Jones, Casey L - DNR
Subject: FW: Ledgeview Farms Annual Report
Attachments: Ledgeview Farms 2013 Annual Report.pdf

FYI

Tom Bauman
Agricultural Runoff Program
Wisconsin Department of Natural Resources
(☎) phone: (608) 266-9993
(☎) fax: (608) 267-2800
(✉) e-mail: Thomas.Bauman@wisconsin.gov

Quality Customer Service is Important to Us. Tell Us How We Are Doing.
Water Division Customer Service Survey
https://www.surveymonkey.com/s/WDNRWater

From: Kevin Beckard [mailto:kbeckard@agsource.com]
Sent: Friday, March 14, 2014 3:55 PM
To: (schwer.don@epa.gov)
Cc: Wetenkamp_DL; Bauman, Thomas S - DNR
Subject: Ledgeview Farms Annual Report

Good Afternoon Don,
Attached you will find the 2013 annual report for Ledgeview Farms, LLC as required by paragraph 69 of their Administrative Order Docket No. V-W-13-AO-22. The report contains the required information from items a through g in paragraph 69 of the order. I went over this information with Jason Pansier today. I will also be sending you a hard copy in the mail. If you have any questions or need further information feel free to contact me.

Thank You,
Kevin

Kevin Beckard
NMP/GPS Specialist
AgSource Laboratories
920-309-1948

2013 Annual Report

Ledgeview Farms, LLC

Introduction

Ledgeview Farms, LLC is a dairy and cropping enterprise located in the Town of Ledgeview in Brown County Wisconsin. The business is owned and managed by Glen, Jason and Roy Pansier.

This report is being prepared in accordance with paragraph 69 of the Ledgeview Farms Administrative Order (Docket No. V-W-13-AO-22) they received from EPA in 2013. Paragraph 69 of the Administrative Order states:

Annual Reports: Respondent shall submit an annual report to EPA and WDNR not later than March 15 of each calendar year following the effective date of this Order. In each annual report, Respondent shall include the following information for the previous calendar year prior to submittal of that annual report:

A. The maximum number and type of animals confined, whether in open confinement or housed under roof:

Animal Numbers for 2013		
Livestock Type and Size Class	**Animal Numbers**	**Housing Type**
Calves (Dairy/Beef) up to 400#	375	Housed under Roof
Heifers – 400# to 800#	130	Housed under Roof/Open Confinement
Heifers – 800# to 1200#	200	Housed under Roof/Open Confinement
Milking and Dry Cows	550	Confined under Roof
Beef Steers -400# to Market	425	Housed under Roof/Open Confinement

B. The estimated amount of total manure, litter, and process wastewater generated at the Site in the previous 12 months:

In 2013 Ledgeview Farms generated and land applied approximately 15,100 tons of solid/semi-solid manure and approximately 350,000 gallons of milkhouse wastewater.

C. The estimated amount of total manure, litter, and process wastewater transferred to another person from the Site in the previous 12 months (tons/gallons):

In 2013 Ledgeview Farms did not transfer any manure or process wastewater from their farm to a 3rd party in 2013. All manure and process wastewater

generated by the farm was applied to fields contained within the nutrient management plan.

D. The total number of acres for land application covered by the nutrient management plan:

The nutrient management plan for Ledgeview Farms for 2013 contained 2,077 acres. For 2014 the acres contained in this plan will be approximately 2,181 acres as Ledgeview Farms has rented additional cropland.

E. The total number of acres under the control of Respondent that were used for land application of manure, litter, and process wastewater in the previous 12 months:

In 2013 Ledgeview Farms applied manure and process wastewater to 863 acres. All fields were contained in the Ledgeview Farms nutrient management plan.

F. A summary of all manure, litter, and process wastewater discharges from the production area that have occurred in the previous 12 months, including the date, time, and approximate volume of such discharges:

Ledgeview Farms has not documented any discharge events from the production sites in 2013. As stated in the letter submitted in October of 2013 by Dave Wetenkamp of the Brown County Land and Water Conservation Department Ledgeview Farms implemented interim controls to control runoff from both production sites. Ledgeview Farms is actively working on the development of additional runoff controls to meet WPDES permit requirements.

G. A statement indicating whether the current version of the nutrient management plan was developed or approved by a certified nutrient management planner.

Kevin Beckard of Agsource Laboratories developed the Nutrient Management Plan (NMP) for Ledgeview Farms. Kevin is a Certified Crop Advisor (license # 29509) in Wisconsin.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false statements and information, including the possibility of fines and imprisonment for knowing violations.

Ledgeview Farms Representative -Jason Pansier

LAND AND WATER CONSERVATION

Brown County

1150 BELLEVUE ST.
GREEN BAY, WI 54302

JIM JOLLY

PHONE (920) 391-4620 FAX (920) 391-4617 WEB: www.co.brown.wi.us

COUNTY CONSERVATIONIST

March 24th, 2014

This affidavit is being generated to document the investigation of a manure spreading spill incident in the Town of Ledgeview received from WDNR on 03/24/14 via an email to the Brown County Land & Water Conservation Department. The anonymous complaint was about winter spread manure on an agricultural field identified as field (11E3) on a winter spreading plan submitted to Brown County by Kevin Beckard, an agronomist employed by Ag Source. The site was located in the SE1/4 SW1/4 Sec 29 T23N R21E, Town of Ledgeview. The property is owned by Leanna Family LTD Partnership and is rented and operated by Ledgeview Farms, LLC for agricultural use. The email account from the WDNR recorded that manure was land spread recently and runoff may be reaching a nearby stream. The email account is attached to this document. Brent Petersen and David Wetenkamp responded by visiting the site on 03/24/14 at approximately 1:30 p.m. to assess the conditions. After walking the field and locating the runoff we were approached by two adjacent landowners who were concerned about what we were doing, so we identified ourselves and explained why we were out checking the field. We then proceeded to Ledgeview Farm's upper farm to talk with the operator. We approached Ledgeview Farms owner Mr. Roy Pansier who was operating machinery for a farm building project and explained why we were there and what we had found.

03/24/14 Observations and discussions are as follows:

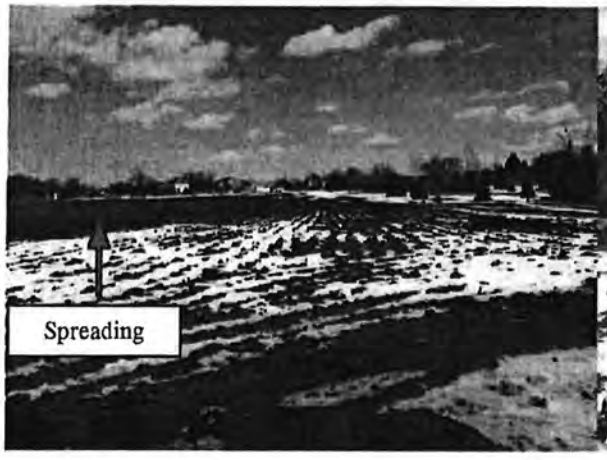
- Brent and David drove to Dollar Rd and looked for evidence of recent manure spreading activity and found two likely locations. The first site we stopped at was the field identified as 11E3, the second 11G1.
- Manure was observed in the field. The manure was primarily a solid heavy bedded type of material. A setback of 25'-30' was observed where manure was not spread adjacent to the drainage ditch that bordered the north side of field 11E3.
- In one location identified as "A" on the attached map, manure was observed that was spread into the drainage ditches bank. This area was located in a natural swale where snow melt had also washed manure into the drainage ditch as it was melting. The amount of manure was in a small quantity, the impact had already occurred, the current water flow in the ditch was running clear and no further runoff was occurring at an amount causing a need for a spills clean-up effort to be performed.
- This field was identified on maps in the Winter Spreading Plan submitted by AgSource, but this field was not designated as a field to be used in 2014 and it had hazard areas mapped where winter manure spreading was restricted.
- While walking back to the car past the adjacent landowners property they stepped out to ask who we were and what we were doing. We apologized if we had concerned them and identified our names and that we were from Brown County and responding to a complaint about manure spreading. They were satisfied and said they owned part of the land and rented it to Ledgeview Farms and that it did stink for a few days after they had spread the manure. We proceeded back to our vehicle.
- Brent and David then proceeded to the upper farm and talked with Roy Pansier about an anonymous complaint to the WDNR and he gave permission for us to walk his land if needed. They confirmed they had spread the manure and believed the field was approved in their Winter Spreading Plan. Roy said they only spread about 10 loads or the field and stayed back from the ditch while spreading. Roy also added they had spread on field 11G1 a few weeks ago on top of the snow. We did not have the spreading plan with us at the time and we said for them to check their plan again and we would also confirm back in the office.
- Brent and David drove to Dollar Rd and walked field 11G1 and digital pictures were taken to document our findings and observations.
- The field was approved for winter spreading. There was visual evidence that during past snow melt manure had washed down slope and entered a drainage ditch at location identified as "B" on attached maps. This drainage ditch drains to a mapped stream. Runoff and impacts had already occurred and no runoff was observed at the time of investigation.
- Brown County left the property around 2:15 p.m. Brent and David returned to the LWCD office and informed the County Conservationist and emailed WDNR of our findings.

Attached below are pictures taken on 03/24/14 of the fields, signatures of the personnel present for the on-site investigation and aerial photographs with locations identified. The WDNR email regarding the complaint and Winter Spreading Plan is also attached.

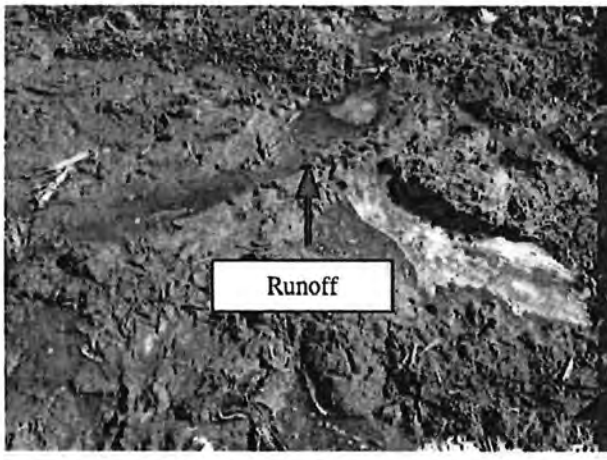
Turning Brown Green

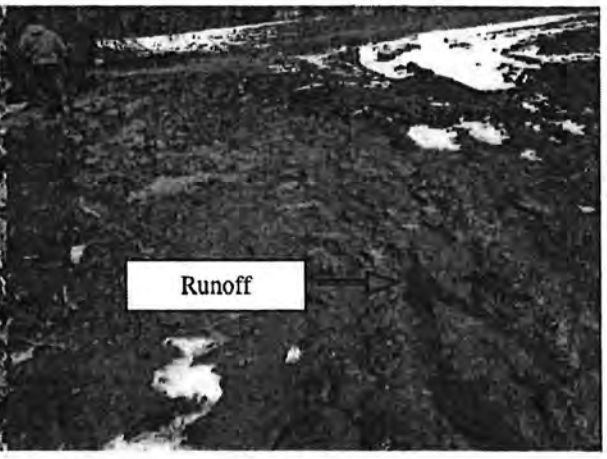
FIELD 11E3 (Location "A")

Picture looking east at field area

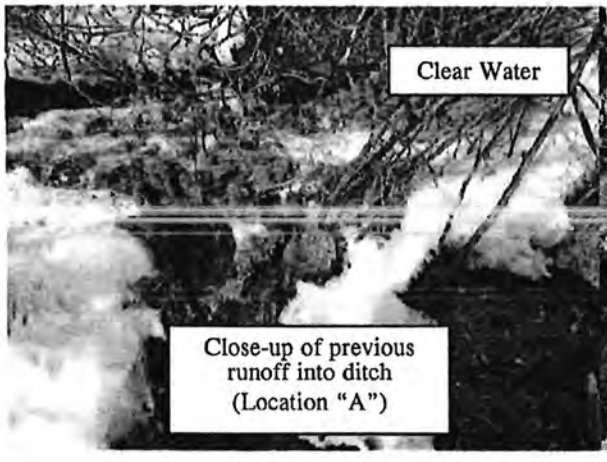


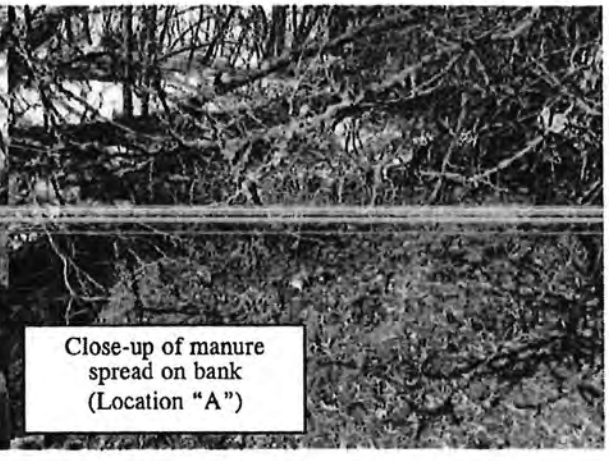
Picture looking northeast along dralnage ditch showing swale area where runoff had occurred





Pictures looking at previous impact to dralnage ditch





FIELD 11G1 (Location "B")

Picture looking southeast at field area from discharge area in ditch

Picture looking north at drainage ditch showing swale area where runoff had occurred

Pictures looking west at previous discharge to ditch

Signature: _____

Typed Name: Brent A. Petersen

Signature: _____

Typed Name: David L. Wetenkamp

Subscribed and sworn to before me this _____day of _____ 2014.

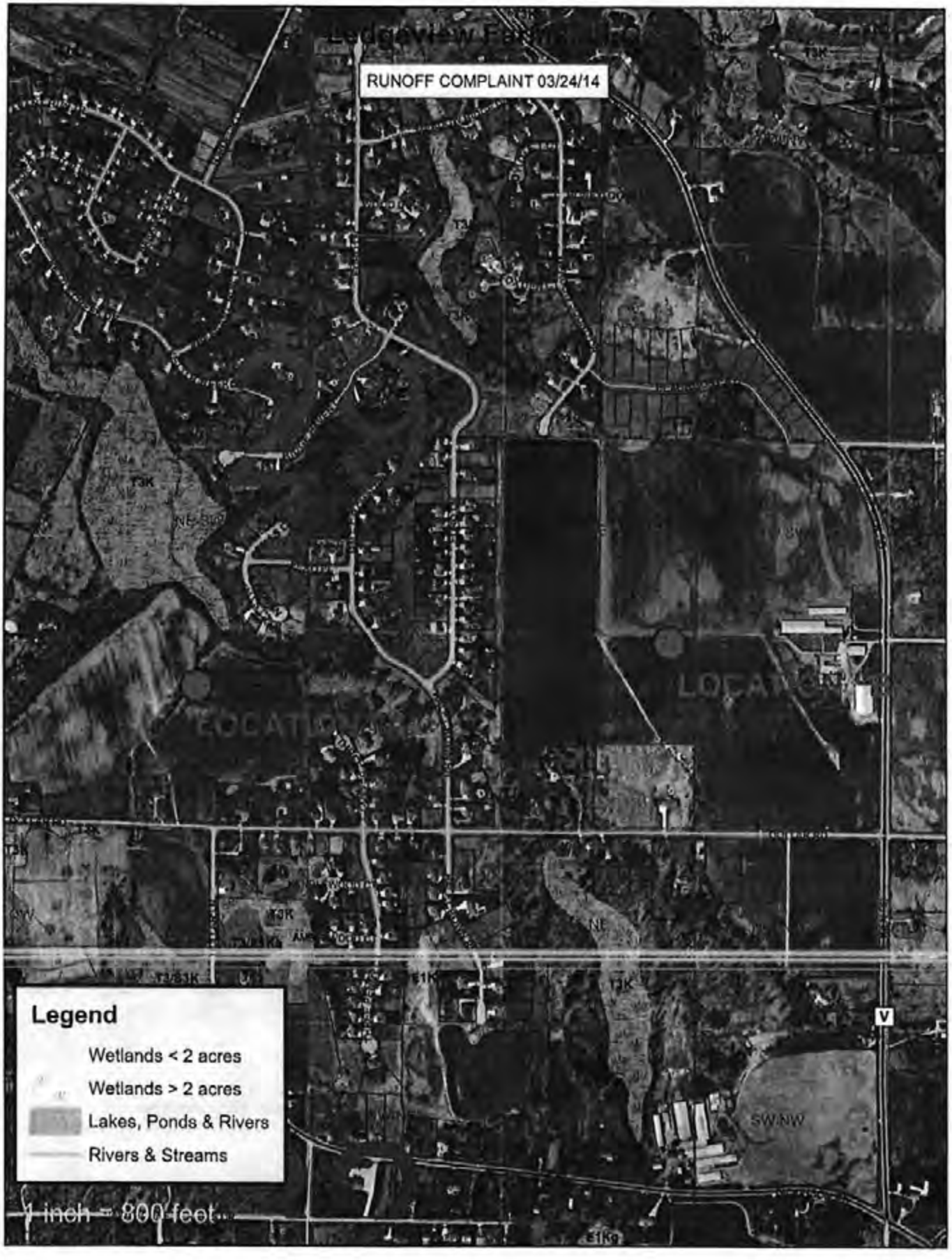
Signature: _____

Notary Public, State of Wisconsin

My commission expires on _____.

03/26/2014

- Brown County LWCD has been in contact with Casey Jones, WDNR and a copy of this report will be sent to her.
- At this time no environmental impact was found occurring from the field spread manure to the unnamed tributary to Bower Creek.
- Brown County will be sending a violation notice to Ledgeview Farms, LLC.


RUNOFF COMPLAINT 03/24/14
Legend
Wetlands < 2 acres
Wetlands > 2 acres
Lakes, Ponds & Rivers
Rivers & Streams
1 inch = 800 feet

Yelle, Ryan J - DNR

From: Jones, Casey L - DNR
Sent: Monday, April 07, 2014 9:45 AM
To: Yelle, Ryan J - DNR
Cc: Hanson, Erin E - DNR
Subject: FW: WI SPILL #7939 SERTS ID 20140324NE05-1 - MANURE
Attachments: David Wetenkamp.vcf; Ledgeview Farms, LLC Affidavit 03-24-14 scanned.pdf

Hi Ryan,

Please print email chain and attached report and add to Ledgeview Farms' permit file.

Thanks,
Casey

Casey L. Jones
Agricultural Runoff Management Specialist - Enforcement/Compliance Expert DNR Oshkosh Service Center
625 E County Rd Y, Suite 700
Oshkosh, WI 54901
phone: (920) 303-5426
fax: (920) 424-4404
e-mail: Casey.Jones@Wisconsin.gov

Quality Customer Service is Important to Us. Tell Us How We Are Doing.
Water Division Customer Service Survey
https://www.surveymonkey.com/s/WDNRWater

-----Original Message-----
From: Wetenkamp_DL [mailto:Wetenkamp_DL@co.brown.wi.us]
Sent: Monday, April 07, 2014 9:42 AM
To: Jones, Casey L - DNR
Subject: RE: WI SPILL #7939 SERTS ID 20140324NE05-1 - MANURE

Casey,

Here is the report after responding to your spills request email. Please call if you have any questions.

Dave

-----Original Message-----
From: Jones, Casey L - DNR [mailto:Casey.Jones@wisconsin.gov]
Sent: Tuesday, March 25, 2014 4:17 PM
To: Wetenkamp_DL
Cc: Jolly_JR; Bechle_JE; Petersen_BA

Subject: RE: WI SPILL #7939 SERTS ID 20140324NE05-1 - MANURE

Thanks for checking this out, please copy me on letter/report when it goes out so I can include it in the file we have for them.

Casey L. Jones
Agricultural Runoff Management Specialist - Enforcement/Compliance Expert DNR Oshkosh Service Center
625 E County Rd Y, Suite 700
Oshkosh, WI 54901
phone: (920) 303-5426
fax: (920) 424-4404
e-mail: Casey.Jones@Wisconsin.gov

Quality Customer Service is Important to Us. Tell Us How We Are Doing.
Water Division Customer Service Survey
https://www.surveymonkey.com/s/WDNRWater

-----Original Message-----
From: Wetenkamp_DL [mailto:Wetenkamp_DL@co.brown.wi.us]
Sent: Tuesday, March 25, 2014 3:54 PM
To: Jones, Casey L - DNR
Cc: Jolly_JR; Bechle_JE; Petersen_BA
Subject: RE: WI SPILL #7939 SERTS ID 20140324NE05-1 - MANURE

Casey,

Brent and I visited the site and talked to Roy Pansier. Manure was spread and some manure runoff had occurred into a drainage ditch that flows to a mapped blue line on the USGS map on two different fields. The event had already occurred and the drainage ditch and stream were running clear. The event was fairly small with little impact and further impact is possible with a rain/melt event. The manure is a heavy bedded pack type manure. A clean-up effort would do more damage than good in my opinion. Feel free to visit the site for your needs.

Brown County has taken pictures, is preparing and affidavit and will be sending a warning letter to Ledgeview Farms that a violation has occurred to BC Ordinance according to their winter spreading plan. Next time Corp Counsel may be involved.

Dave

-----Original Message-----
From: Jones, Casey L - DNR [mailto:Casey.Jones@wisconsin.gov]
Sent: Monday, March 24, 2014 11:36 AM
To: Petersen_BA; Bechle_JE; Wetenkamp_DL
Cc: Hanson, Erin E - DNR; Yelle, Ryan J - DNR; Block, Danielle L - DNR
Subject: FW: WI SPILL #7939 SERTS ID 20140324NE05-1 - MANURE

Hi County Folks,

The spills hotline rec'd complaint regarding Ledgeview Dairy spreading off of Dollar Rd. Would any of you have time to look into this? Erin and Ryan are out of office at training today...I think in your office building :) If not, let me know and I'll see if Danielle Block or a warden can check it out.

The only details I have are below, the complainant did not leave a call back number/information.

Thanks,
Casey

Casey L. Jones
Agricultural Runoff Management Specialist - Enforcement/Compliance Expert DNR Oshkosh Service Center
625 E County Rd Y, Suite 700
Oshkosh, WI 54901
phone: (920) 303-5426
fax: (920) 424-4404
e-mail: Casey.Jones@Wisconsin.gov

Quality Customer Service is Important to Us. Tell Us How We Are Doing.
Water Division Customer Service Survey
https://www.surveymonkey.com/s/WDNRWater

-----Original Message-----
From: Erdman, Beth A - DNR
Sent: Monday, March 24, 2014 11:04 AM
To: Jones, Casey L - DNR
Subject: FW: WI SPILL #7939 SERTS ID 20140324NE05-1 - MANURE

Sounds more like a runoff event in SERTS. If I can help in any way, don't hesitate.

P Beth A.Erdman
NER Spills Coordinator/Hydrogeologist
Remediation and Redevelopment Program
Wisconsin Department of Natural Resources
625 E CTY Y, Suite 700
Oshkosh WI 54901
(() phone: (920) 303-5410
(() mobile: (920) 362-2072
(() fax: (920) 424-4404
(() e-mail: beth.erdman@wisconsin.gov dnr.wi.gov

We are committed to service excellence. Click here to evaluate how I did.

-----Original Message-----
From: dakota.berg@wisconsin.gov [mailto:dakota.berg@wisconsin.gov]
Sent: Monday, March 24, 2014 11:03 AM
To: Erdman, Beth A - DNR
Subject: WI SPILL #7939 SERTS ID 20140324NE05-1 - MANURE

Substance Release Notification from Wisconsin DNR Spill Electronic Reporting and Tracking System (SERTS):

SERTS Spill ID:
20140324NE05-1

Date/Time Reported:
03/24/2014 10:00

Person Reporting (PR):
ANONYMOUS

Date/Time Occurred:
03/24/2014 10:00

Location:
NE REGION
BROWN COUNTY
TOWNSHIP OF DE PERE
LEDGVIEW FARMS
3870 DICKINSON RD
SPREADING IS OFF OF OF DOLLAR RD

Responsible Party (RP):
LEDGEVIEW FARMS

Substance:
MANURE (Manure)
Released Amt: UNKNOWN
Recovered Amt: UNKNOWN

Spill Cause:
SPREADING MANURE THAT LOOKS LIKE IT IS RUNNING INTO A NEARBY CREEK

NO EVACUATION

NO INJURIES

Weather:

Contractor Hired:
NONE ENTERED

Cleanup Method:
CLEAN-UP PROGRESS UNKNOWN OR CLEAN-UP NOT STARTED.

Additional Comments:
INFORMATION RELAYED FROM A VOICEMAIL

Notified BETH ERDMAN at 10:30 by Phone

Form Completed by:
DAKOTA BERG
(608) 267-0844
dakota.berg@wisconsin.gov

Notification sent to:
becky.powers@wi.gov
beth.erdman@wisconsin.gov
casey.jones@wisconsin.gov
diane.hansen@wisconsin.gov
dmawemdutyofficer@wisconsin.gov
dnrledo@wisconsin.gov
dnrlehotline@wisconsin.gov
frank.docimo@wisconsin.gov
gazdik_pr@co.brown.wi.us
halbur.kathy@epa.gov
jason.lowery@wisconsin.gov
karen.paulson@wisconsin.gov
kevin.erb@ces.uwex.edu
roxanne.chronert@wisconsin.gov
stephanie.krueger@dhs.wisconsin.gov
steve.fenske@wi.gov
tauren.beggs@wisconsin.gov

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
101 S. Webster Street
Box 7921
Madison WI 53707-7921

Scott Walker, Governor
Cathy Stepp, Secretary
Telephone 608-266-2621
FAX 608-267-3579
TTY Access via relay - 711

WISCONSIN DEPT. OF NATURAL RESOURCES

April 9, 2014

Jason Pansier
Ledgeview Farms LLC
3870 Dickinson Rd
De Pere, WI 54115

Operation: Ledgeview Farms LLC
WPDES GP No. 0063274-01-0

SUBJECT: CAFO WPDES Preliminary Permit Application Receipt and Status

Dear Mr. Pansier:

The Department received your preliminary application for a CAFO WPDES permit for Ledgeview Dairy LLC on April 4, 2014.

Casey Jones & Brad Holz, your regional Agricultural Specialists, will contact you to set up an appointment for a walk-over of your operation. During the walk-over, Casey & Brad can answer questions you may have about CAFO regulations and the WPDES permitting process.

Thank you for submitting your preliminary application. If you have questions regarding this letter, please contact me at (608) 261-8437.

Sincerely,

James Martin
CAFO Intake Specialist

cc: Kevin Beckard – Ag Source – email
David Wetenkamp – Brown County LWCD – email
Casey Jones – DNR – email
File

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

JUL 18 2014

REPLY TO THE ATTENTION OF:
WC-15J

CERTIFIED MAIL 7009 1680 0000 7678 5822
RETURN RECEIPT REQUESTED

Mr. Roy Pansier, Registered Agent
Ledgeview Farms, LLC.
3870 Dickinson Road
De Pere, Wisconsin 54115

Re: *In the Matter of Ledgeview Farms LLC*
Clean Water Act Administrative Order V-W-13-AO-22
Notifications of Required Revisions to Draft Permit Compliance Plan and
Information Request Docket Number: V-W-14-308-24

Dear Mr. Pansier:

On September 13, 2013, the U.S. Environmental Protection Agency issued an Administrative Order ("Order") V-W-13-AO-22 to Ledgeview Farms, LLC ("Ledgeview") for its facilities at 3875 Dickinson Road and 3688 County Road V, in De Pere, Wisconsin. On September 26, 2013, EPA sent Ledgeview a letter providing a Compliance Schedule as an aid to understand the compliance deadlines of the Order. Additionally, EPA notified Ledgeview that the Order was effective as of September 28, 2013.

On March 13, 2014, EPA notified Ledgeview by letter that EPA had not received the Permit Compliance Plan required under section IV.C. of the Order. This plan was due on December 27, 2013. Mr. David Wetenkamp of Brown County Land and Water Conservation emailed documents pertaining to a Permit Compliance Plan on March 18, 2014. According to Mr. Wetenkamp, those documents were sent at the request of Ledgeview. Mr. Wetenkamp's email and document is attached to this letter (Attachment A).

EPA reviewed and hereby disapproves of the draft Permit Compliance Plan and requires revisions to the draft Permit Compliance Plan, pursuant to paragraph 43 of the Order. Please submit a revised draft Permit Compliance Plan addressing all of the following:

- The actions Ledgeview has taken or will take to prepare and submit a complete NPDES permit application to WDNR (see paragraph 41 of the Order).

- A schedule for the development of nutrient management plan (NMP) (paragraph 46.c, section IV.D) and a schedule for the construction of all controls required by the NMP (see paragraph 41.a of the Order)[1].
  NOTE: State when an NMP meeting all requirements of paragraphs 49-61 of the Order will be submitted to WDNR.
  ALSO NOTE: The 3/18/14 Brown County email describes a schedule for certain proposed construction projects. The email provided dates for the completion of proposed construction projects which extended until October 2015 and June 2016. The Order required for the construction of all controls and for the submittal of a complete Permit Application to WDNR within 270 days of the effective date of the Order (see paragraph 41 and 42 of the Order). It is unclear whether or not those construction projects are required by the NMP, and it is unclear whether or not those construction projects constitute all controls required by the NMP. In the event that the construction projects are required by the NMP, the construction schedule for the following projects listed in the 3/18/14 Brown County email must be revised:
  -Animal Lot B: revise completion date to be 9/30/14
  -Animal Lot D: revise completion date to be 9/30/14
  -Leachate Controls Lower Bunker: revise completion date to be 11/30/14
  -Manure Storage 5-6 Million gallon storage: revise completion date to be 11/30/14

- The design costs, capital costs, annual operation and maintenance costs associated with the NMP (see paragraph 41.b of the Order).
  NOTE: The 3/18/14 Brown County email included one page listing "Construction Costs for compliance". It is unclear whether or not that one page of costs was part of the cost submittal required under paragraph 41.b of the Order. Provide all costs described in paragraph 41.b of the Order).

- A schedule for submitting a complete Permit Application to WDNR after construction of all controls required by the NMP (see paragraph 41.c of the Order). *NOTE: Provide a schedule documenting when a complete NPDES permit application, including all requirements contained in paragraphs 46-47 of the Order will be submitted to WDNR.*

- A certification with an authorized signature as required by paragraph 72 of the Order.

[1] Your schedule should reflect the fact that the NMP will contain the information required by paragraphs 49, 51, 57-59, and 60 of the Order.

Please be aware that all submittals made pursuant to the Order shall contain the following certification:

> I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false statements and information, including the possibility of fines and imprisonment for knowing violations.

Pursuant to paragraph 43 of the Order, Ledgeview must submit a revised draft Permit Compliance Plan to EPA **within ten (10) calendar days** of receipt of this letter. Failure to comply with the Order may subject Ledgeview Farms to further enforcement action pursuant to Section 309 of the Clean Water Act (CWA). Please respond to the attached request for information pursuant to Section 308(a) of the CWA (Attachment B). If you have any questions, please contact Don Schwer of my staff, at (312) 353-8752 as soon as possible.

Sincerely,

D. MARSO for T.H.

Tinka G. Hyde
Director, Water Division

ATTACHMENT A

ATTACHMENT B

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

IN THE MATTER OF:	)	Docket No. V-W-14-308-24
	)	
Ledgeview Farms LLC	)	Proceeding under Section 308(a) of the
3875 Dickinson Road	)	Clean Water Act, 33 U.S.C. § 1318(a)
De Pere, Wisconsin 54115	)	
	)	
	)	
	)	
	)	

INFORMATION REQUEST

I. STATUTORY AUTHORITY

The U.S. Environmental Protection Agency is issuing this Information Request to Ledgeview Farms LLC (Ledgeview or you) pursuant to the authority vested in the Administrator of EPA by Section 308(a) of the Clean Water Act (CWA), 33 U.S.C. § 1318(a). This authority has been delegated to the Director of the Water Division, EPA Region 5.

II. INSTRUCTIONS

1. You must respond to this Information Request **within 30 calendar days** of receipt. Submission instructions are in Section V of this Information Request.

2. You must respond separately to each of the requests and subparts of each of the requests. Precede each answer with the number of the request to which it corresponds. For each document produced in response to this Information Request, indicate on the document, or in some other reasonable manner, the number of the request to which it corresponds.

3. For each request, identify the person(s) who provided information used or considered in responding to that question, as well as each person consulted in the preparation of that response.

4. If you do not have documents responsive to a particular request, state in your written response that you do not have responsive documents, and provide an explanation of why such documents are unavailable, if applicable.

5. If information and/or documents are not known or not available to you as of the date of your response to this information request and should later become known or available to you, you must supplement your response to EPA. Moreover, should you find at any time after the submission of your response that any portion of the submitted information is false or misrepresents the truth, you must notify EPA of this fact as soon as possible and provide EPA with a corrected response.

6. Where this information request seeks data or records, provide such information in electronically editable, tabular format (e.g., Excel spreadsheet, etc.) where that data already exists in, or can be organized and provided in, electronically editable, tabular format.

7. You must keep the reports and all records reviewed or generated in the course of responding to this Information Request until EPA informs you in writing that you are no longer required to keep the reports and records, or for three years, whichever is sooner.

III. DEFINITIONS

All terms used in this information request have their ordinary meaning unless such terms are defined in the CWA and/or its implementing regulations, and in which case the statutory and/or regulatory definitions apply.

1. The terms "document" and "documents" shall mean any object that records, stores, or presents information, and includes writings, memoranda, records, or information of any kind, formal or informal, whether wholly or partially handwritten or typed, whether in computer format, memory, or storage device, or in hardcopy, including any form or format of these. If in computer format or memory, each such document shall be provided in translation to a form useable and readable by EPA, with all necessary documentation and support. All documents in hard copy should also include attachments to or enclosures with any documents.

2. The term "facility" or "facilities" means:

    a. Any animal feeding operation(s) (AFO), as defined at 40 C.F.R. § 122.23(b)(1), owned or operated by you (including but not limited to 3875 Dickinson Road and 3688 County Road V); and

    b. Any associated land application area(s)/site(s), including any field, land and/or property owned, operated, leased, rented, and/or otherwise used by you or under your control that is or may be used to apply manure, litter, and/or process wastewater. See 40 C.F.R. § 122.23(b)(3).

3. The term "identify" means to provide:

    a. With respect to a natural person, that person's name, job title, business address, and telephone number;

    b. With respect to a corporation, partnership, business trust or other association, or business entity (including a sole proprietorship), its full name, address, legal status, and form (e.g., corporation, partnership, etc.), its owners, members, officers and directors, and a brief description of its business; and

c. With respect to a document, its customary business description, date, author's identity, addressor, addressee and/or recipient, and the subject matter.

4. The term "manure" includes animal waste (i.e., solid or liquid animal waste), bedding, compost, and raw materials or other materials (used in or otherwise resulting from the confinement of animals) commingled with manure or set aside for disposal, and includes land application.

5. The terms "relate to" or "pertain to" (or any form thereof) shall mean constituting, reflecting, representing, supporting, contradicting, referring to, stating, describing, recording, noting, embodying, containing, mentioning, studying, analyzing, discussing, evaluating or relevant to.

6. The term "Order" means the Order for Compliance issued on September 13, 2013, to Ledgeview Farms LLC under Section 308 and 309(a) of the Clean Water Act.

7. The term "person" means any individual, business, corporation, partnership, association, state, municipality, commission, or political subdivision of a state, or any interstate body.

8. The term "process wastewater" means water directly or indirectly used in the operation of the facility for any or all of the following: spillage or overflow from animal or poultry watering systems; washing, cleaning, or flushing pens, barns, manure pits, or other AFO facility aspects/structures; direct contact swimming, washing or spray cooling of animals; and dust control. "Process wastewater" also includes any water (e.g., precipitation, water used in the facility's operation, etc.) which comes into contact with any raw materials, products, or byproducts including manure, litter, feed, milk, eggs, bedding, or other material or product used in, or resulting from, the confinement of animals.

9. The terms "you" or "your" or "Ledgeview" refers to Ledgeview Farms LLC and to any agents, employees, contractors, or other entities that performed work or acted in any way on behalf of, or at the direction of Ledgeview.

VI. INFORMATION REQUEST

Pursuant to Section 308 of the CWA, 33 U.S.C. § 1318, provide the following information to EPA. Provide information for the last five years from the date of receipt of this Information Request, unless a particular request specifies a different time period.

General

1. Describe all efforts to manage any increase in manure, litter and process wastewater at the facility as a result of the increase (if any) in the number of mature dairy cows at the facility since April 18, 2013.
2. On what date were animals removed from any animal lots at the facility?
3. State how often Ledgeview removes manure and used bedding from the animal lots that are currently in use.

4. Describe how manure and used bedding from the animal lots currently in use is stored at the facility both in the short- and long-term.
5. Describe how storm water that contacts manure or used bedding materials from animal lots currently in use is contained during rainfall and other runoff events.
6. State whether or not leachate is created in the ensilage process at the facility. If yes, describe how that leachate is managed by Ledgeview.

Interim Measures

7. State whether or not unpermitted discharges from the Site have occurred since September 28, 2013. If they have not stopped, provide the following information for each discharge:
    a. A description of the material discharged;
    b. The amount of the discharge;
    c. When the discharge started;
    d. When the discharge stopped; and
    e. Any measures taken by Ledgeview to clean up the discharge.
8. Describe all interim measures (including but not limited to changes in the operation and maintenance of the manure pits at the facility, measures taken to patch the hole in the wall of manure storage pit 2, reduction or elimination of silage leachate production at the facility, elimination of process wastewater runoff) which have been taken by Ledgeview to eliminate all unpermitted discharges from the Site since September 28, 2013. Include the following information for each interim measure:
    a. A description of the interim measure taken;
    b. Documentation showing that Ledgeview completed installation of the interim measure (e.g. as-built diagrams, photographs, affidavits, etc.);
    c. An accounting of the costs to Ledgeview to install, implement and maintain the interim measure;
    d. A description of how the interim measure contributes to the elimination of unpermitted discharges from the Site;
    e. The date the interim measure was fully implemented; and
    f. A description of how Ledgeview plans to maintain the interim measure.
9. Describe all interim measures (including but not limited to changes in the operation and maintenance of the manure pits at the facility, measures taken to patch the hole in the wall of manure storage pit 2, reduction or elimination of silage leachate production at the facility, and elimination of process wastewater runoff) which are planned by Ledgeview to eliminate all unpermitted discharges from the Site. Include the following information for each interim measure:
    a. A description of the interim measure taken;
    b. A description of how the interim measure contributes to the elimination of unpermitted discharges from the Site;
    c. The date physical construction of the interim measure will begin;
    d. The date the interim measure will be fully implemented; and
    e. A description of how Ledgeview plans to maintain the interim measure

Nutrient Management - Land Application (limitations, sampling, records)

10. State whether or not Ledgeview has land applied manure, litter or process wastewater closer than 100 feet to any down-gradient surface waters, open tile line intake structures, sinkholes, agricultural well heads, or other conduits to surface waters since September 28, 2013. If the answer is yes, provide:
    a. A description of the material which was land applied;
    b. Where the material was applied;
    c. The quantity of material which was applied;
    d. When the material was applied;
    e. When the material was removed;
    f. Whether Ledgeview imposed a 35-foot wide vegetated buffer around the land application area; and
    g. If Ledgeview did not impose a 35-foot wide vegetated buffer, provide any evidence Ledgeview may have demonstrating that a setback or buffer was not necessary.
11. Provide a copy of any record kept by Ledgeview for each day Ledgeview land applied manure, litter or process wastewater since September 28, 2013.

Nutrient Management- Transfers of Manure, Litter or Process Wastewater to Other Persons

12. Provide a copy of any record kept by Ledgeview regarding the transfer of manure, litter, or process wastewater to another person since September 28, 2013.
13. State whether or not Ledgeview provided the most current annual nutrient analysis to any person to whom Ledgeview transferred manure, litter or process wastewater since September 28, 2013.

Site Inspections

14. Has Ledgeview conducted daily inspections of water lines at its facility since September 28, 2013? If the answer is anything other than an unequivocal yes, provide the date(s) on which Ledgeview has conducted a daily inspection at the facility and provide a copy of any inspection report required by paragraph 64 of the Order.
15. Has Ledgeview conducted weekly inspections of all storm water diversion devices, runoff diversion devices, and devices channeling contaminated storm water to containment structures at the facility since September 28, 2013? If the answer is anything other than an unequivocal yes, provide the date(s) on which Ledgeview has conducted an inspection at the facility and provide a copy of any inspection report required by paragraph 64 of the Order.
16. Has Ledgeview conducted weekly inspections of storage structures at its facility since September 28, 2013? If the answer is anything other than an unequivocal yes, provide the date(s) on which Ledgeview has conducted weekly inspections of storage structures at the facility and provide a copy of any inspection report required by paragraph 64 of the Order.
17. Has Ledgeview made weekly determinations of the depth of the manure and process wastewater (and amount of freeboard, where required) in all open surface liquid

structures required under the Order? If the answer is anything other than an unequivocal yes, provide the date(s) on which Ledgeview has made such a weekly determination and provide a copy of any inspection report required by paragraph 64 of the Order.

18. Has Ledgeview conducted any periodic inspections of equipment used for the land application of manure, litter, or process wastewater? Provide the date(s) of any such inspection and provide a copy of any inspection report required by paragraph 64 of the Order.

Discharge Minimization/Notification

19. Has Ledgeview posted procedures at the facility to effectively respond to any spill or discharge pursuant to paragraph 65 of the Order? If yes:
    a. Describe the location of the posted procedures;
    b. Provide a copy of the posted procedures; and
    c. Provide the date(s) on which the procedures were posted.

V. SUBMISSION OF INFORMATION

1. You must submit a response to this Information Request within 30 calendar days of receipt to:

U.S. Environmental Protection Agency
Attention: Donald R. Schwer III
Water Enforcement and Compliance Assurance Branch
Water Division, WC-15J
77 West Jackson Blvd.
Chicago, Illinois 60604-3590

2. You must submit all requested information under an authorized signature with the following certification:

> I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, which include the possibility of fine and imprisonment for knowing violations.

3. If you find at any time after submitting information to EPA that any portion of the submittal is false or incorrect, you must notify EPA immediately. Knowing submittal of false information to EPA in response to this Information Request may subject you to criminal prosecution under Section 309(c) of the CWA, 33 U.S.C. § 1319(c), and 18 U.S.C. §§ 1001 and 1341.

4. EPA may use the information submitted in response to this Information Request in an administrative, civil or criminal action.

5. There can be significant civil or criminal penalties for failing to adequately respond to requests for information issued under the Section 308(a) of the CWA, 33 U.S.C. § 1318(a).

6. You must provide the information requested even though you may contend that it includes confidential information. You may assert a business confidentiality claim covering any portion of the information requested in this Information Request, as provided in 40 C.F.R. § 2.203(b). Effluent data (as defined in 40 C.F.R. § 2.302(A)(2)) and information in NPDES permit applications are not entitled to confidential treatment. 40 C.F.R. § 122.7.

   To assert a confidentiality claim, you must submit the requested information and indicate that you are asserting a claim of confidentiality. You must mark any document over which you assert a claim of confidentiality by attaching a cover sheet stamped or typed with a legend indicating your intent to claim confidentiality. The stamped or typed legend, or other suitable form of notice, should employ language such as "confidential" or "business confidential," and indicate a date, if any, when the information should no longer be treated as confidential. EPA will only disclose the information covered by such a claim to the extent permitted and by means of the procedures set forth in Section 308(b) of the CWA, 33 U.S.C. § 13I8(b), and 40 C.F.R. Part 2. You must clearly identify allegedly confidential portions of otherwise non-confidential documents.

   Please submit your response to this information request so that all non-confidential information, including any redacted versions of documents, is in one package and all materials for which you desire confidential treatment are in another package. EPA will construe the failure to furnish a confidentiality claim with your response as a waiver of that claim, and the information may be made available to the public without further notice to you. All confidentiality claims are subject to EPA verification. It is important that you satisfactorily show that you have taken reasonable measures to protect the confidentiality of the information, that you intend to continue to do so, and that the information is not and has not been obtainable by legitimate means without your consent.

   If you assert a confidentiality claim for any of the information you submit to EPA, you bear the burden of substantiating that claim. EPA will give conclusory allegations little or no weight in its determination. For each document or response you claim confidential, you must separately address the following points:

   a. The portions of the information alleged to be entitled to confidential treatment;

   b. The period of time for which confidential treatment is desired (e.g., until a certain date, until the occurrence of a specific event, or permanently);

   c. Measures taken by you to guard against the undesired disclosure of the information to others;

d. The extent to which the information has been disclosed to others, and the precautions taken in connection therewith;

e. Pertinent confidentiality determinations, if any, by EPA or other federal agencies, and a copy of any such determinations or reference to them, if available; and

f. Whether you assert that disclosure of the information would likely result in substantial harmful effects on your business' competitive position, and if so, what those harmful effects would be, why they should be viewed as substantial, and an explanation of the causal relationship between disclosure and such harmful effects.

Finally, EPA may disclose information which you submit in response to this Information Request to authorized representatives of the United States pursuant to 40 C.F.R. § 2.302(h) even if you assert that all or part of the information is confidential business information. Please be advised that EPA may disclose all responses to this Information Request to one or more private contractors for the purpose of organizing and/or analyzing the information contained in the responses to this Information Request. If you are submitting information which you assert is entitled to confidential treatment, you may comment on this potential disclosure to authorized representatives when you submit your response to this Information Request.

7. This Information Request is not subject to the Paperwork Reduction Act, 44 U.S.C. § 3501 *et seq.*, because it seeks collection of information from specific individuals or entities as part of an administrative action or investigation.

8. Please contact Don Schwer by telephone at (312) 353-8752, or via email at schwer.don@epa.gov, if you have any questions about this Information Request.

Date: 7/18/14

D. MEANS FOR T.H.

Tinka G. Hyde
Director, Water Division

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
101 S. Webster Street
Box 7921
Madison WI 53707-7921

Scott Walker, Governor
Cathy Stepp, Secretary
Telephone 608-266-2621
FAX 608-267-3579
TTY Access via relay - 711

September 22, 2014

Jason Pansier
Ledgeview Farms LLC
3870 Dickinson Rd
De Pere, WI 54115

Subject: CAFO WPDES Permit Issuance - Final Application Acknowledgment of Receipt
Status: Incomplete

Dear Mr. Pansier:

The Department received your final application materials for issuance of a CAFO WPDES permit to Ledgeview Farms, LLC, on June 23, 2014. Your application is currently incomplete because it is missing the following components:

1. An updated Livestock/Poultry Operation WPDES Permit Application Form 3400-025
2. An updated Animal Unit Calculation Worksheet Form 3400-025A
3. EA Questionnaire
4. Plans and specifications for any proposed reviewable structures/systems
5. An evaluation of existing reviewable structures/systems
6. 180-days Manure Storage Calculations

Checklists and forms to assist you and your consultant in preparing and submitting complete application information are available at: http://dnr.wi.gov/topic/AgBusiness/CAFO/PermitForms.html. Please mail the information identified above to:

CAFO Intake Specialist-WT/3
WDNR
P.O. Box 7185
Madison, WI 53703-7185

The following application materials have been received to date:

1. Labeled Aerial Maps
2. Nutrient Management Plan (NMP)

As you know, the regional Agricultural Specialist assigned to your operation is Brad Holtz (phone: (920) 662-5407, e-mail: Bradley.Holtz@wisconsin.gov). Please continue to work with Brad to determine appropriate due dates for submitting the required application materials. In order to begin processing your application and to conduct a more thorough review to determine if additional information is needed, all of the above application materials must be received by the Department. Please understand that until the Department approves design plans, you may not begin construction of reviewable facilities. In addition, until you are issued coverage under a WPDES permit, you may not populate to 1,000 animal units or more.

We look forward to working with you throughout the permitting process. Please do not hesitate to contact Brad or me if you have any questions regarding this letter or questions about the application materials.

Sincerely,

Tyler Dix
CAFO Intake Specialist
Bureau of Watershed Management

Phone: (608) 261-8437
Email: Tyler.Dix@Wisconsin.gov

Cc: Kevin Beckard, Ag Source (via e-mail)
Dave Wetenkamp, Brown County LWCD (via email)
NER – Casey Jones (via e-mail)
NER – Brad Holtz (via e-mail)
Matthew Gluckman, US EPA Region V (via e-mail)

AgSource Laboratories
A subsidiary of Cooperative Resources International

106 North Cecil Street
P.O. Box 7
Bonduel, Wisconsin 54107
715-758-2178 • FAX 715-758-2620
www.agsource.com

DATE: 3-6-2015

TO: Donald R. Schwer III – US EPA Region 5

FROM: Kevin Beckard, AgSource Laboratories

SUBJECT: Ledgeview Farms 2014 Annual Report

Mr Schwer,
Attached you will find the 2014 annual report for Ledgeview Farms, LLC as required by paragraph 69 of their Administrative Order Docket No. V-W-13-AO-22. The report contains the required information from items a through g in paragraph 69 of the order. If you have any questions or need further information feel free to contact me at 920-309-1948.

Thank You,

Kevin Beckard
AgSource

Cc: Jason Pansier – Ledgeview Farms
Brad Holtz - WDNR

2014 Annual Report

Ledgeview Farms, LLC

Introduction

Ledgeview Farms, LLC is a dairy and cropping enterprise located in the Town of Ledgeview in Brown County Wisconsin. The business is owned and managed by Glen, Jason and Roy Pansier.

This report is being prepared in accordance with paragraph 69 of the Ledgeview Farms Administrative Order (Docket No. V-W-13-AO-22) they received from EPA in 2013. Paragraph 69 of the Administrative Order states:

Annual Reports: Respondent shall submit an annual report to EPA and WDNR not later than March 15 of each calendar year following the effective date of this Order. In each annual report, Respondent shall include the following information for the previous calendar year prior to submittal of that annual report:

A. The maximum number and type of animals confined, whether in open confinement or housed under roof:

Animal Numbers for 2014		
Livestock Type and Size Class	**Animal Numbers**	**Housing Type**
Calves (Dairy/Beef) up to 400#	370	Housed under Roof
Heifers – 400# to 800#	135	Housed under Roof/Open Confinement
Heifers – 800# to 1200#	205	Housed under Roof/Open Confinement
Milking and Dry Cows	555	Confined under Roof
Beef Steers -400# to Market	420	Housed under Roof/Open Confinement

B. The estimated amount of total manure, litter, and process wastewater generated at the Site in the previous 12 months:

In 2014 Ledgeview Farms generated and land applied approximately 15,750 tons of solid/semi-solid manure and approximately 360,000 gallons of milkhouse wastewater.

C. The estimated amount of total manure, litter, and process wastewater transferred to another person from the Site in the previous 12 months (tons/gallons):

In 2014 Ledgeview Farms did not transfer any manure or process wastewater from their farm to a 3rd party. All manure and process wastewater generated by the farm was applied to fields contained within the nutrient management plan.

D. The total number of acres for land application covered by the nutrient management plan:

The nutrient management plan for Ledgeview Farms for 2014 contained 2,146 acres. For 2015 the acres contained in this plan will be increased as Ledgeview Farms has purchased and rented additional cropland.

E. The total number of acres under the control of Respondent that were used for land application of manure, litter, and process wastewater in the previous 12 months:

In 2014 Ledgeview Farms applied manure and process wastewater to approximately 874 acres. All fields were contained in the Ledgeview Farms nutrient management plan.

F. A summary of all manure, litter, and process wastewater discharges from the production area that have occurred in the previous 12 months, including the date, time, and approximate volume of such discharges:

Ledgeview Farms has not documented any discharge events from the production sites in 2014.

G. A statement indicating whether the current version of the nutrient management plan was developed or approved by a certified nutrient management planner.

Kevin Beckard of Agsource Laboratories developed the Nutrient Management Plan (NMP) for Ledgeview Farms. Kevin is a Certified Crop Advisor (license # 29509) in Wisconsin.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false statements and information, including the possibility of fines and imprisonment for knowing violations.

Ledgeview Farms Representative

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

NOV 29 2016

REPLY TO THE ATTENTION OF

WC-15J

CERTIFIED MAIL 7009 1680 0000 7645 8580
RETURN RECEIPT REQUESTED

Ledgeview Farms LLC
c/o Roy Pansier, Registered Agent
3870 Dickinson Road
De Pere, Wisconsin 54115

Subject: Notice of Intent to File Civil Administrative Complaint Against Ledgeview Farms

Dear Mr. Pansier:

The U. S. Environmental Protection Agency plans to file an administrative complaint for civil penalties against Ledgeview Farms LLC, pursuant to Section 309(g) of the Clean Water Act (CWA), 33 U.S.C. § 1319. In the complaint, EPA will allege that Ledgeview Farms LLC has violated the CWA by having seven unauthorized discharges of manure and process wastewater and having one unauthorized discharge of construction sediment to Waters of the United States.

Based on information currently available to us, we plan to propose a penalty of up to $128,000 in the complaint. This letter is not a demand to pay a penalty. We will not ask you to pay a penalty until we file the complaint or a final order. Before filing the complaint, we are giving you the opportunity to present any information that you believe we should consider. Relevant information might include evidence that you did not violate the law; evidence that you relied on compliance assistance from EPA or a state agency; evidence that we identified the wrong party; or financial data bearing on your ability to pay a penalty.

If you believe that you will be unable to pay a $128,000 penalty because of financial reasons, please send us certified, complete financial statements including balance sheets, income statements and all notes to the financial statements, and your company's signed income tax returns with all schedules and amendments, for the past three years.

You may assert a claim of business confidentiality under 40 C.F.R. Part 2, Subpart B, for any portion of the information you submit to us. Information subject to a business confidentiality

claim is available to the public only to the extent allowed by 40 C.F.R. Part 2, Subpart B. If you fail to assert a business confidentiality claim, EPA may make all submitted information available, without further notice, to any member of the public who requests it.

Before filing the complaint, EPA is extending to Ledgeview Farms LLC the opportunity to resolve this matter by entering into a Consent Agreement and Final Order (CAFO) with issuance of a CAFO by EPA. If Ledgeview Farms wishes to discuss resolving this matter under a CAFO, **within 10 calendar days** after you receive this letter, please send any written response to:

Donald R. Schwer III
Water Division, WC-15J
U.S. EPA Environmental Protection Agency, Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604

and

Catherine Garypie
Office of Regional Counsel
U.S. EPA Environmental Protection Agency, Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604

If you want to confer with us, you should contact Donald R. Schwer III of the Water Enforcement and Compliance Assurance Branch, in writing **within 10 calendar days** after you receive this letter. Please be advised that this conference is not a settlement negotiation covered by Federal Rule of Evidence 408; we may use any information you submit in support of an administrative, civil or criminal action. After the conference (or after you have submitted a written reply if we do not have a conference), we may give you the opportunity to engage in settlement negotiations before we file the complaint. If pre-filing settlement negotiations commence and are successful, a settlement agreement can be filed under EPA regulations at 40 C.F.R. § 22.13(b).

If you do not respond to this letter, EPA may file a complaint without further notice against Ledgeview Farms as authorized under Section 309(g) of CWA, 33 U.S.C. § 1319(g).

If you have any questions, please telephone Donald R. Schwer III, (312) 353-8752 or Catherine Garypie, Associate Regional Counsel, at (312) 886-5825.

Thank you for your prompt attention to this matter.

Sincerely,

Christopher Korleski
Director, Water Division

cc: Tom Bauman, Wisconsin Department of Natural Resources
Brad Holtz, Wisconsin Department of Natural Resources
Casey Jones, Wisconsin Department of Natural Resources

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
Green Bay Service Center
2984 Shawano Avenue
Green Bay, WI 54313

WISCONSIN DEPT. OF NATURAL RESOURCES

February 2, 2017

Jason Pansier
Ledgeview Farms LLC
3870 Dickinson Rd
De Pere, WI 54115

Subject: **Wisconsin Pollutant Discharge Elimination System (WPDES) Permit Application – ACTION REQUIRED**

Dear Mr. Pansier:

This letter is to provide notification that the Wisconsin Department of Natural Resources (department) will proceed with issuance of a Wisconsin Pollutant Discharge Elimination System (WPDES) permit for Ledgeview Farms LLC. The department received permit application materials in 2014, but a permit was not issued due to pending US EPA actions. Updated information is required to proceed with the permit issuance process at this time. Please submit the following items in accordance with NR 243.12, Wis. Adm. Code:

1. Updated Livestock/Poultry Operation WPDES Permit Application (Form 3400-025);
2. Updated Animal Unit Calculation Worksheet (Form 3400-025A);
3. Updated aerial photographs of site location, manure and stormwater flow diagrams, and soil survey maps for the existing main farm site as well as any satellite facilities.
   - Include scaled drawings and descriptions of: existing and proposed animal housing, manure storage, feed storage, and composting or treatment facilities; process wastewater storage or treatment facilities or systems; runoff control structures or systems; feed storage structures; groundwater monitoring systems; water supply wells; ancillary service and storage areas; and loading and outside lot areas.
4. EA Questionnaire;
5. Evaluations of existing reviewable structures/systems;
6. Plans and specifications for any proposed reviewable structures/systems;
7. 180-day manure and process wastewater storage calculations;
8. 5-year Nutrient Management Plan (NMP);
9. Description of permanent spray irrigation systems and any other landspreading or land treatment systems, if applicable;

Application forms and reference documents can be found online at:
http://dnr.wi.gov/topic/AgBusiness/CAFO/PermitForms.html

Permit application materials above should be sent to:

CAFO Intake Specialist - WT/3
Wisconsin Department of Natural Resources

PO Box 7185
101 S Webster St
Madison WI 53707-7185

Please submit the required items above to the department no later than **March 31, 2017**. If you have any questions regarding this letter or the WPDES permit application process, please contact me at (920) 662-5187 or Heidi.SchmittMarquez@wisconsin.gov.

Sincerely,

Heidi Schmitt Marquez
Agricultural Runoff Management Specialist

ec: Kevin Beckard, AgSource Laboratories
John Roach, Roach & Associates LLC
Don Schwer III, USEPA
Dave Wetenkamp, Brown County Land & Water Conservation Department
Rick Stoll, DNR – Green Bay
Casey Jones, DNR – Oshkosh
Clare Freix, DNR – Madison

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
PO Box 7185
101 S. Webster Street
Madison WI 53707-7185

Scott Walker, Governor
Cathy Stepp, Secretary
Telephone 608-266-2621
FAX 608-267-3579
TTY Access via relay - 711

April 26, 2017

Jason Pansier
Ledgeview Farms, LLC
3870 Dickinson Road
DePere, WI 54115

Subject: CAFO WPDES Final Permit Application - Acknowledgment of Receipt
Status: Incomplete

Dear Jason Pansier:

The Department received your application materials for issuance of a CAFO WPDES permit (No. WI-0065421-01) to Ledgeview Farms, LLC on April 03, 2017. Your application is currently incomplete because it is missing the following components:

1. Updated Livestock/Poultry Operation WPDES Permit Application Form 3400-025
2. Updated Animal Unit Calculation Worksheet Form 3400-025A
3. Evaluations of existing reviewable facilities (submitted through the ePermitting System)
4. Plans and specifications for any proposed reviewable structures/systems (submitted through the ePermitting System)

Checklists and forms to assist you and your consultant in preparing and submitting complete application information are available at: http://dnr.wi.gov/topic/AgBusiness/CAFO/PermitForms.html. The following materials have been received to date:

1. Nutrient Management Plan (NMP)
2. Labeled Aerial Maps
3. EA Questionnaire
4. 180 day manure storage calculations

In order to begin processing your application and to conduct a thorough review to determine if additional information is needed, all of the above application materials must be received by the Department. Your operation is currently above the permit threshold of 1,000 animal units and should already be covered under a WPDES permit. If the missing application materials are not received by May 10, 2017, the Department may take additional action to obtain a complete permit application. Contact me if you are unable to meet this deadline. Application materials should be mailed to:

CAFO Intake Specialist-WT/3
WDNR
P.O. Box 7185
Madison, WI 53703-7185

The regional Agricultural Runoff Management Specialist assigned to your operation is Heidi Schmitt Marquez. Please do not hesitate to contact her (phone: (920) 662-5187, e-mail: Heidi.SchmittMarquez@wisconsin.gov) or me if you have any question about your application materials. We look forward to working with you throughout the permitting process.

Sincerely,

Clare Freix

Clare Freix
CAFO Intake Specialist
Bureau of Watershed Management

Phone: (608) 261-8437
Email: Clare.Freix@Wisconsin.gov

cc: Heidi Schmitt Marquez
David Wetenkamp, Brown County LWCD
Kevin Beckard, Ag Source
Mike Mushinski, County Conservationist

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
PO Box 7185
101 S. Webster Street
Madison WI 53707-7185

Scott Walker, Governor
Cathy Stepp, Secretary
Telephone 608-266-2621
FAX 608-267-3579
TTY Access via relay - 711

August 8, 2017

FILE REF: R-2017-0097i
WPDES Permit #: WI-0065421

Jason Pansier
Ledgeview Farms, LLC
3870 Dickinson Rd.
De Pere, WI 54115

Subject: Non-compliant Evaluation Review for the Facilities Reviewed List at Ledgeview Farms, LLC, Sec 33, T23N, R21E, Ledgeview Township, Brown County (Upper and Lower Farms) – MORE INFORMATION IS REQUIRED

Dear Mr. Pansier:

The Division of External Services of the Wisconsin Department of Natural Resources (the Department) received an evaluation submitted on behalf of Ledgeview Farms, LLC by David Wetenkamp, Brown County LWCD on May 26, 2017. Department review was performed to determine if compliance is demonstrated in accordance with s. 243.16 Wis. Adm. Code, and applicable NRCS standards.

Documentation that was provided for review was determined to not be in compliance due to insufficient information. A revised evaluation must be submitted with the permit application. It is your responsibility to demonstrate compliance with ch. NR 243, Wis. Adm. Code, and applicable NRCS Standards. Questions concerning the review may be directed to Jeff Kreider, and questions concerning timelines and permit issues may be directed to the DNR CAFO Specialist. (Contact information at the end of this letter.)

Days of Available Storage: Not in compliance with s. NR 243.15(3)(i) to (k), Wis. Adm. Code.

- Provide tables and/or spreadsheets that include storage volume calculations, storage volumes and all inputs to the waste storage pond(s). Include up to a 25 year / 24 hour storm event.

Reviewable Facilities:

- The documentation submitted contained as-builts, but no current site assessment was completed. A current site assessment is required to show that the facility or system presently is compliant. The documentation that was submitted is not acceptable for review.
- Without proper documentation for the existing reviewable facilities and systems as defined in s. NR 243.03(56), all reviewable facilities and systems are considered to not be in compliance with NR 243.
- When stating that a reviewable facility or system meets an NRCS standard, the statement must include the standard number, e.g. NRCS 313, table and column numbers (if applicable) and the date of the standard used to determine that the pond is compliant.

Related to the Waste Storage Pond Constructed in 2015:

- The pond was constructed without approval.
- Plans and specifications for the pond had been submitted to the DNR for approval were withdrawn because they were not approvable. The plans and specifications that were submitted, possibly could have met the current NRCS 313 standard; but they were not compliant with ch. NR 243, Wis. Adm. Code.
- The evaluation must provide the necessary justifications and certifications to show that the waste storage pond meets NRCS 313 and NR 243.15.
- The DATCP approval for the withdrawn plans and specifications dated November 2014 is not considered valid once they were withdrawn. A new approval would have been required.

- The submitted document states that Brown County staff was on site during construction and inspection of the waste storage pond. Therefore, the DNR assumes that Brown County has taken responsibility for the construction oversight and inspection of the pond. Certification from the county must be included within the evaluation that states the pond meets or exceeds the applicable NRCS standards and NR 243 requirements. If the county will not be responsible, then a person with the appropriate job approval or has a professional engineer license needs to take the responsibility to certify that the pond meets or exceeds the specific NRCS standard and NR 243 requirements. Until this occurs, the pond is not in compliance with s. NR 243, Wis. Adm. Code.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

Brian Weigel, PH.D.
Deputy Director, Watershed Bureau
Runoff Management Program

Jeff C. Kreider
Water Resources Engineer; Watershed Bureau

Email:

Dave Wetenkamp; Technician
Brown County Land Conservation Department
(920) 391-4639

Mike Mushinski; County Conservationist
Brown County
(920) 391-4621; mushinski_ML@co.brown.wi.us

Matt Woodrow, P.E.
DATCP
(920) 427-8505; matthew.woodrow@wisconsin.gov

Heidi Schmitt Marquez; DNR CAFO Specialist
DNR, Northeast Region
(920) 662-5187; Heidi.SchmittMarquez@Wisconsin.gov

Jeff Kreider
DNR, Madison Office
(608) 266-0856; jeff.kreider@wisconsin.gov

Drew Zelle
DATCP
(920) 858-1517; drew.zelle@wisconsin.gov

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

WC-15J

MEMORANDUM

SUBJECT: Inspection Report Transmittal to Ledgeview Farms, LLC

FROM: Donald R. Schwer III DRS 8/10/17
Enforcement Officer

TO: File

I attest that the inspection report from the April 9, 2015 inspection was transmitted to Ledgeview Farm, LLC. The transmittal letter and the report were signed at the time of transmittal on December 8, 2015. EPA has misplaced the signed versions of these documents. The certified mail receipt documents that the farm received the inspection report on December 14, 2015. Attached is the Certified Mail receipt, the transmittal letter, and the inspection report as transmitted.

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Roy Pansier, Registered Agent
Ledgeview Farms, LLC
3870 Dickinson Road
De Pere, Wisconsin 54115

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☑ Agent ☐ Addressee

B. Received by (Printed Name) Joan Pansier C. Date of Delivery 12-14-15

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail® ☐ Priority Mail Express™
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. 7009 1680 0000 7675 2374

PS Form 3811, July 2013 Domestic Return Receipt

7009 1680 0000 7675 2374

U.S. Postal Service
CERTIFIED MAIL® RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com

RECEIVED
DEC 14 2015
WATER ENFORCEMENT & COMPLIANCE ASSURANCE BRANCH, EPA, REGION 5

Postage $ 1.10
Certified Fee 3.30
Return Receipt Fee (Endorsement Required) 2.70
Restricted Delivery Fee (Endorsement Required)
Postmark Here 12/11/15

Mr. Roy Pansier, Registered Agent
Ledgeview Farms, LLC
3870 Dickinson Road
De Pere, Wisconsin 54115

WC-15J

CERTIFIED MAIL 7009 1680 0000 7675 2374
RETURN RECEIPT REQUESTED

Mr. Roy Pansier, Registered Agent
Ledgeview Farms, LLC
3870 Dickinson Road
De Pere, Wisconsin 54115

Subject: Clean Water Act Compliance Evaluation Inspection Report

Dear Mr. Pansier:

Protecting water quality is a high priority of the U.S. Environmental Protection Agency. Pollutants such as excessive nutrients and pathogens discharged to waterways from animal feeding operations contribute to poor water quality and impairment of uses of those waterways.

On April 9, 2015, EPA conducted an inspection of your facility, Ledgeview Farms in De Pere, Wisconsin. The purpose of the inspection was to evaluate compliance with the Clean Water Act (CWA) and Administrative Order V-W-13-AO-22. Ledgeview Farms is a large Concentrated Animal Feeding Operation (CAFO) as defined in 40 C.F.R. § 122. During the inspection, we observed violations of the CWA and Administrative Order. The CWA and Order requires you to immediately cease all unauthorized discharges.

Ledgeview Farms continues to have serious compliance problems as noted in EPA's inspection report which is enclosed. EPA had a conference call with you on April 21, 2015 in which we discussed our concerns. You had committed to correct the concerns we noted on the upper and lower farm and provide us a plan that included the installation of interim measures and a schedule for the installation of all permanent measures. To this date, EPA has yet to receive a complete and approvable Permit Compliance Plan submittal from Ledgeview Farms.

If you have any questions or concerns regarding this letter, or the inspection report, please contact Donald R. Schwer III at (312) 353-8752 or schwer.don@epa.gov.

Sincerely,

Ryan Bahr, Chief, Section 2
Water Enforcement and Compliance Assurance Branch

Enclosure

Cc: Brad Holtz, Wisconsin Department of Natural Resources
Amy Minser, Wisconsin Department of Natural Resources

CWA COMPLIANCE EVALUATION INSPECTION REPORT
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 5

Purpose:	Compliance Evaluation Inspection
Facility:	Ledgeview Farms 3875 Dickinson Road De Pere, Wisconsin 54115 44.4249N, 87.9695W
NPDES Permit Number:	None
Date of Inspection:	April 9, 2015
EPA Representatives:	Donald R. Schwer III, Enforcement Officer schwer.don@epa.gov, 312-353-8752 Ben Atkinson, Agronomist
State Representatives:	NA
Facility Representatives:	Jason Pansier, Owner
Report Prepared by:	Donald R. Schwer III, Enforcement Officer
Report Date:	December 8, 2015

Inspector Signature_____

1. BACKGROUND

The purpose of this report is to describe, evaluate and document Ledgeview Farms compliance with the Clean Water Act (CWA) at its De Pere, Wisconsin facility on April 9, 2015. This inspection was performed pursuant to Section 308(a) of the Federal Water Pollution Control Act, as amended. EPA issued an Order for Compliance, Docket Number: V-W-13-AO-22, on September 13, 2013 and issued an Information Request, Docket Number: V-W-14-308-24, on July 18, 2014.

Ledgeview Farms is a Limited Liability Company (LLC) dairy operation in Brown County, Wisconsin. It is owned and operated by Mr. Glenn Pansier (father), Mr. Roy Pansier (uncle), and Mr. Jason Pansier (son). The operation consists of two facilities that operate under the same nutrient management plan (NMP). The Home site is at 3875 Dickinson Road, De Pere, Wisconsin. A Satellite site is northeast of the Home location at 3688 County Road V, De Pere, Wisconsin.

Ledgeview Farms is considered a large Concentrated Animal Feeding Operation (CAFO) due to the total number of cattle maintained at the facility. Ledgeview Farms currently houses approximately 550 mature dairy cows and 1130 cattle other than mature dairy cows. There was currently no National Pollutant Discharge Elimination System (NPDES) permit allowing discharge from the CAFO. The facility had submitted a permit application to WDNR.

Ledgeview Farms was conducting earthwork related to the construction of a waste storage facility and a milking parlor. There was currently no National Pollutant Discharge Elimination System (NPDES) permit allowing sediment discharge from the facility related to construction and earthwork.

Surface runoff from the Ledgeview Farms Home site flowed through pathways to unnamed tributaries that abuts the east side of the site. The unnamed tributary that abuts the east side of the Home site flows to an unnamed tributary that flows to Bower Creek. Bower Creek flows to the East River. The East River flows to the lower Fox River. The lower Fox River flows to Green Bay.

Surface runoff from the Ledgeview Farms Satellite site flowed east through ditches and pathways to an unnamed tributary. Additionally, surface runoff from portions of the Satellite site flowed south/west to an unnamed tributary that abuts the south/west end of the site. The unnamed tributaries flow to Bower Creek. Bower Creek flows to the East River. The East River flows to the lower Fox River. The lower Fox River flows to Green Bay.

The watershed is covered under a Total Maximum Daily Load and Watershed Management Plan for Total Phosphorus and Total Suspended Solids in the Lower Fox River Basin and Lower Green Bay.

2. SITE INSPECTION

Prior to beginning the inspection, I conducted a visual reconnaissance of the Ledgeview Farms sites and its surroundings from the public right-of-way. This included Dickinson Road for the Home site and County Road V for the Satellite site. During the reconnaissance, I observed significant track out of sediment onto County Road V near the construction entrance related to the construction of a structure north of the new barn. Sediment was deposited in the south bound lane of County Road V. The sediment accumulation was most significant within the first couple hundred feet south of the construction entrance; however, sediment had been tracked all the way to the intersection of County Road V and Dickinson Road.

I arrived at Ledgeview Farms Home site at approximately 8:23 a.m. on April 9, 2015. I parked the vehicle near the entrance of the facility. The temperature was approximately 36° F and it was overcast. The weather station, Green Bay Weather Forecast Office, WI US (USC00473268), in Green Bay, Wisconsin had an observed rainfall of 0.28 inches on April 9, 2015. Upon arrival, Mr. Atkinson and I put on disposable boots. I located Mr. Jason Pansier in the milking shed and explained to him that I would like to conduct an inspection to evaluate Ledgeview Farms compliance with the Administrative Order and to evaluate the interim and permanent measures the farm had implemented to cease discharges of manure and process wastewater. I told Mr. Pansier that the inspection would be similar to the previous inspection we conducted at the facility. Mr. Pansier requested time to finish milking the cows. I asked Mr. Pansier if there was anyone else on site who could perform the facility walkthrough. He said he was the only person who could walk us around the facility.

We waited in our vehicle until Mr. Pansier finished milking. During the time we waited in our vehicle, we observed a skid loader transporting loads of sand to the north side of the facility. The skid loader continued transporting loads of sand until we began the walkthrough at 9:30 a.m. Later in the inspection, we noted fresh loads of sand at all the entrance/exit locations of the barns. Mr. Pansier requested we begin the inspection at the Satellite facility. I said we would like to start the inspection at this site.

2.1 Walkthrough of the Facility

To facilitate the walkthrough section of this report, overview photographs are included in Attachment 1 which includes building labels, outlines of drainage pathways, and sample locations. The inspection photographs are in Attachment 2.

Home Site

We began the walkthrough portion of the inpection by walking to the north end of the facility. We observed an emergency response plan in the machine shed located on the far west side of the facility. At the north end of the Milk Cow Barn, manure and process wastewater was flowing north into the field north of the Milk Cow Barn (Attachment 2: RIMG0011-RIMG0013). I observed an accumulation of manure, bedding, and feed

solids throughout the field north of the Milk Cow Barn. Manure and process wastewater was flowing out from a barn access point on the northwest corner of the Milk Cow Barn (Attachment 2: RIMG0014). A berm of sand had been recently placed across the access point; however, it did not eliminate the flow of manure and process wastewater from the barn. Additionally, drainage from the access way and feed bunker were contributing flow north into the field north of the Milk Cow Barn (Attachment 2: RIMG0015; RIMG0192). The access way and feed bunker lacked proper housekeeping which resulted in an accumulation of raw materials and manure on the access way surfaces (Attachment 2: RIMG0192). Process wastewater was flowing north from the access way to the field north of the Milk Cow Barn.

I observed process wastewater on the north end of the feed bunker which could drain west to the unnamed tributary (Attachment 2:RIMG0016). I observed manure and process wastewater in pathways throughout the field north of the Milk Cow Barn (Attachment 2: RIMG0017-RIMG0019). Process wastewater flowed north down the ledge into a borrow area (Attachment 2: RIMG0020-RIMG0030). The borrow area under construction did not conatin any sediment and erosion control structures or best management practices (BMPs) in place. The facitily had not acquired a constuction site storm water discharge permit or developed a storm water pollution prevention plan for the areas of the facility that were disturbed. I estimated the total area of disturbed land at approximately 9-12 acres based on on-site observation and aerial photographs. I estimated that the borrow area was approximately 2-3 acres in size. I observed process wastewater in puddles and pathways throughout the borrow area and the general flow direction of the process wastewater was to the north. The flowing wastewater in the pathways was dark in color and smelled of manure. The flowing wastewater in the pathways looked like a diluted liquid manure slurry that would normally be stored in a waste storage facility or slurry storage structure.

Process wastewater and sediment laden stormwater flowed north into a forested area. I observed foam throughout the flow pathway in the forested area (Attachment 2: RIMG0033-RIMG0040). The flow pathway continued north and then east and connected with the unnamed tributary. The water from the flow pathway was cloudy at the discharge point into the unnamed tributary(Attachment 2: RIMG0043-RIMG0044). Before the pathway connected with the unnamed tributary, the topography leveled off. In this area I observed the deposition of red clay along the forest floor (Attachment 2: RIMG0202-RIMG0206).

We continued back south where we observed another process wastewater stream flowing down the ledge into the borrow area (Attachment 2:RIMG0047-RIMG0059; RIMG241-RIMG0261). The process wastewater was emanating from the barns and cattle pathways used to transfer dairy cows between the New Barn and the existing barns (Attachment 2: RIMG0078; RIMG0080-RIMG0082; RIMG0091- RIMG0092).

We continued north between the existing barns. I observed manure and process wastewater tracked out of the barn and on the concrete area (Attachment 2: RIMG0060-RIMG0062). Sand had recently been placed at the barn access point in which manure

and process wastewater was tracked out of the barn. This area drains north to the field north of the Milk Cow Barn.

We walked to Lot B. The open lot did not have containment for manure or process wastewater. A sand berm had recently been placed on the east end of the open lot (Attachment 2: RIMG0063-RIMG0064). A pile of bedding was located at the east side of Lot B. The process wastewater from the open lot and pile could flow east and north to a culvert under the New Barn and to the unnamed tributary on the east side of the site (Attachment 2: RIMG0064-RIMG0065). I observed a pile of waste material located east of Lot B (Attachment 2: RIMG0066-RIMG0067). Process wastewater contacting the waste material could flow north to the culvert under the new barn and to the unnamed tributary.

At the southeast corner of the New Barn, I observed a mucky area that drained toward the culvert under the New Barn. Sand had been placed at an access point along the southwest end of the New Barn. Manure and process wastewater was observed outside of the southwest access point of the New Barn and could flow south toward the mucky area (Attachment 2: RIMG0072-RIMG0077).

A cow access way between the New Barn and the barn west of the New Barn contained manure solids on its surface. Manure and process wastewater flowed north from the access way between the New Barn and the barn west of the New Barn (Attachment 2: RIMG0078; RIMG0091-RIMG0092). It then flowed west after contacting a concrete wall and then flowed to the north into the field west of the concrete pits (Attachment 2: RIMG0080-RIMG0082). A sand berm had recently been placed near the metal gate on the access way. Mr. Pansier said he did not believe the sand berms were sufficient to adequatly contain the manure and process wastewater.

I observed the west concrete pit; it was partially full (Attachment 2: RIMG0083). At the northwest corner of the concrete pit, I observed process wastewater which drained to the northwest (Attachement 2: RIMG0084). There was a trickling flow of process wastewater emenating from the northwest corner of the concrete pit (Attachement 2: RIMG0085; RIMG0090).

I observed manure and waste materials throughout the access ways on the production area due to poor housekeeping (Attachement 2; RIMG0093; RIMG0095).

Satellite Site

I began the walkthrough of the Satellite site on the east side of Lot D. A sand berm had recently been placed at the access gate for Lot D. Feed, manure, and process wastewater were observed east of the access gate on the concrete (Attachement 2: RIMG0098-RIMG0102). The area east of the access gate drained southeast into a grassed area north of the Heifer Barn. The grassed area drained into the County Road V ditch. Feed and process wastewater had no containment along the south end of Lot D (Attachement 2: RIMG0103-RIMG0105). The facility had recently constructed a new feed bunker

(Attachement 2: RIMG0109). Leachate was observed outside of the bunker walls on the north and south side of the new feed bunker (Attachment 2: RIMG0110; RIMG0115). An unnamed tributary is located less than 50 feet from the edge of the feed bunker (Attachment 2: RIMG0112- RIMG00114). I observed leachate seeping out through the rock/soil along the south side of the feed bunker and flowing overland to the unnamed tributary (Attachment 2: RIMG0116-RIMG0119; RIMG0126-RIMG0130; RIMG0167-RIMG0168). I observed a sheen where the leachate entered the unnamed tributary (Attachment 2: RIMG0120-RIMG0125).

I observed process wastewater and feed solids around the southeast side of the feed bunkers (Attachment 2: RIMG0133-RIMG0136). The process wastewater was located in an area and could flow south and west into and across a field. I observed process wastewater and feed solids around the east side of the feed bunkers (Attachment 2: RIMG0137; RIMG0154- RIMG0162). The process wastewater flowed east into a grassed area north of the Heifer Barn and continued northeast into the County Road V ditch (Attachment 2: RIMG0138- RIMG0151; RIMG0163-RIMG0166). I observed feed solids throughout the grassed area and observed water flowing through the culvert east under County Road V. The County Road V ditch and culverts flowed to the unnamed tributary.

2.2 Closing Conference and Post-Inspection

I summarized my findings and observations to Mr. Pansier. I expressed the following areas of concern:

1. At the Satellite site, process wastewater runoff generated at the open lot and feed bunkers flowed east to the County Road V ditch.
2. At the Satellite site, process wastewater generated at the New Bunker flowed west to the unnamed tributary.
3. At the Home site, process wastewater was trickling out of the northwest corner of the concrete pit.
4. At the Home site, manure and process wastewater from the feed bunker, access way, and northwest access point of the Milk Cow Barn did not have containment and flowed north through pathways that led to the unnamed tributary on the east end of the site.
5. At the Home site, manure and process wastewater from the New Barn, cattle walkways, and the barn located between the New Barn and the Milk Cow Barn did not have containment and flowed north through pathways that led to the unnamed tributary on the east end of the site.
6. At the Home site, manure and process wastewater from the used bedding stockpile and Lot B could flow east and north through a culvert under the barn to the unnamed tributary on the east end of the site.

2.3 Sampling Information

Sampling was conducted at various locations of the production area to determine the presence of pollutants that could impact the applicable unnamed tributaries. Mr. Pansier did not accompany EPA during sampling. I offered to split samples with Mr. Pansier. Mr. Pansier declined splitting samples. Samples were tested for fecal coliform, biochemical oxygen demand (BOD), total dissolved solids (TDS), total suspended solids (TSS), ammonia nitrogen, nitrate- nitrite nitrogen, total Kjeldahl nitrogen (TKN), and total phosphorus (TP).

Sample B01 was taken at 11:02 a.m. as a field blank. Sample S01 was taken at 11:14 a.m. of process wastewater from the New Bunker (Attachment 2: RIMG0169, RIMG0170). Sample S02 was taken at 11:25 a.m. of process wastewater emanating from the New Bunker and flowing into an unnamed tributary (Attachment 2: RIMG0178, RIMG0179). Sample S03 was taken at 11:32 a.m. of process wastewater in the grassed area at the Satellite site (Attachment 2: RIMG0181-RIMG0184). Sample S04 was taken at 11:35 a.m. of process wastewater flowing into the culvert under County Road V at the Satellite site (Attachment 2: RIMG0185- RIMG0189). Sample S05 was taken at 12:45 p.m. from the process wastewater in the drainage pathway at the unnamed tributary on the east side of the Home site (Attachment 2: RIMG0194-RIMG0195). Sample S06 and Sample S07 were taken at 1:00 p.m. of process wastewater in the drainage pathway in the borrow area that drains to the unnamed tributary on the east side of the Home site (Attachment 2: RING0234-RIMG0235). Sample S08 was taken at 1:12 p.m. of manure and process wastewater in a pathway emanating from the New Barn and cattle walkways between the New Barn and the barn west of the New Barn (Attachment 2: RIMG0250-RIMG0253). Sample S09 was taken at 1:20 p.m. of manure and process wastewater in a pathway emanating from the Milk Cow Barn and the access way between the Milk Cow Barn and the feed bunkers (Attachment 2: RIMG0265-RIMG0267). Sampling locations can be seen in Attachment 1: Figure 1 and Figure 2.

Sampling concluded at 1:20 pm. I took all samples. Samples were preserved starting at 1:30 pm according to EPA Region 5 Field Sampling Plan. Fecal coliform samples were transported to Pace Analytical Services, Inc. at 1241 Bellevue Street, Green Bay, Wisconsin. All other samples were hand delivered to the EPA Region 5 Chicago Regional Laboratory. All samples met holding time according to the EPA Region 5 Field Sampling Plan developed for the inspection.

The results of the sampling, summarized in Table 1, indicate multiple areas contribute pollutants into the unnamed tributaries. All of the samples had significant quantities of fecal coliform (<901 to 2,500,000 colony forming units (CFU) per 100 milliliter). Additionally, several forms of nitrogen are contained in the process wastewater samples, as indicated by the TKN, nitrate- nitrite nitrogen, and ammonia nitrogen sampling results. Total Phosphorus, TDS, and TSS were present in the samples. The laboratory results are in Attachment 3.

Table 1: Field Sampling Results

Sample ID	Fecal Coliform (CFU/100ml)	Biochemical Oxygen Demand (BOD) (mg/L)	Total Kjeldahl Nitrogen (TKN) (mg/L)	Nitrate-Nitrite Nitrogen (mg/L)	Ammonia Nitrogen (mg/L)	Total Phosphorus (mg/L)	Total Dissolved Solids (TDS) (mg/L)	Total Suspended Solids (TSS) (mg/L)
S01	<901	9300	1700	3.08	56.3	502	42000	95.7
S02	90,900	2600	162	1.94	67.7	21.9	4030	1670
S03	2,100,000	4300	244	U	57.2	103	5700	960
S04	2,500,000	2300	146	U	32.1	56.7	3680	342
S05	135,000	280	47.1	3.07	11.2	8.59	1060	66.0
S06	1,140,000	870	229	5.19	51.0	36.8	2760	645
S07	1,300,000	1800	255	5.22	45.4	39.8	2670	636
S08	757,000	4400	276	14.2	105	32.4	4310	149
S09	260,000	2300	138	2.79	18.9	40.1	2220	270
B01	-	4	0.09	U	U	U	U	U

U-Undetectable

3. POTENTIAL VIOLATIONS

According to Section 301(a) of the Clean Water Act, it is a violation to discharge pollutants from a CAFO to waters of the United States without a permit.

EPA observed discharges in the following locations:

1. At the Home site, process wastewater was trickling out of the northwest corner of the concrete pit and was observed in a depressional area. The depressional area drained north through pathways and was observed discharging to the unnamed tributary on the east side of the Home site.

2. At the Home site, manure and process wastewater from the feed bunker, access way, and the northwest access point of the Milk Cow Barn did not have containment and was flowing north through pathways and was observed discharging to the unnamed tributary on the east side of the Home site.

3. At the Home site, manure and process wastewater from the New Barn, cattle walkways, and the barn west of the New Barn did not have containment and was flowing north through pathways and was observed discharging to the unnamed tributary on the east side of the Home site.

4. At the Satellite site, process wastewater runoff generated at the feed bunkers was flowing east to the County Road V ditch. The County Road V ditch and culverts flow to the unnamed tributary.

5. At the Satellite site, process wastewater runoff generated at the New Bunker was flowing west and was observed discharging to the unnamed tributary.

According to Section 301(a) of the Clean Water Act, it is a violation to discharge pollutants from a point source to waters of the United States without a permit.

EPA observed discharges in the following locations:

1. At the Home site, the borrow area did not have sediment and erosion controls in place. Sediment laden storm water from the borrow area was flowing north through pathways and was observed discharging to the unnamed tributary on the east side of the Home site.

4. AREAS OF CONCERN

EPA observed these areas of concern whereby pollutants have the potential to reach waters of the United States:

1. At the Home site, runoff from Lot B could flow east to the unnamed tributary on the east end of the site.

2. The Home site contained waste feed, manure, and process wastewater in many of the access ways.

3. At the Satellite site, process wastewater runoff generated at the open lot could flow east to the County Road V ditch.

LIST OF ATTACHMENTS

1. Aerial photographs of Ledgeview Farms
2. Inspection Photographs
3. Field Sampling Results

ATTACHMENT 1: AERIAL PHOTOGRAPHS OF LEDGEVIEW FARMS

Figure 1.1: March 24, 2014 aerial photograph of Ledgeview Farms Home Site

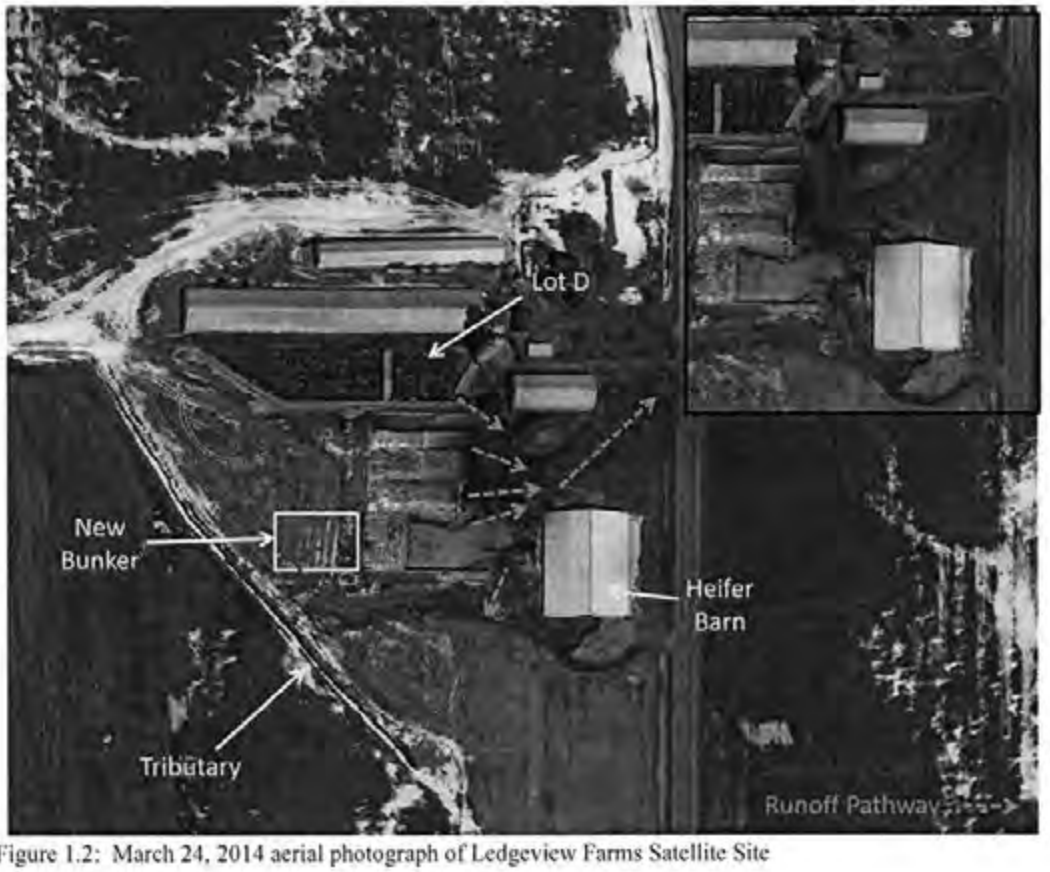


Figure 1.2: March 24, 2014 aerial photograph of Ledgeview Farms Satellite Site

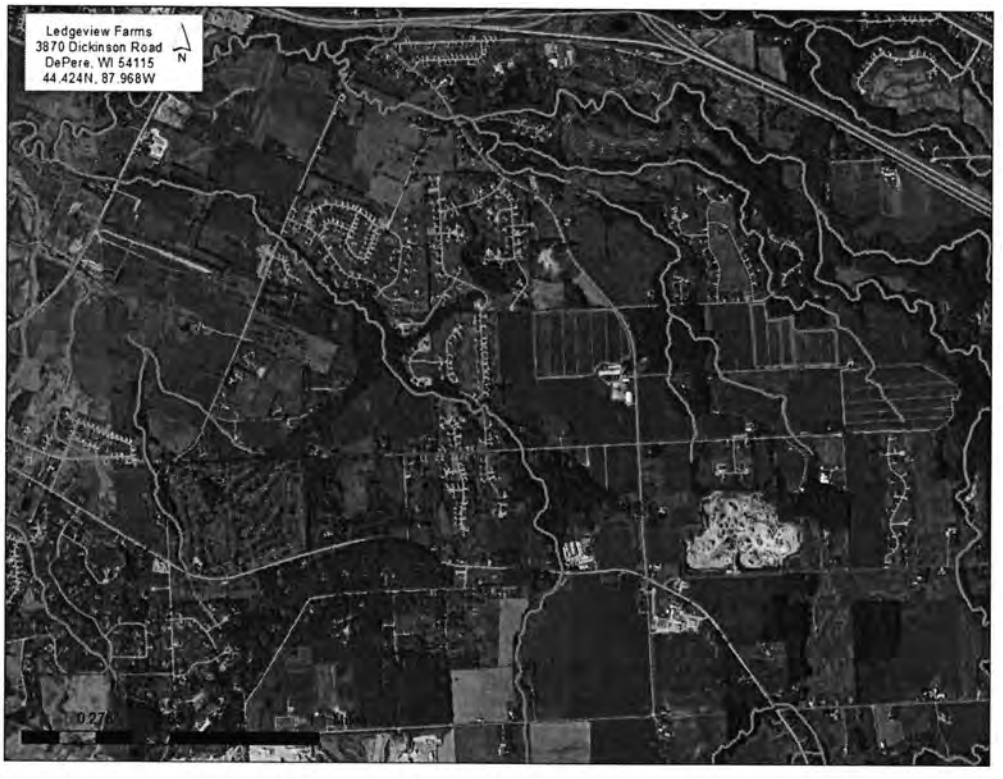


Figure 1.3: Aerial Photograph of National Hydrography Dataset (NHD) Waterways from the United States Geological Survey (USGS)

ATTACHMENT 2: INSPECTION PHOTOGRAPHS

Note: A table documenting photograph date, time, direction, and GPS coordinates is located at the end of this document.

1: RIMG0009

Description: The emergency response plan was located in the machine shed.

2: RIMG0010

Description: The emergency response plan was located in the machine shed.

3: RIMG0011
Description: Manure and process wastewater flowed out of the northwest end of the Milk Cow Barn and from the access ways and silage bunker to the west of the Milk Cow Barn. The manure and process waste water flowed north and entered the field to the north of the Milk Cow Barn.

4: RIMG0012
Description: The manure and process waste water flowed north and entered the field to the north of the Milk Cow Barn. The accumulation of manure, bedding, and feed solids was observed through the field north of the Milk Cow Barn.

5: RIMG0013
Description: Manure and process wastewater flowed out of the northwest end of the Milk Cow Barn and from the access ways and silage bunker to the west of the Milk Cow Barn. The manure and process waste water flowed north and entered the field to the north of the Milk Cow Barn.

6: RIMG0014
Description: Manure and process wastewater flowed out of the northwest end of the Milk Cow Barn and from the access ways and silage bunker to the west of the Milk Cow Barn. The manure and process waste water flowed north and entered the field to the north of the Milk Cow Barn.

7: RIMG0015
Description: Manure and process wastewater flowed out of the northwest end of the Milk Cow Barn and from the access ways and silage bunker to the west of the Milk Cow Barn. The manure and process waste water flowed north and entered the field to the north of the Milk Cow Barn.

8: RIMG0016
Description: Process wastewater was observed at the north end of the Feed Bunker

9: RIMG0017
Description: Feed, bedding, and manure solids were observed throughout the field north of the Milk Cow Barn. The field sloped to the north.

10: RIMG0018
Description: Feed, bedding, and manure solids were observed throughout the field north of the Milk Cow Barn. The field sloped to the north.

11: RIMG0019
Description: Manure and process wastewater flow from the field concentrated into a pathway.

12: RIMG0020
Description: Manure and process wastewater flow from the field concentrated into a pathway.

13: RIMG0021
Description: The process wastewater pathway flows to the north through the borrow area north of the Milk Cow Barn. The borrow area was used for the construction of a waste storage facility. Sediment and erosion control measures had not been implemented on the disturbed area. The dark colored water in the borrow area is process wastewater.

14: RIMG0023
Description: NA

15: RIMG0024
Description: The process wastewater pathway flows to the north through the borrow area north of the Milk Cow Barn. The borrow area was used for the construction of a waste storage facility. Sediment and erosion control measures had not been implemented on the disturbed area.

16: RIMG0025
Description: The process wastewater pathway flows to the north through the borrow area north of the Milk Cow Barn. The borrow area was used for the construction of a waste storage facility. Sediment and erosion control measures had not been implemented on the disturbed area. The dark colored water in the borrow area is process wastewater.

17: RIMG0026
Description: The process wastewater pathway flows to the north through the borrow area north of the Milk Cow Barn. The borrow area was used for the construction of a waste storage facility. Sediment and erosion control measures had not been implemented on the disturbed area. The dark colored water in the borrow area is process wastewater.

18: RIMG0027
Description: The process wastewater pathway flows to the north through the borrow area north of the Milk Cow Barn. The borrow area was used for the construction of a waste storage facility. Sediment and erosion control measures had not been implemented on the disturbed area. The dark colored water in the borrow area is process wastewater.

19: RIMG0028
Description: The process wastewater pathway flows to the north through the borrow area north of the Milk Cow Barn. The borrow area was used for the construction of a waste storage facility. Sediment and erosion control measures had not been implemented on the disturbed area. The dark colored water in the borrow area is process wastewater.

20: RIMG0029
Description: The process wastewater pathway flows to the north through the borrow area north of the Milk Cow Barn. The borrow area was used for the construction of a waste storage facility. Sediment and erosion control measures had not been implemented on the disturbed area. The dark colored water in the borrow area is process wastewater.

21: RIMG0030
Description: The process wastewater pathway flows to the north through the borrow area north of the Milk Cow Barn. The topography of the disturbed field is sloped such that the flow continues north into a wooded area. There were no sediment and erosion controls to reduce the amount of sediment transferred off site.

22: RIMG0031
Description: The process wastewater pathway flows to the north through a wooded area. Foam was observed in multiple locations throughout the pathway.

23: RIMG0032
Description: The process wastewater pathway flows to the north through a wooded area. Foam was observed in multiple locations throughout the pathway.

24: RIMG0033
Description: The process wastewater pathway flows to the north through a wooded area. Foam was observed in multiple locations throughout the pathway.

25: RIMG0034
Description: The process wastewater pathway flows to the north through a wooded area. Foam was observed in multiple locations throughout the pathway.

26: RIMG0035
Description: The process wastewater pathway flows to the north through a wooded area. Foam was observed in multiple locations throughout the pathway.

27: RIMG0036
Description: The process wastewater pathway flows to the north through a wooded area. Foam was observed in multiple locations throughout the pathway.

28: RIMG0037
Description: The process wastewater pathway flows to the north through a wooded area. Foam was observed in multiple locations throughout the pathway.

29: RIMG0038
Description: The process wastewater pathway flows to the north through a wooded area. Foam was observed in multiple locations throughout the pathway.

30: RIMG0039
Description: The process wastewater pathway flows to the north through a wooded area. Foam was observed in multiple locations throughout the pathway.

31: RIMG0040
Description: The process wastewater pathway flows to the north through a wooded area. Foam was observed in multiple locations throughout the pathway. After the flow pathway dropped down the ledge, it continued east through an area with relatively little elevation change to the unnamed tributary. Sediment deposition was observed throughout this area covering the forest floor.

32: RIMG0041
Description: The flow pathway continued east through an area with relatively little elevation change to the unnamed tributary. Sediment deposition was observed throughout this area covering the forest floor.

33: RIMG0042
Description: Water from the upstream portion of the unnamed tributary that abuts the east side of the Home site was clear.

34: RIMG0043
Description: The process wastewater pathway entered the unnamed tributary that abuts the east side of the Home site. The turbid water on the left hand side of the photo from the flow pathway mixed with the clear water from the upstream portion of the unnamed tributary.

35: RIMG0044
Description: The process wastewater pathway entered the unnamed tributary that abuts the east side of the Home site. The turbid water from the flow pathway was observed throughout the downstream portion of the unnamed tributary.

36: RIMG0045
Description: The process wastewater pathway entered the unnamed tributary that abuts the east side of the Home site.

37: RIMG0046
Description: The process wastewater pathway flowing east to the unnamed tributary that abuts the east side of the Home site.

38: RIMG0047
Description: Process wastewater flowed to the north to the borrow area north of the Milk Cow Barn. This process wastewater was emanating from the New Barn, the barn west of the New Barn, and the access ways between these barns.

39: RIMG0048
Description: Process wastewater flowed to the north to the borrow area north of the Milk Cow Barn. This process wastewater was emanating from the New Barn, the barn west of the New Barn, and the access ways between these barns.

40: RIMG0049
Description: Process wastewater flowed to the north to the borrow area north of the Milk Cow Barn. This process wastewater was emanating from the New Barn, the barn west of the New Barn, and the access ways between these barns.

41: RIMG0050
Description: Process wastewater flowed through a pathway to the north to the borrow area north of the Milk Cow Barn. This process wastewater was emanating from the New Barn, the barn west of the New Barn, and the access ways between these barns.

42: RIMG0051
Description: Process wastewater flowed through a pathway to the north to the borrow area north of the Milk Cow Barn. This process wastewater was emanating from the New Barn, the barn west of the New Barn, and the access ways between these barns.

43: RIMG0052
Description: Process wastewater in the field west of the concrete pits.

44: RIMG0053
Description: Process wastewater in the field west of the concrete pits.

45: RIMG0054
Description: Process wastewater in the field west of the concrete pits.

46: RIMG0055
Description: Process wastewater in the field west of the concrete pits.

47: RIMG0056
Description: Process wastewater flowed through a pathway to the north to the borrow area north of the Milk Cow Barn. This process wastewater was emanating from the New Barn, the barn west of the New Barn, and the access ways between these barns.

48: RIMG0057
Description: Process wastewater flowed through a pathway to the north to the borrow area north of the Milk Cow Barn. This process wastewater was emanating from the New Barn, the barn west of the New Barn, and the access ways between these barns.

49: RIMG0058
Description: Process wastewater flowed through a pathway to the north to the borrow area north of the Milk Cow Barn. This process wastewater was emanating from the New Barn, the barn west of the New Barn, and the access ways between these barns.

50: RIMG0059
Description: Manure solids and process wastewater flowed off the concrete into the field west of the concrete pits. The manure and process wastewater was emanating from the New Barn, the barn west of the New Barn, and the access ways between these barns.

51: RIMG0060
Description: A recently placed sand berm had been place at a barn doorway. Manure and process wastewater was observed outside of the doorway on the concrete.

52: RIMG0061
Description: A recently placed sand berm had been place at a barn doorway. Manure and process wastewater was observed outside of the doorway on the concrete.

53: RIMG0062
Description: A recently placed sand berm had been place at a barn doorway. Manure and process wastewater was observed outside of the doorway on the concrete.

54: RIMG0063
Description: A stockpile of bedding material was located east of Calf Barn 2. A sand berm was placed on the east end of Calf Barn 2. The process wastewater from the open lot and pile could flow east and north to a culvert under the New Barn and to unnamed tributary on the east side of the site.

55: RIMG0064
Description: A stockpile of bedding material was located east of Calf Barn 2. A sand berm was placed on the east end of Calf Barn 2. The process wastewater from the open lot and pile could flow east and north to a culvert under the New Barn and to the unnamed tributary on the east side of the site.

56: RIMG0065
Description: The culvert inlet under the New Barn.

57: RIMG0066
Description: A pile of waste material was placed such that process wastewater generated from it would flow to the culvert under the New Barn which flows to the unnamed tributary on the east side of the site.

58: RIMG0067
Description: A pile of waste material was placed such that process wastewater generated from it would flow to the culvert under the New Barn which flows to the unnamed tributary on the east side of the site.

59: RIMG0068
Description: A pile of sand and dead calf.

60: RIMG0069
Description: A mucky area drains toward the culvert under the New Barn.

61: RIMG0070
Description: A mucky area drains toward the culvert under the New Barn.

62: RIMG0071
Description: A mucky area drains toward the culvert under the New Barn.

63: RIMG0072
Description: Sand had been placed at an access point along the southwest end of the New Barn. Manure and process wastewater was observed outside of the New Barn and could flow south toward the mucky area.

64: RIMG0073
Description: Manure and process wastewater was observed outside of the New Barn and could flow south toward the mucky area.

65: RIMG0074
Description: Sand had been placed at an access point along the west end of the New Barn. Manure and process wastewater was observed outside of the New Barn and could flow south toward the mucky area.

66: RIMG0075
Description: Manure and process wastewater was observed outside of the New Barn and could flow south toward the mucky area.

67: RIMG0076
Description: Manure and process wastewater was observed outside of the New Barn and could flow south toward the mucky area.

68: RIMG0077
Description: Sand had been placed at an access point along the west end of the New Barn. Manure and process wastewater was observed outside of the New Barn and could flow south toward the mucky area.

69: RIMG0078
Description: A cow access way between the New Barn and the barn west of the New Barn contained manure solids on its surface and process wastewater flowed north to the field west of the concrete pits.

70: RIMG0079
Description: Disturbed area.

71: RIMG0080
Description: Manure and process wastewater flowed north from the access way between the New Barn and the barn west of the New Barn. It then flowed west after contacting a concrete wall and then flowed to the north into the field west of the concrete pits.

72: RIMG0081
Description: Manure and process wastewater flowed north from the access way between the New Barn and the barn west of the New Barn. It then flowed west after contacting a concrete wall and then flowed to the north into the field west of the concrete pits. A sand berm had recently been placed near the metal gate on the access way.

73: RIMG0082
Description: Manure and process wastewater flowed north from the access way between the New Barn and the barn west of the New Barn. It then flowed west after contacting a concrete wall and then flowed to the north into the field west of the concrete pits.

74: RIMG0083
Description: The west concrete pit was about halfway full.

75: RIMG0084
Description: Process wastewater was observed at the northwest corner of the west concrete pit.

76: RIMG0085
Description: A trickling flow of process wastewater was emanating from the northwest corner of the concrete pit.

77: RIMG0086
Description: North end of concrete pit.

78: RIMG0087
Description: The north east end of the east concrete pit had clay covering a hole that was observed in the east concrete pit in an April 2013 inspection.

79: RIMG0088
Description: Area on north end of the concrete pit.

80: RIMG0089
Description: Area on north end of the concrete pit.

81: RIMG0090
Description: A trickling flow of process wastewater was emanating from the northwest corner of the west concrete pit.

82: RIMG0091
Description: Manure and process wastewater flowed from the new barn and access way west and then north.

83: RIMG0092
Description: Manure and process wastewater flowed from the New Barn and access way west and then north.

84: RIMG0093
Description: Manure and waste materials were observed on the ground along an access way between the barns.

85: RIMG0094
Description: Pump out for the milk house wastewater.

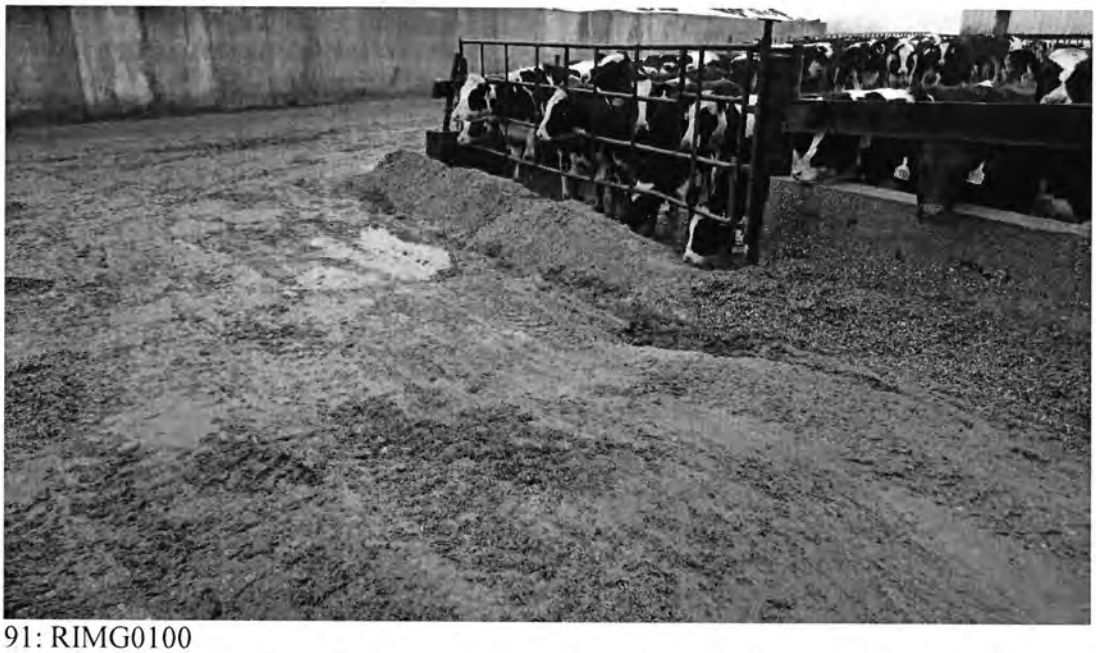
86: RIMG0095
Description: An access way between the barns.

87: RIMG0096
Description: Process wastewater east of Lot D.

88: RIMG0097
Description: Raw materials east of Lot D.

89: RIMG0098
Description: Feed and manure on the concrete east of Lot D.

90: RIMG0099
Description: Feed and manure on the concrete east of Lot D.



91: RIMG0100
Description: A sand berm had recently been placed at the access gate for Lot D. Manure and process wastewater were observed east of the access gate on the concrete.

92: RIMG0101
Description: A sand berm had recently been placed at the access gate for Lot D. Manure and process wastewater were observed east of the access gate on the concrete.

93: RIMG0102
Description: Manure and process wastewater on the concrete east of Lot D.

94: RIMG0103
Description: Feed and process wastewater had no containment along the south end of Lot D.

95: RIMG0104
Description: Feed bunkers.

96: RIMG0105
Description: Feed and process wastewater had no containment along the south end of Lot D.

97: RIMG0106
Description: Pit for Lot D.

98: RIMG0107
Description: Puddle near pit for Lot D.

99: RIMG0108
Description: Pit for Lot D.

100: RIMG0109
Description: Newly constructed feed bunker.

101: RIMG0110
Description: Leachate was observed outside of the bunker wall.

102: RIMG0111
Description: Northwest corner of new bunker.

103: RIMG0112
Description: Unnamed tributary is located less than 50 feet from the edge of newly constructed bunker.

104: RIMG0113
Description: Unnamed tributary is located less than 50 feet from the edge of newly constructed bunker.

105: RIMG0114
Description: Unnamed tributary is located less than 50 feet from the edge of newly constructed bunker.

106: RIMG0115
Description: Leachate was observed outside of the bunker wall and was draining through the rock/soil and then overland to the unnamed tributary.

107: RIMG0116
Description: Leachate was seeping out through the rock/soil and then draining overland to the unnamed tributary.

108: RIMG0117
Description: The leachate was draining west through tire ruts and into the unnamed tributary.

109: RIMG0118
Description: The leachate was draining west through tire ruts and into the unnamed tributary.

110: RIMG0119
Description: The leachate was draining west through tire ruts and into the unnamed tributary.

111: RIMG0120
Description: A sheen was observed where the leachate entered the unnamed tributary.

112: RIMG0121
Description: A sheen was observed where the leachate entered the unnamed tributary.

113: RIMG0122
Description: A sheen was observed where the leachate entered the unnamed tributary.

114: RIMG0123
Description: A sheen was observed where the leachate entered the unnamed tributary.

115: RIMG0124
Description: A sheen was observed where the leachate entered the unnamed tributary.

116: RIMG0125
Description: A sheen and foam was observed where the leachate entered the unnamed tributary.

117: RIMG0126
Description: The leachate flowed through the tire ruts to the unnamed tributary.

118: RIMG0127
Description: The leachate was seeping out of the rock/soil.

119: RIMG0128
Description: The leachate was seeping out of the rock/soil.

120: RIMG0129
Description: The leachate was seeping out of the rock/soil.

121: RIMG0130
Description: The leachate was seeping out of the rock/soil.

122: RIMG0131
Description: The topography on the south side of the feed bunkers are situated such that it drains to the unnamed tributary.

123: RIMG0132
Description: The topography on the south side of the feed bunkers are situated such that it drains to the unnamed tributary.

124: RIMG0133
Description: Process wastewater from the southeast end of the feed bunker flows south into the field.

125: RIMG0134
Description: Process wastewater from the southeast end of the feed bunker flows south into the field.

126: RIMG0135
Description: Raw material and feeds solids were scattered throughout the concrete surface of the feed bunker.

127: RIMG0136
Description: Process wastewater from the southeast end of the feed bunker flows south into the field.

128: RIMG0137
Description: Process wastewater and feed solids were observed around the feed bunkers. The process wastewater was ponded and flowed east into a grassed area. Drainage from most portions of the feed bunkers flowed east into a grassed area and to a ditch.

129: RIMG0138
Description: Process wastewater and feed solids were observed throughout the grassed area and the drainage paths leading to the grassed area.

130: RIMG0139
Description: Process wastewater and feed solids were observed throughout the grassed area and the drainage paths leading to the grassed area.

131: RIMG0140
Description: Process wastewater and feed solids were observed throughout the grassed area and the drainage paths leading to the grassed area.

132: RIMG0141
Description: Process wastewater and feed solids were observed throughout the grassed area.

133: RIMG0142
Description: Process wastewater and feed solids were observed throughout the grassed area and the drainage paths leading to the grassed area.

134: RIMG0143
Description: Process wastewater and feed solids observed in the grassed area.

223: RIMG0232
Description: The drainage pathway flowed to the unnamed tributary.

224: RIMG0233
Description: The drainage pathway flowed to the unnamed tributary.

225: RIMG0234
Description: Sample S06 and S07 were taken at 1:00 p.m. from process wastewater in the drainage pathway in the borrow area that drains to the unnamed tributary on the east side of the Home site.

226: RIMG0235
Description: Sample S06 and S07 were taken at 1:00 p.m. from process wastewater in the drainage pathway in the borrow area that drains to the unnamed tributary on the east side of the Home site.

227: RIMG0236
Description: Manure and process wastewater flowed into the borrow area from the New Barn and cattle walkways between the New Barn and the barn west of the New Barn.

228: RIMG0237
Description: Manure and process wastewater flowed north through the borrow area from the New Barn and cattle walkways between the New Barn and the barn west of the New Barn.

229: RIMG0238
Description: Manure and process wastewater flowed into the borrow area from the Milk Cow Barn and the access way between the Milk Cow Barn and the feed bunkers.

230: RIMG0239
Description: Manure and process wastewater flowed north through the borrow area from the Milk Cow Barn and the access way between the Milk Cow Barn and the feed bunkers.

231: RIMG0240
Description: Manure and process wastewater flowed north through the borrow area from the Milk Cow Barn and the access way between the Milk Cow Barn and the feed bunkers.

232: RIMG0241
Description: Manure and process wastewater flowed north toward the borrow area from the New Barn and cattle walkways between the New Barn and the barn west of the New Barn.

233: RIMG0242
Description: Manure and process wastewater flowed north toward the borrow area from the New Barn and cattle walkways between the New Barn and the barn west of the New Barn.

234: RIMG0243
Description: Manure and process wastewater flowed north toward the borrow area from the New Barn and cattle walkways between the New Barn and the barn west of the New Barn.

235: RIMG0244
Description: Manure and process wastewater flowed north toward the borrow area from the New Barn and cattle walkways between the New Barn and the barn west of the New Barn.

236: RIMG0245
Description: Manure and process wastewater flowed north toward the borrow area from the New Barn and cattle walkways between the New Barn and the barn west of the New Barn.

237: RIMG0246
Description: Manure and process wastewater flowed north toward the borrow area from the New Barn and cattle walkways between the New Barn and the barn west of the New Barn.

238: RIMG0247
Description: Manure and process wastewater flowed north toward the borrow area from the New Barn and cattle walkways between the New Barn and the barn west of the New Barn.

239: RIMG0248
Description: Manure and process wastewater flowed north toward the borrow area from the New Barn and cattle walkways between the New Barn and the barn west of the New Barn.

240: RIMG0249
Description: Manure and process wastewater flowed north toward the borrow area from the New Barn and cattle walkways between the New Barn and the barn west of the New Barn.

241: RIMG0250
Description: Sample S08 was taken at 1:12 p.m. of manure and process wastewater in a pathway emanating from the New Barn and cattle walkways between the New Barn and the barn west of the New Barn.

242: RIMG0251
Description: Sample S08 was taken at 1:12 p.m. of manure and process wastewater in a pathway emanating from the New Barn and cattle walkways between the New Barn and the barn west of the New Barn.

243: RIMG0252
Description: Sample S08 was taken at 1:12 p.m. of manure and process wastewater in a pathway emanating from the New Barn and cattle walkways between the New Barn and the barn west of the New Barn.

244: RIMG0253
Description: Sample S08 was taken at 1:12 p.m. of manure and process wastewater in a pathway emanating from the New Barn and cattle walkways between the New Barn and the barn west of the New Barn.

245: RIMG0254
Description: Manure and process wastewater flowed north toward the borrow area from the New Barn and cattle walkways between the New Barn and the barn west of the New Barn.

246: RIMG0255
Description: Manure and process wastewater flowed north toward the borrow area from the New Barn and cattle walkways between the New Barn and the barn west of the New Barn.

247: RIMG0256
Description: Manure and process wastewater flowed north toward the borrow area from the New Barn and cattle walkways between the New Barn and the barn west of the New Barn.

248: RIMG0257
Description: Manure and process wastewater flowed north toward the borrow area from the New Barn and cattle walkways between the New Barn and the barn west of the New Barn.

249: RIMG0258
Description: Manure and process wastewater flowed north toward the borrow area from the New Barn and cattle walkways between the New Barn and the barn west of the New Barn.

250: RIMG0259
Description: Manure and process wastewater flowed north toward the borrow area from the New Barn and cattle walkways between the New Barn and the barn west of the New Barn.

251: RIMG0260
Description: Manure and process wastewater flowed north toward the borrow area from the New Barn and cattle walkways between the New Barn and the barn west of the New Barn.

252: RIMG0261
Description: Manure and process wastewater flowed north toward the borrow area from the New Barn and cattle walkways between the New Barn and the barn west of the New Barn.

253: RIMG0262
Description: Manure and process wastewater flowed north through the borrow area from the Milk Cow Barn and the access way between the Milk Cow Barn and the feed bunkers.

254: RIMG0263
Description: Manure and process wastewater flowed north through the borrow area from the Milk Cow Barn and the access way between the Milk Cow Barn and the feed bunkers.

255: RIMG0264
Description: Manure and process wastewater flowed north through the borrow area from the Milk Cow Barn and the access way between the Milk Cow Barn and the feed bunkers.

256: RIMG0265
Description: Sample S09 was taken at 1:20 p.m. of manure and process wastewater in a pathway emanating from the Milk Cow Barn and the access way between the Milk Cow Barn and the feed bunkers.

257: RIMG0266
Description: Sample S09 was taken at 1:20 p.m. of manure and process wastewater in a pathway emanating from the Milk Cow Barn and the access way between the Milk Cow Barn and the feed bunkers.

258: RIMG0267
Description: Sample S09 was taken at 1:20 p.m. of manure and process wastewater in a pathway emanating from the Milk Cow Barn and the access way between the Milk Cow Barn and the feed bunkers.

259: RIMG0268
Description: The borrow area did not have sediment and erosion controls installed.

260: RIMG0269
Description: The borrow area did not have sediment and erosion controls installed.

261: RIMG0270
Description: The borrow area did not have sediment and erosion controls installed.

262: RIMG0271
Description: Samples

263: RIMG0272
Description: Samples

264: RIMG0273
Description: Sediment had been tracked out onto the south bound lane of County Road V.

265: RIMG0274
Description: Sediment had been tracked out onto the south bound lane of County Road V.

266: RIMG0275
Description: Sediment had been tracked out onto the south bound lane of County Road V.

267: RIMG0276
Description: Sediment had been tracked out onto the south bound lane of County Road V.

268: RIMG0277
Description: The unnamed tributary had a bed and bank and flow was conveyed via a large culvert under Dollar Road.

269: RIMG0278
Description: The unnamed tributary had a bed and bank and flow was conveyed via a large culvert under Dollar Road.

270: RIMG0279
Description: The unnamed tributary had a bed and bank and flow was conveyed under Dollar Road.

271: RIMG0280
Description: The unnamed tributary had a bed and bank and flow was conveyed under Dollar Road.

272: RIMG0281
Description: The unnamed tributary had a bed and bank and flow was conveyed under Dollar Road.

Name	Date/Time (Standard)	Direction (degrees)	Latitude	Longitude
RIMG0009.JPG	2015:04:09 08:30:27	231.74	44.423841667	-87.96911333
RIMG0010.JPG	2015:04:09 08:30:32	231.6	44.423841667	-87.96911333
RIMG0011.JPG	2015:04:09 08:33:52	298.82	44.424786667	-87.96836833
RIMG0012.JPG	2015:04:09 08:34:02	30.8	44.425951667	-87.96834
RIMG0013.JPG	2015:04:09 08:34:22	94.48	44.425951667	-87.96834
RIMG0014.JPG	2015:04:09 08:34:40	141.11	44.425951667	-87.96834
RIMG0015.JPG	2015:04:09 08:35:01	271.92	44.425951667	-87.96834
RIMG0016.JPG	2015:04:09 08:35:59	248.04	44.425866667	-87.968826667
RIMG0017.JPG	2015:04:09 08:37:51	141.47	44.425533333	-87.96879667
RIMG0018.JPG	2015:04:09 08:38:05	29.33	44.42540167	-87.96876
RIMG0019.JPG	2015:04:09 08:38:59	187.37	44.42553	-87.96847667
RIMG0020.JPG	2015:04:09 08:39:19	34.99	44.42553	-87.96847667
RIMG0021.JPG	2015:04:09 08:40:05	318.64	44.42574167	-87.96843167
RIMG0023.JPG	2015:04:09 08:41:15	351.42	44.425705	-87.968378333
RIMG0024.JPG	2015:04:09 08:41:30	154.38	44.425705	-87.968378333
RIMG0025.JPG	2015:04:09 08:41:59	355.91	44.425705	-87.968378333
RIMG0026.JPG	2015:04:09 08:43:04	130.05	44.426065	-87.96889
RIMG0027.JPG	2015:04:09 08:43:20	135.66	44.426065	-87.96889
RIMG0028.JPG	2015:04:09 08:43:23	86.44	44.426065	-87.96889
RIMG0029.JPG	2015:04:09 08:43:27	54.74	44.426065	-87.96889
RIMG0030.JPG	2015:04:09 08:45:06	134.66	44.42637	-87.968936667
RIMG0031.JPG	2015:04:09 08:45:36	37.31	44.42671833	-87.968941667
RIMG0032.JPG	2015:04:09 08:46:27	190.68	44.42682167	-87.96893167
RIMG0033.JPG	2015:04:09 08:46:53	15.31	44.42682167	-87.96893167
RIMG0034.JPG	2015:04:09 08:47:32	167.11	44.427045	-87.968845
RIMG0035.JPG	2015:04:09 08:47:38	18.57	44.427045	-87.968845
RIMG0036.JPG	2015:04:09 08:47:52	339.09	44.427045	-87.968845
RIMG0037.JPG	2015:04:09 08:48:41	16.84	44.427236667	-87.96886333
RIMG0038.JPG	2015:04:09 08:48:44	163.04	44.427236667	-87.96886333
RIMG0039.JPG	2015:04:09 08:48:50	313.49	44.427236667	-87.96886333
RIMG0040.JPG	2015:04:09 08:49:20	355.34	44.42736833	-87.968853333
RIMG0041.JPG	2015:04:09 08:49:26	38.96	44.42736833	-87.968853333
RIMG0042.JPG	2015:04:09 08:50:20	90.85	44.42754333	-87.968778333
RIMG0043.JPG	2015:04:09 08:50:25	57.44	44.42754333	-87.968778333
RIMG0044.JPG	2015:04:09 08:50:35	21.94	44.42754333	-87.968778333
RIMG0045.JPG	2015:04:09 08:50:42	340.36	44.42754333	-87.968778333
RIMG0046.JPG	2015:04:09 08:50:47	244.35	44.42754333	-87.968778333
RIMG0047.JPG	2015:04:09 08:56:23	161.06	44.426755	-87.968795

RIMG0048.JPG	2015:04:09 08:56:30	89.58	44.426755	-87.968795
RIMG0049.JPG	2015:04:09 08:56:37	76.78	44.426755	-87.968795
RIMG0050.JPG	2015:04:09 08:57:00	152.78	44.426755	-87.968795
RIMG0051.JPG	2015:04:09 08:57:03	71.78	44.426755	-87.968795
RIMG0052.JPG	2015:04:09 08:57:22	130.7	44.426755	-87.968795
RIMG0053.JPG	2015:04:09 08:57:26	77.36	44.426755	-87.968795
RIMG0054.JPG	2015:04:09 08:57:28	30.31	44.426755	-87.968795
RIMG0055.JPG	2015:04:09 08:57:30	19.87	44.426755	-87.968795
RIMG0056.JPG	2015:04:09 08:57:42	7.84	44.42529333	-87.968355
RIMG0057.JPG	2015:04:09 08:57:48	136.2	44.42529333	-87.968355
RIMG0058.JPG	2015:04:09 08:58:11	330.67	44.42529333	-87.968355
RIMG0059.JPG	2015:04:09 08:58:14	63.13	44.42529333	-87.968355
RIMG0060.JPG	2015:04:09 08:58:52	110.37	44.424986667	-87.968418333
RIMG0061.JPG	2015:04:09 08:58:59	54.98	44.424986667	-87.968418333
RIMG0062.JPG	2015:04:09 08:59:02	352.4	44.424986667	-87.968418333
RIMG0063.JPG	2015:04:09 09:01:58	358.85	44.4237	-87.96755
RIMG0064.JPG	2015:04:09 09:02:31	310.14	44.423778333	-87.967041667
RIMG0065.JPG	2015:04:09 09:03:33	357.69	44.424221667	-87.96702
RIMG0066.JPG	2015:04:09 09:03:48	119.41	44.424221667	-87.96702
RIMG0067.JPG	2015:04:09 09:03:52	179.54	44.424221667	-87.96702
RIMG0068.JPG	2015:04:09 09:04:35	174.15	44.424131667	-87.967405
RIMG0069.JPG	2015:04:09 09:04:38	89.78	44.424131667	-87.967405
RIMG0070.JPG	2015:04:09 09:04:42	38.65	44.424131667	-87.967405
RIMG0071.JPG	2015:04:09 09:04:47	354.69	44.424131667	-87.967405
RIMG0072.JPG	2015:04:09 09:05:05	4.41	44.424131667	-87.967405
RIMG0073.JPG	2015:04:09 09:05:09	80.53	44.424131667	-87.967405
RIMG0074.JPG	2015:04:09 09:05:15	337.98	44.424131667	-87.967405
RIMG0075.JPG	2015:04:09 09:05:18	298.78	44.424131667	-87.967405
RIMG0076.JPG	2015:04:09 09:05:23	261.03	44.424131667	-87.967405
RIMG0077.JPG	2015:04:09 09:05:35	136.77	44.42427833	-87.967671667
RIMG0078.JPG	2015:04:09 09:06:31	192.45	44.424535	-87.96789
RIMG0079.JPG	2015:04:09 09:06:57	83.5	44.424535	-87.96789
RIMG0080.JPG	2015:04:09 09:07:47	276.8	44.42484667	-87.967948333
RIMG0081.JPG	2015:04:09 09:07:55	89.35	44.42484667	-87.967948333
RIMG0082.JPG	2015:04:09 09:08:09	276.18	44.42484667	-87.967948333
RIMG0083.JPG	2015:04:09 09:09:27	2.01	44.424966667	-87.967976667
RIMG0084.JPG	2015:04:09 09:10:26	41.46	44.424835	-87.967855
RIMG0085.JPG	2015:04:09 09:10:50	264.32	44.425063333	-87.968061667
RIMG0086.JPG	2015:04:09 09:11:19	275.75	44.425063333	-87.968061667

RIMG0087.JPG	2015:04:09 09:11:58	290.17	44.425285	-87.967478333
RIMG0088.JPG	2015:04:09 09:12:54	38.21	44.42522667	-87.96769333
RIMG0089.JPG	2015:04:09 09:12:59	4.14	44.42522667	-87.96769333
RIMG0090.JPG	2015:04:09 09:13:34	172.03	44.42522667	-87.96769333
RIMG0091.JPG	2015:04:09 09:15:19	56.18	44.42487333	-87.967948333
RIMG0092.JPG	2015:04:09 09:15:23	293.87	44.42487333	-87.967948333
RIMG0093.JPG	2015:04:09 09:17:26	302.71	44.424223333	-87.96747
RIMG0094.JPG	2015:04:09 09:17:49	294.32	44.42399167	-87.968055
RIMG0095.JPG	2015:04:09 09:17:59	65.68	44.42399167	-87.968055
RIMG0096.JPG	2015:04:09 09:23:29	259.91	44.433625	-87.964
RIMG0097.JPG	2015:04:09 09:23:32	350.19	44.433625	-87.964
RIMG0098.JPG	2015:04:09 09:23:47	144.02	44.433625	-87.964
RIMG0099.JPG	2015:04:09 09:23:50	151.48	44.433625	-87.964
RIMG0100.JPG	2015:04:09 09:24:18	227.3	44.433625	-87.964
RIMG0101.JPG	2015:04:09 09:24:33	10.54	44.433503333	-87.96437
RIMG0102.JPG	2015:04:09 09:24:38	67.1	44.433503333	-87.96437
RIMG0103.JPG	2015:04:09 09:25:12	55.8	44.433503333	-87.96437
RIMG0104.JPG	2015:04:09 09:25:18	199.29	44.433503333	-87.96437
RIMG0105.JPG	2015:04:09 09:26:10	88.4	44.43342833	-87.965118333
RIMG0106.JPG	2015:04:09 09:26:15	282.35	44.43342833	-87.965118333
RIMG0107.JPG	2015:04:09 09:26:36	55.48	44.43367	-87.96595
RIMG0108.JPG	2015:04:09 09:26:43	25.41	44.43367	-87.96595
RIMG0109.JPG	2015:04:09 09:28:01	193.56	44.43353667	-87.96564167
RIMG0110.JPG	2015:04:09 09:28:50	75.13	44.432988333	-87.96517333
RIMG0111.JPG	2015:04:09 09:28:56	290.43	44.432988333	-87.96517333
RIMG0112.JPG	2015:04:09 09:29:34	293.45	44.432705	-87.965425
RIMG0113.JPG	2015:04:09 09:29:38	239.37	44.432705	-87.965425
RIMG0114.JPG	2015:04:09 09:29:41	208.76	44.432705	-87.965425
RIMG0115.JPG	2015:04:09 09:30:03	60.86	44.432705	-87.965425
RIMG0116.JPG	2015:04:09 09:30:15	112.97	44.432705	-87.965425
RIMG0117.JPG	2015:04:09 09:30:38	45.45	44.43255	-87.96543
RIMG0118.JPG	2015:04:09 09:30:42	29.43	44.43255	-87.96543
RIMG0119.JPG	2015:04:09 09:30:50	310.99	44.43255	-87.96543
RIMG0120.JPG	2015:04:09 09:31:22	304.43	44.43255	-87.96543
RIMG0121.JPG	2015:04:09 09:31:28	299.82	44.432535	-87.965546667
RIMG0122.JPG	2015:04:09 09:31:36	281.51	44.432535	-87.965546667
RIMG0123.JPG	2015:04:09 09:31:42	324	44.432535	-87.965546667
RIMG0124.JPG	2015:04:09 09:31:51	288.92	44.432535	-87.965546667
RIMG0125.JPG	2015:04:09 09:31:58	310.86	44.432535	-87.965546667
RIMG0126.JPG	2015:04:09 09:32:11	95.62	44.432535	-87.965546667

RIMG0127.JPG	2015:04:09 09:33:02	356.88	44.432525	-87.965601667
RIMG0128.JPG	2015:04:09 09:33:06	55.27	44.432525	-87.965601667
RIMG0129.JPG	2015:04:09 09:33:22	8.93	44.432525	-87.965601667
RIMG0130.JPG	2015:04:09 09:33:49	317.21	44.43244	-87.965275
RIMG0131.JPG	2015:04:09 09:34:25	280.81	44.43244	-87.965275
RIMG0132.JPG	2015:04:09 09:34:56	290.71	44.432455	-87.964841667
RIMG0133.JPG	2015:04:09 09:35:22	260.45	44.432455	-87.964841667
RIMG0134.JPG	2015:04:09 09:35:29	192.59	44.43256667	-87.964223333
RIMG0135.JPG	2015:04:09 09:35:57	257.79	44.43256667	-87.964223333
RIMG0136.JPG	2015:04:09 09:36:01	202.25	44.43256667	-87.964223333
RIMG0137.JPG	2015:04:09 09:36:07	311.61	44.43256667	-87.964223333
RIMG0138.JPG	2015:04:09 09:36:52	65.43	44.43279333	-87.964241667
RIMG0139.JPG	2015:04:09 09:36:58	349.93	44.43279333	-87.964241667
RIMG0140.JPG	2015:04:09 09:41:57	128.31	44.433588333	-87.964313333
RIMG0141.JPG	2015:04:09 09:42:00	80.8	44.433093333	-87.963928333
RIMG0142.JPG	2015:04:09 09:42:04	59.08	44.433093333	-87.963928333
RIMG0143.JPG	2015:04:09 09:42:13	59.22	44.433093333	-87.963928333
RIMG0144.JPG	2015:04:09 09:42:20	58.19	44.433093333	-87.963928333
RIMG0145.JPG	2015:04:09 09:42:41	225.75	44.433093333	-87.963928333
RIMG0146.JPG	2015:04:09 09:42:51	38.64	44.433093333	-87.963928333
RIMG0147.JPG	2015:04:09 09:43:47	155.87	44.4331	-87.963833333
RIMG0148.JPG	2015:04:09 09:44:11	225.99	44.433445	-87.96350167
RIMG0149.JPG	2015:04:09 09:44:15	172.33	44.433445	-87.96350167
RIMG0150.JPG	2015:04:09 09:46:55	133.69	44.433291667	-87.96367
RIMG0151.JPG	2015:04:09 09:47:16	287.79	44.43317167	-87.963995
RIMG0152.JPG	2015:04:09 09:48:20	152.65	44.432938333	-87.963758333
RIMG0153.JPG	2015:04:09 09:48:25	337.64	44.432938333	-87.963758333
RIMG0154.JPG	2015:04:09 10:07:18	83.01	44.43314667	-87.964531667
RIMG0155.JPG	2015:04:09 10:07:37	266.14	44.43314667	-87.964531667
RIMG0156.JPG	2015:04:09 10:07:59	287.32	44.43314667	-87.964531667
RIMG0157.JPG	2015:04:09 10:08:15	90.18	44.43314667	-87.964531667
RIMG0158.JPG	2015:04:09 10:09:02	277.02	44.43290833	-87.964403333
RIMG0159.JPG	2015:04:09 10:09:43	70.55	44.432778333	-87.96427
RIMG0160.JPG	2015:04:09 10:10:31	201.18	44.43284333	-87.964268333
RIMG0161.JPG	2015:04:09 10:10:38	267.69	44.43284333	-87.964268333
RIMG0162.JPG	2015:04:09 10:10:44	328	44.43284333	-87.964268333
RIMG0163.JPG	2015:04:09 10:10:50	24.02	44.43284333	-87.964268333
RIMG0164.JPG	2015:04:09 10:10:57	16.56	44.43284333	-87.964268333
RIMG0165.JPG	2015:04:09 10:11:03	66.71	44.43284333	-87.964268333

RIMG0166.JPG	2015:04:09 10:11:40	172.94	44.43288333	-87.96413
RIMG0167.JPG	2015:04:09 10:13:23	20.43	44.43251667	-87.964955
RIMG0168.JPG	2015:04:09 10:13:35	279.8	44.43251667	-87.964955
RIMG0169.JPG	2015:04:09 10:16:03	13.96	44.432538333	-87.964995
RIMG0170.JPG	2015:04:09 10:16:21	354.33	44.432538333	-87.964995
RIMG0171.JPG	2015:04:09 10:20:08	146.45	44.432655	-87.96566167
RIMG0172.JPG	2015:04:09 10:20:21	102.97	44.432655	-87.96566167
RIMG0173.JPG	2015:04:09 10:20:26	99.89	44.432655	-87.96566167
RIMG0174.JPG	2015:04:09 10:22:53	155.21	44.43259	-87.96562167
RIMG0175.JPG	2015:04:09 10:23:16	213.49	44.43260833	-87.965591667
RIMG0176.JPG	2015:04:09 10:23:22	181.68	44.43260833	-87.965591667
RIMG0177.JPG	2015:04:09 10:23:40	281.58	44.43260833	-87.965591667
RIMG0178.JPG	2015:04:09 10:24:19	173.77	44.43259	-87.965525
RIMG0179.JPG	2015:04:09 10:24:25	195.85	44.43259	-87.965525
RIMG0180.JPG	2015:04:09 10:26:19	334.19	44.432475	-87.965545
RIMG0181.JPG	2015:04:09 10:33:38	128.66	44.43299	-87.964195
RIMG0182.JPG	2015:04:09 10:33:48	216.75	44.43299	-87.964195
RIMG0183.JPG	2015:04:09 10:33:58	58.02	44.43299	-87.964195
RIMG0184.JPG	2015:04:09 10:34:10	124.08	44.43299	-87.964195
RIMG0185.JPG	2015:04:09 10:38:08	151.96	44.43346833	-87.963588333
RIMG0186.JPG	2015:04:09 10:38:27	208.83	44.43346833	-87.963588333
RIMG0187.JPG	2015:04:09 10:38:34	108.28	44.43346833	-87.963588333
RIMG0188.JPG	2015:04:09 10:38:44	74.87	44.43346833	-87.963588333
RIMG0189.JPG	2015:04:09 10:38:48	19.42	44.43346833	-87.963588333
RIMG0190.JPG	2015:04:09 11:34:25	75.92	44.423525	-87.969191667
RIMG0191.JPG	2015:04:09 11:34:36	2.36	44.42495833	-87.968915
RIMG0192.JPG	2015:04:09 11:35:02	350.98	44.42495833	-87.968915
RIMG0193.JPG	2015:04:09 11:35:24	81.6	44.42495833	-87.968915
RIMG0194.JPG	2015:04:09 11:46:11	107.03	44.42758833	-87.96879833
RIMG0195.JPG	2015:04:09 11:46:18	141.85	44.42758833	-87.96879833
RIMG0196.JPG	2015:04:09 11:46:34	116.64	44.42758833	-87.96879833
RIMG0197.JPG	2015:04:09 11:46:40	105.34	44.42758833	-87.96879833
RIMG0198.JPG	2015:04:09 11:46:55	3.12	44.42758833	-87.96879833
RIMG0199.JPG	2015:04:09 11:46:59	346.69	44.42758833	-87.96879833
RIMG0200.JPG	2015:04:09 11:47:03	294.63	44.42758833	-87.96879833
RIMG0201.JPG	2015:04:09 11:47:08	239.44	44.42758833	-87.96879833
RIMG0202.JPG	2015:04:09 11:48:34	66.39	44.42763167	-87.96868333
RIMG0203.JPG	2015:04:09 11:48:49	89.31	44.42763167	-87.96868333
RIMG0204.JPG	2015:04:09 11:48:54	124.69	44.42763167	-87.96868333
RIMG0205.JPG	2015:04:09 11:49:06	179.99	44.42763167	-87.96868333

RIMG0206.JPG	2015:04:09 11:49:18	164.83	44.42757333	-87.96892667
RIMG0207.JPG	2015:04:09 11:49:28	118.74	44.42757333	-87.96892667
RIMG0208.JPG	2015:04:09 11:49:59	223.15	44.42757333	-87.96892667
RIMG0209.JPG	2015:04:09 11:50:28	345.43	44.427475	-87.968958333
RIMG0210.JPG	2015:04:09 11:50:38	215.11	44.427475	-87.968958333
RIMG0211.JPG	2015:04:09 11:50:56	290.6	44.427475	-87.968958333
RIMG0212.JPG	2015:04:09 11:51:00	231.68	44.427475	-87.968958333
RIMG0213.JPG	2015:04:09 11:51:12	341.91	44.42730167	-87.96886167
RIMG0214.JPG	2015:04:09 11:51:19	197.17	44.42730167	-87.96886167
RIMG0215.JPG	2015:04:09 11:51:45	214.36	44.42730167	-87.96886167
RIMG0216.JPG	2015:04:09 11:51:49	226.53	44.42730167	-87.96886167
RIMG0217.JPG	2015:04:09 11:52:07	204.36	44.42730167	-87.96886167
RIMG0218.JPG	2015:04:09 11:52:15	334.92	44.427146667	-87.968895
RIMG0219.JPG	2015:04:09 11:52:32	207.37	44.427146667	-87.968895
RIMG0220.JPG	2015:04:09 11:52:38	98.27	44.427146667	-87.968895
RIMG0221.JPG	2015:04:09 11:53:02	223.08	44.427146667	-87.968895
RIMG0222.JPG	2015:04:09 11:53:24	169.26	44.42704	-87.96883667
RIMG0223.JPG	2015:04:09 11:53:44	141.57	44.42704	-87.96883667
RIMG0224.JPG	2015:04:09 11:53:50	66.94	44.42704	-87.96883667
RIMG0225.JPG	2015:04:09 11:54:07	141.6	44.42704	-87.96883667
RIMG0226.JPG	2015:04:09 11:54:21	217.8	44.42678	-87.96898
RIMG0227.JPG	2015:04:09 11:54:40	210.16	44.42678	-87.96898
RIMG0228.JPG	2015:04:09 11:55:17	117.98	44.426375	-87.968698333
RIMG0229.JPG	2015:04:09 11:56:00	131.53	44.426375	-87.968698333
RIMG0230.JPG	2015:04:09 11:56:24	330.44	44.42611	-87.968545
RIMG0231.JPG	2015:04:09 11:56:28	228.11	44.42611	-87.968545
RIMG0232.JPG	2015:04:09 11:56:32	277.75	44.42611	-87.968545
RIMG0233.JPG	2015:04:09 11:57:21	1.07	44.426156667	-87.96845667
RIMG0234.JPG	2015:04:09 12:02:45	123.41	44.426165	-87.968603333
RIMG0235.JPG	2015:04:09 12:02:52	61.87	44.426165	-87.968603333
RIMG0236.JPG	2015:04:09 12:04:59	158.28	44.426005	-87.968446667
RIMG0237.JPG	2015:04:09 12:05:48	338	44.425835	-87.96833
RIMG0238.JPG	2015:04:09 12:06:56	152.66	44.42570167	-87.968338333
RIMG0239.JPG	2015:04:09 12:07:17	328.86	44.425738333	-87.968408333
RIMG0240.JPG	2015:04:09 12:07:24	345.43	44.425738333	-87.968408333
RIMG0241.JPG	2015:04:09 12:08:05	222.86	44.425738333	-87.968408333
RIMG0242.JPG	2015:04:09 12:08:17	22.51	44.425663333	-87.9683
RIMG0243.JPG	2015:04:09 12:08:52	25.74	44.425663333	-87.9683
RIMG0244.JPG	2015:04:09 12:09:19	228.69	44.425558333	-87.96843

RIMG0245.JPG	2015:04:09 12:09:59	9.23	44.425558333	-87.96843
RIMG0246.JPG	2015:04:09 12:10:04	6.4	44.425558333	-87.96843
RIMG0247.JPG	2015:04:09 12:10:29	203.12	44.425513333	-87.968418333
RIMG0248.JPG	2015:04:09 12:10:44	220.3	44.425513333	-87.968418333
RIMG0249.JPG	2015:04:09 12:10:49	140.55	44.425513333	-87.968418333
RIMG0250.JPG	2015:04:09 12:13:49	137.8	44.425623333	-87.968285
RIMG0251.JPG	2015:04:09 12:13:56	170.85	44.425623333	-87.968285
RIMG0252.JPG	2015:04:09 12:14:15	352.75	44.42560833	-87.968356667
RIMG0253.JPG	2015:04:09 12:14:21	345.42	44.42560833	-87.968356667
RIMG0254.JPG	2015:04:09 12:16:11	337.83	44.42529667	-87.968281667
RIMG0255.JPG	2015:04:09 12:16:15	352.18	44.42529667	-87.968281667
RIMG0256.JPG	2015:04:09 12:16:32	174.24	44.42529667	-87.968281667
RIMG0257.JPG	2015:04:09 12:16:42	343.83	44.42529667	-87.968281667
RIMG0258.JPG	2015:04:09 12:17:12	50.96	44.425031667	-87.968325
RIMG0259.JPG	2015:04:09 12:17:17	14.38	44.425031667	-87.968325
RIMG0260.JPG	2015:04:09 12:17:26	347.59	44.425031667	-87.968325
RIMG0261.JPG	2015:04:09 12:17:34	342.36	44.425031667	-87.968325
RIMG0262.JPG	2015:04:09 12:18:53	276.28	44.425145	-87.968536667
RIMG0263.JPG	2015:04:09 12:19:04	73.58	44.425145	-87.968536667
RIMG0264.JPG	2015:04:09 12:19:08	41.89	44.425145	-87.968536667
RIMG0265.JPG	2015:04:09 12:22:29	284.1	44.42553	-87.968465
RIMG0266.JPG	2015:04:09 12:22:34	289.87	44.42553	-87.968465
RIMG0267.JPG	2015:04:09 12:22:39	313.94	44.42553	-87.968465
RIMG0268.JPG	2015:04:09 12:23:17	353.55	44.42553	-87.968465
RIMG0269.JPG	2015:04:09 12:23:21	33.65	44.42553	-87.968465
RIMG0270.JPG	2015:04:09 12:23:26	318.75	44.42553	-87.968465
RIMG0271.JPG	2015:04:09 12:33:21	274.7	44.42432333	-87.96893333
RIMG0272.JPG	2015:04:09 12:33:26	301.55	44.42432333	-87.96893333
RIMG0273.JPG	2015:04:09 12:59:26	NW*	*,**	*,**
RIMG0274.JPG	2015:04:09 12:59:35	58.09	44.424266667	-87.96379
RIMG0275.JPG	2015:04:09 12:59:37	63.61	44.424266667	-87.96379
RIMG0276.JPG	2015:04:09 12:59:39	74.92	44.424266667	-87.96379
RIMG0277.JPG	2015:04:09 13:01:15	78.54	44.430145	-87.964795
RIMG0278.JPG	2015:04:09 13:01:24	240.56	44.430145	-87.964795
RIMG0279.JPG	2015:04:09 13:01:45	111.33	44.430013333	-87.970775
RIMG0280.JPG	2015:04:09 13:01:53	287.08	44.430013333	-87.970775
RIMG0281.JPG	2015:04:09 13:01:57	296.02	44.430013333	-87.970775

*Camera sensor didn't register data point.
**Coordinates are near RIMG00274.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CHICAGO REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

LABORATORY ACCREDITATION BUREAU
ACCREDITED ISO/IEC 17025
Certificate # L2280 Testing

Date: 5/21/2015

Subject: Review of Region 5 Data for Ledgeview

To: Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604

From: Francis Awanya, Group Leader
US EPA Region 5 Chicago Regional Laboratory

The data transmitted under this cover memo successfully passed CRL's data review procedures as documented in the current Quality Management Plan and applicable Standard Operating Procedures. In accordance with EPA's *Guidance on Environmental Data Verification and Data Validation* (Document EPA QA/G-8), CRL verified and validated the data but does not perform data quality assessment based on project plans.

This report was reviewed and the information provided herein accurately represents the analysis performed.

X Francis A Awanya 5/21/2015

Please contact the analyst with any technical report issues, Amanda Wroble at (312)-353-0375 for sample project concerns, and Sylvia Griffin at (312)-353-9073 with data transmittal questions. Thank you.

Attached are Results for: Ledgeview

/ /

Data Management Coordinator and DateTransmitted

Analyses included in this report:

BOD

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5 77 West Jackson Boulevard Chicago IL, 60604	Project: Ledgeview Project Number: 15DS01 Project Manager: Don Schwer	**Reported:** May-21-15 12:52

Analysis Case Narrative

General Information

Ten (10) water samples collected for the project were received at the Chicago Regional Laboratory (CRL) on 04/10/2015. The samples were analyzed for Biochemical Oxygen Demand (BOD) in water using Standard Operating Procedure (SOP) CRL Document # AIG006 Version # 1 (Reference SM 5210B). The designated analyst for those samples is Francis Awanya. Francis can be reached at 312-886-3682. Other pertinent information and dates are provided in the final analysis report. Analysis was completed within the holding time.

Supporting data archived with Work Order Number 1504006.

Sample Analysis and Results

The data reported herein meet the requirements of "2015 General Field Sampling Plan 103113 – CAFOs" and "2014 reporting request for CAFO samples 062014".

Quality Control

All required quality control criteria for the laboratory, method, and system performance audits were evaluated and determined to be within the CRL's QC limits with the following exceptions.

Glucose/Glutamic acid (GGA) checks: A mean recovery of 66.0 % obtained for three GGA checks with individual recoveries of 67.1%, 64.1%, and 66.7% respectively was out of the limits (84.8% - 115.4%) and could indicate low bias. A probable cause is weak seed. Sample results are flagged "L" for estimated and the possible low bias.

Oxygen depletions: BOD concentrations of 4 mg/L found in field blank sample 1504007-10 (Field Sample Number B01) exceeded the reporting limit of 2 mg/L and could indicate contamination. Laboratory blank results were within the limits. Sample results are not considered to be affected by contamination. BOD concentrations of the samples were more than 10 times the amount found in the field blank. No additional flag was applied on this basis.

Final dissolved oxygen (Final DO): Final DO determined for sample 1504007-01 (Field Sample Number S01), 1504007-03 (Field Sample Number S03), 1504007-04 (Field Sample Number S04), and 1504007-09 (Field Sample Number S09) exceeded the limit of 1 mg/L. BOD concentrations for those samples are considered estimated. No additional flag was applied.

Environmental Protection Agency Region 5

Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Ledgeview	
77 West Jackson Boulevard	Project Number: 15DS01	**Reported:**
Chicago IL, 60604	Project Manager: Don Schwer	May-21-15 12:52

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5 77 West Jackson Boulevard Chicago IL, 60604	Project: Ledgeview Project Number: 15DS01 Project Manager: Don Schwer	**Reported:** May-21-15 12:52

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S01	1504007-01	Water	Apr-09-15 11:14	Apr-10-15 11:27
S02	1504007-02	Water	Apr-09-15 11:25	Apr-10-15 11:27
S03	1504007-03	Water	Apr-09-15 11:32	Apr-10-15 11:27
S04	1504007-04	Water	Apr-09-15 11:35	Apr-10-15 11:27
S05	1504007-05	Water	Apr-09-15 12:45	Apr-10-15 11:27
S06	1504007-06	Water	Apr-09-15 13:00	Apr-10-15 11:27
S07	1504007-07	Water	Apr-09-15 13:00	Apr-10-15 11:27
S08	1504007-08	Water	Apr-09-15 13:12	Apr-10-15 11:27
S09	1504007-09	Water	Apr-09-15 13:20	Apr-10-15 11:27
B01	1504007-10	Water	Apr-09-15 11:02	Apr-10-15 11:27

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Ledgeview	
77 West Jackson Boulevard	Project Number: 15DS01	**Reported:**
Chicago IL, 60604	Project Manager: Don Schwer	May-21-15 12:52

BOD, 5 day, SM 5210 B (modified)
US EPA Region 5 Chicago Regional Laboratory

S01 (1504007-01) Water Sampled: Apr-09-15 11:14 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Biochemical Oxygen Demand	**9300**	L		2	mg/L	1	B15D010	Apr-10-15	Apr-10-15

S02 (1504007-02) Water Sampled: Apr-09-15 11:25 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Biochemical Oxygen Demand	**2600**	L		2	mg/L	1	B15D010	Apr-10-15	Apr-10-15

S03 (1504007-03) Water Sampled: Apr-09-15 11:32 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Biochemical Oxygen Demand	**4300**	L		2	mg/L	1	B15D010	Apr-10-15	Apr-10-15

S04 (1504007-04) Water Sampled: Apr-09-15 11:35 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Biochemical Oxygen Demand	**2300**	L		2	mg/L	1	B15D010	Apr-10-15	Apr-10-15

S05 (1504007-05) Water Sampled: Apr-09-15 12:45 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Biochemical Oxygen Demand	**280**	L		2	mg/L	1	B15D010	Apr-10-15	Apr-10-15

S06 (1504007-06) Water Sampled: Apr-09-15 13:00 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Biochemical Oxygen Demand	**870**	L		2	mg/L	1	B15D010	Apr-10-15	Apr-10-15

S07 (1504007-07) Water Sampled: Apr-09-15 13:00 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Biochemical Oxygen Demand	**1800**	L		2	mg/L	1	B15D010	Apr-10-15	Apr-10-15

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Ledgeview	
77 West Jackson Boulevard	Project Number: 15DS01	**Reported:**
Chicago IL, 60604	Project Manager: Don Schwer	May-21-15 12:52

BOD, 5 day, SM 5210 B (modified)
US EPA Region 5 Chicago Regional Laboratory

S08 (1504007-08) Water Sampled: Apr-09-15 13:12 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Biochemical Oxygen Demand	**4400**	L		2	mg/L	1	B15D010	Apr-10-15	Apr-10-15

S09 (1504007-09) Water Sampled: Apr-09-15 13:20 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Biochemical Oxygen Demand	**2300**	L		2	mg/L	1	B15D010	Apr-10-15	Apr-10-15

B01 (1504007-10) Water Sampled: Apr-09-15 11:02 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Biochemical Oxygen Demand	**4**	L		2	mg/L	1	B15D010	Apr-10-15	Apr-10-15

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Ledgeview	
77 West Jackson Boulevard	Project Number: 15DS01	**Reported:**
Chicago IL, 60604	Project Manager: Don Schwer	May-21-15 12:52

Notes and Definitions

L	The identification of the analyte is acceptable; the reported value may be biased low. The actual value is expected to be greater than the reported value.
U	Not Detected
NR	Not Reported

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CHICAGO REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

LABORATORY ACCREDITATION BUREAU
ACCREDITED ISO/IEC 17025
Certificate # L2280 Testing

Date: 5/11/2015

Subject: Review of Region 5 Data for Ledgeview

To: Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604

From: Anna Knoebel, Chemist
US EPA Region 5 Chicago Regional Laboratory

The data transmitted under this cover memo successfully passed CRL's data review procedures as documented in the current Quality Management Plan and applicable Standard Operating Procedures. In accordance with EPA's *Guidance on Environmental Data Verification and Data Validation* (Document EPA QA/G-8), CRL verified and validated the data but does not perform data quality assessment based on project plans.

This report was reviewed and the information provided herein accurately represents the analysis performed.

X Anna Knoebel

Please contact the analyst with any technical report issues, Amanda Wroble at (312)-353-0375 for sample project concerns, and Sylvia Griffin at (312)-353-9073 with data transmittal questions. Thank you.

Attached are Results for: Ledgeview

/ /

Data Management Coordinator and DateTransmitted

Analyses included in this report:

Ammonia N DA, Distilled
Nitrate-Nitrite N DA

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Ledgeview	
77 West Jackson Boulevard	Project Number: 15DS01	**Reported:**
Chicago IL, 60604	Project Manager: Don Schwer	May-11-15 10:54

ANALYSIS CASE NARRATIVE – Distilled Ammonia Nitrogen in Water

Work Order: 1504007
Analyst: Anna Knoebel
Phone #: (312) 353-9467

General Information

Ten water samples for Ammonia Nitrogen were received on April 10, 2015. All holding times were met.

Note: All supporting data are archived with work order number 1504009.

Sample Analysis and Results

The samples were distilled on May 4, 2015 and analyzed on May 6 – 7, 2015 for Ammonia Nitrogen in water using CRL SOP AIG029B, Version # 2 (Reference Method, Standard Method 4500 – NH3- B & H). The samples were stored in the refrigerator at all times, except when in use.

The data reported herein meets the Data Quality Objectives referenced in the 2014 General Field Sampling Plan 102113 – CAFOs and 2014 reporting request for CAFO samples 062014.

Quality Control

Duplicate (DUP)

The %RPD for sample 1504007-01 (S01) was above the acceptance limit (< 20 %). The sample and duplicate were repeated giving the same results, the repeated results were reported. There may be some homogeneity problems with the sample. The result was flagged "J" (estimated).

Matrix Spike (MS)

The matrix spike recovery for sample 1504007-01 (S01) was above the acceptance limit (80 – 120 %). The blank spike (BS) recovery (97 %) and other QC audits were within the CRL limits. The sample and spike were diluted 20 fold. As a result the spike concentration was diluted out. No flags were used on this basis.

All other quality control audits were within CRL limits or did not result in qualification of the data.

ANALYSIS CASE NARRATIVE – Nitrate-Nitrite Nitrogen in Water

Work Order: 1504007
Analyst: Anna Knoebel
Phone #: (312) 353-9467

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Ledgeview	
77 West Jackson Boulevard	Project Number: 15DS01	**Reported:**
Chicago IL, 60604	Project Manager: Don Schwer	May-11-15 10:54

General Information

Ten water samples for Nitrate-Nitrite Nitrogen were received on April 10, 2015. All holding times were met.

Note: All supporting data are archived with work order number 1504006.

Sample Analysis and Results

The samples were analyzed for Nitrate-Nitrite Nitrogen in water on April 23, 2015 using CRL SOP AIG031A, Version # 2 (Standard Method 4500 – NO3- E). The samples were stored in the refrigerator at all times except when in use. All samples except 1504007-10 (B01) were centrifuged prior to analysis to remove particulates.

The data reported herein meets the Data Quality Objectives referenced in the 2014 General Field Sampling Plan 102113 – CAFOs and 2014 reporting request for CAFO samples 062014.

Quality Control

Continuing Calibration Check (ICV/CCV)

The last CCV recovery (94 %) was below the acceptance limit (98 – 108 %). Multiple dilutions were analyzed for samples 1504007-01 to 1504007-08 and the ending quality control standards continued to fail. Other work orders were analyzed with these samples that did not cause the CCV recoveries to decrease below the acceptance limit. It is evident that the excess acid added to the samples interfered with the cadmium reduction as seen in the low recovery of the ending control standard. Further dilutions could not be performed within the holding time. Samples 1504007-01 (S01), -02 (S02), -03 (S03), -04 (S04), -05 (S05), -06 (S06), -07 (S07), and -08 (S08) were flagged "L" (biased low) or "UJ" (non-detect, estimated).

All quality control audits were within CRL limits or did not result in qualification of the data

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Ledgeview	
77 West Jackson Boulevard	Project Number: 15DS01	**Reported:**
Chicago IL, 60604	Project Manager: Don Schwer	May-11-15 10:54

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S01	1504007-01	Water	Apr-09-15 11:14	Apr-10-15 11:27
S02	1504007-02	Water	Apr-09-15 11:25	Apr-10-15 11:27
S03	1504007-03	Water	Apr-09-15 11:32	Apr-10-15 11:27
S04	1504007-04	Water	Apr-09-15 11:35	Apr-10-15 11:27
S05	1504007-05	Water	Apr-09-15 12:45	Apr-10-15 11:27
S06	1504007-06	Water	Apr-09-15 13:00	Apr-10-15 11:27
S07	1504007-07	Water	Apr-09-15 13:00	Apr-10-15 11:27
S08	1504007-08	Water	Apr-09-15 13:12	Apr-10-15 11:27
S09	1504007-09	Water	Apr-09-15 13:20	Apr-10-15 11:27
B01	1504007-10	Water	Apr-09-15 11:02	Apr-10-15 11:27

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Ledgeview	
77 West Jackson Boulevard	Project Number: 15DS01	**Reported:**
Chicago IL, 60604	Project Manager: Don Schwer	May-11-15 10:54

Nitrate - Nitrite Nitrogen, SM 4500E (modified)
US EPA Region 5 Chicago Regional Laboratory

S01 (1504007-01) Water Sampled: Apr-09-15 11:14 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**3.08**	L	0.30	0.75	mg/L	3	B15D038	Apr-22-15	Apr-23-15

S02 (1504007-02) Water Sampled: Apr-09-15 11:25 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**1.94**	L	0.30	0.75	mg/L	3	B15D038	Apr-22-15	Apr-23-15

S03 (1504007-03) Water Sampled: Apr-09-15 11:32 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	U	UJ	0.30	0.75	mg/L	3	B15D038	Apr-22-15	Apr-23-15

S04 (1504007-04) Water Sampled: Apr-09-15 11:35 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	U	UJ	0.30	0.75	mg/L	3	B15D038	Apr-22-15	Apr-23-15

S05 (1504007-05) Water Sampled: Apr-09-15 12:45 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**3.07**	L	0.30	0.75	mg/L	3	B15D038	Apr-22-15	Apr-23-15

S06 (1504007-06) Water Sampled: Apr-09-15 13:00 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**5.19**	L	0.30	0.75	mg/L	3	B15D038	Apr-22-15	Apr-23-15

S07 (1504007-07) Water Sampled: Apr-09-15 13:00 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**5.22**	L	0.30	0.75	mg/L	3	B15D038	Apr-22-15	Apr-23-15

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Ledgeview	
77 West Jackson Boulevard	Project Number: 15DS01	**Reported:**
Chicago IL, 60604	Project Manager: Don Schwer	May-11-15 10:54

Nitrate - Nitrite Nitrogen, SM 4500E (modified)
US EPA Region 5 Chicago Regional Laboratory

S08 (1504007-08) Water Sampled: Apr-09-15 13:12 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**14.2**	L	0.30	0.75	mg/L	3	B15D038	Apr-22-15	Apr-23-15

S09 (1504007-09) Water Sampled: Apr-09-15 13:20 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	**2.79**		0.30	0.75	mg/L	3	B15D038	Apr-22-15	Apr-23-15

B01 (1504007-10) Water Sampled: Apr-09-15 11:02 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Nitrate-Nitrite N	U		0.10	0.25	mg/L	1	B15D038	Apr-22-15	Apr-23-15

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Ledgeview	
77 West Jackson Boulevard	Project Number: 15DS01	**Reported:**
Chicago IL, 60604	Project Manager: Don Schwer	May-11-15 10:54

Ammonia Nitrogen, SM4500B & H (modified)
US EPA Region 5 Chicago Regional Laboratory

S01 (1504007-01) Water Sampled: Apr-09-15 11:14 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Ammonia as N	**56.3**	J	1.20	4.00	mg/L	20	B15E007	May-04-15	May-06-15

S02 (1504007-02) Water Sampled: Apr-09-15 11:25 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Ammonia as N	**67.7**		1.20	4.00	mg/L	20	B15E007	May-04-15	May-06-15

S03 (1504007-03) Water Sampled: Apr-09-15 11:32 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Ammonia as N	**57.2**		1.20	4.00	mg/L	20	B15E007	May-04-15	May-06-15

S04 (1504007-04) Water Sampled: Apr-09-15 11:35 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Ammonia as N	**32.1**		0.60	2.00	mg/L	10	B15E007	May-04-15	May-07-15

S05 (1504007-05) Water Sampled: Apr-09-15 12:45 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Ammonia as N	**11.2**		0.60	2.00	mg/L	10	B15E007	May-04-15	May-07-15

S06 (1504007-06) Water Sampled: Apr-09-15 13:00 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Ammonia as N	**51.0**		1.20	4.00	mg/L	20	B15E007	May-04-15	May-07-15

S07 (1504007-07) Water Sampled: Apr-09-15 13:00 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Ammonia as N	**46.4**		1.20	4.00	mg/L	20	B15E007	May-04-15	May-07-15

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Ledgeview	
77 West Jackson Boulevard	Project Number: 15DS01	**Reported:**
Chicago IL, 60604	Project Manager: Don Schwer	May-11-15 10:54

Ammonia Nitrogen, SM4500B & H (modified)
US EPA Region 5 Chicago Regional Laboratory

S08 (1504007-08) Water Sampled: Apr-09-15 13:12 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Ammonia as N	105		2.40	8.00	mg/L	40	B15E007	May-04-15	May-07-15

S09 (1504007-09) Water Sampled: Apr-09-15 13:20 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Ammonia as N	18.9		0.60	2.00	mg/L	10	B15E007	May-04-15	May-07-15

B01 (1504007-10) Water Sampled: Apr-09-15 11:02 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Ammonia as N	U		0.06	0.20	mg/L	1	B15E007	May-04-15	May-06-15

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Ledgeview	
77 West Jackson Boulevard	Project Number: 15DS01	**Reported:**
Chicago IL, 60604	Project Manager: Don Schwer	May-11-15 10:54

Notes and Definitions

UJ	The analyte was not detected at or above the reported limit. The reported limit is an estimate.
L	The identification of the analyte is acceptable; the reported value may be biased low. The actual value is expected to be greater than the reported value.
J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Not Detected
NR	Not Reported

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5 CHICAGO REGIONAL LABORATORY
536 SOUTH CLARK STREET
CHICAGO, ILLINOIS 60605

LABORATORY ACCREDITATION BUREAU
ACCREDITED ISO/IEC 17025
Certificate # L2280 Testing

Date: 5/14/2015

Subject: Review of Region 5 Data for Ledgeview

To: Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604

From: Laurence Wong, Analyst
US EPA Region 5 Chicago Regional Laboratory

The data transmitted under this cover memo successfully passed CRL's data review procedures as documented in the current Quality Management Plan and applicable Standard Operating Procedures. In accordance with EPA's *Guidance on Environmental Data Verification and Data Validation* (Document EPA QA/G-8), CRL verified and validated the data but does not perform data quality assessment based on project plans.

This report was reviewed and the information provided herein accurately represents the analysis performed.

X Laurence Wong

Please contact the analyst with any technical report issues, Amanda Wroble at (312)-353-0375 for sample project concerns, and Sylvia Griffin at (312)-353-9073 with data transmittal questions. Thank you.

Attached are Results for: Ledgeview

/ /

Data Management Coordinator and DateTransmitted

Analyses included in this report:

Solids, TDS

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Ledgeview	
77 West Jackson Boulevard	Project Number: 15DS01	**Reported:**
Chicago IL, 60604	Project Manager: Don Schwer	May-14-15 17:46

ANALYSIS CASE NARRATIVE

General Information

Ten (10) water samples under Work Order #1504007 were received on September 12, 2014 for Total Dissolved Solids (TDS) analysis. The designated analyst was Laurence Wong; and the contact person, Francis Awanya (phone number: 312-886-3682).

The preparation and analysis began on September 16, 2014, and were completed on September 19, 2014. The samples were kept in refrigerator at $\leq 6°C$ at all-time except when in use. The sample holding time limit was met. Other pertinent information is provided in the final analysis report.

The sample preparation and analysis followed procedure CRL SOP AIG017 r5.0 (Standard Method 2540 C).

Sample Analysis and Results

Only four (4) samples (Lab #s 1504006-01, -05, -09 and -10; field designations: S01, S05, S09 and B01) were analyzed with the usual filtration volume of 50mL. The other six were analyzed with reduced volumes, because the fine contents inside the samples could easily clog the filters.

The data reported herein met the DQO for "2015 General Field Sampling Plan 103113-CAFOs" and the "2014 reporting request for CAFO samples 062014".

Quality Control

All quality control (QC) audits followed CRL guidelines. The required quality control criteria for the laboratory, method, and system performance audits were evaluated and determined to be within the CRL's QC limits.

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Ledgeview	
77 West Jackson Boulevard	Project Number: 15DS01	**Reported:**
Chicago IL, 60604	Project Manager: Don Schwer	May-14-15 17:46

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S01	1504007-01	Water	Apr-09-15 11:14	Apr-10-15 11:27
S02	1504007-02	Water	Apr-09-15 11:25	Apr-10-15 11:27
S03	1504007-03	Water	Apr-09-15 11:32	Apr-10-15 11:27
S04	1504007-04	Water	Apr-09-15 11:35	Apr-10-15 11:27
S05	1504007-05	Water	Apr-09-15 12:45	Apr-10-15 11:27
S06	1504007-06	Water	Apr-09-15 13:00	Apr-10-15 11:27
S07	1504007-07	Water	Apr-09-15 13:00	Apr-10-15 11:27
S08	1504007-08	Water	Apr-09-15 13:12	Apr-10-15 11:27
S09	1504007-09	Water	Apr-09-15 13:20	Apr-10-15 11:27
B01	1504007-10	Water	Apr-09-15 11:02	Apr-10-15 11:27

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Ledgeview	
77 West Jackson Boulevard	Project Number: 15DS01	**Reported:**
Chicago IL, 60604	Project Manager: Don Schwer	May-14-15 17:46

Dissolved Solids, SM 2540C (modified)
US EPA Region 5 Chicago Regional Laboratory

S01 (1504007-01) Water Sampled: Apr-09-15 11:14 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Dissolved Solids	**42000**			20.0	mg/L	1	B15D008	Apr-16-15	Apr-16-15

S02 (1504007-02) Water Sampled: Apr-09-15 11:25 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Dissolved Solids	**4030**			20.0	mg/L	1	B15D008	Apr-16-15	Apr-16-15

S03 (1504007-03) Water Sampled: Apr-09-15 11:32 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Dissolved Solids	**5700**			20.0	mg/L	1	B15D008	Apr-16-15	Apr-16-15

S04 (1504007-04) Water Sampled: Apr-09-15 11:35 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Dissolved Solids	**3680**			20.0	mg/L	1	B15D008	Apr-16-15	Apr-16-15

S05 (1504007-05) Water Sampled: Apr-09-15 12:45 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Dissolved Solids	**1060**			20.0	mg/L	1	B15D008	Apr-16-15	Apr-16-15

S06 (1504007-06) Water Sampled: Apr-09-15 13:00 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Dissolved Solids	**2760**			20.0	mg/L	1	B15D008	Apr-16-15	Apr-16-15

S07 (1504007-07) Water Sampled: Apr-09-15 13:00 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Dissolved Solids	**2670**			20.0	mg/L	1	B15D008	Apr-16-15	Apr-16-15

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Ledgeview	
77 West Jackson Boulevard	Project Number: 15DS01	**Reported:**
Chicago IL, 60604	Project Manager: Don Schwer	May-14-15 17:46

Dissolved Solids, SM 2540C (modified)
US EPA Region 5 Chicago Regional Laboratory

S08 (1504007-08) Water Sampled: Apr-09-15 13:12 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Dissolved Solids	**4310**			20.0	mg/L	1	B15D008	Apr-16-15	Apr-16-15

S09 (1504007-09) Water Sampled: Apr-09-15 13:20 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Dissolved Solids	**2220**			20.0	mg/L	1	B15D008	Apr-16-15	Apr-16-15

B01 (1504007-10) Water Sampled: Apr-09-15 11:02 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Dissolved Solids	**U**			20.0	mg/L	1	B15D008	Apr-16-15	Apr-16-15

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Ledgeview	
77 West Jackson Boulevard	Project Number: 15DS01	**Reported:**
Chicago IL, 60604	Project Manager: Don Schwer	May-14-15 17:46

Notes and Definitions

U	Not Detected
NR	Not Reported

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5 CHICAGO REGIONAL LABORATORY
536 SOUTH CLARK STREET
CHICAGO, ILLINOIS 60605

Date: 5/14/2015

Subject: Review of Region 5 Data for Ledgeview

To: Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604

From: Laurence Wong, Analyst
US EPA Region 5 Chicago Regional Laboratory

The data transmitted under this cover memo successfully passed CRL's data review procedures as documented in the current Quality Management Plan and applicable Standard Operating Procedures. In accordance with EPA's *Guidance on Environmental Data Verification and Data Validation* (Document EPA QA/G-8), CRL verified and validated the data but does not perform data quality assessment based on project plans.

This report was reviewed and the information provided herein accurately represents the analysis performed.

X Laurence Wong

Please contact the analyst with any technical report issues, Amanda Wroble at (312)-353-0375 for sample project concerns, and Sylvia Griffin at (312)-353-9073 with data transmittal questions. Thank you.

Attached are Results for: Ledgeview

/ /

Data Management Coordinator and DateTransmitted

Analyses included in this report:

Solids, TSS

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Ledgeview	
77 West Jackson Boulevard	Project Number: 15DS01	**Reported:**
Chicago IL, 60604	Project Manager: Don Schwer	May-14-15 17:49

ANALYSIS CASE NARRATIVE

General Information

Ten (10) water samples under Work Order #1504007 were received on April 10, 2015 for Total Suspended Solids (TSS) analysis. The designated analyst for these samples was Laurence Wong; and the contact person, Francis Awanya (phone number: 312-886-3682).

The sample preparation and analysis followed procedure CRL SOP AIG018 r4.0 (Standard Method 2540 D). They began on April 16, 2015, and were completed on April 17, 2015. The sample holding time limit was met. The samples were kept in refrigerator at $\leq 6°C$ at all time except when in use.

Sample Analysis and Results

Only two of the samples (Lab #s 1504007-05 & -10; field designations respectively S05 & B01) could be analyzed with the typical filtration volume of 100mL each. The remaining eight (8) samples could only be analyzed with reduced volumes, because the filters were quickly clogged by the fine contents inside the samples.

The data reported herein met the DQO for "2015 General Field Sampling Plan 103113-CAFOs" and the "2014 reporting request for CAFO samples 062014".

Quality Control

All quality control (QC) audits followed CRL guidelines. The required quality control criteria for the laboratory, method, and system performance audits were evaluated and determined to be within the CRL's QC limits.

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Ledgeview	
77 West Jackson Boulevard	Project Number: 15DS01	**Reported:**
Chicago IL, 60604	Project Manager: Don Schwer	May-14-15 17:49

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S01	1504007-01	Water	Apr-09-15 11:14	Apr-10-15 11:27
S02	1504007-02	Water	Apr-09-15 11:25	Apr-10-15 11:27
S03	1504007-03	Water	Apr-09-15 11:32	Apr-10-15 11:27
S04	1504007-04	Water	Apr-09-15 11:35	Apr-10-15 11:27
S05	1504007-05	Water	Apr-09-15 12:45	Apr-10-15 11:27
S06	1504007-06	Water	Apr-09-15 13:00	Apr-10-15 11:27
S07	1504007-07	Water	Apr-09-15 13:00	Apr-10-15 11:27
S08	1504007-08	Water	Apr-09-15 13:12	Apr-10-15 11:27
S09	1504007-09	Water	Apr-09-15 13:20	Apr-10-15 11:27
B01	1504007-10	Water	Apr-09-15 11:02	Apr-10-15 11:27

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Ledgeview	
77 West Jackson Boulevard	Project Number: 15DS01	**Reported:**
Chicago IL, 60604	Project Manager: Don Schwer	May-14-15 17:49

Total Suspended Solids, SM 2540 D (modified)
US EPA Region 5 Chicago Regional Laboratory

S01 (1504007-01) Water Sampled: Apr-09-15 11:14 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Suspended Solids	**95.7**			5.0	mg/L	1	B15D009	Apr-16-15	Apr-16-15

S02 (1504007-02) Water Sampled: Apr-09-15 11:25 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Suspended Solids	**1670**			5.0	mg/L	1	B15D009	Apr-16-15	Apr-16-15

S03 (1504007-03) Water Sampled: Apr-09-15 11:32 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Suspended Solids	**960**			5.0	mg/L	1	B15D009	Apr-16-15	Apr-16-15

S04 (1504007-04) Water Sampled: Apr-09-15 11:35 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Suspended Solids	**342**			5.0	mg/L	1	B15D009	Apr-16-15	Apr-16-15

S05 (1504007-05) Water Sampled: Apr-09-15 12:45 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Suspended Solids	**66.0**			5.0	mg/L	1	B15D009	Apr-16-15	Apr-16-15

S06 (1504007-06) Water Sampled: Apr-09-15 13:00 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Suspended Solids	**645**			5.0	mg/L	1	B15D009	Apr-16-15	Apr-16-15

S07 (1504007-07) Water Sampled: Apr-09-15 13:00 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Suspended Solids	**636**			5.0	mg/L	1	B15D009	Apr-16-15	Apr-16-15

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Ledgeview	
77 West Jackson Boulevard	Project Number: 15DS01	**Reported:**
Chicago IL, 60604	Project Manager: Don Schwer	May-14-15 17:49

Total Suspended Solids, SM 2540 D (modified)
US EPA Region 5 Chicago Regional Laboratory

S08 (1504007-08) Water Sampled: Apr-09-15 13:12 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Suspended Solids	**149**			5.0	mg/L	1	B15D009	Apr-16-15	Apr-16-15

S09 (1504007-09) Water Sampled: Apr-09-15 13:20 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Suspended Solids	**270**			5.0	mg/L	1	B15D009	Apr-16-15	Apr-16-15

B01 (1504007-10) Water Sampled: Apr-09-15 11:02 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Suspended Solids	**U**			5.0	mg/L	1	B15D009	Apr-16-15	Apr-16-15

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Ledgeview	
77 West Jackson Boulevard	Project Number: 15DS01	**Reported:**
Chicago IL, 60604	Project Manager: Don Schwer	May-14-15 17:49

Notes and Definitions

U	Not Detected
NR	Not Reported

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5 CHICAGO REGIONAL LABORATORY
536 SOUTH CLARK STREET
CHICAGO, ILLINOIS 60605

LABORATORY ACCREDITATION BUREAU
ACCREDITED ISO/IEC 17025
Certificate # L2280 Testing

Date: 5/26/2015

Subject: Review of Region 5 Data for Ledgeview

To: Water Division, US EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604

From: Nidia Fuentes, Analyst
US EPA Region 5 Chicago Regional Laboratory

The data transmitted under this cover memo successfully passed CRL's data review procedures as documented in the current Quality Management Plan and applicable Standard Operating Procedures. In accordance with EPA's *Guidance on Environmental Data Verification and Data Validation* (Document EPA QA/G-8), CRL verified and validated the data but does not perform data quality assessment based on project plans.

This report was reviewed and the information provided herein accurately represents the analysis performed.

x Nidia Fuentes 5/26/2015

Please contact the analyst with any technical report issues, Amanda Wroble at (312)-353-0375 for sample project concerns, and Sylvia Griffin at (312)-353-9073 with data transmittal questions. Thank you.

Attached are Results for: Ledgeview

/ /

Data Management Coordinator and DateTransmitted

Analyses included in this report:

TKN DA

Total Phosphorus DA

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Ledgeview	
77 West Jackson Boulevard	Project Number: 15DS01	**Reported:**
Chicago IL, 60604	Project Manager: Don Schwer	May-26-15 15:01

Analysis Case Narrative

General Information

A total of ten water samples to be analyzed for Total Phosphorus (TP) were received at the Chicago Regional Laboratory on April 10, 2015. The water samples were digested and analyzed using CRL SOP AIG034B, Version #2 (EPA method 365.4). All holding times were met. The designated analyst for the sample is Nidia Fuentes. Nidia can be reached at 312-353-9079.

Sample Analysis and Results

The data reported herein meet requirements for "2015 General Field sampling plan 103113-CAFOs" and "2014 reporting request for CAFO samples 062014".

Quality Control

All quality control audits were within the CRL's limits.

Analysis Case Narrative

General Information

A total of ten water samples to be analyzed for Total Kjeldahl Nitrogen (TKN) were received at the Chicago Regional Laboratory on April 10, 2015. The samples were digested and analyzed using CRL SOP AIG035B, Version #2 (EPA method 351.2).
All holding times were met. The designated analyst for these samples is Nidia Fuentes. Nidia can be reached at 312-353-9079.

Sample Analysis and Results

The data reported herein meet requirements for "2015 General Field sampling plan 103113-CAFOs" and "2014 reporting request for CAFO samples 062014".

Quality Control

All quality control audits were within the CRL limits.

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Ledgeview	
77 West Jackson Boulevard	Project Number: 15DS01	**Reported:**
Chicago IL, 60604	Project Manager: Don Schwer	May-26-15 15:01

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S01	1504007-01	Water	Apr-09-15 11:14	Apr-10-15 11:27
S02	1504007-02	Water	Apr-09-15 11:25	Apr-10-15 11:27
S03	1504007-03	Water	Apr-09-15 11:32	Apr-10-15 11:27
S04	1504007-04	Water	Apr-09-15 11:35	Apr-10-15 11:27
S05	1504007-05	Water	Apr-09-15 12:45	Apr-10-15 11:27
S06	1504007-06	Water	Apr-09-15 13:00	Apr-10-15 11:27
S07	1504007-07	Water	Apr-09-15 13:00	Apr-10-15 11:27
S08	1504007-08	Water	Apr-09-15 13:12	Apr-10-15 11:27
S09	1504007-09	Water	Apr-09-15 13:20	Apr-10-15 11:27
B01	1504007-10	Water	Apr-09-15 11:02	Apr-10-15 11:27

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Ledgeview	
77 West Jackson Boulevard	Project Number: 15DS01	**Reported:**
Chicago IL, 60604	Project Manager: Don Schwer	May-26-15 15:01

Phosphorus, Colorimetric, EPA 365.4 (modified)
US EPA Region 5 Chicago Regional Laboratory

S01 (1504007-01) Water Sampled: Apr-09-15 11:14 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Phosphorus	**502**			27.0	mg/L	180	B15E006	May-04-15	May-07-15

S02 (1504007-02) Water Sampled: Apr-09-15 11:25 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Phosphorus	**21.9**			7.50	mg/L	50	B15E006	May-04-15	May-07-15

S03 (1504007-03) Water Sampled: Apr-09-15 11:32 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Phosphorus	**103**			7.50	mg/L	50	B15E006	May-04-15	May-07-15

S04 (1504007-04) Water Sampled: Apr-09-15 11:35 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Phosphorus	**56.7**			3.00	mg/L	20	B15E006	May-04-15	May-07-15

S05 (1504007-05) Water Sampled: Apr-09-15 12:45 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Phosphorus	**8.59**			1.50	mg/L	10	B15E006	May-04-15	May-07-15

S06 (1504007-06) Water Sampled: Apr-09-15 13:00 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Phosphorus	**36.8**			7.50	mg/L	50	B15E006	May-04-15	May-07-15

S07 (1504007-07) Water Sampled: Apr-09-15 13:00 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Phosphorus	**39.8**			7.50	mg/L	50	B15E006	May-04-15	May-07-15

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Ledgeview	
77 West Jackson Boulevard	Project Number: 15DS01	**Reported:**
Chicago IL, 60604	Project Manager: Don Schwer	May-26-15 15:01

Phosphorus, Colorimetric, EPA 365.4 (modified)
US EPA Region 5 Chicago Regional Laboratory

S08 (1504007-08) Water Sampled: Apr-09-15 13:12 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Phosphorus	**32.4**			7.50	mg/L	50	B15E006	May-04-15	May-07-15

S09 (1504007-09) Water Sampled: Apr-09-15 13:20 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Phosphorus	**40.1**			3.00	mg/L	20	B15E006	May-04-15	May-07-15

B01 (1504007-10) Water Sampled: Apr-09-15 11:02 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Phosphorus	U			0.15	mg/L	1	B15E006	May-04-15	May-07-15

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Ledgeview	
77 West Jackson Boulevard	Project Number: 15DS01	**Reported:**
Chicago IL, 60604	Project Manager: Don Schwer	May-26-15 15:01

Total Kjeldahl Nitrogen, EPA 351.2 (modified)
US EPA Region 5 Chicago Regional Laboratory

S01 (1504007-01) Water Sampled: Apr-09-15 11:14 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Kjeldahl Nitrogen	**1700**			90.0	mg/L	180	B15E005	May-04-15	May-07-15

S02 (1504007-02) Water Sampled: Apr-09-15 11:25 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Kjeldahl Nitrogen	**162**			25.0	mg/L	50	B15E005	May-04-15	May-07-15

S03 (1504007-03) Water Sampled: Apr-09-15 11:32 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Kjeldahl Nitrogen	**244**			25.0	mg/L	50	B15E005	May-04-15	May-07-15

S04 (1504007-04) Water Sampled: Apr-09-15 11:35 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Kjeldahl Nitrogen	**146**			10.0	mg/L	20	B15E005	May-04-15	May-07-15

S05 (1504007-05) Water Sampled: Apr-09-15 12:45 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Kjeldahl Nitrogen	**47.1**			5.00	mg/L	10	B15E005	May-04-15	May-07-15

S06 (1504007-06) Water Sampled: Apr-09-15 13:00 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Kjeldahl Nitrogen	**229**			25.0	mg/L	50	B15E005	May-04-15	May-07-15

S07 (1504007-07) Water Sampled: Apr-09-15 13:00 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Kjeldahl Nitrogen	**255**			25.0	mg/L	50	B15E005	May-04-15	May-07-15

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Ledgeview	
77 West Jackson Boulevard	Project Number: 15DS01	**Reported:**
Chicago IL, 60604	Project Manager: Don Schwer	May-26-15 15:01

Total Kjeldahl Nitrogen, EPA 351.2 (modified)
US EPA Region 5 Chicago Regional Laboratory

S08 (1504007-08) Water Sampled: Apr-09-15 13:12 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Kjeldahl Nitrogen	276			25.0	mg/L	50	B15E005	May-04-15	May-07-15

S09 (1504007-09) Water Sampled: Apr-09-15 13:20 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Kjeldahl Nitrogen	138			10.0	mg/L	20	B15E005	May-04-15	May-07-15

B01 (1504007-10) Water Sampled: Apr-09-15 11:02 Received: Apr-10-15 11:27

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Total Kjeldahl Nitrogen	0.09			0.50	mg/L	1	B15E005	May-04-15	May-07-15

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, US EPA Region 5	Project: Ledgeview	
77 West Jackson Boulevard	Project Number: 15DS01	**Reported:**
Chicago IL, 60604	Project Manager: Don Schwer	May-26-15 15:01

Notes and Definitions

U	Not Detected
NR	Not Reported

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

April 16, 2015

Kimberly O'Neill
SAIC
McLean/Enterprise Center
8301 Greensboro Drive
Mc Lean, VA 22102

RE: Project: 15DS01 LEDGEVIEW
Pace Project No.: 40112913

Dear Kimberly O'Neill:
Enclosed are the analytical results for sample(s) received by the laboratory on April 09, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Steven Mleczko
steve.mleczko@pacelabs.com
Project Manager

Enclosures

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 15DS01 LEDGEVIEW
Pace Project No.: 40112913

Green Bay Certification IDs
1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
North Dakota Certification #: R-150
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
US Dept of Agriculture #: S-76505
Wisconsin Certification #: 405132750

Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: 15DS01 LEDGEVIEW
Pace Project No.: 40112913

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40112913001	S01 FEED BACK	Water	04/09/15 11:14	04/09/15 14:14
40112913002	S02 FEED BACK CONF	Water	04/09/15 11:25	04/09/15 14:14
40112913003	S03 SAT EAST	Water	04/09/15 11:32	04/09/15 14:14
40112913004	S04 SAT EAST CONF	Water	04/09/15 11:35	04/09/15 14:14
40112913005	S05 STREAM	Water	04/09/15 12:45	04/09/15 14:14
40112913006	S06 PONDED	Water	04/09/15 13:00	04/09/15 14:14
40112913007	S07 PONDED 2	Water	04/09/15 13:00	04/09/15 14:14
40112913008	S08 EAST FLOW	Water	04/09/15 13:12	04/09/15 14:14
40112913009	S09 WEST FLOW	Water	04/09/15 13:20	04/09/15 14:14

Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE ANALYTE COUNT

Project: 15DS01 LEDGEVIEW
Pace Project No.: 40112913

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40112913001	S01 FEED BACK	SM 9222D	DEY	1
40112913002	S02 FEED BACK CONF	SM 9222D	DEY	1
40112913003	S03 SAT EAST	SM 9222D	DEY	1
40112913004	S04 SAT EAST CONF	SM 9222D	DEY	1
40112913005	S05 STREAM	SM 9222D	DEY	1
40112913006	S06 PONDED	SM 9222D	DEY	1
40112913007	S07 PONDED 2	SM 9222D	DEY	1
40112913008	S08 EAST FLOW	SM 9222D	DEY	1
40112913009	S09 WEST FLOW	SM 9222D	DEY	1

Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 15DS01 LEDGEVIEW
Pace Project No.: 40112913

Sample: S01 FEED BACK **Lab ID: 40112913001** Collected: 04/09/15 11:14 Received: 04/09/15 14:14 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
9222D MICRO Fecal Coli by MF	Analytical Method: SM 9222D Preparation Method: SM 9222D								
Fecal Coliforms	**<901**	CFU/100 mL	901	901	901	04/09/15 16:20	04/09/15 16:20		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 15DS01 LEDGEVIEW
Pace Project No.: 40112913

Sample: S02 FEED BACK CONF **Lab ID: 40112913002** Collected: 04/09/15 11:25 Received: 04/09/15 14:14 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
9222D MICRO Fecal Coli by MF	Analytical Method: SM 9222D Preparation Method: SM 9222D								
Fecal Coliforms	**90900**	CFU/100 mL	9090	9090	9090	04/09/15 16:20	04/09/15 16:20		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 15DS01 LEDGEVIEW
Pace Project No.: 40112913

Sample: S03 SAT EAST **Lab ID: 40112913003** Collected: 04/09/15 11:32 Received: 04/09/15 14:14 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
9222D MICRO Fecal Coli by MF	Analytical Method: SM 9222D Preparation Method: SM 9222D								
Fecal Coliforms	**2100000**	CFU/100 mL	100000	100000	100000	04/09/15 16:20	04/09/15 16:20		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 15DS01 LEDGEVIEW
Pace Project No.: 40112913

Sample: S04 SAT EAST CONF **Lab ID: 40112913004** Collected: 04/09/15 11:35 Received: 04/09/15 14:14 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
9222D MICRO Fecal Coli by MF	Analytical Method: SM 9222D Preparation Method: SM 9222D								
Fecal Coliforms	**2500000**	CFU/100 mL	100000	100000	1000000	04/09/15 16:20	04/09/15 16:20		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 15DS01 LEDGEVIEW
Pace Project No.: 40112913

Sample: S05 STREAM **Lab ID: 40112913005** Collected: 04/09/15 12:45 Received: 04/09/15 14:14 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
9222D MICRO Fecal Coli by MF	Analytical Method: SM 9222D Preparation Method: SM 9222D								
Fecal Coliforms	**135000**	CFU/100 mL	9010	9010	9010	04/09/15 16:20	04/09/15 16:20		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 15DS01 LEDGEVIEW
Pace Project No.: 40112913

Sample: S06 PONDED **Lab ID: 40112913006** Collected: 04/09/15 13:00 Received: 04/09/15 14:14 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
9222D MICRO Fecal Coli by MF	Analytical Method: SM 9222D Preparation Method: SM 9222D								
Fecal Coliforms	**1140000**	CFU/100 mL	9010	9010	9010	04/09/15 16:20	04/09/15 16:20		

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 15DS01 LEDGEVIEW
Pace Project No.: 40112913

Sample: S07 PONDED 2 **Lab ID: 40112913007** Collected: 04/09/15 13:00 Received: 04/09/15 14:14 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
9222D MICRO Fecal Coli by MF	Analytical Method: SM 9222D Preparation Method: SM 9222D								
Fecal Coliforms	**1300000**	CFU/100 mL	9010	9010	9010	04/09/15 16:20	04/09/15 16:20		

Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 15DS01 LEDGEVIEW
Pace Project No.: 40112913

Sample: S08 EAST FLOW **Lab ID: 40112913008** Collected: 04/09/15 13:12 Received: 04/09/15 14:14 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
9222D MICRO Fecal Coli by MF	Analytical Method: SM 9222D Preparation Method: SM 9222D								
Fecal Coliforms	**757000**	CFU/100 mL	9010	9010	9010	04/09/15 16:20	04/09/15 16:20		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 15DS01 LEDGEVIEW
Pace Project No.: 40112913

Sample: S09 WEST FLOW **Lab ID: 40112913009** Collected: 04/09/15 13:20 Received: 04/09/15 14:14 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
9222D MICRO Fecal Coli by MF	Analytical Method: SM 9222D Preparation Method: SM 9222D								
Fecal Coliforms	**260000**	CFU/100 mL	10000	10000	10000	04/09/15 16:20	04/09/15 16:20		

REPORT OF LABORATORY ANALYSIS

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 15DS01 LEDGEVIEW
Pace Project No.: 40112913

QC Batch: MBIO/3946 Analysis Method: SM 9222D
QC Batch Method: SM 9222D Analysis Description: 9222D MICRO Fecal Coliform by MF
Associated Lab Samples: 40112913001, 40112913002, 40112913003, 40112913004, 40112913005, 40112913006, 40112913007, 40112913008, 40112913009

METHOD BLANK: 1141501 Matrix: Water
Associated Lab Samples: 40112913001, 40112913002, 40112913003, 40112913004, 40112913005, 40112913006, 40112913007, 40112913008, 40112913009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fecal Coliforms	CFU/100 mL	<1	1.0	04/09/15 16:20	

METHOD BLANK: 1141503 Matrix: Water
Associated Lab Samples: 40112913001, 40112913002, 40112913003, 40112913004, 40112913005, 40112913006, 40112913007, 40112913008, 40112913009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fecal Coliforms	CFU/100 mL	<1	1.0	04/09/15 16:20	

SAMPLE DUPLICATE: 1141502

Parameter	Units	40112913001 Result	Dup Result	RPD	Max RPD	Qualifiers
Fecal Coliforms	CFU/100 mL	<901	<901			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: 15DS01 LEDGEVIEW
Pace Project No.: 40112913

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 15DS01 LEDGEVIEW
Pace Project No.: 40112913

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40112913001	S01 FEED BACK	SM 9222D	MBIO/3945	SM 9222D	MBIO/3946
40112913002	S02 FEED BACK CONF	SM 9222D	MBIO/3945	SM 9222D	MBIO/3946
40112913003	S03 SAT EAST	SM 9222D	MBIO/3945	SM 9222D	MBIO/3946
40112913004	S04 SAT EAST CONF	SM 9222D	MBIO/3945	SM 9222D	MBIO/3946
40112913005	S05 STREAM	SM 9222D	MBIO/3945	SM 9222D	MBIO/3946
40112913006	S06 PONDED	SM 9222D	MBIO/3945	SM 9222D	MBIO/3946
40112913007	S07 PONDED 2	SM 9222D	MBIO/3945	SM 9222D	MBIO/3946
40112913008	S08 EAST FLOW	SM 9222D	MBIO/3945	SM 9222D	MBIO/3946
40112913009	S09 WEST FLOW	SM 9222D	MBIO/3945	SM 9222D	MBIO/3946

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

schwerdon@epa.gov
~~dschwer~~
312-353-8752

4011'2415

REGION 5
77 West Jackson Boulevard
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

Page 47 of 48

PROJ. NO.	PROJECT NAME
15DS01	Ledgeview

SAMPLERS: *(Print Name and Sign)* Don Schwer DRS III 4/9/2015

Activity Code:

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	Analyte: Fecal Coli. for	TAG NUMBERS
S01	4/9/15	11:14		X	Feed Bunk	1	X	001 1-100ml p[A]
S02	4/9/15	11:25		X	Feed Bunk Cont	1	X	002
S03	4/9/15	11:32		X	Sat East	1	X	003
S04	4/9/15	11:35		X	Sat East Cont	1	X	004
S05	4/9/15	12:45		X	Stream	1	X	005
S06	4/9/15	13:00		X	Ponded	1	X	006
S07	4/9/15	13:00		X	Ponded 2	1	X	007
S08	4/9/15	13:12		X	East Flow	1	X	008
S09	4/9/15	13:20		X	West Flow	1	X	009

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
DRS III	4/9/15 2:14 PM	Melissa Venema 4/9/15 1414
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)* / Date / Time

Ship To:

ATTN:

Airbill Number

Chain of Custody Seal Numbers

Distribution: White - Accompanies Shipment; Pink - Coordinator Field Files; Yellow - Laboratory File

Printed on Recycled Paper/Printed with Soy-Based Ink

5-50175

Sample Condition Upon Receipt

Pace Analytical Services, Inc.
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Pace Analytical™

Client Name: EPA

Project #: WO#: 40112913

Courier: ☐ Fed Ex ☐ UPS ☑ Client ☐ Pace Other:

Tracking #:

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Custody Seal on Samples Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other

Thermometer Used: NA Type of Ice: Wet Blue Dry None ☑ Samples on ice, cooling process has begun

Cooler Temperature: Uncorr: 2.01 /Corr: Biological Tissue is Frozen: ☐ yes ☐ no

Temp Blank Present: ☐ yes ☑ no

Person examining contents:
Date: 4/9/15
Initials: MV

Temp should be above freezing to 6°C for all sample except Biota.
Frozen Biota Samples should be received ≤ 0°C.

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☐Yes ☑No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
- VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☑Yes ☐No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☐Yes ☑No ☐N/A	
-Pace IR Containers Used:	☐Yes ☑No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12. No time on samples 4/9/15 MV
-Includes date/time/ID/Analysis Matrix:	WT	
All containers needing preservation have been checked. (Non-Compliance noted in 13.)	☐Yes ☐No ☑N/A	13. ☐ HNO3 ☐ H2SO4 ☐ NaOH ☐ NaOH +ZnAct
All containers needing preservation are found to be in compliance with EPA recommendation. (HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	☐Yes ☐No ☑N/A	
exceptions: VOA, coliform, TOC, TOX, TOH, O&G, WIDROW, Phenolics, OTHER:	☐Yes ☐No	Initial when completed / Lab Std #ID of preservative / Date/ Time:
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☑N/A	14.
Trip Blank Present:	☐Yes ☐No ☑N/A	15.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: Date: 4/9/15

F-GB-C-031-Rev.02 (28Oct2013) SCUR Form

7/26/17

State of Wisconsin
Department of Natural Resources
PO Box 7185, Madison, WI 53707-7185
dnr.wi.gov

Animal Unit Calculation Worksheet
Form 3400-025A (R 3/2012)

The Current Animal Unit Calculation Worksheet must be filled out separately for the "main" site and each site which are owned or operated by your farm for the purposes of housing animals associated with your operation. The site name, for which you are filling this worksheet out, must be provided below and correlate with Form 3400-025 Site Information (Section II).

Current Animal Unit Calculation Numbers

Name of Site: Ledgeview Farms, LLC – Upper Farm

Animal Type		I. Mixed Animal Units			II. Non-mixed Animal Units		
		b. Equiv. factor	c. Current Number	d. No. of AUs	e. Equiv. factor	f. Current Number	g. No. of Aus
Example - Broilers (non-liquid manure):		*0.005 x*	*150,000*	*= 750*	*0.008 x*	*150,000*	*= 1200*
Dairy/Beef Calves (under 400 lbs)		0.20 x	375	= 75	*Fed numbers in this column comply with 40 CFR s. 122.23*		
Dairy Cattle	Milking & Dry Cows	1.40 x	600	= 840	1.43 x	600	= 858
	Heifers (800 lbs to 1200 lbs)	1.10 x	200	= 220			
	Heifers (400 lbs to 800 lbs)	0.60 x		=	1.00 x		=
Beef	Steers or Cows (400 lbs to market)	1.00 x		=			
	Bulls (each)	1.40 x	15	= 21	1.00 x		=
Veal Calves		0.50 x		=	1.00 x		=
Swine	Pigs (up to 55 lbs)	0.10 x		=	0.10 x		=
	Pigs (55 lbs to market)	0.40 x		=			
	Sows (each)	0.40 x		=			
	Boars (each)	0.50 x		=	0.40 x		=
Chickens	Layers (each) -non-liquid manure system	0.01 x		=	0.0123 x		=
	Broilers/Pullets (each) -non-liquid manure system	0.005 x		=	0.008 x		=
	Per Bird -liquid manure system	0.033 x		=	0.0333 x		=
Ducks	Ducks (each) -liquid manure system	0.2 x		=	0.2 x		=
	Ducks (each) -non-liquid manure system	0.01 x		=	0.0333 x		=
Turkeys (each)		0.018 x		=	0.018 x		=
Sheep (each)		0.1 x		=	0.1 x		=
Horses (each)		2 x		=	2 x		=
Total Animal Units:		**Total Mixed Animal Units =** (add all rows above) 1156			**Total Non-Mixed Animal Units =** (Enter the single highest number from any row above; DO NOT add the totals) 858		

☐ Check here if there are no proposed increases in animal numbers at this site within the next five years.

State of Wisconsin
Department of Natural Resources
PO Box 7185, Madison, WI 53707-7185
dnr.wi.gov

Animal Unit Calculation Worksheet
Form 3400-025A (R 3/2012)

The Projected Animal Unit Calculation Worksheet must be filled out separately for the "main" site and each site which are owned or operated by your farm for the purposes of housing animals associated with your operation. The site name, for which you are filling this worksheet out, must be provided below and correlate with Form 3400-025 Site Information (Section II).

Projected Animal Unit Calculation Numbers 5yr.

Name of Site: Ledgeview Farms, LLC - Upper Farm

Animal Type		I. Mixed Animal Units			II. Non-mixed Animal Units		
		b. Equiv. factor	c. Projected Number	d. No. of AUs	e. Equiv. factor	f. Projected Number	g. No. of Aus
Example - Broilers (non-liquid manure):		*0.005 x*	*150,000*	*= 750*	*0.008 x*	*150,000*	*= 1200*
Dairy/Beef Calves (under 400 lbs)		0.20 x	300	= 60	*Fed numbers in this column comply with 40 CFR s. 122.23*		
Dairy Cattle	Milking & Dry Cows	1.40 x	1500	= 2100	1.43 x	1500	= 2145
	Heifers (800 lbs to 1200 lbs)	1.10 x	500	= 550			
	Heifers (400 lbs to 800 lbs)	0.60 x		=	1.00 x	800	= 800
Beef	Steers or Cows (400 lbs to market)	1.00 x		=			
	Bulls (each)	1.40 x	20	= 28	1.00 x	20	= 20
Veal Calves		0.50 x		=	1.00 x		=
Swine	Pigs (up to 55 lbs)	0.10 x		=	0.10 x		=
	Pigs (55 lbs to market)	0.40 x		=			
	Sows (each)	0.40 x		=			
	Boars (each)	0.50 x		=	0.40 x		=
Chickens	Layers (each) -non-liquid manure system	0.01 x		=	0.0123 x		=
	Broilers/Pullets (each) -non-liquid manure system	0.005 x		=	0.008 x		=
	Per Bird -liquid manure system	0.033 x		=	0.0333 x		=
Ducks	Ducks (each) -liquid manure system	0.2 x		=	0.2 x		=
	Ducks (each) -non-liquid manure system	0.01 x		=	0.0333 x		=
Turkeys (each)		0.018 x		=	0.018 x		=
Sheep (each)		0.1 x		=	0.1 x		=
Horses (each)		2 x		=	2 x		=
Total Animal Units:			**Total Mixed Animal Units =** (add all rows above) 2738			**Total Non-Mixed Animal Units =** (Enter the single highest number from any row above; DO NOT add the totals) 2965	

Date of Proposed Expansion (MM/YY):
~~01/14~~ ~~01/19~~ 2017 → 2020

7/26/17

State of Wisconsin
Department of Natural Resources
PO Box 7185, Madison, WI 53707-7185
dnr.wi.gov

Animal Unit Calculation Worksheet
Form 3400-025A (R 3/2012)

The Current Animal Unit Calculation Worksheet must be filled out separately for the "main" site and each site which are owned or operated by your farm for the purposes of housing animals associated with your operation. The site name, for which you are filling this worksheet out, must be provided below and correlate with Form 3400-025 Site Information (Section II).

Current Animal Unit Calculation Numbers

Name of Site: Ledgeview Farms, LLC Lower Farm

Animal Type		I. Mixed Animal Units			II. Non-mixed Animal Units		
		b. Equiv. factor	c. Current Number	d. No. of AUs	e. Equiv. factor	f. Current Number	g. No. of Aus
Example - Broilers (non-liquid manure):		*0.005 x*	*150,000*	*= 750*	*0.008 x*	*150,000*	*= 1200*
Dairy/Beef Calves (under 400 lbs)		0.20 x		=	*Fed numbers in this column comply with 40 CFR s. 122.23*		
Dairy Cattle	Milking & Dry Cows	1.40 x		=	1.43 x		=
	Heifers (800 lbs to 1200 lbs)	1.10 x		=			
	Heifers (400 lbs to 800 lbs)	0.60 x	130	= 78	1.00 x	130	= 130
Beef	Steers or Cows (400 lbs to market)	1.00 x	425	= 425			
	Bulls (each)	1.40 x		=	1.00 x	425	= 425
Veal Calves		0.50 x		=	1.00 x		=
Swine	Pigs (up to 55 lbs)	0.10 x		=	0.10 x		=
	Pigs (55 lbs to market)	0.40 x		=			
	Sows (each)	0.40 x		=			
	Boars (each)	0.50 x		=	0.40 x		=
Chickens	Layers (each) -non-liquid manure system	0.01 x		=	0.0123 x		=
	Broilers/Pullets (each) -non-liquid manure system	0.005 x		=	0.008 x		=
	Per Bird -liquid manure system	0.033 x		=	0.0333 x		=
Ducks	Ducks (each) -liquid manure system	0.2 x		=	0.2 x		=
	Ducks (each) -non-liquid manure system	0.01 x		=	0.0333 x		=
Turkeys (each)		0.018 x		=	0.018 x		=
Sheep (each)		0.1 x		=	0.1 x		=
Horses (each)		2 x		=	2 x		=
Total Animal Units:		**Total Mixed Animal Units =** (add all rows above) 503			**Total Non-Mixed Animal Units =** (Enter the single highest number from any row above; DO NOT add the totals) 555		

☐ Check here if there are no proposed increases in animal numbers at this site within the next five years.

State of Wisconsin
Department of Natural Resources
PO Box 7185, Madison, WI 53707-7185
dnr.wi.gov

Animal Unit Calculation Worksheet
Form 3400-025A (R 3/2012)

The Projected Animal Unit Calculation Worksheet must be filled out separately for the "main" site and each site which are owned or operated by your farm for the purposes of housing animals associated with your operation. The site name, for which you are filling this worksheet out, must be provided below and correlate with Form 3400-025 Site Information (Section II).

Projected Animal Unit Calculation Numbers 5 yr.

Name of Site: Ledgeview Farms, LLC Lower Farm

Animal Type		I. Mixed Animal Units			II. Non-mixed Animal Units		
		b. Equiv. factor	c. Projected Number	d. No. of AUs	e. Equiv. factor	f. Projected Number	g. No. of Aus
Example - Broilers (non-liquid manure):		*0.005 x*	*150,000*	*= 750*	*0.008 x*	*150,000*	*= 1200*
Dairy/Beef Calves (under 400 lbs)		0.20 x		=	*Fed numbers in this column comply with 40 CFR s. 122.23*		
Dairy Cattle	Milking & Dry Cows	1.40 x		=	1.43 x		=
	Heifers (800 lbs to 1200 lbs)	1.10 x		=			
	Heifers (400 lbs to 800 lbs)	0.60 x	350	= 210	1.00 x	350	= 350
Beef	Steers or Cows (400 lbs to market)	1.00 x	125	= 125			
	Bulls (each)	1.40 x		=	1.00 x	125	= 125
Veal Calves		0.50 x		=	1.00 x		=
Swine	Pigs (up to 55 lbs)	0.10 x		=	0.10 x		=
	Pigs (55 lbs to market)	0.40 x		=			
	Sows (each)	0.40 x		=			
	Boars (each)	0.50 x		=	0.40 x		=
Chickens	Layers (each) -non-liquid manure system	0.01 x		=	0.0123 x		=
	Broilers/Pullets (each) -non-liquid manure system	0.005 x		=	0.008 x		=
	Per Bird -liquid manure system	0.033 x		=	0.0333 x		=
Ducks	Ducks (each) -liquid manure system	0.2 x		=	0.2 x		=
	Ducks (each) -non-liquid manure system	0.01 x		=	0.0333 x		=
Turkeys (each)		0.018 x		=	0.018 x		=
Sheep (each)		0.1 x		=	0.1 x		=
Horses (each)		2 x		=	2 x		=
Total Animal Units:		**Total Mixed Animal Units =** (add all rows above) 335			**Total Non-Mixed Animal Units =** (Enter the single highest number from any row above; DO NOT add the totals) 425		

Date of Proposed Expansion (MM/YY):

~~01/14 - 01/19~~ 2017 → 2020

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
PO Box 7185
101 S. Webster Street
Madison, WI 53707-7185

Scott Walker, Governor
Cathy Stepp, Secretary
Telephone 608-266-2621
FAX 608-267-3579
TTY Access via relay - 711

August 25, 2017

Jason Pansier
Ledgeview Farm LLC
3870 Dickinson Road
De Pere, WI 54115

SUBJECT: CAFO WPDES Final Permit Application – ePermitting Submittal Required
Status: Incomplete

Dear Jason Pansier:

You are receiving this letter because you have submitted an incomplete application for issuance of a CAFO WPDES permit prior to June 5, 2017. As of this date, the Department is only accepting CAFO WPDES permit applications through our online ePermitting System: http://dnr.wi.gov/permits/water/. Based on your application materials, you are currently operating over 1,000 animal units and should have submitted a complete application six months prior to reaching this size. The Department previously sent you a request to submit the materials needed to complete your application. However, the deadline included in that request has passed and your application remains incomplete. Therefore, you must submit your complete final permit application through the ePermitting System by September 25, 2017.

Your application is currently incomplete because it is missing the following components:

1. Soil Survey Maps for Each Site (Upper & Lower Farm)

2. Evaluations of Existing Reviewable Facilities:

   - Upper Farm:
     i. Waste storage facility built in 2015 (4-5 million gallons)
     ii. Pit 1; waste storage facility built in 1995 (490,000 gallons)
     iii. Pit 2; waste storage facility built in 1999 (504,000 gallons)
     iv. Manure transfer system (piping & reception tanks) for all barns
     v. Feed storage area
     vi. Feed storage area runoff controls (or feed storage abandonment plan)
     vii. Runoff controls for all feedlots (heifer barn & cow barns), including the status of discharge points north of the cow barns and west of Pits 1 & 2.
     viii. Management plan for pasture areas (or pasture abandonment plan)
     ix. Storm water management/clean water diversions
   - Lower Farm:
     i. Waste storage facility for heifer barns
     ii. Manure transfer system (if any)
     iii. Feed storage area
     iv. Feedlot runoff controls
     v. Storm water management/clean water diversions

Note: the evaluations submitted on May 26, 2017 for Ledgeview Dairy are incomplete and do not provide adequate information to determine compliance. The evaluation documentation that was

provided does not state what was evaluated, how it was evaluated, what criteria was used for the evaluations, etc. and does not meet s. NR 243.16 Wis. Adm. Code. Additionally, the evaluations do not state who is taking responsibility for the determination in accordance with ch. NR 243. The evaluation review letter dated August 8, 2017 under DNR project number R-2017-0097 found the reviewable facilities to not be in compliance with s. NR 243.15 and contains additional information.

3. Plans and Specifications for All Proposed Reviewable Facilities:

Required plans and specifications must be submitted through the ePermitting System separate from your permit application

- Upper Farm:
    i. Heifer outdoor lot runoff controls
    ii. Feed storage runoff controls (or abandonment plan)
    iii. Pasture runoff controls (or abandonment plan)
    iv. Pits 1 & 2 repairs for continued use (or abandonment plan)
    v. Existing/2015 waste storage facility upgrades
- Lower Farm:
    i. Feed storage runoff controls
    ii. Feed storage expansion (if proposed)
    iii. Feedlot containment/runoff controls for east end of lot
    iv. Upgrades (if any) for waste storage facility for the heifer barns

Note: Please refer to the site inspection report and summary letter sent out by your regional specialist for additional items that may require immediate attention. If any issues requiring immediate attention are not addressed prior to your final application submittal, then these items will be included as requirements for a complete application. Also, keep in mind that additional plans and specifications may be required to bring your operation into compliance pending the review of the evaluations listed above.

The following application components have been received to date:

1. Livestock Operation WPDES Permit Application Forms 3400-025, 025B, 025C & Animal Unit Calculation Worksheet Form 3400-025A
   Although these forms were previously submitted to the Department (hard copy/PDF files), you are now required to complete the fillable version of each form provided by the online application. The system will not allow you to sign and submit your application unless these forms are completed.

2. Labeled Aerial Maps for Each Site (Upper & Lower Farm)
   Site maps previously submitted to the Department should be updated (if necessary) and included as part of your final application submittal. At a minimum, site maps should identify all existing and proposed structures along with a manure/process wastewater/storm water flow diagram.

3. Five Year Nutrient Management Plan (NMP)
   Your five year NMP for permit issuance was previously submitted to the Department and approved on June 29, 2017. However, you are still required to include your NMP as part of your complete online application submittal. Approved NMPs will not be reviewed a second a time.

4. Environmental Assessment Questionnaire (EAQ)
   The EAQ previously submitted to the Department should be updated (if necessary) and included as part of your online application submittal.

5. 180-Day Manure Storage Calculations

   The 180-day storage calculations previously submitted to the Department must be updated (if necessary) and included as part of your online application submittal. Please note the system also requires supporting documentation for 180-day storage, and your previous calculations may no longer be adequate. This section of the online application provides links to different spreadsheets that you may use to satisfy this requirement. You are not required to use these spreadsheets as long as sufficient documentation has been provided.

Information and materials to assist you and your consultant in preparing and submitting a complete final application are available at: http://dnr.wi.gov/topic/AgBusiness/CAFO/PermitForms.html. Here are some important notes about submitting applications via the Department's ePermitting System:

- All 3400-025 forms are provided by the system as required fillable forms. Uploading scanned, PDF or other versions of these forms will not satisfy this requirement in the system.
- Remaining application materials (EAQ, evaluations, site maps, NMP documents, etc.) will need to be saved as an electronic file and uploaded as an attachment to the appropriate section of the online application.
- Evaluations required for a complete application must be submitted as part of the permit application submittal. However, plans and specifications must *always* be submitted through the ePermitting System as a separate engineering submittal.
- Once all required forms and attachments are completed, the system will allow you to electronically sign the application and submit it to the Department.
- Permit applications must be electronically signed by the operation's authorized representative. Consultants completing an application on the operation's behalf can use the "Assign Role" feature to send the application to another user (with a WAMS ID) to edit and sign.

It is important to understand that submitting an application through the ePermitting System does not guarantee a complete application. Once submitted, the Department will review the application materials for completeness. Incomplete applications may be dismissed from the system, at which point a complete application will need to be resubmitted. Please note the Department may take additional enforcement action to obtain a complete final application.

The regional Agricultural Runoff Management Specialist assigned to your operation is Heidi Schmitt Marquez. Please do not hesitate to contact her (phone: (920) 662-5187, email: Heidi.SchmittMarquez@wisconsin.gov) or me if you have any questions about your application materials. We look forward to working with you throughout the permitting process.

Sincerely,

Clare Freix

Clare Freix, CAFO Intake Specialist
Regional Agricultural Specialist
Phone: (608) 261-8437
Email: Clare.Freix@Wisconsin.gov

cc: David Wetenkamp, Brown County LWDC
Kevin Beckard, AgSource Laboratories
Mike Mushinski, County Conservationist
Heidi Schmitt Marquez, DNR

CASE ACTIVITY REPORT FOR REGULATORS

State of Wisconsin
Department of Natural Resources

Case ID	Case Title
	Ledgeview Farms LLC Leachate Sample Collection

Activity	Date of Activity
Site visit to Ledgeview Farms LLC to collect samples of leachate from the feed storage area at the heifer site	August 8, 2017

On August 8, 2017, at approximately 09:00 WDNR Agricultural Runoff Management Specialists Heidi Schmitt Marquez and Andrea Gruen arrived at the Ledgeview Farms LLC heifer site to collect samples of the leachate and process wastewater discharging from the feed storage area. The heifer site is located at 3688 Lime Kiln Rd, De Pere, WI. The purpose of the sample collection was to characterize the leachate and process wastewater generated by the feed storage area because discharges to navigable waters from the heifer site have been documented in the past. There is currently no collection system or runoff controls in place for the feed storage area. Schmitt Marquez spoke with Jason Pansier, farm operations manager, to ask for permission to access the site for sample collection, and Pansier granted permission. Upon arrival, Schmitt Marquez and Gruen surveyed the feed storage area and located areas of concentrated leachate/process wastewater discharging from the concrete walls of the feed storage bunkers. Samples were collected from the location of the greatest volume of accumulated leachate/process wastewater discharge. After sample collection, Pansier arrived onsite and had a brief discussion with Schmitt Marquez. Schmitt Marquez and Gruen departed the site shortly after the discussion ended and returned to the Green Bay DNR office. Schmitt Marquez followed environmental sampling protocols for preparation and mailing of the collected samples to the State Laboratory of Hygiene in Madison, WI, for analysis.

A photo log and sample results immediately follow this written report.

Regulator(s) Reporting	Date of Report	Exhibit Reference
Heidi Schmitt Marquez	October 19, 2017	

PHOTO LOG

Photo 1: View of a discharge point of leachate / process wastewater on the outer west wall of the feed storage bunker at the heifer site. Dashed orange arrows indicate the direction of discharge flow. Photo direction is down.

Photo 2: View of discharge points of leachate / process wastewater on the outer west wall of the feed storage bunker at the heifer site. Samples (LD1) were collected from the ponded wastewater adjacent to the location of the bottles. Dashed orange arrows indicate the direction of discharge flow. Photo direction is south and down.

Photo 2: Close up view of the location of sample collection along the outer west wall of the feed storage bunker at the heifer site. Samples (LD1) were collected from the ponded wastewater adjacent to the location of the bottles. Photo direction is down.

ANALYTICAL RESULTS – STATE LABORATORY OF HYGIENE

Wisconsin Department of Natural Resources
Laboratory Report

09/08/2017 *Lab:* **113133790** *Sample:* **334111001** *Page 1 of 2*

Laboratory: **Wisconsin State Laboratory of Hygiene** *DNR ID* **113133790**
2601 Agriculture Dr
Madison **WI** **53718**
Phone : **800-442-4618** *Fax Phone :* **608-224-6213**

Sample:

Field #: **LD1** *Sample #:* **334111001**
Collection Start: **08/08/2017 09:16 am** *Collection End:* **08/08/2017 09:16 am**
Collected by: **HEIDI SCHMITT MARQUEZ** *Waterbody/Outfall Id:*
ID #: *ID Point #:*
County: **Brown** *Account #:* **WW019**
Sample Location: **3688 LIME KILN RD, DE PERE; NW CORNER OF FEED STORAGE AREA BEHIND CONCRETE WALL**
Sample Description: **FEED LEACHATE RUNOFF GRAB SAMPLE FROM THE FEED STORAGE AREA AT THE HEIFER SITE/LOWER FARM**
Sample Source: **Leachate**
Date Reported: **09/07/2017** *Sample Depth:*
Project No: *Sample Status:* **CORRECTED**
Comment: *Sample Reason:*
Analyzed past the 8 hours holding time: Method SM9223BMPN analyzed on 08/09/17 1144

Analyses and Results:

Analysis Method	*Analysis Date*	*Lab Comment*
SM4500-H+B	**08/09/2017**	

Code	*Description*	*Result*	*Units*	*LOD*	*Report Limit*	*LOQ*
403	**PH LAB**	**5.05**	SU	1.00		1.00

Analysis Method	*Analysis Date*	*Lab Comment*
EPA 350.1	**09/05/2017**	

Code	*Description*	*Result*	*Units*	*LOD*	*Report Limit*	*LOQ*
608	**NITROGEN NH3-N DISS**	**523**	MG/L	15.0		48.0

Analysis Method	*Analysis Date*	*Lab Comment*
SM5210B	**08/14/2017**	

Code	*Description*	*Result*	*Units*	*LOD*	*Report Limit*	*LOQ*
310	**BOD 5 DAY**	**20000**	MG/L	2.00		2.00

Comment: SAMPLE STRONGER THAN DILUTIONS WERE SET UP FOR. ACTUAL BOD RESULT IS >19962 MG/L.

Analysis Method	*Analysis Date*	*Lab Comment*
EPA 351.2	**08/22/2017**	

Code	*Description*	*Result*	*Units*	*LOD*	*Report Limit*	*LOQ*
625	**NITROGEN KJELDAHL TOTAL**	**1270**	MG/L	16.5		54.0

Analysis Method	*Analysis Date*	*Lab Comment*
SM2540D	**08/14/2017**	

Code	*Description*	*Result*	*Units*	*LOD*	*Report Limit*	*LOQ*

Wisconsin Department of Natural Resources
Laboratory Report

09/08/2017 *Lab:* **113133790** *Sample:* **334111001** *Page 2 of 2*

Code	*Description*	*Result*	*Units*	*LOD*	*Report Limit*	*LOQ*
530	RESIDUE TOTAL NFLT (TOTAL SUSPENDED SOLIDS)	20400	MG/L	4000.0		4000.0

Analysis Method	*Analysis Date*	*Lab Comment*
EPA 365.1	08/23/2017	

Code	*Description*	*Result*	*Units*	*LOD*	*Report Limit*	*LOQ*
665	PHOSPHORUS TOTAL	159	MG/L	1.00		3.20

Analysis Method	*Analysis Date*	*Lab Comment*
EPA 353.2	09/05/2017	

Code	*Description*	*Result*	*Units*	*LOD*	*Report Limit*	*LOQ*
631	NITROGEN NO3+NO2 DISS (AS N)	ND	MG/L	0.190		0.610

Analysis Method	*Analysis Date*	*Lab Comment*
SM9223BMPN	08/10/2017	

Code	*Description*	*Result*	*Units*	*LOD*	*Report Limit*	*LOQ*
99188	E COLI COLILERT QUANTITRAY MPN	77010	/100 ML			100

Wisconsin Department of Natural Resources
Laboratory Report

Laboratory: **Wisconsin State Laboratory of Hygiene** DNR ID **113133790**
2601 Agriculture Dr
Madison **WI** **53718**
Phone : **800-442-4618** *Fax Phone :* **608-224-6213**

Sample:

Field #:	**LD1**	*Sample #:*	**334111001**
Collection Start:	**08/08/2017 09:16 am**	*Collection End:*	**08/08/2017 09:16 am**
Collected by:	**HEIDI SCHMITT MARQUEZ**	*Waterbody/Outfall Id:*	
ID #:		*ID Point #:*	
County:	**Brown**	*Account #:*	**WW019**
Sample Location:	**3688 LIME KILN RD, DE PERE; NW CORNER OF FEED STORAGE AREA BEHIND CONCRETE WALL**		
Sample Description:	**FEED LEACHATE RUNOFF GRAB SAMPLE FROM THE FEED STORAGE AREA AT THE HEIFER**		
Sample Source:	**SITE/LOWER FARM**		
Date Reported:	**Leachate**	*Sample Depth:*	
Project No:		*Sample Status:*	**COMPLETE**
Comment:		*Sample Reason:*	

Analyzed past the 8 hours holding time: Method SM9223BMPN analyzed on 08/09/17 1144

Analyses and Results:

Analysis Method	*Analysis Date*	*Lab Comment*
SM4500-H+B/SW846 9040C	**08/09/2017**	

Code	*Description*	*Result*	*Units*	*LOD*	*Report Limit*	*LOQ*
403	**PH LAB**	**5.05**	SU	1.00		1.00

Analysis Method	*Analysis Date*	*Lab Comment*
SM9223BMPN	**08/10/2017**	

Code	*Description*	*Result*	*Units*	*LOD*	*Report Limit*	*LOQ*
99188	**E COLI COLILERT QUANTITRAY MPN**	**77010**	/100 ML			100

Wisconsin Department of Natural Resources
Laboratory Report

Laboratory: Wisconsin State Laboratory of Hygiene DNR ID 113133790
2601 Agriculture Dr
Madison WI 53718
Phone : 800-442-4618 Fax Phone : 608-224-6213

Sample:

Field #: LD1 Sample #: 334111001
Collection Start: 08/08/2017 09:16 am Collection End: 08/08/2017 09:16 am
Collected by: HEIDI SCHMITT MARQUEZ Waterbody/Outfall Id:
ID #: ID Point #:
County: Brown Account #: WW019
Sample Location: 3688 LIME KILN RD, DE PERE; NW CORNER OF FEED STORAGE AREA BEHIND CONCRETE WALL
Sample Description: FEED LEACHATE RUNOFF GRAB SAMPLE FROM THE FEED STORAGE AREA AT THE HEIFER SITE/LOWER FARM
Sample Source: Leachate Sample Depth:
Date Reported: 09/07/2017 Sample Status: CORRECTED
Project No: Sample Reason:
Comment: Analyzed past the 8 hours holding time: Method SM9223BMPN analyzed on 08/09/17 1144

Analyses and Results:

Analysis Method	Analysis Date	Lab Comment
SM4500-H+B	08/09/2017	

Code	Description	Result	Units	LOD	Report Limit	LOQ
403	PH LAB	5.05	SU	1.00		1.00

Analysis Method	Analysis Date	Lab Comment
EPA 350.1	09/05/2017	

Code	Description	Result	Units	LOD	Report Limit	LOQ
608	NITROGEN NH3-N DISS	523	MG/L	15.0		48.0

Analysis Method	Analysis Date	Lab Comment
SM5210B	08/14/2017	

Code	Description	Result	Units	LOD	Report Limit	LOQ
310	BOD 5 DAY	20000	MG/L	2.00		2.00

Comment: SAMPLE STRONGER THAN DILUTIONS WERE SET UP FOR; ACTUAL BOD RESULT IS >19962 MG/L.

Analysis Method	Analysis Date	Lab Comment
EPA 351.2	08/22/2017	

Code	Description	Result	Units	LOD	Report Limit	LOQ
625	NITROGEN KJELDAHL TOTAL	1270	MG/L	16.5		54.0

Analysis Method	Analysis Date	Lab Comment
SM2540D	08/14/2017	

Code	Description	Result	Units	LOD	Report Limit	LOQ

Code	Description	Result	Units	LOD	Report Limit	LOQ
530	**RESIDUE TOTAL NFLT (TOTAL SUSPENDED SOLIDS)**	**20400**	MG/L	4000.0		4000.0

Analysis Method	Analysis Date	Lab Comment
EPA 365.1	**08/23/2017**	

Code	Description	Result	Units	LOD	Report Limit	LOQ
665	**PHOSPHORUS TOTAL**	**159**	MG/L	1.00		3.20

Analysis Method	Analysis Date	Lab Comment
EPA 353.2	**09/05/2017**	

Code	Description	Result	Units	LOD	Report Limit	LOQ
631	**NITROGEN NO3+NO2 DISS (AS N)**	**ND**	MG/L	0.190		0.610

Analysis Method	Analysis Date	Lab Comment
SM9223BMPN	**08/10/2017**	

Code	Description	Result	Units	LOD	Report Limit	LOQ
99188	**E COLI COLILERT QUANTITRAY MPN**	**77010**	/100 ML			100

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
101 S. Webster Street
Box 7921
Madison WI 53707-7921

Scott Walker, Governor
Kurt A. Thiede, Interim Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

September 21, 2017

Jason Pansier
Ledgeview Farms LLC
3870 Dickinson Rd
De Pere, WI 54115

Brown County

SUBJECT: Compliance Inspection Summary – Response Required

Dear Mr. Pansier:

On July 18, 2017, the Department of Natural Resources (Department) conducted a site inspection for Ledgeview Farms LLC (Ledgeview), 3875 Dickinson Rd and 3688 Lime Kiln Rd in De Pere, WI. The site inspection was conducted in response to the need for updated information regarding the compliance status of Ledgeview in order to proceed with permit issuance and resolution of the pending case with EPA. Also present at the inspection on behalf of the farm was Kevin Beckard (AgSource Laboratories). A site inspection report including photographs of the site with an accompanying narrative is enclosed for your review and convenience.

Several issues have been required to be addressed by EPA since its inspections. Based on what was observed during the Department's site inspection, the items listed below require follow-up by the specified deadlines. Please refer to the enclosed inspection report for more information about the observations made during the inspection and the items that require additional actions listed at the end of the report (pp. 52-54) and below.

1. Calf barn discharge to Dickinson Rd ditch (main farm site)
    a. Interim controls/management shall be implemented immediately and maintained until a permanent solution is determined/installed.
        i. Submit documentation demonstrating that the discharge to the ditch on Dickinson Rd has ceased by **October 6, 2017.**

2. Feed storage area (both sites)
    a. Interim controls shall be implemented immediately and maintained until a permanent solution is determined/installed.
        i. Submit a plan for the installation of interim controls for the feed storage areas to prevent discharges to waters of the state by **October 6, 2017.**

3. Stacking areas for used bedding (both sites)

   a. Interim controls/management shall be implemented immediately and maintained until a permanent solution is determined/installed.
      i. Submit a plan for management and/or installation of runoff controls to prevent discharges to waters of the state by **October 31, 2017**.

4. Feedlots (both sites)
   a. Interim controls/management shall be implemented immediately and maintained until a permanent solution is determined/installed.
      i. Submit a plan to address containment/runoff controls for the feedlot areas to prevent discharges to waters of the state by **October 31, 2017**.

5. Pits 1 & 2
   a. Submit a plan for the long-term use of the pits. For use as waste storage facilities, repairs and engineering evaluations will be required. For abandonment, a plan that meets applicable requirements for waste storage abandonment will be required.
      i. Submit the long-term use plan by **October 31, 2017**.

6. Permit application reminder
   a. Pursuant to NR 243.12, Wis. Adm. Code, a WPDES permit is required for Ledgeview.
   b. The permit application is incomplete. Engineering evaluations for existing structures are required to be submitted by September 25, 2017.
   c. See Department letter dated August 25, 2017, for additional information.

The following items have been identified for inclusion in a compliance schedule in the reissued permit:

- Upgrades/corrections required for existing structures based on reviews of the engineering evaluations
- Construction schedules for installation of waste storage facilities and/or runoff controls
- Monitoring and inspection program submittal
- Emergency response plan submittal

The items listed above are dependent upon the compliance status of the operation at the time of permit issuance. Any outstanding items identified in this letter and the inspection report that require action at the time of permit issuance will be included in the compliance schedule in the issued permit. You will have the opportunity to review the draft permit and provide comments during the public notice period.

If you have any questions regarding this summary or the WPDES permit reissuance process, please contact me at (920) 662-5187 or Heidi.SchmittMarquez@wisconsin.gov.

Sincerely,

Heidi L. Marquis

Agricultural Runoff Management Specialist

encl: Compliance Inspection Report

ec: Kevin Beckard, AgSource Laboratories
John Roach, Roach and Associates LLC
Mike Mushinski, Brown County Land and Water Conservation Department
Jon Bechle, Brown County Land and Water Conservation Department
Dave Wetenkamp, Brown County Land and Water Conservation Department
Rick Stoll, DNR – Green Bay
Clare Freix, DNR – Madison
Jeff Kreider, DNR – Madison

CAFO Compliance Report – 09/21/2017

Inspection Date: July 18, 2017

Inspection Type: Permit Issuance

Operation / Owner Name: Ledgeview Farms LLC / Jason Pansier

WPDES Permit No. WI-0065421-01-0

Operation Address: 3875 Dickinson Rd, De Pere, WI 54115 (main farm site)
3688 Lime Kiln Rd, De Pere, WI 54115 (heifer site)

On-Site Representative(s): Jason Pansier, owner/operator; Kevin Beckard, AgSource Laboratories

DNR Staff / Report Writer: Heidi Schmitt Marquez, Agricultural Runoff Management Specialist

---

On July 18, 2017, Heidi Schmitt Marquez, Agricultural Runoff Management Specialist with the Wisconsin Department of Natural Resources (Department,) met with Jason Pansier to conduct a site inspection of the Ledgeview Farms LLC (Ledgeview) operation for compliance assessment and permit issuance. Also present for the inspection on behalf of the farm was Kevin Beckard, NMP Specialist with AgSource Laboratories. A Wisconsin Pollutant Discharge Elimination System (WPDES) permit application was recently updated and received on April 3, 2017, and is considered incomplete as of the date of this report. A conditional approval of the nutrient management plan (NMP) was granted on June 29, 2017.

Background Information:

Ledgeview is a dairy operation that is owned by Roy and Glenn Pansier and operated by Jason Pansier. The operation consists of two site locations; the main farm site is located at 3875 Dickinson Rd and the heifer site is located approximately 0.7 miles northeast at 3688 Lime Kiln Rd in De Pere, WI. Both sites are managed under one NMP, and operate a shared feed storage area at the heifer site. The operations at the main site consist of calf and heifer raising and milking; milking occurs twice per day. The heifer site is for raising heifers and beef animals, and contains a large concrete feedlot. No milking occurs at the heifer site.

According to Department records, staff documented that Ledgeview met the definition of and was considered a concentrated animal feeding operation (CAFO) in 2008. The Department initiated the enforcement process to work with Ledgeview to gain compliance with statutory and administrative code requirements. Ledgeview agreed to reduce animal numbers and resolve runoff and storage issues, and the Department closed the enforcement case in 2010. Part of the enforcement case closure included clarification that Ledgeview could not exceed 1,000 (animal units) AUs prior to applying for a WPDES permit, and the sites should continue to be managed to prevent discharges of animal waste and process wastewater offsite.

Environmental Protection Agency (EPA) staff has conducted site inspections on two separate occasions in the past several years (April 18, 2013 & April 9, 2015) to document unauthorized discharges from the facility production areas and determine compliance status with federal and state regulatory requirements. EPA issued an administrative order for compliance on September 13, 2013, to resolve noncompliance at the farm. The order included several requirements as of the effective date of the order, 09/13/2013, including:

- Implementation of interim measures to cease all unauthorized discharges from the site;
- Operate and maintain the interim measures until permanent storage facilities are constructed in accordance with an approved NMP;
- Submit a complete application for a WPDES permit to the Department as the local permitting authority.

To date, the Department has not received a complete application for WPDES permit issuance. Furthermore, no documentation has been submitted that demonstrates any actions taken by Ledgeview to comply with the requirements

in the order to cease all unauthorized discharges. The Department and EPA determined that an inspection was necessary to evaluate the current status of the site and whether Ledgeview had implemented measures toward resolving the noncompliance observed by EPA and in accordance with the September 13, 2013, administrative order for compliance. Since Ledgeview is required to obtain a WPDES permit from the Department, it was determined that the Department regional CAFO permitting and compliance specialist (Schmitt Marquez) would conduct the inspection and provide an update to EPA.

The inspection included both the main farm site and the heifer site locations. Beckard accompanied Schmitt Marquez on the walkthrough part of the inspection after an initial discussion about the operation with Pansier and Beckard. Schmitt Marquez spoke with Pansier prior to concluding the inspection to identify several items that would require immediate follow-up, and would be further specified in the inspection report. Pansier acknowledged that he understood the items Schmitt Marquez explained and said that he would follow all requirements in accordance with the inspection report after he received it.

Site Diagrams:

Figure 1. Main farm site diagram.

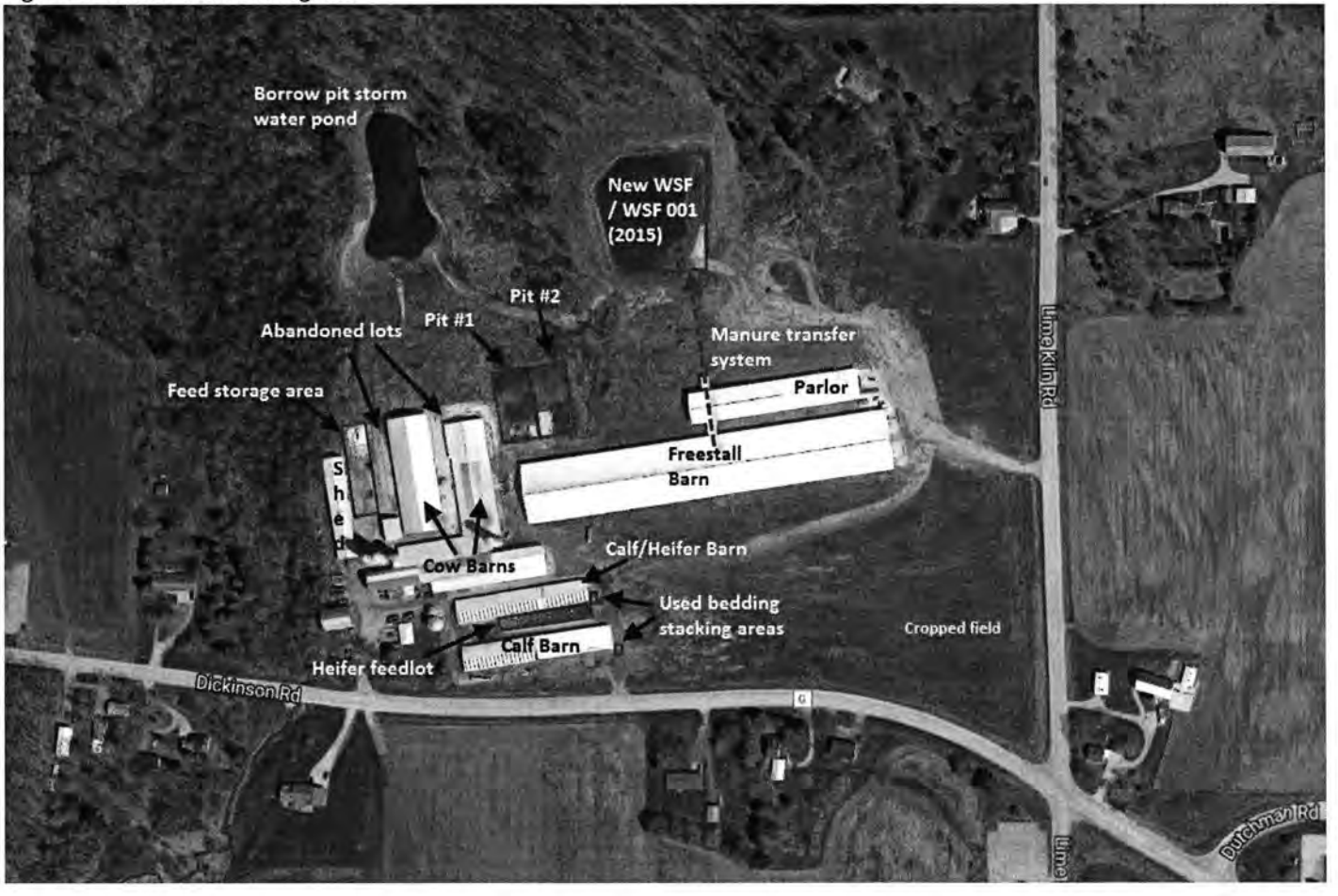


Figure 1 is a diagram of the main farm site. The site includes a freestall barn (built in 2013), milking parlor (built in 2015), four cow barns in various stages of use, calf barn, heifer barn, concrete lot areas adjacent to the cow barns, heifer feedlot, feed storage area, concrete waste storage facilities (pits 1 and 2), and a waste storage facility (WSF 001) that was constructed in 2015. The concrete lots adjacent to the cow barns are no longer used, and pits 1 and 2 are currently not used for animal waste/process wastewater storage due to structural failures that require maintenance and reevaluation. The dashed red arrow represents the manure transfer system from the freestall barn and milking parlor

that discharges directly into WSF 001. There are two PVC pipes that discharge from the transfer system into WSF 001; the larger pipe discharges manure from the freestall barn and the smaller pipe discharges process wastewater from the milking parlor. A field in the SE corner of the site is maintained in agricultural production. The storm water pond on the north side of the site west of WSF 001 was a former borrow pit that was used to excavate clay for construction of WSF 001, and has since begun to collect storm water during rain events. There are no plans to abandon or fill in the pond at this time.

Figure 2. Heifer site diagram.

Figure 2 is a site diagram of the heifer site, which is located approximately 0.7 miles north and slightly east of the main farm on Lime Kiln Rd/Cty Rd V. Heifers are raised at this site as well as beef animals. No milking occurs at this site. Two heifer/steer barns, concrete feedlot, and the feed storage area are located at the heifer site. The feedlot drains to an aboveground concrete collection basin on the west end of the feedlot. Storm water is diverted from the feedlot by roof gutters on the barn that discharge to the fields west of the barn. A residence onsite was vacant at the time of the inspection with no plans for further use. There is a well associated with the residence. Ledgeview has discussed the possibility of abandoning the well at the residence but that has not been done as of the date of this report.

Flow Diagrams:

Figure 3. Main farm site flow/discharge diagram.

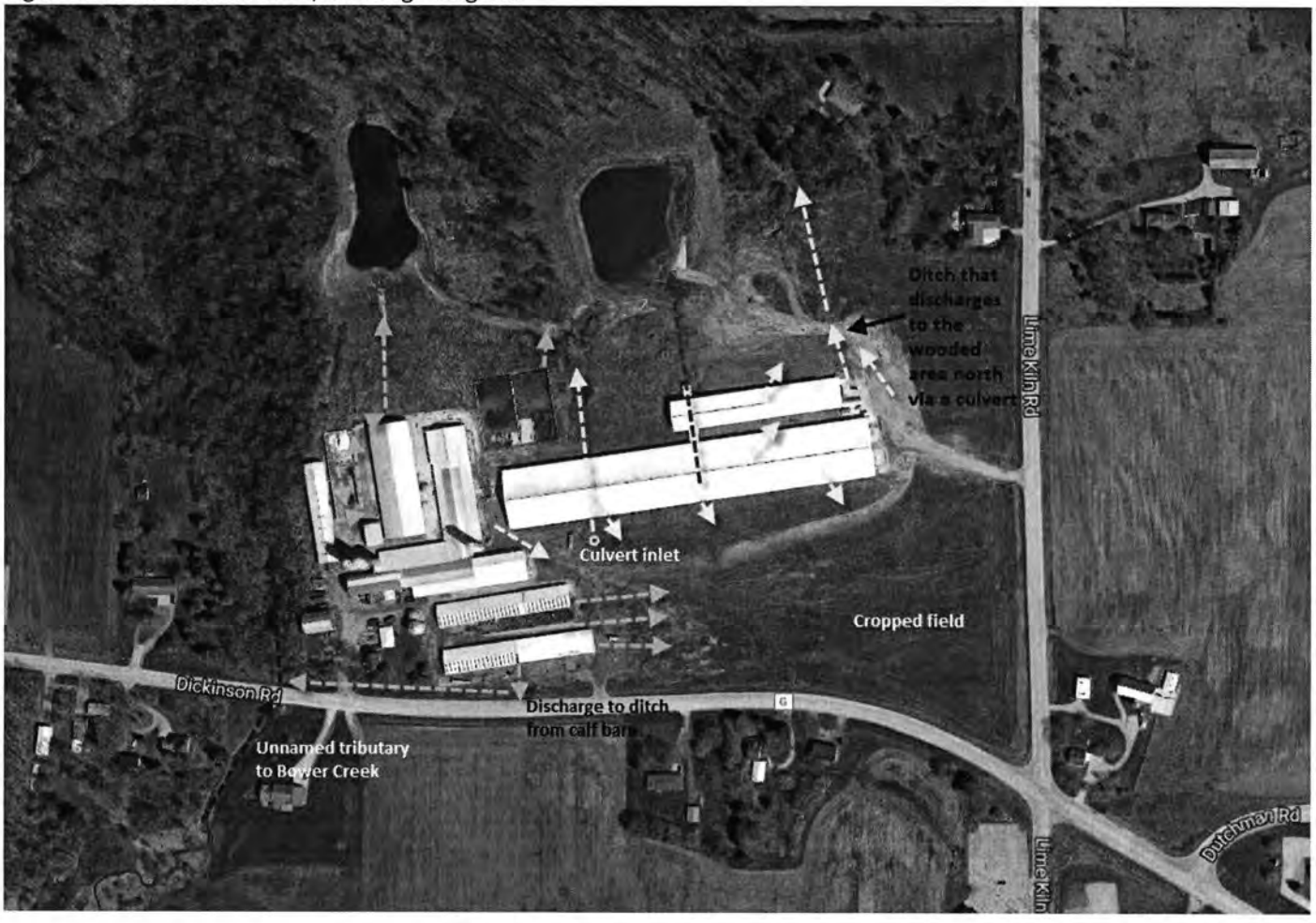


Figure 3 shows the discharge flow paths from the main farm site. The orange dashed arrows represent the flow path of animal waste and process wastewater. The dashed yellow arrows represent the flow path of uncontaminated storm water onsite. The majority of storm water from the building roofs discharges to vegetated areas adjacent to the buildings and infiltrates to groundwater. These areas are maintained to remain vegetated to facilitate infiltration. The red dashed arrow represents the manure transfer system that discharges manure from the freestall barn and process wastewater from the milking parlor directly to WSF 001. The blue dashed arrows indicate the location of and flow direction of mapped water resources near the farm site.

Figure 4. Heifer site flow/discharge diagram.

Figure 4 shows the discharge flow paths from the heifer site. The orange dashed arrows represent the flow path of animal waste and process wastewater. The yellow solid line represents the roof gutters on the south side of the barn that collect uncontaminated storm water, and the yellow dashed arrows represent the flow path of uncontaminated storm water. Storm water from the gutters discharges to the agricultural field west of the barn and feedlot where a grassed waterway is located. Storm water from the north side of the barn roof discharges to a vegetated area adjacent to the barn and infiltrates to groundwater. Storm water from the northeast part of the roof discharges through the site east toward a low area adjacent to a driveway and Lime Kiln Rd. It does not appear that there is a discharge outlet from this ponded area to surface waters. The green dashed arrows indicate the presence of a grassed waterway and the direction of flow in the waterway.

Water Resources Diagram:

Figure 5. Mapped water resources diagram for both the main farm and heifer sites.

Figure 5 shows the water resources flow diagram from the Department's Surface Water Data Viewer (SWDV) for both the main farm and heifer sites in relation to the mapped waterways around Ledgeview. The white dashed lines indicate intermittent waterways mapped in SWDV. The blue dashed arrows were added to the SWDV map and represent the flow direction of the mapped waterways in the watershed. There are unnamed tributaries in close proximity (within 0.2 miles) to both sites in addition to numerous ditches and grassed waterways that connect the surrounding land area to those tributaries. The unnamed tributaries identified in Figure 5 are tributaries to Bower Creek (WBIC 118400), which is a tributary to the East River (WBIC 118000), which is a tributary to the Fox River (WBIC 117900), which discharges into Green Bay/Lake Michigan (WBIC 20).

SITE OBSERVATIONS

Main Farm Site:

The main farm site is also referenced as the upper farm. For the purposes of the WPDES permit, it will be referred to as the main farm site.

Calf Barn

The primary calf barn is closest to Dickinson Rd, and was expanded in 2012. Calves are contained in open pens with straw bedding. The used bedding is removed approximately once per week or on an as-needed basis and is stacked on the east end of the barn. The stacked bedding is loaded onto trucks for direct land application to fields. The animals and pens are kept under the barn roof but the bedding stacking area on the east end of the barn is not under a roof. The south side of the calf barn is open, and a concrete lane extends approximately 25 feet south toward a vegetated area adjacent to the ditch on the north side of Dickinson Rd. Process wastewater was observed discharging from the calf barn to the ditch via the vegetated area. Beckard stated that the discharge was likely from rinsing out buckets used to feed the calves. Piles of small stones were present along the southern edge of the concrete lane adjacent to the vegetated area but it was unclear whether the stone piles were an attempt to mitigate discharges from the calf barn. The ditch discharges to an unnamed tributary to Bower Creek.

Photo 1: View of the west end of the calf barn. Dashed yellow arrows indicate process wastewater discharge flow path. Photo direction is NW.

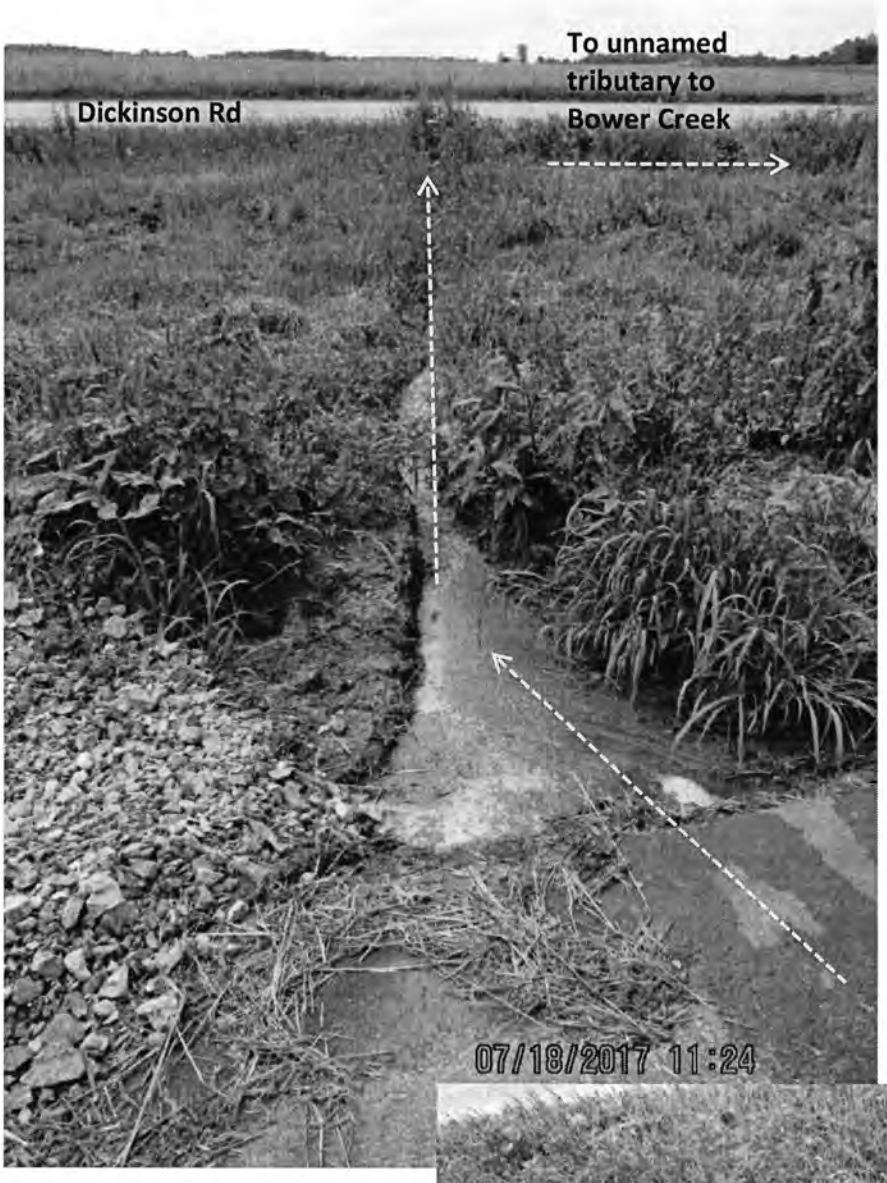


Photo 2: View of the discharge from the calf barn. Dashed yellow arrows indicate process wastewater discharge flow path. Photo direction is south.

Photo 3: View of ponded process wastewater from the calf barn in the ditch north of Dickinson Rd. Photo direction is down.

Photo 4: View of the east end of the calf barn. Photo direction is NE.

Photo 5: View of the calf pens inside the calf barn. Photo direction is north.

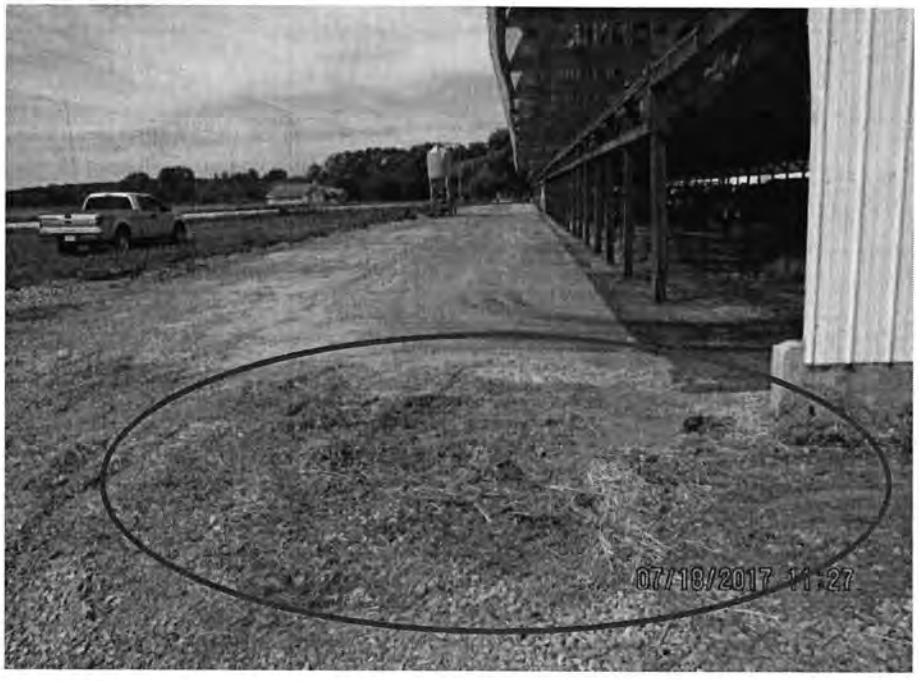


Photo 6: View of the concrete lane on the south side of the calf barn. Used bedding stacking area is visible in the foreground (red circle) on the east end of barn. Photo direction is west.

Heifer/Calf Barn

The barn north of the calf barn houses calves and heifers, and utilizes the same used bedding removal, stacking, and disposal/hauling process. The bedding is stacked on the east end of the barn, not under a roof, and is loaded onto trucks for direct land application to fields.

There are no runoff controls or containment for the bedding stacking areas for either calf barn to prevent waste discharges. The bedding is stacked directly on concrete that is sloped toward a vegetated area east of the barns. Discharges of waste from the calf/heifer barn and from the stacked bedding areas flow east and into the vegetated area. The vegetated area is maintained with vegetation and/or an agricultural crop.

Photo 7: View of the heifer/calf barn and feedlot. Photo direction is west.

Photo 8: View of the east end of the heifer/calf barn and feedlot. Photo direction is NE.

Photo 9: View of the west end of the heifer/calf barn and feedlot. Photo direction is NW.

Photo 10: View of the east end of the heifer/calf barn. The used bedding solids are visible stacked adjacent to the barn. Photo direction is south.

Photo 11: Close up view of the east end of the heifer/calf barn. Photo direction is west.

Photo 12: View of the concrete lane between the calf and heifer/calf barns. Photo direction is east.

Photo 13: View of the concrete lane between the heifer/calf and maternity barns. Photo direction is east.

Concrete Feedlots

The only feedlot at the main farm site is attached to the heifer/calf barn. The feedlot area is partially contained by a concrete curb that is open on the west and east ends of the feedlot. Uncontained waste was observed on both the east and west ends of the feedlot as well as the east end of the barn.

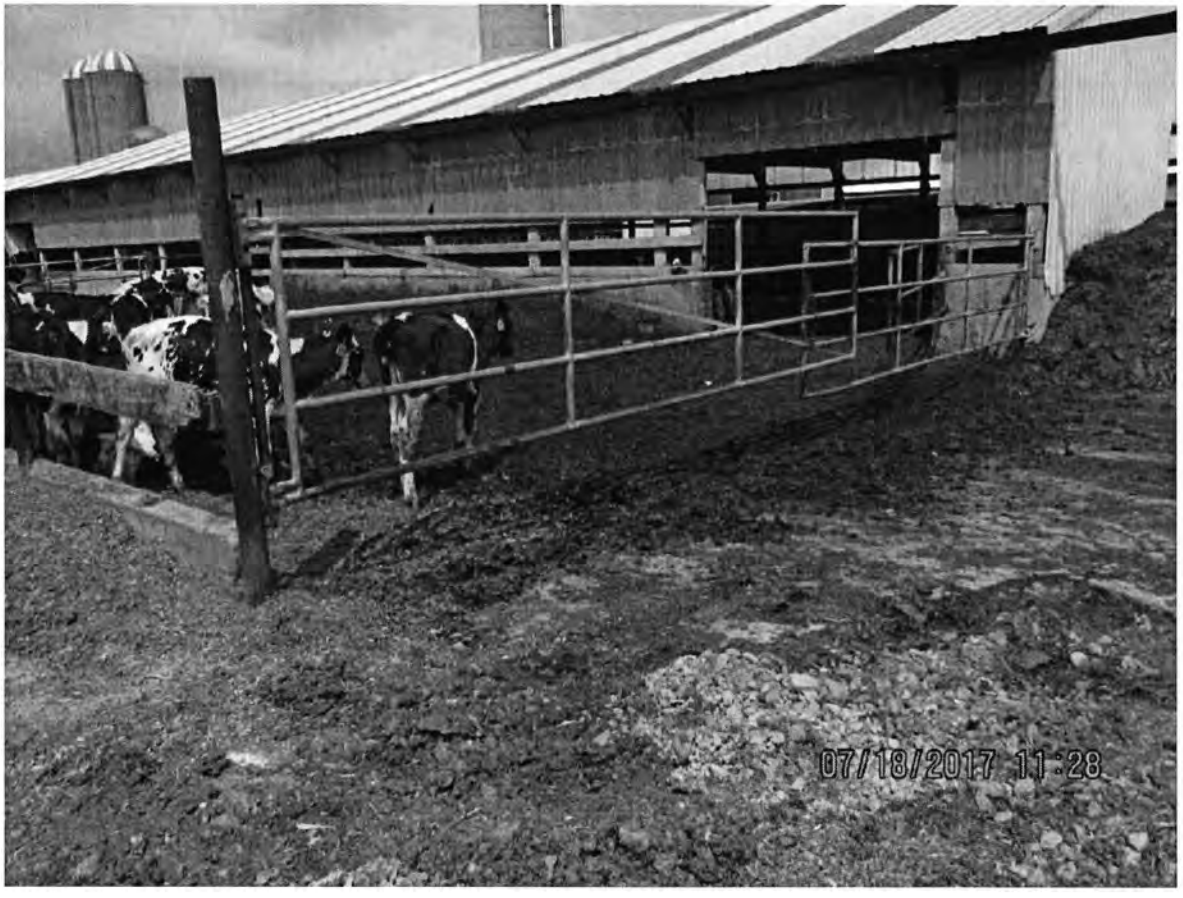


Photo 14: View of the east end of the heifer/calf barn feedlot. Photo direction is NW.

Photo 15: View of the heifer/calf barn feedlot. Photo direction is west.

Photo 16: View of the heifer/calf barn feedlot. Photo direction is east.

Photo 17: View of the west end of the heifer/calf barn feedlot. Photo direction is NE.

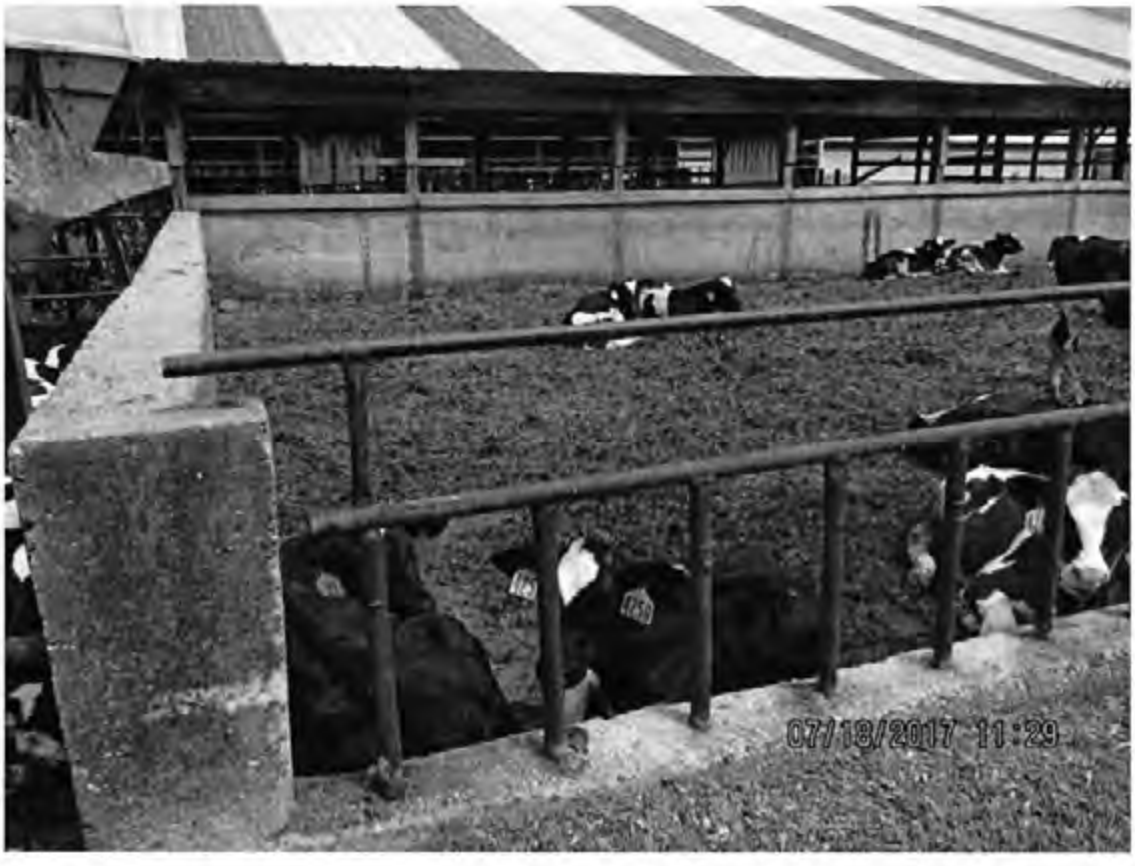


Photo 18: View of a concrete wall separator in the heifer/calf barn feedlot. Photo direction is north.

Photo 19: View of the heifer/calf barn feedlot. Photo direction is NE.

Abandoned Feedlots

Three feedlot areas between the cow barns at the main farm site are no longer utilized as feedlots, and have been abandoned as of the date of the inspection.

Photo 20: View of an abandoned feedlot between the cow barns at the main site. Photo direction is south.

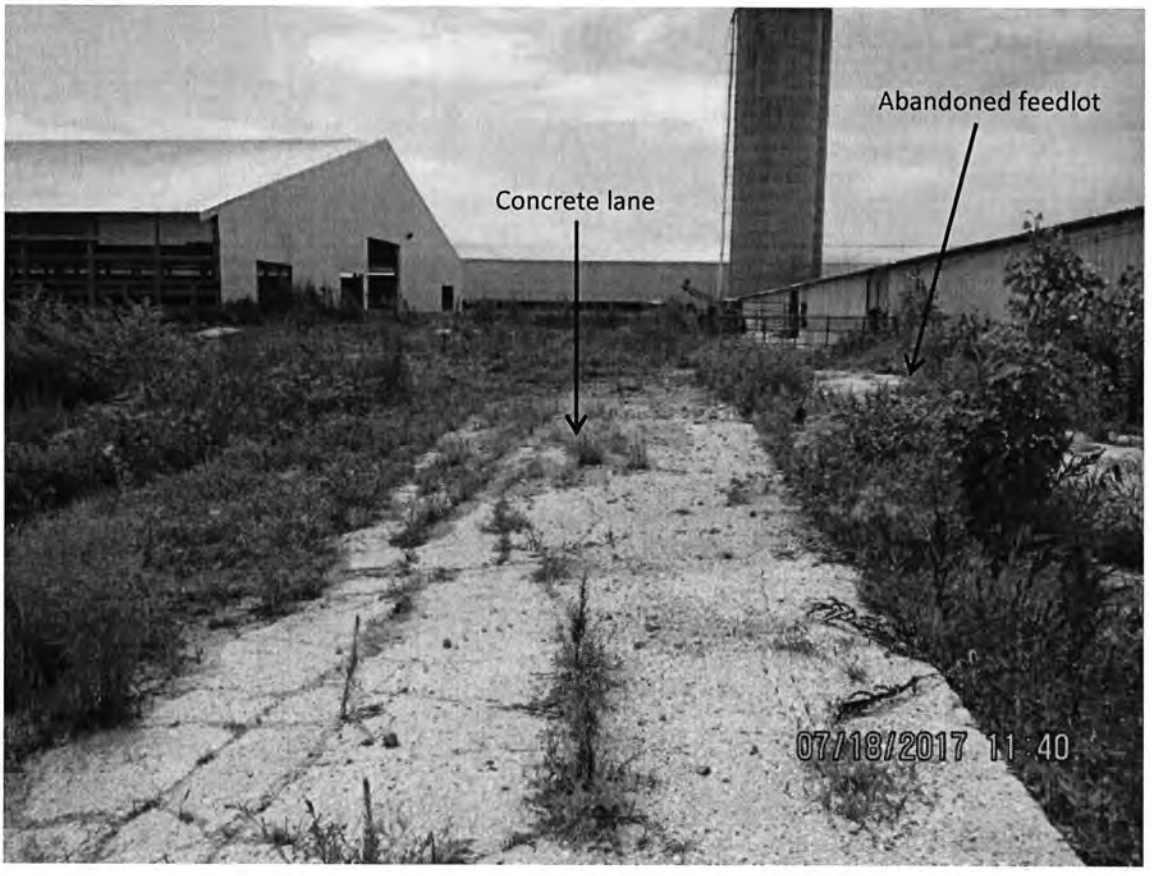


Photo 21: View of an abandoned feedlot between the cow barns at the main site. Photo direction is south.

Waste Storage Facilities

Outfall 001/WSF 001:

- Earthen/clay-lined waste storage facility built in 2015.
- Concrete ramp and MOL marker present.
    i. MOL marker needs clarification.
    ii. MOS not present.
- Fence needs repair/reinstallation.
- No discharge, leakage, or rodent holes observed.
- Facility requires an engineering evaluation to determine compliance with statutory and administrative code requirements.

Photo 22: View of the southern section of outfall/WSF 001. Photo direction is west.

Photo 23: View of the southern and middle sections of outfall/WSF 001. Photo direction is west.

Photo 24: View of outfall/WSF 001. Photo direction is NW.

Photo 25: View of the middle and northern sections of outfall/WSF 001. Photo direction is NW.

Photo 26: View of the southern section of outfall/WSF 001 showing the concrete ramp. Photo direction is west.

Photo 27: Close up view of the MOL and manure transfer system discharge pipes in the southern section of outfall/WSF 001. Photo direction is west and down.

Photo 28: Close up view of the MOL marker in the southern section of outfall/WSF 001. Photo direction is west.

Photo 29: View of outfall/WSF 001 showing the concrete ramp. Photo direction is west.

Photo 30: Alternate view of outfall/WSF 001 showing the concrete ramp. Photo direction is NW.

Photo 31: View of the northern section of outfall/WSF 001 showing the concrete ramp. Photo direction is NW.

Photo 32: Close up view of the interior western wall of outfall/WSF 001. Photo direction is west.

Photo 33: View of outfall/WSF 001. Photo direction is west.

Photo 34: View of the NE corner of outfall/WSF 001. Photo direction is NW.

Photo 35: Alternate view of outfall/WSF 001. Photo direction is SW.

Photo 36: Alternate view of outfall/WSF 001 showing the concrete ramp. Photo direction is SE.

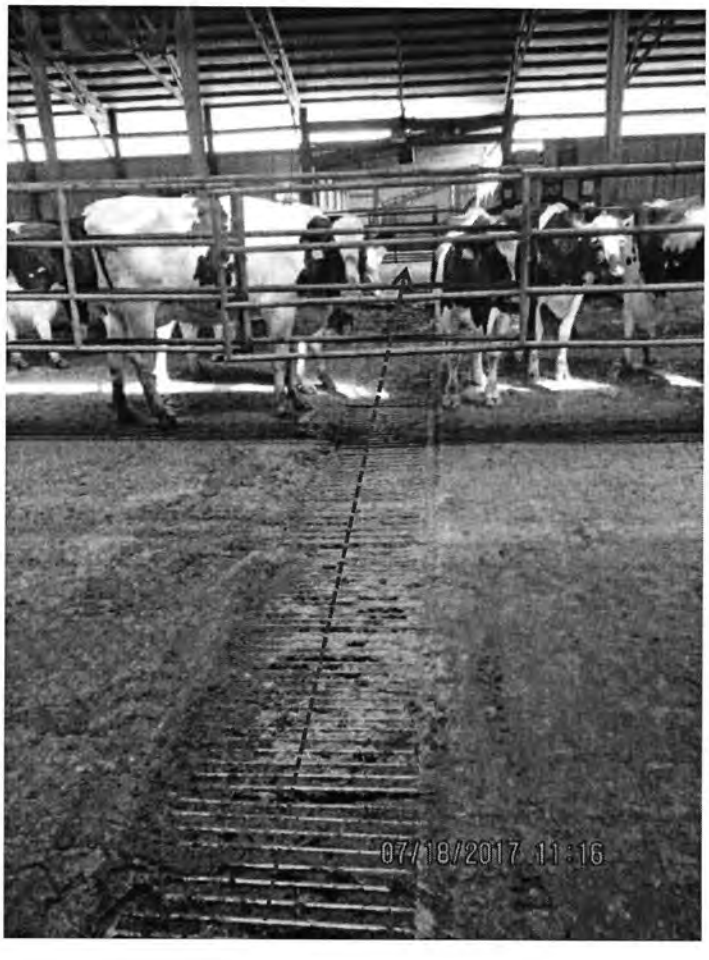


Photo 37: View of the waste collection/manure transfer system inside the freestall barn that discharges directly into outfall/WSF 001. Red dashed arrow indicates the flow direction of waste. Photo direction is north.

Pits 1 & 2

- Aboveground concrete waste storage facilities.
- Pit 1 = 489,223 gallons; built in 1995.
- Pit 2 = 503,783 gallons; built in 1999.
    i. Crack/hole needs repair in NE corner.
- MOL/MOS markers not present.
- Both storage facilities were not in use for animal waste/process wastewater storage at the time of inspection.
    i. Storm water was observed in both storage facilities during the inspection.
- Permanent plan for the storage facilities is potential abandonment.
    i. Abandonment plan is required if storage facilities will be abandoned.
- Facilities require engineering evaluations to determine compliance with statutory and administrative code requirements in order to resume use as waste storage facilities.

Photo 38: View of pits 1 & 2 at the main farm site. Storm water is visible in the pits. Photo direction is NE.

Photo 39: Alternate view of pits 1 & 2 at the main farm site. Storm water is visible in the pits. Photo direction is east.

Feed Storage Area

The feed storage area at the main farm site is located west of the cow barns and is a smaller storage area than the feed storage at the heifer site. It is comprised of a single bunker constructed by three concrete block walls. Leachate was observed ponded and discharging from the south end of the feed pile as well as from the NE corner of the concrete wall. Clay was placed along the bottom of the concrete wall blocks at the direction of EPA to prevent leachate discharges, but the clay appeared very dry and weathered. The clay was not/no longer containing leachate from the feed storage area, and a discharge path was observed along the eastern wall and from the NE corner of the feed storage area. The discharge path flowed in a northeasterly direction for approximately 80 feet before heading north into a vegetated area that eventually discharges to an unnamed tributary (WBIC 5019477) to Bower Creek. Topographical soils data show that the elevation changes in the vegetated area, and C slopes (6-12%) are present. The C slope area adjoins a soil map unit with A slopes (0-2%) and high groundwater, through which an unnamed tributary (WBIC 5019477) to Bower Creek flows.

Photo 40: View of the feed storage area at the main farm site. Photo direction is NW.

Photo 41: View of the east wall of the feed storage area at the main farm site. Leachate is visible discharging from the feed storage area. Orange dashed arrows indicate the flow path and direction of leachate. Photo direction is north.

Photo 42: Close up view of the east wall of the feed storage area at the main farm site showing clay placed along the bottom of the wall to prevent leachate discharges. Photo direction is west and down.

Photo 43: View of the leachate discharge from the NE corner of the feed storage area. Orange dashed arrows indicate the flow path and direction of leachate. Photo direction is SW and down.

Photo 44: View of the leachate discharge from the NE corner of the feed storage area. Orange dashed arrows indicate the flow path and direction of leachate. Photo direction is north and down.

Photo 45: View of the leachate discharge path as it flows NE from the NE corner of the feed storage area. Orange dashed arrows indicate the flow path and direction of leachate. Photo direction is down.

Photo 46: View of the leachate discharge path as it flows NE from the NE corner of the feed storage area. Orange dashed arrows indicate the flow path and direction of leachate. Photo direction is east and down.

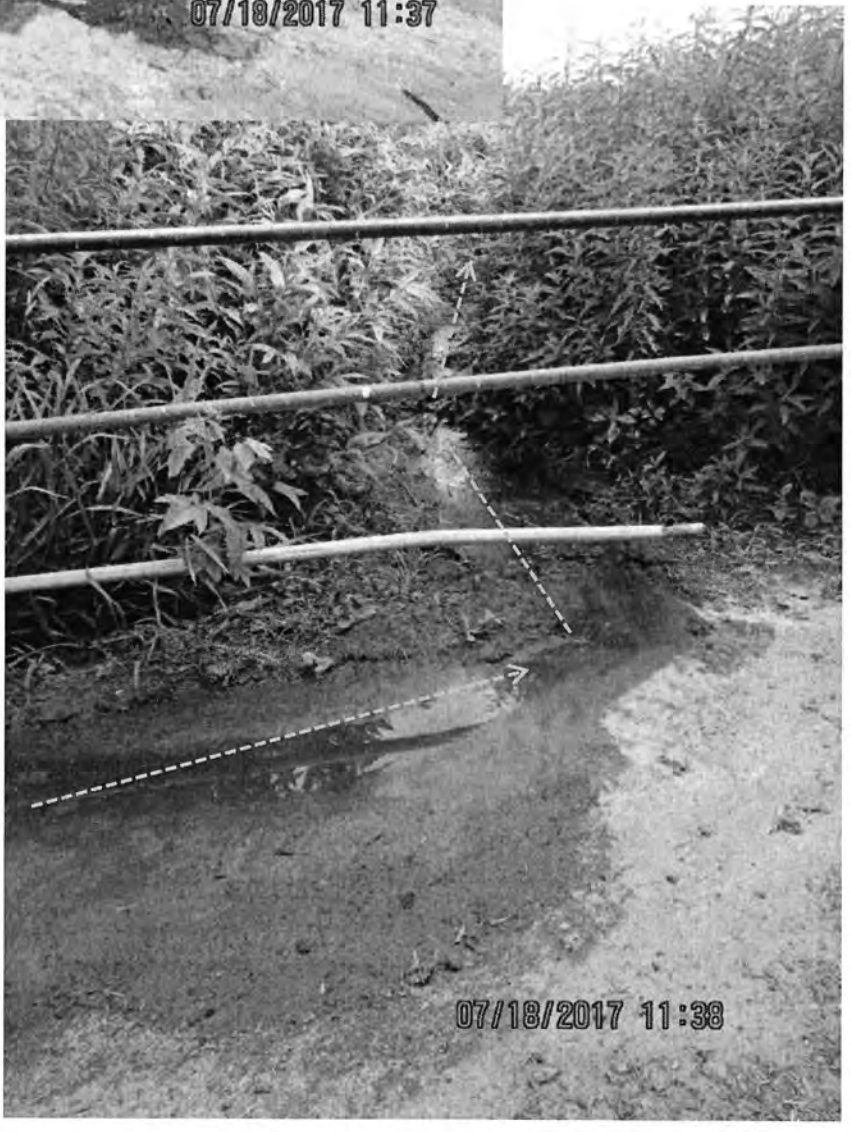


Photo 47: View of the leachate discharge path as it flows NE from the NE corner of the feed storage area. Orange dashed arrows indicate the flow path and direction of leachate. Flow is north into the vegetation. Photo direction is north.

Storm Water Management

Storm water management at the main farm site consists of vegetated infiltration areas and culverts/graded areas to direct uncontaminated storm water to the vegetated areas for infiltration. Storm water from roofs that falls directly on the vegetated areas remains uncontaminated, but there are several areas onsite that require better management to prevent storm water from becoming contaminated, which will require containment and management. These areas include stacking areas for bedding, uncontained feedlot areas, and open barn doors where waste is present.

Photo 48: View of the storm water flow path on the east side of the main farm in front of the freestall barn and milking parlor. Yellow dashed arrows indicate direction of flow path. Yellow circle is a culvert. Photo direction is north.

Photo 49: Close up view of the culvert through which storm water flows on the east side of the main farm in front of the freestall barn and milking parlor. Yellow dashed arrows indicate direction of flow path. Yellow circle is the culvert. Photo direction is north.

Heifer Site:

The heifer site is also referenced as the lower farm. For the purposes of the WPDES permit, it will be referred to as the heifer site.

Beef/Heifer Barns

The heifer site contains two barns: a larger freestall that contains heifers of various ages that is adjacent to a concrete feedlot (barn 1), and a smaller barn for heifers /large beef steers (barn 2). Bedding for the heifers consists of wood chips or the used bedding from the calf barns at the main farm site. The calf barn bedding is usually only mildly soiled, and can be reused. Both barns are cleaned manually and used bedding is stacked near the barns for direct hauling to fields for land application. There is no containment for the stacking areas and evidence of waste discharges from the bedding stacks was observed.

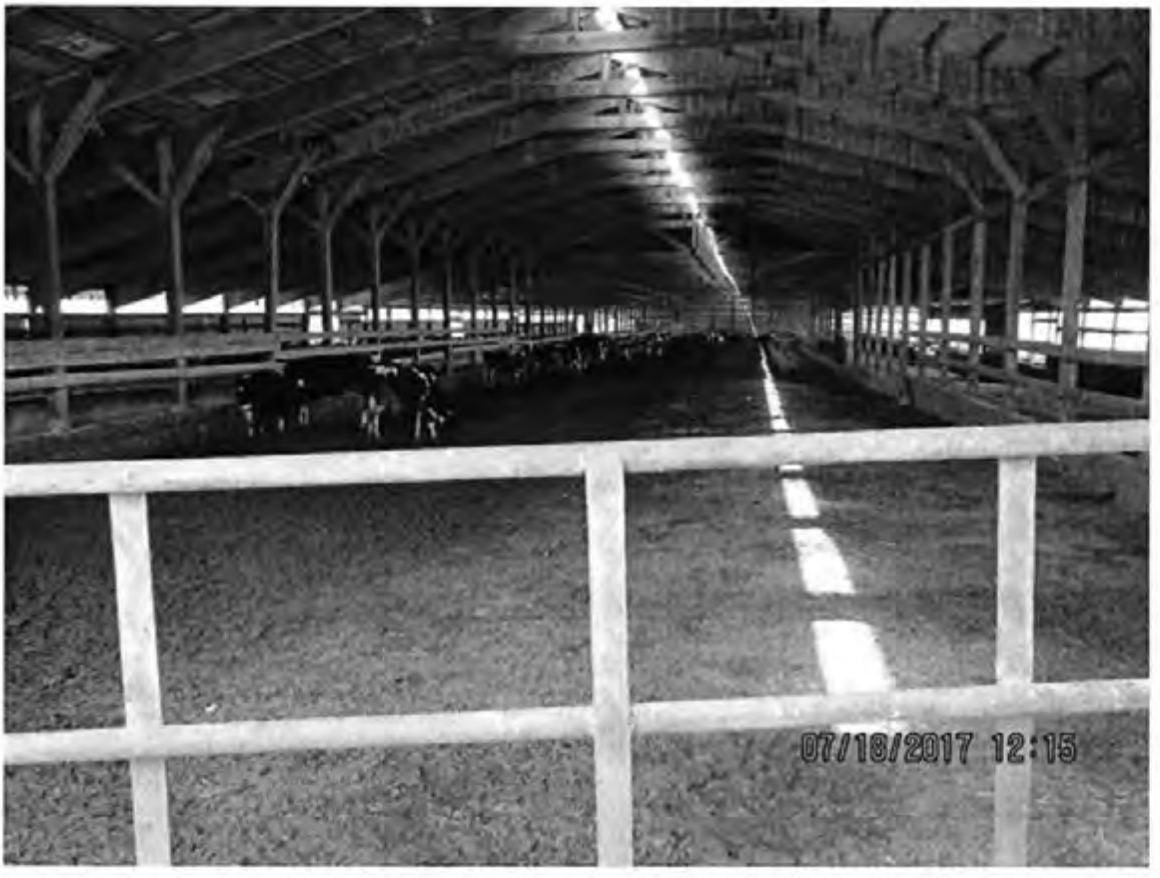


Photo 50: View of the inside of the heifer barn at the heifer site. Photo direction is west.

Photo 51: View of the east side of the heifer barn at the heifer site. Bedding pile and animal mortality are visible. Photo direction is NW.

Photo 52: View of the inside of the large steer barn at the heifer site. Photo direction is south.

Photo 53: View of the exterior of the east wall of the large steer barn at the heifer site. Photo direction is south.

Photo 54: View of the south side of the large steer barn at the heifer site. Photo direction is north.

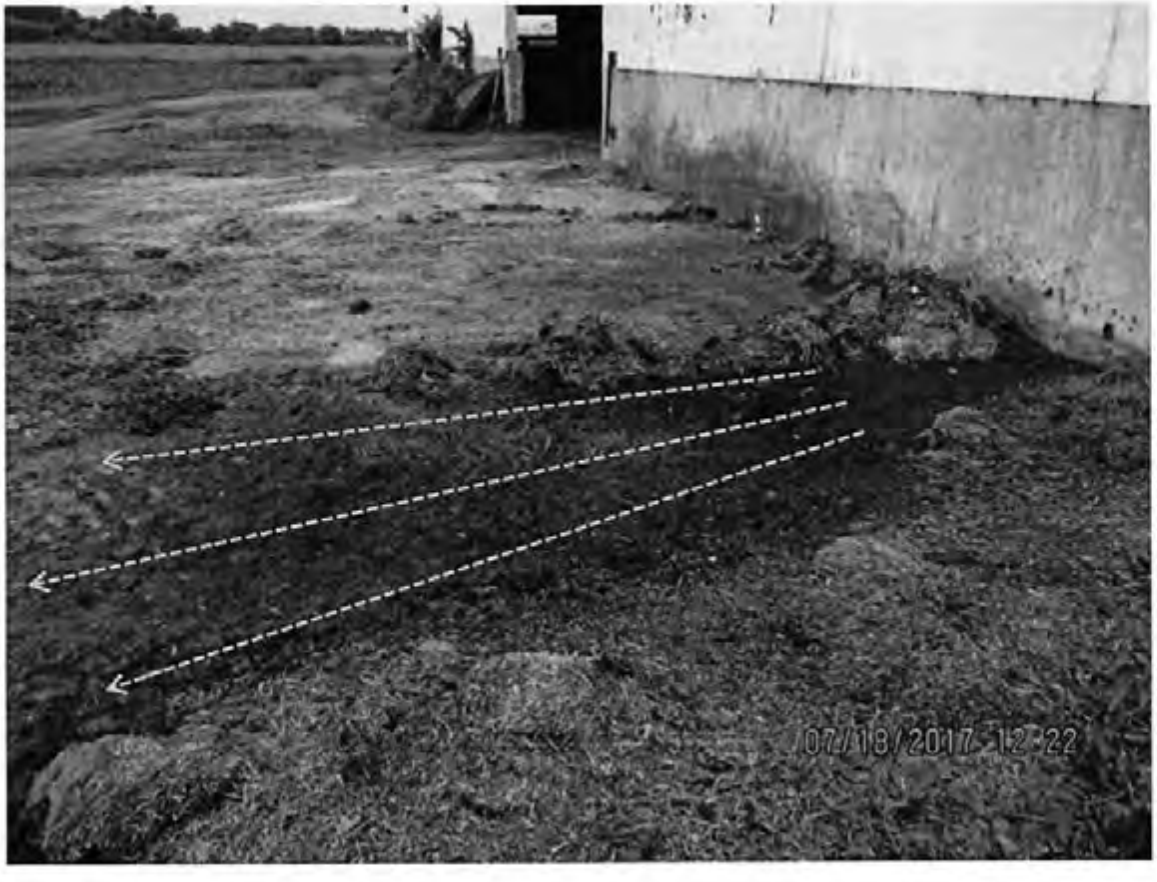


Photo 55: View of the south side of the large steer barn at the heifer site. Orange dashed arrows indicate flow direction of wastewater from bedding stacking area. Photo direction is west.

Concrete Feedlots

The concrete feedlot at the heifer site is attached to a freestall barn that contains heifers of various ages. The feedlot spans the length of the barn and is divided into two sections by a short concrete wall area that is roofed; the sections remain connected, as the wall does not provide complete separation. The feed lot is approximately 38,000 square feet. The feedlot is contained by a short concrete wall that provides nearly complete containment and separation from the yard area. An entrance on the east side of the feedlot is open and not contained by the concrete wall, only a metal gate. Waste was visible outside the feedlot area from the east gate, and evidence of past discharges from this area in an easterly direction was observed on the ground surface. The west side of the feedlot discharges directly into a concrete collection/reception tank that is located on the west end of the feedlot for waste collection from the feedlot. A metal gate separates the feedlot area from the tank. Waste collected in this tank is removed and directly land applied to fields as needed based on waste volume in the tank.

Gutters were installed on the roof to divert storm water from the feedlot and reduce the volume of waste that requires collection and containment. The gutter system discharges to a grassed waterway in the field west of the freestall heifer barn that is typically in agricultural production.

Photo 56: View of the feedlot at the heifer site. Photo direction is east.

Photo 57: View of the feedlot at the heifer site. Photo direction is SE.

Photo 58: View of the feedlot at the heifer site. Photo direction is east.

Photo 59: View of the feedlot at the heifer site. Photo direction is NE.

Photo 60: View of the west end of the feedlot at the heifer site. Photo direction is NE.

Photo 61: View of the feedlot at the heifer site. Photo direction is west.

Photo 62: View of the east end of the feedlot at the heifer site. Photo direction is NW.

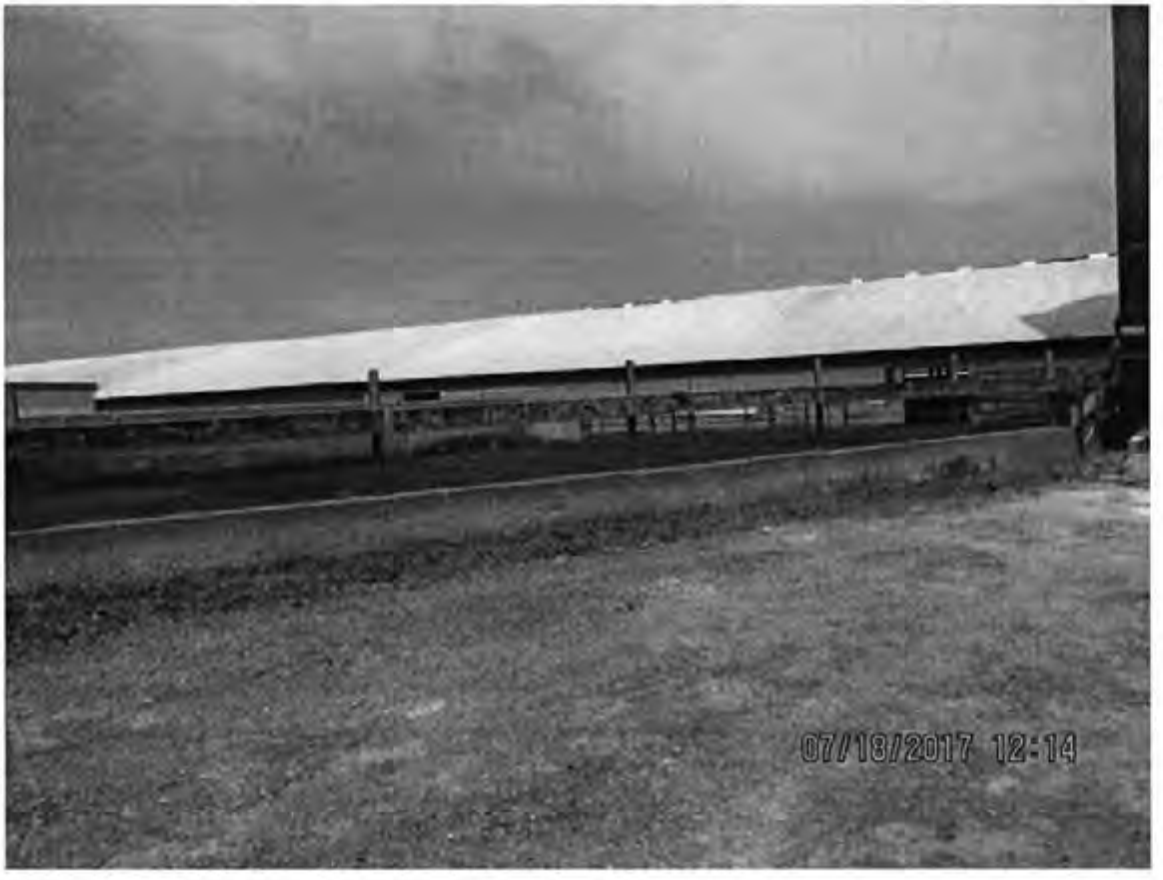


Photo 63: View of the east end of the feedlot at the heifer site. Photo direction is NW.

Waste Storage Facilities

Outfall 002/WSF 002

- Concrete waste storage facility on the west end of the feedlot.
  i. Open top and partially below ground.
  ii. Capacity and construction information not known.
- MOL/MOS markers not present.
- No discharge, leakage, or holes/cracks observed.
- Facility requires an engineering evaluation to determine compliance with statutory and administrative code requirements.

Photo 64: View of the feedlot discharge point to outfall/WSF 002 at the heifer site. Red dashed arrows indicate the source and flow path of animal waste into the storage facility. Photo direction is north.

Photo 65: View of outfall/WSF 002 at the heifer site. Photo direction is NW.

Photo 66: View of outfall/WSF 002 at the heifer site. Photo direction is west.

Feed Storage Area

The feed storage area at the heifer site is the main feed storage area for the operation. It is located south of the large heifer barn/barn 1 and consists of several bunkers on a concrete pad. The feed storage area has undergone expansions since it was originally constructed, and there are plans for further expansion in the future. No runoff controls are currently in place for leachate and process wastewater from the feed storage area, and discharges were observed from multiple cracks in the concrete walls and drainage pathways off the concrete pad. Leachate and process wastewater discharge to the grassed waterway in the field west of the site. The drainageway in the agricultural field flows NW through the field and through a series of culverts to an unnamed tributary of Bower Creek. Waste feed piles near the feed storage area were observed contributing leachate/process wastewater to the waste discharges to the field west of the site. Ponded leachate and process wastewater were observed near the feed storage area in multiple locations.

Photo 67: View of the feed bag recycling dumpsters at the heifer site. Photo direction is east.

Photo 68: View of the feed storage area at the heifer site. Photo direction is NW.

Photo 69: Alternate view of the feed storage area at the heifer site. Photo direction is west.

Photo 70: View of the area adjacent to the south wall of the feed storage area at the heifer site. Photo direction is south.

Photo 71: Close up view of leachate discharging from the south wall of the feed storage area at the heifer site. Orange dashed arrows indicate flow direction of leachate. Photo direction is south.

Photo 72: View of the middle section of the feed storage area at the heifer site. Photo direction is west.

Photo 73: Close up view of a concrete wall from the middle of the feed storage area at the heifer site. Ponded leachate was observed adjacent to the wall (orange arrows). Photo direction is west.

Photo 74: Close up view of a concrete wall from the middle of the feed storage area at the heifer site. Ponded leachate was observed adjacent to the wall. Photo direction is west.

Photo 75: View of a concrete wall from the middle of the feed storage area at the heifer site. Leachate was observed discharging from the wall (black liquid/substance). Photo direction is east.

Photo 76: Close up view of the concrete wall on the NW side of the feed storage area at the heifer site. Leachate was observed discharging from the wall and was ponded adjacent to the wall (orange arrows). Photo direction is NE and down.

Photo 77: Alternate view of the concrete wall on the NW side of the feed storage area at the heifer site. Leachate was observed discharging from the wall and was ponded adjacent to the wall (orange arrows). Photo direction is NE and down.

Photo 78: View of the north concrete wall of the feed storage area at the heifer site. Leachate was observed discharging from the wall. Orange dashed arrows indicate flow path of leachate discharge. Photo direction is SW and down.

Photo 79: Alternate view of the north concrete wall of the feed storage area at the heifer site. Leachate was observed discharging from the wall and flowing west. Orange dashed arrows indicate flow path of leachate discharge. Photo direction is west.

Photo 80: Alternate view of the north concrete wall of the feed storage area at the heifer site. Leachate was observed discharging from the wall and flowing west. Orange dashed arrows indicate flow path of leachate discharge. Photo direction is west.

Animal Mortality Disposal

Mortalities are managed using computer software similar to DairyComp. Circle R Mink Ranch collects mortalities on an as-needed basis when contacted by the farm. There does not appear to be a designated area for mortality storage and management onsite. Mortality management/storage areas should be managed to prevent discharges of pollutants to waters of the state.

Record-keeping and Reporting

Since Ledgeview is not a permitted farm, records and reports required by the permit were not requested for review during the inspection. Documentation of land application activity was discussed, and Pansier directly manages land application and works with Beckard to ensure that the NMP is followed. Record-keeping and reporting that is required by the WPDES permit was briefly reviewed with the understanding that the permit would be reviewed in more detail during the drafting/issuance process.

SUMMARY

Action Items

Main Farm Site:

1. Calf barn discharge to Dickinson Rd ditch
    a. The discharge from the calf barn is considered process wastewater and is not allowed to discharge to the ditch as was observed during the inspection.
    b. Process wastewater from the calf barn discharges into the ditch on the north side of Dickinson Rd, which discharges to an unnamed tributary to Bower Creek. Ponded process wastewater also discharges to groundwaters of the state.
    c. Interim controls/management shall be implemented immediately until a permanent solution is determined/installed.
        i. Submit documentation demonstrating that the discharge to the ditch on Dickinson Rd has ceased by **October 6, 2017**.

2. Feed storage area
    a. Feed leachate and process wastewater from the feed storage area currently discharge in a northwesterly direction down the ledge to the unnamed tributary to Bower Creek. Leachate and process wastewater also discharge to groundwaters of the state.
    b. There are currently no runoff controls for leachate and process wastewater from the feed storage area.
    c. Interim controls shall be implemented immediately and maintained until a permanent solution is determined/installed.
        i. Submit a plan for the installation of interim controls for the feed storage areas to prevent discharges to waters of the state by **October 6, 2017**.

3. Stacking areas for used bedding
    a. Process wastewater from the stacking areas discharge to groundwaters of the state via a field east of the stacking areas.
    b. There are currently no runoff controls for the areas where used bedding is stacked prior to removal for direct land application to fields.
    c. Interim controls/management shall be implemented immediately and maintained until a permanent solution is determined/installed.
        i. Submit a plan for management and/or installation of runoff controls to prevent discharges to waters of the state by **October 31, 2017**.

4. Feedlot
    a. Animal waste and process wastewater from the heifer feedlot discharge to groundwaters of the state via a field east of the calf/heifer barn and feedlot.
    b. The feedlot is not completely contained and does not have runoff controls.
    c. Interim controls/management shall be implemented immediately and maintained until a permanent solution is determined/installed.
        i. Submit a plan to address containment/runoff controls for the feedlot areas to prevent discharges to waters of the state by **October 31, 2017**.

5. Pits 1 & 2
    a. Submit a plan for the long-term use of the pits. For use as waste storage facilities, repairs and engineering evaluations will be required. For abandonment, a plan that meets applicable requirements for waste storage abandonment will be required.
        i. Submit the long-term use plan by **October 31, 2017**.

Heifer Site:

1. Feed storage area
    a. Feed leachate and process wastewater from the feed storage area currently discharge from the west side and SE corner of the feed storage area and flow west to a drainageway in a field west of the feed storage area. The drainageway flows NW through the field and a series of culverts to an unnamed tributary of Bower Creek. Leachate and process wastewater also discharge to groundwaters of the state from various ponded areas along the discharge path.
    b. Waste feed piles were observed at the Heifer Site that contributed to the process wastewater runoff.
    c. There are currently no runoff controls for leachate and process wastewater from the feed storage area.
    d. Interim controls shall be implemented immediately and maintained until a permanent solution is determined/installed.
        i. Submit a plan for the installation of interim controls for the feed storage areas to prevent discharges to waters of the state by **October 6, 2017**.

2. Stacking areas for used bedding
    a. Process wastewater from the stacking area adjacent to barn 1 discharges to unnamed tributaries to Bower Creek via a culvert and ditch system that flows east under Lime Kiln Rd.
    b. Process wastewater from the stacking area adjacent to barn 2 discharges to a drainageway in the field south of barn 2 and west of the feed storage area. The drainageway flows NW through the field and a series of culverts to an unnamed tributary of Bower Creek.
    c. Process wastewater also discharges to groundwaters of the state via ponded areas onsite and near the culvert.
    d. There are currently no runoff controls for the areas where used bedding is stacked prior to removal for direct land application to fields.
    e. Interim controls/management shall be implemented immediately and maintained until a permanent solution is determined/installed.
        i. Submit a plan for management and/or installation of runoff controls to prevent discharges to waters of the state by **October 31, 2017**.

3. Feedlot
    a. Process wastewater from the feedlot discharges through the east gate/entrance and flows in an easterly direction to the culvert that flows east under Lime Kiln Rd. The culvert and ditch discharge to unnamed tributaries to Bower Creek. Process wastewater also discharges to groundwaters of the state via ponded areas onsite and near the culvert.
    b. The feedlot is not completely contained and does not have runoff controls.

c. Interim controls/management shall be implemented immediately and maintained until a permanent solution is determined/installed.
    i. Submit a plan to address containment/runoff controls for the feedlot areas to prevent discharges to waters of the state by **October 31, 2017**.

- Permit application reminder
    a. NR 243.12, Wis. Adm. Code, states, "A large CAFO may not discharge pollutants from manure or process wastewater to waters of the state unless the discharge is covered by and in compliance with a WPDES permit."
        i. Ledgeview meets the definition of a CAFO pursuant to NR 243.03.
    b. The permit application is incomplete. Engineering evaluations for existing structures are required to be submitted by September 25, 2017.
    c. See Department letter dated August 25, 2017 for additional information.

Items for Permit Issuance

Items for inclusion in a compliance schedule in the reissued permit could include:
- Upgrades/corrections required for existing structures based on reviews of the engineering evaluations
- Construction schedules for installation of waste storage facilities and/or runoff controls
- Monitoring and inspection program submittal
- Emergency response plan submittal

Please note that all required actions outstanding at the time of permit issuance will be included in the compliance schedule in the draft WPDES permit that the facility will have an opportunity to review prior to public notice and permit issuance.

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
101 S. Webster Street
Box 7921
Madison WI 53707-7921

Scott Walker, Governor
Daniel L. Meyer, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

September 28, 2017

Brown County

Jason Pansier
Ledgeview Farms LLC
3870 Dickinson Rd
De Pere, WI 54115

SUBJECT: Permit Application Deadline Extension Request

Dear Mr. Pansier:

On September 21, 2017, the Department received a request from John Roach on behalf of Ledgeview Farms LLC via email for an extension to the deadline established for submission of complete permit application materials. The original deadline was September 25, 2017, and was established in a letter from the Department dated August 25, 2017, that summarized the status of the permit application and requested required information that was not yet submitted.

The Department hereby grants approval for the requested extension for submittal of outstanding information to complete the permit application. The new deadline is **October 31, 2017**. Please refer to the August 25, 2017, Department letter that specifies the information that is required for submittal.

If you have any questions regarding the WPDES permit application and/or issuance process, please contact me at (920) 662-5187 or Heidi.SchmittMarquez@wisconsin.gov.

Sincerely,

Heidi L. Marquez

Agricultural Runoff Management Specialist

ec: Kevin Beckard, AgSource Laboratories
John Roach, Roach and Associates LLC
Rick Stoll, DNR – Green Bay
Clare Freix, DNR – Madison
Jeff Kreider, DNR – Madison

Roach & Associates, LLC

Dairy Business and Management Consulting
Environmental Engineering
856 N Main Street • Seymour, WI 54165 • Phone 920-833-6340 • Fax 920-833-9851

October 5, 2017

Mrs. Heidi Schmidt Marquez
Wisconsin Department of Natural Resources
2984 Shawano Avenue
Green Bay, WI 54313-6727

Re: Response to CAFO Compliance Report 09/21/2017 – Ledgeview Farms, LLC

Ms. Schmidt Marquez:

On behalf of Ledgeview Farms, LLC (LD) Roach & Associates, LLC (Roach) is providing this response to the CAFO Compliance Report 09/21/2017, Action Items found on page 52.

Main Farm Site:

1. **Calf Barn discharge to Dickinson Rd ditch**
    a. **The discharge from the calf barn is considered process wastewater and is not allowed to discharge to the ditch as was observed during the inspection.**
    b. **Process wastewater from the Calf Barn discharges into the ditch on the north side of Dickinson Rd, which discharges to an unnamed tributary to Bower Creek. Ponded process wastewater also discharges into groundwater.**
    c. **Interim controls/management shall be implemented immediately until a permanent solution is determined/installed.**
        i. **Submit documentation demonstrating that the discharge to the ditch on Dickinson Rd has ceased by <u>October 6, 2017</u>.**

The discharge of wastewater that was observed is the result of washing the tank used to deliver milk to the baby calves in the calf barn. Following the visit and as an interim measure until a final solution is found, LD will take wastewater from washing the Milk Tank to the Main Parlor and empty it into the floor drain in the utility room. The wastewater from the floor drain flows to the Waste Storage Facility (001 WSF).

2. **Feed Storage Area**
    a. **Feed leachate and process wastewater from the Feed Storage Area currently discharge in a northwesterly direction down the ledge to the unnamed tributary to Bower Creek. Leachate and process wastewater also discharge into groundwaters.**
    b. **There are currently no runoff controls for leachate and process wastewater from the Feed Storage Area.**

c. **Interim controls shall be implemented immediately and maintained until a permanent solution is determined/installed.**
    i. **Submit a plan for the installation of interim controls for the Feed Storage Areas to prevent discharges to waters of the state by October 6, 2017.**

Temporary Sumps will be excavated at the Feed Storage Areas (FSA) at both the home and heifer sites. Soil berms will be constructed to facilitate the flow to the sumps. In addition to the sump at the heifer site, a temporary Detention Basin (DB) will be constructed in the existing clay soil formation south of the FSA to contain leachate and runoff. A gravel berm will be installed along the east edge of the apron to ensure the flow is directed to the temporary DB. Locations of the sumps and DB are shown on the attached Site Maps (Exhibit 2). The leachate and runoff will be manually pumped from the sump and DB and transported to the 001 WSF for storage. An Interim O&M plan has been developed for the Feed Storage Areas at both locations (Exhibit 1).

3. **Stacking Areas for used bedding (both sites)**
    a. **Scattered around both sites are areas in which used bedding are stacked. Runoff from these stacks is not captured.**
    b. **Interim controls/management shall be implemented immediately and maintained until a permanent solution is determined/installed.**
        i. **Submit a plan for management and/or installation of runoff controls to prevent discharges to waters of the state by October 31, 2017.**

Ledgeview Farms will discontinue stacking used bedding/ manure within the production area at both sites. Bedding/manure will be removed from Housing Areas and applied onto cropland according to the current Nutrient Management Plan (NMP) or transported to the 001 WSF for storage. An Interim O&M Plan is attached detailing the changes (Exhibit 1).

4. **Feedlots (both sites)**
    a. **On both sites there are Heifer Lots that have no runoff controls in place, allowing manure contaminated water to run freely from them.**
    b. **Interim controls/management shall be implemented immediately and maintained until a permanent solution is determined/installed.**
        i. **Submit a plan to address containment/runoff controls for the Feedlot Areas to prevent discharges to waters of the state by October 31, 2017.**

At the Heifer Site, runoff from the Concrete Yard will be directed to the temporary DB constructed to also contain leachate and runoff from the FSA. At the Main Farm Site, a soil berm will be installed at the east and west gates to contain manure and runoff on the Concrete Yard. Runoff will be removed with manure and bedding and applied onto cropland or transported to the 001 WSF (Exhibit 2).

5. **Pits 1 & 2**
    a. **Submit a plan for the long-term use of the pits. For use as Waste Storage Facilities, repairs and engineering evaluations will be required. For abandonment, a plan that meets applicable requirements for waste storage abandonment will be required.**
        i. **Submit the long-term use plan by October 31, 2017.**

The pits are currently not being used for waste storage and contain rain water. In the future a structural evaluation will be conducted to determine if they can be repaired or their use altered.

6. **Permit Application Reminder**
    a. **Pursuant to NR 243.12, Wis. Adm. Code, a WPDES permit is required for Ledgeview.**
    b. **The permit application is incomplete. Engineering evaluations for existing structures are required to be submitted by September 25, 2017.**
    c. **See Department letter dated August 25, 2017, for additional information**

Roach is currently in the process of completing the items required for the final WPDES application.

Regards,

John Roach

Cc: Ledgeview Farms
Jason Pansier

Exhibit 1

Interim Operation and Maintenance Plan

Ledgeview Farms, LLC (LF) will install the following interim measures at both the Main Farm and Heifer Sites:

Main Farm Site

- Install sump and containment berm to collect leachate and runoff from the FSA
- Soil berms to contain manure and runoff on Concrete Yard
- Collect and storage of Milk Tank wastewater
- Discontinue Unconfined Manure Stacks
- Engineering Evaluation of Pits 1 &2

Heifer Site

- Install sump and soil containment berm to collect leachate and runoff from the FSA.
- Install temporary Detention Basin (DB) and Soil Containment Berm to collect and store leachate & runoff from the FSA and runoff from part of the Heifer Concrete Yard.
- Discontinue Unconfined Manure Stacks

The following Operation and Maintenance Plan outlines the activities required for proper operation of the proposed Interim Systems.

In the event of a spill or accidental discharge, call the WDNR Spill Emergency Hotline.

REPORT SPILLS IMMEDIATELY

1-800-943-0003

Wisconsin's 24-Hour Spill Emergency Hotline

Waste Collection and Transfer Systems

Interim Sumps and Berms

- FSA leachate and runoff will be collected in the sumps.
- The level of liquid in the sumps will be checked daily and liquids will be removed when liquids have filled the sumps to 50% of total capacity.
- Leachate will be manually transferred to a tanker and leachate and runoff will be applied onto cropland according to the current NMP, or transferred to the 001 WSF for storage.
- Leachate and runoff will be removed from the sumps whenever rain is forecasted with a ≥ 50% probability.
- The berm will be inspected daily to insure the flow is directed to the sumps. The berm will be repaired as necessary.
- When liquids are transferred from the sumps the date, person transferring the liquid and the estimated gallons transferred shall be recorded.

Interim Detention Basin (DB) and Berm

- FSA leachate, runoff and concrete yard runoff will be collected in the DB.
- The level of liquid in the DB will be checked daily and liquids will be removed when liquids have filled the DB to 50% of total capacity.
- A staff gauge will be installed at the 50% of capacity elevation.
- Leachate and runoff will be manually transferred to a tanker and the liquids will be applied onto cropland according to the current NMP, or transferred to the 001 WSF for storage.
- Liquids will be removed from the DB whenever rain is forecasted with a ≥ 50% probability.
- The berm will be inspected daily to insure the berm is directing flow to the DB.
- The berm will be repaired as necessary.
- When liquids are transferred from the DB the date, person transferring the liquid and the estimated gallons transferred shall be recorded.

Used Bedding/Manure

Used bedding will be stored in barns until it is time to field apply according to the current NMP, or until it is transported to the 001 WSF.

Calf Barn Wastewater

Wastewater from washing the milk delivery tank will no longer be deposited on the driveway in front of the Calf Barn. Wastewater from cleaning the tank will be deposited in the floor drain in the utility room of the Milking Parlor.

Exhibit 2


WSF 001
Dickinson Rd
LEDGEVIEW DAIRY
HOME FACILITY
BROWN COUNTY, WISCONSIN
1"=150'
INTERIM
MEASURES
Rooch & Associates, LLC
1

LEGGLVIEW DAIRY
HEIFER FACILITY
BROWN COUNTY, WISCONSIN

1"=50'

INTERIM MEASURES

Roach & Associates, LLC

2

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
PO Box 7185
101 S. Webster Street
Madison WI 53707-7185

Scott Walker, Governor
Daniel L. Meyer, Secretary
Telephone 608-266-2621
FAX 608-267-3579
TTY Access via relay - 711

November 15, 2017

Jason Pansier
Ledgeview Farms LLC
3870 Dickinson Road
De Pere, WI 54115

Subject: CAFO WPDES Final Permit Application - Acknowledgment of Receipt
Status: Incomplete

Dear Jason Pansier:

The Department received your final application materials for issuance of a CAFO WPDES permit (No. WI-0065421-01) to Ledgeview Farms LLC on October 31, 2017. Your application is currently incomplete because it is missing the following components:

1. Plans and specifications for additional waste storage in order to meet a minimum of 180 days of storage
2. Updated manure storage calculations showing a minimum of 180 days of storage

Information to assist you and your consultant in preparing and submitting a complete final application is available at: http://dnr.wi.gov/topic/AgBusiness/CAFO/PermitForms.html. The following application materials have been received to date:

1. Livestock/Poultry Operation WPDES Permit Application Forms 3400-025, 025B, 025C
2. Animal Unit Calculation Worksheet Form 3400-025A
3. Labeled Aerial Maps
4. Soil Survey Maps
5. EA Questionnaire
6. Manure storage calculations & supporting documentation showing less than 180 days of storage
7. Nutrient Management Plan (NMP)
8. Evaluations for the following:
   a. Headquarters Farm:
      i. Waste storage facility built in 2015 (4-5 million gallons)
      ii. Pit 1; waste storage facility built in 1995 (490,000 gallons)
      iii. Pit 2; waste storage facility built in 1999 (504,000 gallons)
      iv. Solid waste stacking area
      v. Manure transfer system (piping & reception tanks) for all barns
      vi. Feed storage area
      vii. Feed storage area runoff controls
      viii. Runoff controls for all feedlots (heifer barn & cow barns)
   b. Heifer Farm:
      i. Waste storage facility for heifer barns
      ii. Solid waste stacking area
      iii. Feed storage area
      iv. Feedlot runoff controls

In order to begin processing your application and to conduct a thorough review to determine if additional information is needed, all of the above application materials must be received by the Department. Missing

plans and specifications must be submitted through the ePermitting System as a separate engineering submittal. All other missing materials can be sent directly to the CAFO Intake Specialist to be added to your current application (contact information below).

Your operation is currently above the permit threshold of 1,000 animal units and should already be covered under a WPDES permit. If the missing application materials are not received by November 29, 2017, your current application will be dismissed in the online system. Once an application has been dismissed, a new application containing all required materials must be resubmitted through the ePermitting System. Please note the Department may take additional action to obtain a complete permit application. Contact me if you are unable to meet this deadline.

The regional Agricultural Runoff Management Specialist assigned to your operation is Heidi Schmitt Marquez. Please do not hesitate to contact her (phone: (920) 662-5187, e-mail: Heidi.SchmittMarquez@wisconsin.gov) or me if you have any question about your application materials. We look forward to working with you throughout the permitting process.

Sincerely,

Clare Freix

Clare Freix
CAFO Intake Specialist
Bureau of Watershed Management
Phone: (608) 261-8437
Email: Clare.Freix@Wisconsin.gov

cc: Heidi Schmitt Marquez, DNR
Richard Seas, Roach & Associates
Kevin Beckard, AgSource Laboratories
Mike Mushinski, County Conservationist

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
PO Box 7185
101 S. Webster Street
Madison WI 53707-7185

Scott Walker, Governor
Daniel L. Meyer, Secretary
Telephone 608-266-2621
FAX 608-267-3579
TTY Access via relay - 711

December 4, 2017

Jason Pansier
Ledgeview Farms LLC
3870 Dickinson Road
De Pere, WI 54115

Subject: Incomplete CAFO WPDES Permit Application – Resubmittal Required
Status: Review on Hold

Dear Jason Pansier:

The application received on October 31, 2017, for issuance of a CAFO WPDES permit (No. WI-0065421-01) to Ledgeview Farms LLC is currently incomplete. Since missing application components were not submitted by the November 29, 2017, deadline provided by the Department, the review of application materials has been placed on hold. The Department will continue the review process once a complete application has been resubmitted through the Department's ePermitting System. The application is incomplete because it is missing the following components:

1. Plans and specifications for additional waste storage in order to meet a minimum of 180 days of storage
2. Updated manure storage calculations showing a minimum of 180 days of storage

Note: Plans and specifications for proposed structures/systems must be submitted through the ePermitting System separate from the permit application submittal. Please submit the engineering plan submittal at the time of the complete permit application submittal.

Information to assist you and your consultant in preparing and submitting a complete application is available at: http://dnr.wi.gov/topic/AgBusiness/CAFO/PermitForms.html. The following materials will need to be resubmitted through the ePermitting System along with the missing materials listed above:

1. Livestock/Poultry Operation WPDES Permit Application Forms 3400-025, 025B, 025C
2. Animal Unit Calculation Worksheet Form 3400-025A
3. Labeled Aerial Maps
4. Soil Survey Maps
5. EA Questionnaire
6. Manure storage calculations & supporting documentation showing less than 180 days of storage
7. Nutrient Management Plan (NMP)
8. Evaluations of existing structures/systems at the Headquarters Farm and Heifer Farm (see November 15, 2017 incomplete letter from the department for details)

In order to continue processing your application and to conduct a thorough review to determine if additional information is needed, a complete application must be resubmitted through the Department's ePermitting System. You can access and download application materials previously submitted as part of this application from the following webpages provided these materials do not need to be updated:

Application Material: https://permits.dnr.wi.gov/water/SitePages/DocSetView.aspx?DocSet=AG-APP-NE-2017-5-X10-31T15-15-35

NMP Materials: https://permits.dnr.wi.gov/water/SitePages/DocSetView.aspx?DocSet=AG-NMP-NE-2017-5-X10-31T15-15-35

Evaluations & Storage Calculations:
https://permits.dnr.wi.gov/water/SitePages/DocSetView.aspx?DocSet=AG-PNS-NE-2017-5-X10-31T15-15-35

The regional Agricultural Runoff Management Specialist assigned to your operation is Heidi Schmitt Marquez. Please do not hesitate to contact her (phone: (920) 662-5187, e-mail: Heidi.SchmittMarquez@Wisconsin.gov) or me if you have any question about your application materials. We look forward to working with you throughout the permitting process.

Sincerely,

Clare Freix

Clare Freix
CAFO Intake Specialist
Bureau of Watershed Management

Phone: (608) 261-8437
Email: Clare.Freix@Wisconsin.gov

cc: Heidi Schmitt Marquez
Richard Seas, Roach & Associates
Kevin Beckard, AgSource Laboratories
Mike Mushinski, County Conservationist

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
Northeast Region Headquarters
2984 Shawano Avenue
Green Bay WI 54313-6727

Scott Walker, Governor
Daniel L. Meyer, Secretary
Telephone 608-266-2621
FAX 920-662-5413
TTY Access via relay - 711

December 6, 2017

2017- Ledgeview Farms, LLC
Brown County
CERTIFIED MAIL
Return Receipt Requested

Jason Pansier
Ledgeview Farms, LLC
3870 Dickinson Road
De Pere, WI 54115

Roy Pansier, Registered Agent
Ledgeview Farms, LLC
3870 Dickinson Road
De Pere, WI 54115

Subject: **Notice of Violation / Enforcement Conference: December 21, 2017**

Dear Mr. Jason Pansier and Mr. Roy Pansier:

The Department of Natural Resources has reason to believe that Ledgeview Farms, LLC (Dairy) is in violation of Wisconsin pollutant discharge elimination laws.

The department alleges the following violation:

1. **Section 283.31(1), Wisconsin Statutes: The discharge of any pollutant into any waters of the state by any person is unlawful unless such discharge or disposal is done under a permit issued by the department under this section or s. 283.33, Wis. Stats.**

   - **Section NR 243.11(3)(a), Wisconsin Administrative Code: Any person owning or operating a large CAFO (Concentrated Animal Feeding Operation) that land applies manure or process wastewater shall have a WPDES (Wisconsin Pollutant Discharge Elimination System) Permit.**

   - **Section NR 243.12(1)(a), Wis. Adm. Code: (After Filing a preliminary application), the owner/operator shall then submit a completed final WPDES permit application at least 180 days prior to the date on which the operation would become a large CAFO.**

   The Dairy owns two operations located at 3875 Dickinson Road, De Pere, Brown County, WI (Main Farm) and 3688 Lime Kiln Road, De Pere, Brown County, WI (Heifer Farm). Pursuant to s. NR 243.03(4), Wis. Adm. Code, the department considers the Main Farm and Heifer Farm a single animal feeding operation because the two sites are under common ownership and managed under the same Nutrient Management Plan. The department considers the Dairy a CAFO because in total the Main Farm and Heifer Farm consist of greater than 1,000 animal units.

   Department records indicate the Dairy has not submitted a complete WPDES permit application and is not covered under a WPDES permit as required. The attached letter is notification that the review of the incomplete application has been placed on hold. The department will continue its review process once a complete application is resubmitted.

The department has scheduled an Enforcement Conference to discuss this matter:

Conference Date/Time:	**Thursday, December 21, 2017 at 2:00 PM**
Conference Location:	**DNR Northeast Region Headquarters – Green Bay** **2984 Shawano Avenue, Green Bay, Wisconsin**

In preparation for the meeting, please bring to the Enforcement Conference the following:

1. Demonstration that the Dairy can meet 180-day storage requirements
   - Either plans and specifications for additional waste storage facility construction or
   - Written authorization to utilize off-site waste storage facilities with sufficient volume to provide a minimum of 180 days of storage for the operation.

2. Engineering consultant to discuss engineering related matters

The department requests the Dairy attend the Enforcement Conference as it is an important opportunity to discuss the circumstances surrounding the alleged violation and to learn the Dairy's perspective on this matter. Please note that to encourage a candid and productive conversation, attendance is limited to the Dairy, the Dairy's legal counsel and others with the technical expertise necessary to understand, evaluate and correct the violation. A fact sheet describing the Enforcement Conference is enclosed.

The department's enforcement decision will be based upon available information if the Dairy does not attend the Enforcement Conference.

Please be advised that pursuant to s. 283.91, Wis. Stats, the department may refer the violation alleged above to the Wisconsin Department of Justice to obtain court ordered compliance and penalties of up to $10,000 per day of violation. It is in the Dairy's best interest to take any necessary action to submit a complete permit application and obtain a WPDES permit.

If the Dairy has any questions or would like to reschedule the Enforcement Conference, please call me at (920) 662-5163.

Sincerely,

Kody C. Hansen
Environmental Enforcement Specialist

Enclosures: December 4, 2017 Incomplete CAFO WPDES Permit Application Letter
Enforcement Conference Fact Sheet
Map

Cc: Heidi Schmitt Marquez, DNR
Claire Freix, DNR
Casey Jones, DNR

Environmental Enforcement Conference

An Enforcement Conference (EC) is a meeting between Department of Natural Resources (Department) staff and representatives of a person or business that the Department believes has violated an environmental law. The Department issues a Notice of Violation (NOV) when it has reason to believe that a violation of a permit condition, administrative rule or statutory requirement has occurred. The NOV either offers or schedules an EC.

Why Should I Attend?
The EC is an important opportunity to discuss the Department's basis for the alleged violation(s) and learn more about what happened, why it may have happened, and any factors you believe the Department should consider, such as steps that have been or will be taken to stop the violation, correct any effects of the violation, and prevent violations from occurring in the future. It is also your opportunity to explain why you might disagree with the factual and legal conclusions underlying the NOV.

Historic data shows that most violations are resolved at the EC level, without the need for court ordered compliance and/or penalties. In situations where the significance of the violation warrants further enforcement action, your cooperative efforts to resolve the violation and prevent future violations will help minimize your legal and financial liability.

Who Should Attend the EC?
Department staff involved in the EC typically consists of an Environmental Enforcement Specialist and regulatory staff that are familiar with the issues identified in the NOV.

While not required, you may seek representation by legal counsel or the assistance of an environmental consultant to prepare for and/or attend the EC. The EC is most productive when all involved are well-prepared to discuss the allegations and any corrective actions that may be necessary.

To ensure a productive candid discussion, participation in the EC is limited to the person or business involved and others with the legal or technical expertise necessary to understand, evaluate, mitigate and correct the violation. The EC is not an open meeting under state law and the Department will limit participation to those directly involved in the resolution of the matter.

What Happens if I don't Attend the EC?
If a party is unable to attend the EC, they should immediately contact the Environmental Enforcement Specialist at the phone number in the NOV to reschedule. When a party refuses to attend the EC and provides no further information to the Department, the Department's enforcement decision will be based upon available information.

What Happens Following the EC?
The EC is part of the Department's stepped enforcement process. At the EC, Department staff will explain the process and options available to address the alleged violation. Generally, the options range from closing the matter with no further action to referral to the Wisconsin Department of Justice (DOJ) or to U.S. EPA, for further enforcement action. In limited circumstances, the Department can issue citations, which are handled in local court similar to traffic offenses. If a case is referred to DOJ, the DOJ may initiate an action in court on behalf of the State. The State typically asks the Court to impose financial penalties and order completion of any necessary corrective actions. In most of the Department's cases, a cooperative return to compliance with any necessary restoration results in close out of the case. At close out, the Department will send a letter advising of no further enforcement action.

DIRECTIONS TO GREEN BAY DNR HEADQUARTERS
2984 SHAWANO AVENUE, GREEN BAY, WI 54313

Coming from the South

Taking Highway 41 North

Take **Exit 168C** - Shawano Avenue; take a left at the first roundabout onto Shawano Avenue (heading toward HWY 29 West); go straight through the 2nd and 3rd roundabouts; at the 4th roundabout take a right onto Cardinal Lane. Keep going straight though the next roundabout and remain on Cardinal Lane. At the first stoplight take a left onto Riverview Drive. At the next stoplight take a right onto Shawano Avenue. The DNR office will be on your right hand side.

Coming from the North

Taking Highway 41 South

Take **Exit 168C** - Shawano Avenue. Use the middle lane to keep left at the fork. Take a slight right towards Shawano Ave. Continue on Shawano Ave through the first traffic circle. At the 2nd traffic circle take a right onto N. Packerland Drive. At the next traffic circle take a right onto Riverdale Drive. Continue straight through the traffic lights and the DNR office will be on your right hand side.

Coming from the West

Taking Highway 29 East

Exit at FF and take a left at the roundabout onto Sherwood Street (FF). At the next roundabout take a right onto County Road C. At the stop sign, take a right onto Shawano Avenue. The DNR building will be on your left hand side.

Coming from the East

Coming in on Hwy 29 West – Shawano Avenue

Follow the directions given above coming from the south.

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
PO Box 7185
101 S. Webster St.
Madison WI 53707-7185

Scott Walker, Governor
Daniel L. Meyer, Secretary
Telephone 608-266-2621
FAX 608-267-3579
TTY Access via relay - 711

December 14, 2017

File Ref: R-2017-0226

Jason Pansier
Ledgeview Farms LLC
3870 Dickinson Rd
De Pere, WI 54115

Subject: Acknowledgment of Receipt

The Office of Business Support and External Services of the Wisconsin Department of Natural Resources (the Department) received a plan submittal on behalf of Ledgeview Farms LLC by Richard Seas, Roach & Associated, LLC on December 6, 2017 for waste storage facility and leachate management system (waste storage, detention basin and transfer pipe), to be reviewed by the Department in accordance with s. 281.41 Wis Stats. A preliminary review to assess whether or not the submitted plans and specifications are complete is pending.

In accordance with s. NR 243.15(1)(a) and s. NR 108.03(1), an owner or operator may not commence or cause to be commenced, construction of a proposed reviewable facility or system until plans and specifications have been approved by the department in writing. Also, s. NR 108.04(5) states, "The department may not approve plans and specifications for any project for which construction has commenced. The department may review the plans and specifications and require changes to components which may adversely affect public health, the operation of the proposed or existing facility and the determination of permit compliance. This review does not prohibit the department from taking enforcement action under s. NR 108.03."

If the submitted plans and specifications are deemed complete, then the 90 day start date will be based on the date the submittal was deemed substantially complete. If the submittal is not complete then the review process will be terminated and the submittal will have to be resubmitted, in its entirety, at a later date.

Please contact Clare Freix (contact information below) should you have any questions.

Sincerely,

Clare Freix

Clare Freix
Bureau of Watershed Management

EC: Richard Seas; Engineer
Roach & Associated, LLC
(920) 833-6340; richard@jmroach.com

Mike Mushinski; County Conservationist
Brown County
(920) 391-4621; mushinski_ML@co.brown.wi.us

Matt Woodrow, P.E.
DATCP
(920) 427-8505; matthew.woodrow@wisconsin.gov

Heidi Schmitt Marquez
DNR, Northeast Region
(920) 662-5187;

Clare Freix
DNR, Central Office
(608) 261-8437; Clare.Freix@wisconsin.gov

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
Northeast Region Headquarters
2984 Shawano Avenue
Green Bay WI 54313-6727

Scott Walker, Governor
Daniel L. Meyer, Secretary
Telephone 608-266-2621
FAX 920-662-5413
TTY Access via relay - 711

January 3, 2018

Jason Pansier, Authorized Representative
Ledgeview Farms, LLC
3870 Dickinson Road
De Pere, WI 54115

2017- Ledgeview Farms, LLC
Brown County

Subject: **Enforcement Conference Summary Letter**

Dear Mr. Pansier:

The Department of Natural Resources would like to thank the representatives of Ledgeview Farms, LLC (Dairy) for meeting with the department on December 19, 2017 to discuss the violation alleged in the December 5, 2017 Notice of Violation (NOV). This letter serves as a summary of the Enforcement Conference and attached is a list of the individuals that attended.

The Dairy provided a background of the farming operation. The Dairy started as a family farm in the 1930's. In 1983 Mr. Pansier's Dad and Uncle took ownership of the farm after a death in the family, and Mr. Pansier became part owner on or around 2001. The Dairy has approximately 10 non-family employees and consists of two locations, the Upper and Lower sites.

The Upper Site is managed by Mr. Pansier of the Dairy and consists of dry cows, milking cows and calves up to five months old. Manure is stored in one waste storage facility (WSF) onsite and its contents are hauled by the Dairy to be land applied on its fields per its Nutrient Management Plan (NMP). A custom hauler may be used, but the Dairy is the primary manure applicator. The Dairy produces animal feed by way of its own cropped fields. The feed is mixed at the Lower Site and brought to the Upper Site to feed the animals.

The Lower Site is managed by Mr. Pansier of the Dairy as well and consists of steers and heifers. Manure produced at the Lower Site consists of bedpack solids that is removed daily for land application, and manure generated by the heifer concrete lot that is discharged into a small concrete WSF adjacent to the lot. Manure is land applied under the same NMP as the Upper Site.

The Dairy described the circumstances that gave rise to the NOV. The Dairy has been working with the Environmental Protection Agency for several years. The plan has been to get the Upper Site into compliance and then work on the Lower Site. The Dairy agrees that it is over 1,000 animal units and is trying to do what is necessary to obtain a permit. However, it has become increasingly difficult because the Dairy does not have 180-days of storage. The WSF at the Upper Site has allowed for the Dairy to operate efficiently. The plan has been to construct a WSF at the Lower Site to reduce manure hauling frequencies and comply with the rules that regulate Concentrated Animal Feeding Operation.

The Dairy has submitted a complete application to receive a Wisconsin Pollutant Discharge Elimination System (WPDES) permit from the state and is aware that it will be unable to receive the required WPDES permit unless it has 180-days of waste storage. However, the department must be aware that the Dairy is concerned that the town of Ledgeview (Town) will not allow the Dairy to construct a new WSF due to the Town's Ordinances (Ordinance No. 2017-08).

The department responded to the Dairy's questions and statements. The department received application materials but engineering evaluations were not included in the submittal. The department expects to receive the evaluations that would in turn make the WPDES permit application complete. Once the application is deemed complete, the department will review the information and respond to the Dairy with the next steps to obtain a WPDES permit. The department is concerned that the Dairy does not have 180 days of storage. Please consider contracting with nearby farms to be able to use their WSFs to meet the 180-days of waste storage requirement. The department understands that these contracts would be for the interim until the Dairy constructs a new WSF at the Lower Site.

The department cannot comment on the process between the Dairy and the Town. State law requires the Dairy to have a WPDES permit due to the size and operation of the Dairy. Please continue to work with the Town and the necessary processes to meet the 180-days of storage requirement.

The Dairy and department discussed enforcement and a plan moving forward. The department will contact Roach and Associates to discuss Lower and Upper Site feed storage area runoff controls. The Dairy agreed to assess the possibility of contracting with nearby farms to obtain 180 days of storage as an interim measure to obtain the required permit.

The department advised the Dairy that an enforcement decision, which may include a referral to the Department of Justice, has not been made. The department considers all available information including cooperation, timeliness, and the actions the Dairy takes to return to compliance. It is in the Dairy's best interest to obtain the required permit as efficiently as possible to limit potential liability.

Please submit to me, to the address listed in this letterhead within two weeks from the date of this letter, a signed letter including the following:

1. **The actions taken in the attempt to meet the 180-days of waste storage requirement. This may include contracts with local farmers and/or the actions taken to build a new WSF.**

2. **A commitment to obtain the required WPDES permit.**

The department would like to thank the representatives of the Dairy for attending the Enforcement Conference. If there are any questions or concerns, please call me, Kody Hansen, at (920) 662-5163.

Sincerely,

Kody C. Hansen
Environmental Enforcement Specialist

Enclosures: Enforcement Conference Sign-In Sheet

Cc: Heidi Schmitt Marquez, DNR
Casey Jones, DNR
Rick Stoll, DNR

Enforcement Conference Sign- In Sheet

Ledgeview Farms, LLC
DNR – Northeast Region Headquarters
2984 Shawano Avenue, Green Bay, Wisconsin
December 18, 2017 at 2:00p

Present for Conference	Representing	Phone Number(s)
Kody Hansen	DNR/EE	(920) 662-5163
Heidi Schmitt Marquez	DNR/Ag Runoff	(920) 662-5187
Jason Pansier		920 655 3875

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
PO Box 7185
101 S. Webster Street
Madison WI 53707-7185

Scott Walker, Governor
Daniel L. Meyer, Secretary
Telephone 608-266-2621
FAX 608-267-3579
TTY Access via relay - 711

January 4, 2018

Jason Pansier
Ledgeview Farms LLC
3870 Dickinson Road
De Pere, WI 54115

SUBJECT: CAFO WPDES Permit Application - Acknowledgment of Receipt
WPDES Permit No. WI-0065421-01

Dear Jason Pansier:

The Department received your final application for a CAFO WPDES permit for Ledgeview Farms LLC on December 15, 2017. The application is complete for review and now includes the following components:

1. Livestock/Poultry Operation WPDES Permit Application Forms 3400-025, 025B, 025C
2. Animal Unit Calculation Worksheet Form 3400-025A
3. Labeled Aerial Maps
4. Soil Survey Maps
5. EA Questionnaire
6. 180 Day Manure Storage Calculations & Supporting Documentation
7. Nutrient Management Plan (NMP)
8. Plans and Specifications for an Additional Waste Storage Facility
9. Evaluations for the Following Existing Facilities:
    a. Main Farm:
        i. Waste storage facility built in 2015 (4-5 million gallons)
        ii. Pit 1; waste storage facility built in 1995 (490,000 gallons)
        iii. Pit 2; waste storage facility built in 1999 (504,000 gallons)
        iv. Solid waste stacking area
        v. Manure transfer system (piping & reception tanks) for all barns
        vi. Feed storage area
        vii. Feed storage area runoff controls
        viii. Runoff controls for all feedlots (heifer barn & cow barns)
    b. Heifer Farm:
        i. Waste storage facility for heifer barns
        ii. Solid waste stacking area
        iii. Feed storage area
        iv. Feed storage area runoff controls

I have distributed your application components to the appropriate DNR technical reviewers. As the review process continues, additional materials may be requested.

Your regional Agricultural Runoff Management Specialist is Heidi Schmitt Marquez. Heidi can be contacted at (920) 662-5187 or by e-mail to Heidi.SchmittMarquez@wisconsin.gov. You should now work with her to continue processing your permit application.

Thank you for submitting a final permit application. Please do not hesitate to contact Heidi Schmitt Marquez or me if you have any questions about your application materials.

Sincerely,

Clare Freix

Clare Freix
CAFO Intake Specialist
Bureau of Watershed Management
Phone: (608) 261-8437
Email: Clare.Freix@Wisconsin.gov

cc: Heidi Schmitt Marquez, DNR
Richard Seas, Roach & Associates
Kevin Beckard, AgSource Laboratories
Mike Mushinski, County Conservationist

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
PO Box 7185
101 S. Webster Street
Madison WI 53707-7185

Scott Walker, Governor
Daniel L. Meyer, Secretary
Telephone 608-266-2621
FAX 608-267-3579
TTY Access via relay - 711

January 5, 2018

FILE REF: R-2017-0226
WPDES Permit #: WI-0065421

Jason Pansier
Ledgeview Farms LLC
3870 Dickinson Road
De Pere, WI 54115

Subject: Completeness determination for a waste storage facility and leachate management system at Ledgeview Farms LLC in Brown County

Dear Mr. Pansier:

The Office of Business Support and External Services of the Wisconsin Department of Natural Resources (DNR) received a plan submittal on behalf of Ledgeview Farms LLC by Richard Seas, Roach & Associates LLC on December 6, 2017 for a waste storage facility and leachate management system to be reviewed by the Department in accordance with s. 281.41, Wis. Stats., and ch. NR 243, Wis. Adm. Code. A completeness review was conducted to determine if the submittal is complete. The submitted plans and specifications have been deemed complete. The complete date is set at December 6, 2017 and the 90-day due date is March 6, 2018.

In accordance with s. NR 243.15(1)(a) and NR 108.03(1), an owner or operator may not commence or cause to be commenced, construction of a proposed reviewable facility or system until plans and specifications have been approved by the department in writing. Also, s NR 108.04(5) states, "The department may not approve plans and specifications for any project for which construction has commenced. The department may review the plans and specifications and require changes to components which may adversely affect public health, the operation of the proposed or existing facility and the determination of permit compliance. This review does not prohibit the department from taking enforcement action under s. NR 108.03."

Please contact Jeff Kreider (contact information below) should you have any question.

Sincerely,

Clare Freix

Clare Freix
CAFO Intake Specialist
Bureau of Watershed Management

Email:
Richard Seas
Roach & Associates LLC
(920) 833-6340; richard@jmroach.com

Mike Mushinski
Brown County Conservationist
(920) 391-4621; mushinski_ML@co.brown.wi.us

Matt Woodrow, P.E.
DATCP
(920) 427-8505; matthew.woodrow@wisconsin.gov

Heidi Schmitt Marquez, CAFO Specialist
DNR, Green Bay
(920) 662-5187;
Heidi.SchmittMarquez@wisconsin.gov

Jeff Kreider
DNR, Central Office
(608) 266-0856; jeff.kreider@wisconsin.gov

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
PO Box 7185
101 S. Webster Street
Madison WI 53707-7185

Scott Walker, Governor
Daniel L. Meyer, Secretary
Telephone 608-266-2621
FAX 608-267-3579
TTY Access via relay - 711

February 1, 2018

FILE REF: R-2017-0237
WPDES Permit #: WI-0065421

Jason Pansier
Ledgeview Farms, LLC
3870 Dickinson Rd.
De Pere, WI 54115

Subject: Compliant Evaluation Review for Ledgeview Farms, LLC, (Headquarters and Heifer Sites), Sec 33, T23N, R21E, Ledgeview Township, Brown County – NO ADDITIONAL ACTION REQUIRED

Dear Mr. Pansier:

The Division of External Services of the Wisconsin Department of Natural Resources (the Department) received an evaluation submitted on behalf of Ledgeview Farms, LLC by Richard Seas, P.E., Roach & Associates, LLC on December 15, 2017. The evaluation was submitted because of a permit issuance. Richard Seas, P.E. evaluated the facilities listed below based on ch. NR 243, Wis. Adm. Code and applicable NRCS standards with date. The NRCS standard and date is what Richard Seas, P.E. used when conducting his evaluation of each reviewable facility listed below. The Department's review is to concur or not concur with the content of the evaluation with respect to being in compliance with s. NR 243.15, Wis. Adm. Code. Department review was performed in accordance with s. 243.16, Wis. Adm. Code, and applicable NRCS standards.

The facilities and systems listed below were found to be compliant with ch. NR 243, Wis. Adm. Code, and applicable NRCS Standards. No additional actions on your part are required concerning the evaluation of the facilities listed below. Should you have any questions, contact Jeff Kreider, DNR Madison office (contact information below).

Headquarters Farm Transfer System: The transfer system was evaluated with respect to NRCS Standard 634 (1/14). The Department concurs that the system is in compliance with s. NR 243.15(4), Wis. Adm. Code. The system is made up of a channel and 2-cell pump station. The channel is 20 inches deep x ~24 inches wide and spans the width of barn L1. At the north end of the channel is a 2-cell (wet/dry) tank that receives the liquid manure. The wet cell is 10 ft x 12 ft x 8.5 ft deep and the dry cell is 16 ft x 12 ft x 8.5 ft deep. Transfer pipes are used to transfer liquid manure from the wet cell and milking parlor to waste storage pond #1.

Heifer Farm Transfer Tank: The transfer tank was evaluated with respect to NRCS Standard 634 (1/14). The Department concurs that the tank is in compliance with s. NR 243.15(4), Wis. Adm. Code. The tank is located at the animal lot and is 20 ft x 24.8 ft x 7.5 ft deep.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

Jeff C. Kreider
Water Resources Engineer
Bureau of Watershed Management

Email:

Richard Seas, P.E.
Roach & Associated, LLC
(920) 833-6340; richard@jmroach.com

Mike Mushinski; County Conservationist
Brown County
(920) 391-4621; Mushinski_ML@co.brown.wi.us

Heidi Schmitt Marquez; DNR CAFO Specialist
DNR, Northeast Region
(920) 662-5187; Heidi.SchmittMarquez@Wisconsin.gov

Jeff Kreider
DNR, Central Office
(608) 266-0856; jeff.kreider@wisconsin.gov

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
PO Box 7185
101 S. Webster Street
Madison WI 53707-7185

Scott Walker, Governor
Daniel L. Meyer, Secretary
Telephone 608-266-2621
FAX 608-267-3579
TTY Access via relay - 711

February 1, 2018

FILE REF: R-2017-0237i
WPDES Permit #: WI-0065421

Jason Pansier
Ledgeview Farms, LLC
3870 Dickinson Rd.
De Pere, WI 54115

Subject: Noncompliant Evaluation Review for Ledgeview Farms, LLC, (Headquarters and Heifer Sites), Sec 33, T23N, R21E, Ledgeview Township, Brown County – MORE INFORMATION IS REQUIRED

Dear Mr. Pansier:

The Division of External Services of the Wisconsin Department of Natural Resources (the Department) received an evaluation submitted on behalf of Ledgeview Farms, LLC by Richard Seas, P.E., Roach & Associates, LLC on December 15, 2017. The evaluation was submitted because of a permit issuance. Richard Seas, P.E. evaluated the facilities listed below based on the ch. NR 243, Wis. Adm. Code and applicable NRCS standards with date. The Department's review is to concur or not concur with the content of the evaluation. Department review was performed to determine if compliance is demonstrated in accordance with s. 243.16, Wis. Adm. Code, and applicable NRCS standards.

Headquarters Farm Waste Storage Facility #1: Does not demonstrate compliance with s. NR 243.15(3), Wis. Adm. Code. Plans and specifications were submitted to the Department, but were withdrawn due to insufficiencies in addressing secondary containment and lack of failure analysis. The waste storage facility was constructed in 2016 without prior approval and without addressing secondary containment. It was constructed as a combination liner where the lower portion (bottom up to ~3 vertical feet) is concrete and the upper portion is an earthen liner. The MOL volume is 4,460,399 gallons and has a bottom elevation of 803.2 ft (USGS datum). It's located at the north end of the production area.

- Due to the waste storage pond's location, liner type's upper portion being earthen and proximity to subdivisions of private properties the Department, in accordance with s. NR 243.16(3), requires additional practices to be implemented.
  - A concrete emergency overflow swale shall be constructed to reduce the effects of erosion due to over-topping. The bottom of the emergency overflow swale shall then be considered the top elevation used in calculating the MOL elevation and MOL volume.
  - An emergency overflow plan shall be incorporated into the Operation and Maintenance plan should an overflow occur. The plan should address how the overflow will be stopped and or directed to minimize the impact to private property owners that are "downstream" from the waste storage facility.
  - A failure analysis of the existing structure needs to be conducted and submitted to the Department.
- David Wetenkamp of Brown County LWCD wrote a failure analysis that is dated July 29, 2015. The analysis states that several issues were to be addressed when the facility was to be constructed, however based on the documentation submitted within the evaluation, none of the issues were constructed.

Heifer Farm Feed Storage Area: Does not demonstrate compliance with s. NR 243.15(9), Wis. Adm. Code. The feed storage area is a 90,000 ft^2 earthen liner.

- The evaluation states that there is no containment and did not provide a flow path that demonstrates where the runoff flows to.

Headquarters Farm Animal Lot: Does not demonstrate compliance with s. NR 243.15(2), Wis. Adm. Code. The animal lot is located on the east side of barn L5 and is about 6,000 ft^2.

- The evaluation stated that the animal lot has no containment for manure laden runoff.

- The evaluation did not provide a flow path that demonstrates where the runoff flows to.

Headquarters and Heifer Farm Production Area Runoff Controls: Does not demonstrate compliance with s. NR 243.15(2) and (9), Wis. Adm. Code.

- It must be determined whether the production area runoff control system allows pollutant discharges to navigable water. This can be done either by assessing whether the runoff reaches navigable waters (including during extreme rain events) or whether the runoff management system is able to contain runoff from the animal lot up to the 25-year / 24-hour runoff event. This system must also be protective of groundwater quality.

Days of Available Storage: Does not demonstrate compliance with s. NR 243.15(3)(i) to (k), Wis. Adm. Code. The number of days of storage that was stated within the evaluation was 291. This is based on the following information, however the numbers provided are inconsistent with those numbers that were provided within the documentation. Some values listed below had no documentation that explained how the number was determined.

Total MOL storage volume	19,7755,680 gallons
Manure and bedding	14,070,495 gallons
Parlor wastewater	1,277,500 gallons
Feed leachate and runoff	2,367,738 gallons
Net precipitation	3,462,583 gallons
Steer waste	2,859,484 gallons

- Provide tables and/or spreadsheets that include storage volume calculations, storage volumes and all inputs to the waste storage pond(s) and other supporting documentation. Ensure that the provided calculations include up to a 25-year / 24-hour storm event and that storage volumes are based on the maximum operating level (MOL).

Because the reviewable facilities listed above could not demonstrate compliance, the reviewable facilities are not in compliance with s. NR 243.15, Wis. Adm. Code. A response letter must be submitted by March 1, 2018 to Jeff Kreider and the DNR CAFO specialist. The revised evaluation must address the items listed above. Please understand, the items listed above may not be an all-inclusive list, and it is your responsibility to demonstrate compliance with ch. NR 243, Wis. Adm. Code, and applicable NRCS Standards. Questions concerning the review may be directed to Jeff Kreider, and questions concerning timelines and permit issues may be directed to the DNR CAFO Specialist. (Contact information at the end of this letter.)

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

Mary Anne Lowndes
Chief, Runoff Management Section
Bureau of Watershed Management

Jeff C. Kreider
Water Resources Engineer
Bureau of Watershed Management

Email:
Richard Seas, P.E.
Roach & Associated, LLC
(920) 833-6340; richard@jmroach.com

Mike Mushinski; County Conservationist
Brown County
(920) 391-4621; Mushinski_ML@co.brown.wi.us

Heidi Schmitt Marquez; DNR CAFO Specialist
DNR, Northeast Region
(920) 662-5187; Heidi.SchmittMarquez@Wisconsin.gov

Jeff Kreider
DNR, Central Office
(608) 266-0856; jeff.kreider@wisconsin.gov

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
PO Box 7185
101 S. Webster Street
Madison WI 53707-7185

Scott Walker, Governor
Daniel L. Meyer, Secretary
Telephone 608-266-2621
FAX 608-267-3579
TTY Access via relay - 711

February 1, 2018

FILE REF: R-2017-0237p
WPDES Permit #: WI-0065421

Jason Pansier
Ledgeview Farms, LLC
3870 Dickinson Rd.
De Pere, WI 54115

Subject: Noncompliant Evaluation Review for Ledgeview Farms, LLC, (Headquarters and Heifer Sites), Sec 33, T23N, R21E, Ledgeview Township, Brown County – PLANS AND SPECIFICATIONS ARE REQUIRED

Dear Mr. Pansier:

The Division of External Services of the Wisconsin Department of Natural Resources (the Department) received an evaluation submitted on behalf of Ledgeview Farms, LLC by Richard Seas, P.E., Roach & Associates, LLC on December 15, 2017. The evaluation was submitted because of a permit issuance. Richard Seas, P.E. evaluated the facilities listed below based on the ch. NR 243, Wis. Adm. Code and applicable NRCS standards with date. The Department's review is to concur or not concur with the content of the evaluation. Department review was performed to determine if compliance is demonstrated in accordance with s. 243.16, Wis. Adm. Code, and applicable NRCS standards.

Headquarters Feed Storage Bunker: Does not demonstrate compliance with s. NR 243.15(9), Wis. Adm. Code. The bunker is an 8,700 ft^2 earthen lined bunker. The evaluation states that there are no runoff controls and that runoff flows into the "surface water drainage system". The drainage system naturally flows to the wetland and an unnamed stream that are located about 115 and 190 feet to the west respectively. The stream flows into Bower Creek, a navigable water.

- Submit plans and specifications to construct feed storage area runoff controls in accordance with s. NR 243.15(2), Wis. Adm. Code.

Abandonments: The evaluation stated that the facilities listed below need to be abandoned due to structural defects or the cost for maintenance activities. Should a facility be repurposed, an abandonment plan is still required, however an evaluation shall also be submitted to the Department to demonstrate that the facility will be in compliance with its new use.

- Headquarters Farm Pit #1 and Pit #2: Submit plans and specifications for the abandonment plan in accordance with s. NR 243.17(7), Wis. Adm. Code.
- Headquarters Farm Solids Stacking Area: Submit plans and specifications for the abandonment plan in accordance with s. NR 243.17(7), Wis. Adm. Code. This area is located east of barns L5 and L6.
- Heifer Farm Stacking Area: Submit plans and specifications for the abandonment plan in accordance with s. NR 243.17(7), Wis. Adm. Code. This area is located east of barns L1.

Plans and specifications must be submitted according to the due dates within the Schedules section of the WPDES permit or due date listed in an enforcement notice via the DNR's e-Permitting system at http://dnr.wi.gov/permits/water/. Questions concerning the review may be directed to Jeff Kreider, and questions concerning timelines and permit issues may be directed to the DNR CAFO Specialist. (Contact information at the end of this letter.)

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

Mary Anne Lowndes
Mary Anne Lowndes
Chief, Runoff Management Section
Bureau of Watershed Management

Jeff C. Kreider
Jeff C. Kreider
Water Resources Engineer
Bureau of Watershed Management

Email: Richard Seas, P.E.
Roach & Associated, LLC
(920) 833-6340; richard@jmroach.com

Mike Mushinski; County Conservationist
Brown County
(920) 391-4621; Mushinski_ML@co.brown.wi.us

Heidi Schmitt Marquez; DNR CAFO Specialist
DNR, Northeast Region
(920) 662-5187; Heidi.SchmittMarquez@Wisconsin.gov

Jeff Kreider
DNR, Central Office
(608) 266-0856; jeff.kreider@wisconsin.gov

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
Northeast Region Headquarters
2984 Shawano Avenue
Green Bay WI 54313-6727

Scott Walker, Governor
Daniel L. Meyer, Secretary
Telephone 608-266-2621
FAX 920-662-5413
TTY Access via relay - 711

March 2, 2018

Jason Pansier, Authorized Representative
Ledgeview Farms, LLC
3870 Dickinson Road
De Pere, WI 54115

2017-NEEE-Ledgeview Farms, LLC
Brown County

Subject: **Meeting Scheduled – March 6, 2018**

Dear Mr. Pansier:

On February 1, 2018, the Department of Natural Resources responded in writing to several engineering related matters regarding Ledgeview Farms, LLC (Dairy). The department would like to schedule a meeting with Dairy representatives to discuss progress towards compliance in response to the December 5, 2017 Notice of Violation (NOV) and the Dairy's response considering the following letters:

1. Compliant Evaluation: Headquarters Farm Transfer System and Heifer Farm Transfer Tank.
2. Noncompliant Evaluation: Headquarters Farm Waste Storage Facility, Heifer Farm Feed Storage Area, Headquarters Farm Animal Lot, production area runoff controls, and days of storage.
3. Noncompliant Evaluation: Headquarters Feed Storage Bunker and several facility abandonments.

Please be advised the following meeting has been scheduled:

Date: **March 6, 2018**
Time: **11:00 AM**
Location: **Ledgeview Farms, LLC – Milk Parlor**
3870 Dickinson Road, De Pere, Wisconsin

If the Dairy would like to reschedule the meeting, please call me, Kody Hansen, at (920) 662-5163.

Sincerely,

Kody C. Hansen
Environmental Enforcement Specialist

Cc: Heidi Schmitt Marquez, DNR

CASE ACTIVITY REPORT
Form 4100- 182 9- 99

State of Wisconsin
Department of Natural Resources

Case Number	Case Title
2017-NEEE-Ledgeview Farms, LLC	Ledgeview Farms, LLC

Activity	Date of Activity
Navigability Determination	March 13, 2018

On March 13, 2018 Department of Natural Resource Waterway and Wetland Specialist Crystal von Holdt conducted a navigability determination on five waterways located according to the following:

Waterway 1: T23N R21E S19 SWSW
Waterway 2: T23N R21E S19 SESW
Waterway 3: T23N R21E S20 NESW
Waterway 4: T23N R21E S28 SENW
Waterway 5: T23N R21E S29 NE ¼

A review was conducted using United States Geological Survey maps, Surface water data viewer maps, inspection reports, and other available information.

Review Summary:

Waterway 1:
a. Documented by DNR staff as navigable in 2003 and again in 2004
b. See Enclosure 1, Navigability Surface Water Data Viewer - Sites 1 and 3

Waterway 2:
a. See history on Bordner Survey found at http://digicoll.library.wisc.edu/WebZ/FETCH?sessionid=01-42965-388947680:recno=1:resultset=1:format=F:next=html/nffull.html:bad=error/badfetch.html&entityimageSize=1
   - This map is presumed to be from 1939
   - Section 19 is covered up by lots…..this stream is near/on Lot 26
   - Mapped as stream so this is considered stream history.
     - The presence of stream history is when the state has Ch 30 authority for activities specifically relating to agriculture. If it's a non-ag activity, then navigability is not limited to only sections of waterway with mapped history.

Waterway 3:
a. Documented by DNR staff as navigable in 2005
b. Current pending Ch 30 permit application for streambank stabilization project (site visit in 2017 re-confirmed navigability)
c. See Enclosure 1

Waterway 4:
a. See Enclosure 2, "PLS_Sec 28 and 29"
b. There is a mapped waterway line coming into the NW ¼. It is not drawn to reach into the SENW but also surveyors only walked Section lines (didn't walk internal to sections) so these internal lines are often based on their based professional judgement. It's likely this line on the PLS map is the waterway in SENW. This is considered stream history so is considered navigable with Ch 30 authority.

Waterway 5:

a. See Enclosure 2

c. There is a mapped waterway line coming into the NE ¼. This is considered stream history so is considered navigable with Ch 30 authority.

Additional Information:

a. I have also been on site in this area (southern end) for permitting and enforcement purposes and can verify that the waterway crossing the southern end of Meadow Sound Drive is navigable

Determination:

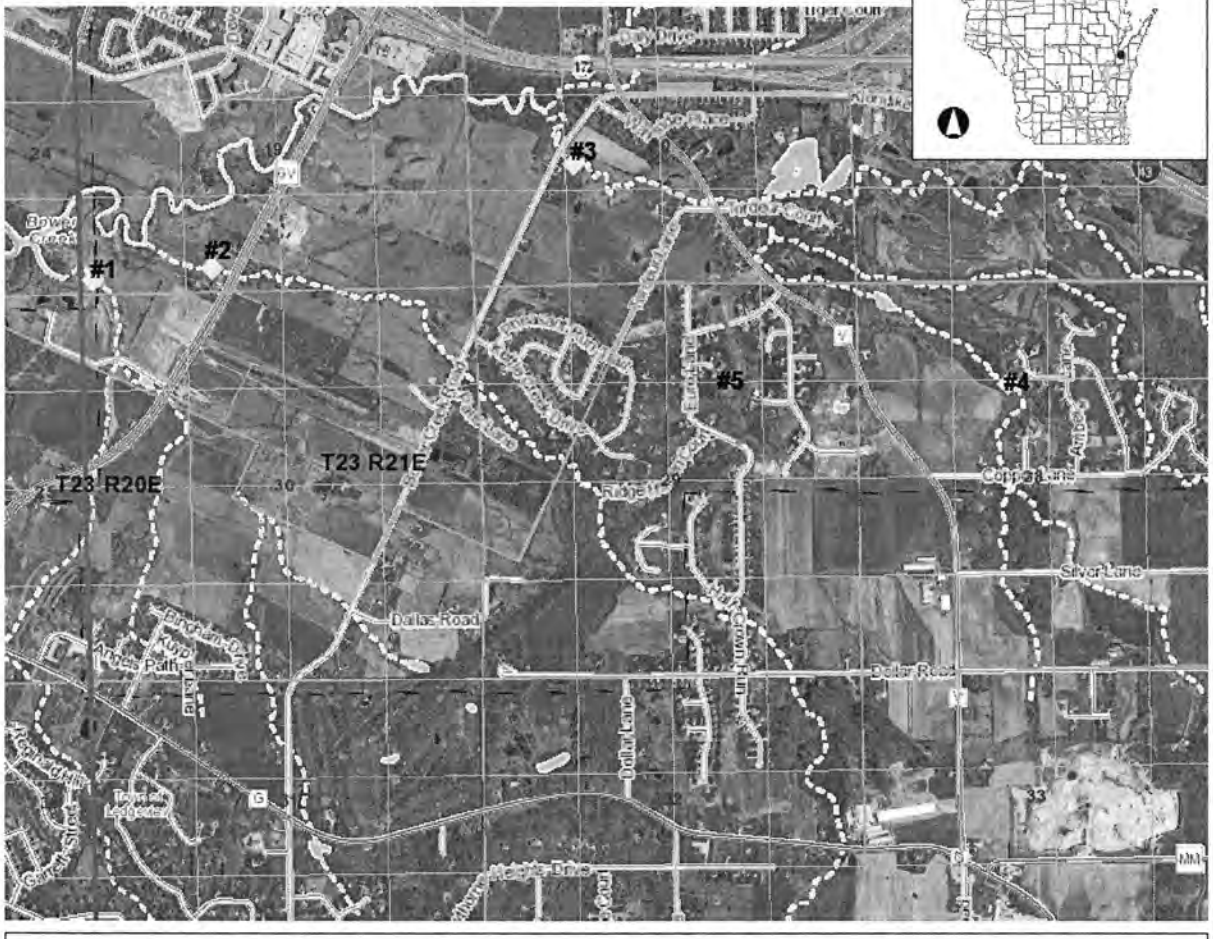
Based on the information provided above, the department has determined that all five waterways described above are navigable waterways as defined is s. 30.01(4m), Wisconsin Statutes.

Enclosed:

1. Aerial Map with Waterway Locations and Numbers
2. PLS_Sec 28 and 29
3. Navigability Surface Water Data Viewer - Sites 1 and 3

Specialist Reporting	Date of Report	Exhibit Reference
Crystal vonHoldt	March 13, 2018	

Sites 1-5 overview



Legend

- Township
- Section
- Quarter-Quarter
- County Boundary
- Cities, Towns & Villages
  - City
  - Village
  - Civil Town
- Municipality
- State Boundaries
- County Boundaries
- Major Roads
  - Interstate Highway
  - State Highway
  - US Highway
- County and Local Roads
  - County HWY
  - Local Road
- Railroads
- Tribal Lands
- Rivers and Streams
- Intermittent Streams
- Lakes and Open water
- Index to EN_Image_Basemap_Leaf_Off

Notes

0.8 0 0.38 0.8 Miles

NAD_1983_HARN_Wisconsin_TM

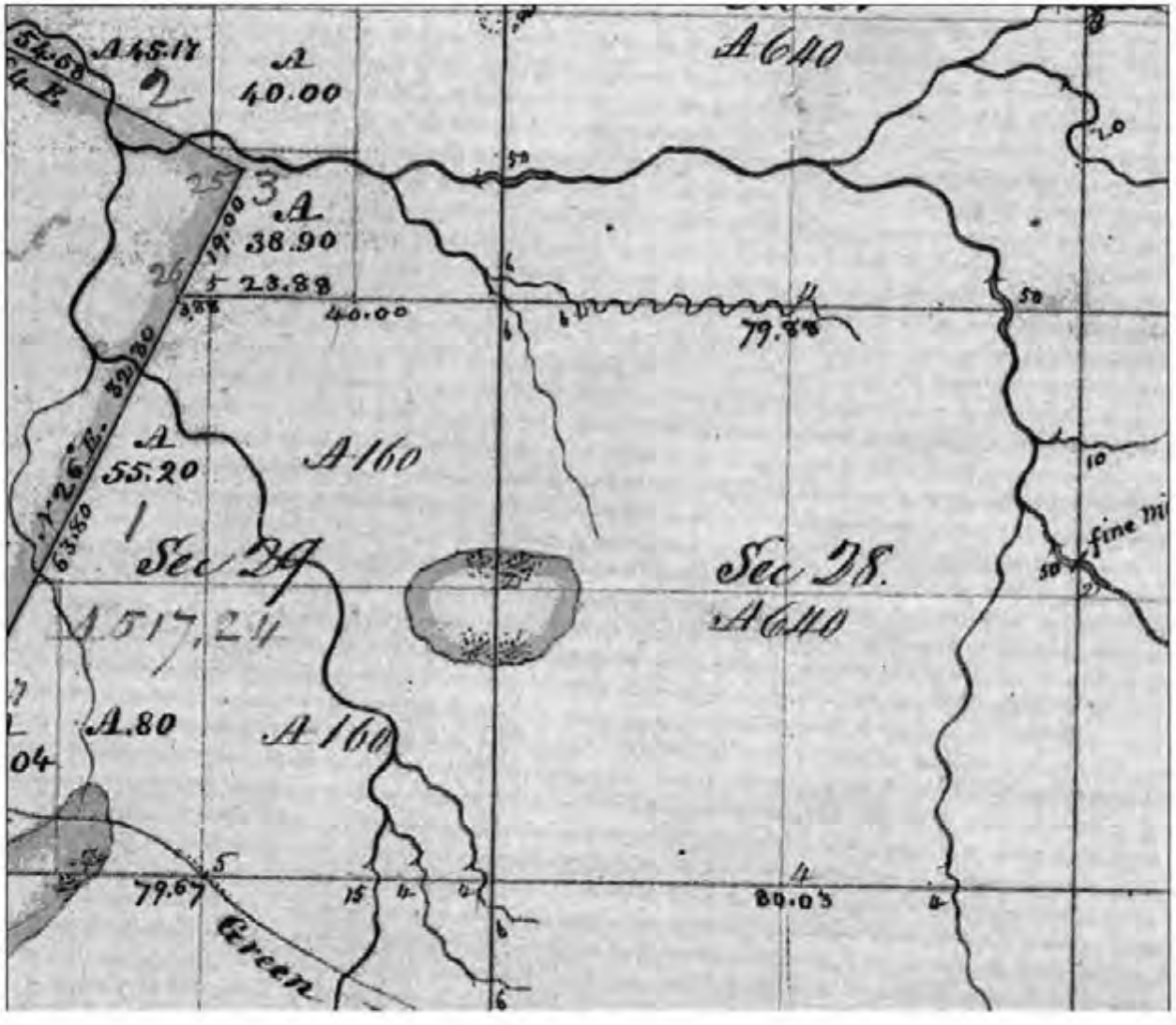
1: 23,760

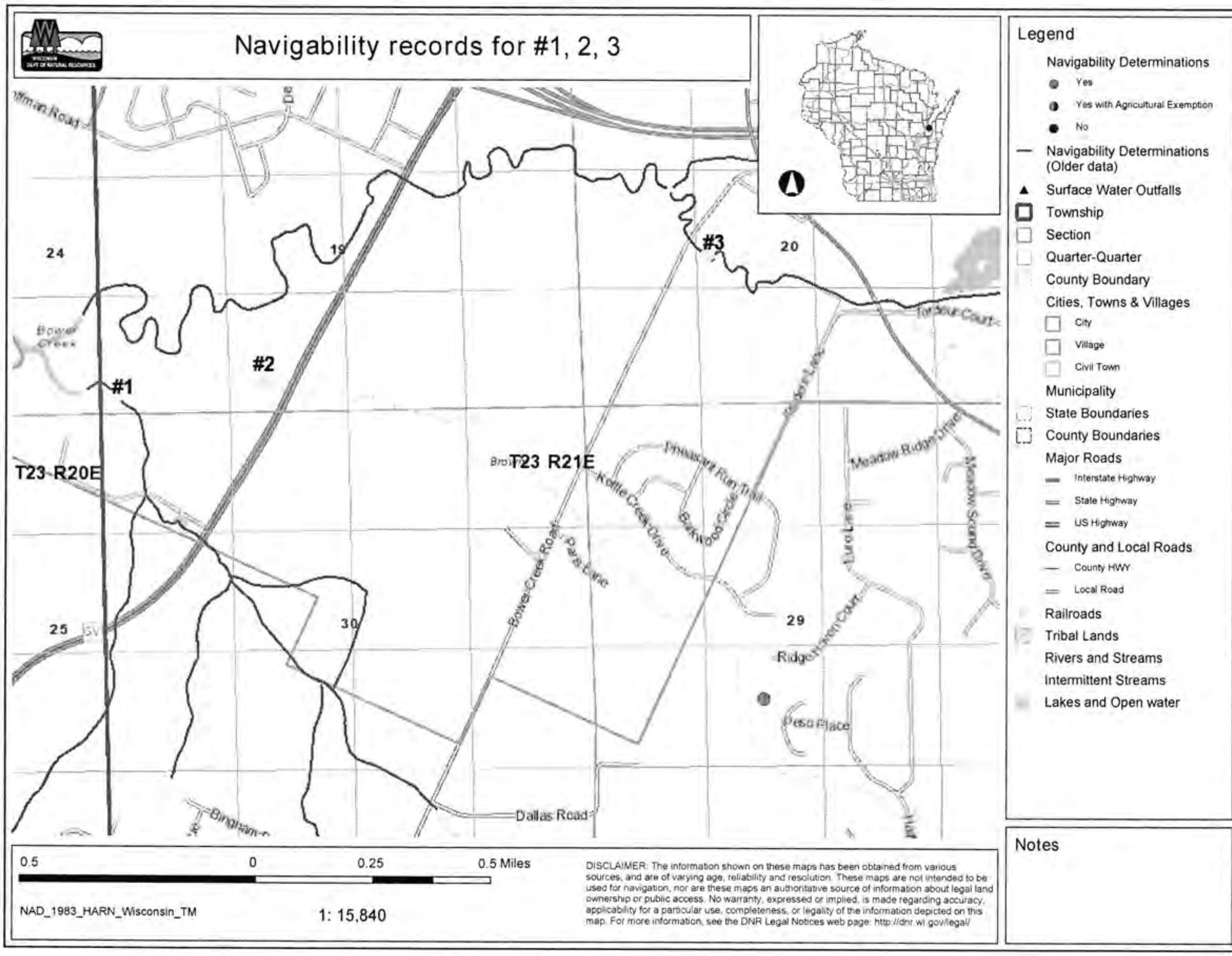
Plat Map for T23N R21E (original)

Zoom in
Zoom out
Zoom to full page
Rotate clockwise

Change image to Large

Close window




Navigability records for #1, 2, 3
#1
#2
#3
24
19
20
25
30
29
T23 R20E
T23 R21E
Bower Creek
Dallas Road
Bower Creek Road
Pheasant Run Trail
Kottle Creek Drive
Meadow Ridge Drive
Meadow Sound Drive
Euro Lane
Ridge Haven Court
Peso Place
Legend
Navigability Determinations
Yes
Yes with Agricultural Exemption
No
Navigability Determinations (Older data)
Surface Water Outfalls
Township
Section
Quarter-Quarter
County Boundary
Cities, Towns & Villages
City
Village
Civil Town
Municipality
State Boundaries
County Boundaries
Major Roads
Interstate Highway
State Highway
US Highway
County and Local Roads
County HWY
Local Road
Railroads
Tribal Lands
Rivers and Streams
Intermittent Streams
Lakes and Open water
Notes
0.5 0 0.25 0.5 Miles
NAD_1983_HARN_Wisconsin_TM
1: 15,840
DISCLAIMER: The information shown on these maps has been obtained from various sources, and are of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: http://dnr.wi.gov/legal/

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
101 S. Webster Street
Box 7921
Madison WI 53707-7921

Scott Walker, Governor
Daniel L. Meyer, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

March 13, 2018

Brown County

Jason Pansier
Ledgeview Farms LLC
3870 Dickinson Rd
De Pere, WI 54115

SUBJECT: Land Application Inspection Report – Action Required

Dear Mr. Pansier:

The Department of Natural Resources (Department) received a complaint on January 11, 2018, regarding land application of manure on fields operated by Ledgeview Farms LLC (Ledgeview) in the Town of Ledgeview. The fields were identified as 11L-East and 11J1&2, and are located between Silver Lane and Copper Lane, east of County Road V/Lime Kiln Rd (S28, T23N, R21E, Town of Ledgeview, Brown County). Department staff conducted an unannounced land application site inspection of these fields on January 11, 2018. The land application site inspection checklist and photos are included with this letter.

The Department documented the following items during the inspection:

- Ledgeview maintained minimum setbacks of 100 feet to private wells.
- Ledgeview applied manure such that ponding did not occur.
  - Solid manure was applied.
  - Some areas had larger piles of solid manure indicating an inconsistent application rate.
    - Uniform application rates are important for preventing waste runoff.
- Ledgeview applied manure so that it did not leave the application site.
  - Runoff from rapid snowmelt was occurring in high volume at the time of the inspection, and certain areas of the field should be closely monitored to ensure that manure does not leave the field during future spring melt conditions.
    - See the map enclosed with this letter.
  - Although it had not yet discharged offsite at the time of the inspection, manure applied in the concentrated flow channels appeared to have begun migrating slightly from its intended application location due to the high flow rate of snowmelt runoff.
- Ledgeview applied manure in concentrated flow channels/grassed waterways.
- The restriction map for the fields did not identify concentrated flow channels/grassed waterways.
  - As a routine part of the winter spreading permit provided by the Brown County Land and Water Conservation Department, Brown County LWCD staff provided winter spreading maps for all Ledgeview fields that identified concentrated flow channels/grassed waterways for avoidance.

To comply with nutrient management requirements, please submit the following by **April 30, 2018**, either to the address listed in the letterhead or by email:

- Revised restriction map for fields 11L1, 11L-East, and 11J1&2 to include all concentrated flow channels/grassed waterways, and any applicable setbacks.
- Written description stating how all fields included in the NMP will be reviewed/revised to include concentrated flow channels/grassed waterways and applicable setbacks.
  - Include a timeframe for revision of restriction maps for all fields to include concentrated flow channels/grassed waterways.
- Monitor the areas identified on the map included with this letter to ensure that manure does not leave the field boundary in these areas.
  - The field should be closely monitored prior to any additional land application of manure, especially liquid manure.
  - Submit documentation that these areas have been monitored and manure has not left the field boundary in any area of the field during spring melt.

Failure to respond to items requested in this letter in a timely manner may result in escalated enforcement actions. Please contact me at (920) 662-5187 or Heidi.SchmittMarquez@wisconsin.gov if you have any questions regarding this letter, the land application inspection, or WPDES permit requirements.

Sincerely,

Heidi A. Marquez

Agricultural Runoff Management Specialist

encl: Land Application Site Inspection Report (Form 3400-215 and photos)

ec: Kevin Beckard, AgSource Laboratories
Mike Mushinski, Brown County Land and Water Conservation Department
Jon Bechle, Brown County Land and Water Conservation Department
Rick Stoll, DNR – Green Bay

cc: File

Save... Print... Clear Data

State of Wisconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

DNR CAFO Land Application Site Inspection Checklist
Form 3400-215 (R 09/16) Page 1 of 3

Inspection purpose: (•) Complaint ( ) Audit (Announced) ( ) Audit (Unannounced) ( ) Spill / Runoff ( ) Other: _____

Inspection Date:	Application Date:	Permittee Name:
01/11/2018	01/07/18 – 01/11/18	Ledgeview Farms LLC
Field Location:	Field ID:	Applicator Name:
E, NW, SE & NE, SE, S28, T23N, R21E	11L-EAST, 11J1&2	Ledgeview Farms LLC
Application Rate:	Previous/current crop:	DNR Inspector Name(s):
1-8 loads per hauling event	Corn/rye grass	Heidi Schmitt Marquez
Weather conditions: Dry		Soil conditions: Saturated

Application Method(s): [X] Surface [ ] Incorporated [ ] Injected [ ] Other:

Equipment Used: (•) Tractor/Tanker ( ) Semi Truck ( ) Tractor/Hose ( ) Other:

Any manure runoff (left field boundaries)? ( ) Yes (•) No

If yes, check resource(s) impacted [ ] Surface Waters [ ] Wetlands [ ] Potential Groundwater [ ] None

Notes:
Solid manure was applied on the fields and did not appear to be actively running off during the inspection. However, the temperature was above freezing and snowmelt from the warm temperatures caused a large volume of runoff from the fields. The runoff appeared to be sediment-laden rather than manure-laden, but manure applied in the concentrated flow channels appeared to be beginning to migrate from its original application location along with the runoff in the drainage pathways that discharge offsite to unnamed tributaries of Bower Creek. It is strongly recommended that the areas of concentrated flow channels are observed during spring melt to ensure that manure does not leave the field boundaries, and actions taken if it appears that manure is beginning to migrate or has already discharged offsite. No additional manure should be applied in the concentrated flow channels.

Manure Setbacks and Restrictions (during non-frozen or snow covered conditions)	**Requirement Met?**		
100 feet from private wells (1000 feet to municipal wells when applicable)	(•) Yes	( ) No	( ) N/A
100 feet from other groundwater conduits	( ) Yes	( ) No	(•) N/A
25 feet from wetlands	(•) Yes	( ) No	( ) N/A
25 feet to surface waters/conduits to surface waters (incorporated or injected)	( ) Yes	( ) No	(•) N/A
100 feet setback to surface waters/conduits to surface waters (surface applied)	(•) Yes	( ) No	( ) N/A
No manure spread in grassed waterways (non-conduits to surface waters)	( ) Yes	(•) No	( ) N/A
No excessive ponding or runoff within field boundaries	( ) Yes	(•) No	( ) N/A
Depth to groundwater greater than 24 inches (if checked, need to dig hole)	( ) Yes	( ) No	(•) Not Verified
Depth to bedrock greater than 24 inches (if checked, need to dig hole)	( ) Yes	( ) No	(•) Not Verified
All observed restrictive features labeled on existing restriction map	( ) Yes	(•) No	( ) Not Verified

Note: "NA" means the requirement does not apply due to absence of setback feature, method, etc.

Notes:
W and R soils were not present on these fields and did not require field verification for depth. Well setbacks appeared to have been met and wetlands do not border these fields. Surface waters NE and SW of the fields are greater than 100 ft from the field boundaries. Solid manure was spread through two large concentrated flow channels/grassed waterways in field 11J1&2 and one concentrated flow channel/grassed waterway in field 11L-East. Some areas of application contained more manure than others, and some solids applied in the concentrated flow channels began to migrate slightly from the intended application location (although not offsite) at the time of the inspection. The restriction maps for these fields did not identify the concentrated flow channels that were observed onsite and have been verified by aerial and topographical mapping analysis.

DNR CAFO Land Application Site Inspection Checklist

Form 3400-215 (R 09/16)

Tile features observed (inlets/outlets/breathers)?	○ Yes	◉ No
Outlets found?	○ Yes	◉ No
Are tile features on restriction maps?	○ Yes	◉ No
Setbacks to tile features met? (25 feet for incorp/inject; 100 feet for surface)	○ Yes	○ No

Outlet observations: ☐ Flowing ☐ Not flowing ☐ Manure present ☐ No manure present

Notes:
No tile inlets/outlets were observed on the fields during the inspection or were identified on the restriction maps.

Tillage and Erosion Features and Restrictions	**Requirement Met?**		
Are permanent grass waterways or buffers properly maintained?	○ Yes	◉ No	○ N/A
Are tillage setbacks being met? (minimum of 5 feet from surface waters)	○ Yes	○ No	◉ N/A
Does field appear to be managed to prevent excessive erosion / soil loss?	◉ Yes	○ No	○ N/A

Notes:
The fields were planted in rye grass over the winter to help with soil retention and reduce erosion. The crop plan for the fields has been alternating crops of corn and rye grass seasonally for better management of nutrients and soil on the fields. The concentrated flow channels/grassed waterways were also planted with rye grass but were not excluded from the manure spreading area nor were maintained with additional vegetation for water management purposes.

Manure Hauler Interview (if applicable):	
Name, title, company name:	
What operation are you hauling for?	
What application rate is being applied?	
What are the spreading setbacks:	
To private wells?	
To streams/waterways?	
To wetlands?	
To grassed waterways?	
Are drainage tile features present?	○ Yes ○ No ○ Don't Know
Do you have copies of restriction maps? (Have them show you / take photo of it)	○ Yes ○ No

Describe spill response procedures:
Spill/runoff response procedures were briefly discussed, and it was confirmed that actions should be taken to stop the source of the spill/runoff, implement procedures for containment and cleanup/removal, and restore the site to pre-spill/ runoff conditions. DNR should be contacted as soon as possible throughout that process to provide the required notification of the incident.

Other Comments:
Schmitt Marquez explained that although manure was not actively discharging offsite at the time of the inspection, it seemed likely that manure may discharge offsite due to field conditions if the warmer weather continued. The importance of identifying concentrated flow channels/grassed waterways onsite and on restriction maps as a means to prevent waste

01/11/2018 Ledgeview Farms LLC

DNR CAFO Land Application Site Inspection Checklist
Form 3400-215 (R 09/16) Page 3 of 3

Manure Hauler Interview (if applicable):
runoff was explained. Schmitt Marquez advised that the concentrated flow channels/grassed waterways would have to be observed to ensure that no waste discharged offsite while snowmelt was occurring, and that process would likely have to continue until the runoff risk was gone after spring. The farm acknowledged this information and agreed to what was discussed.

Figure 1. Aerial map showing fields that were audited on 01/11/18. Dashed yellow arrows represent concentrated flow channels observed during the audit. Yellow circles indicate locations of ponded storm water/snowmelt. Blue dashed arrow represents a stream observed flowing through the wooded area. Arrows indicate direction of flow.

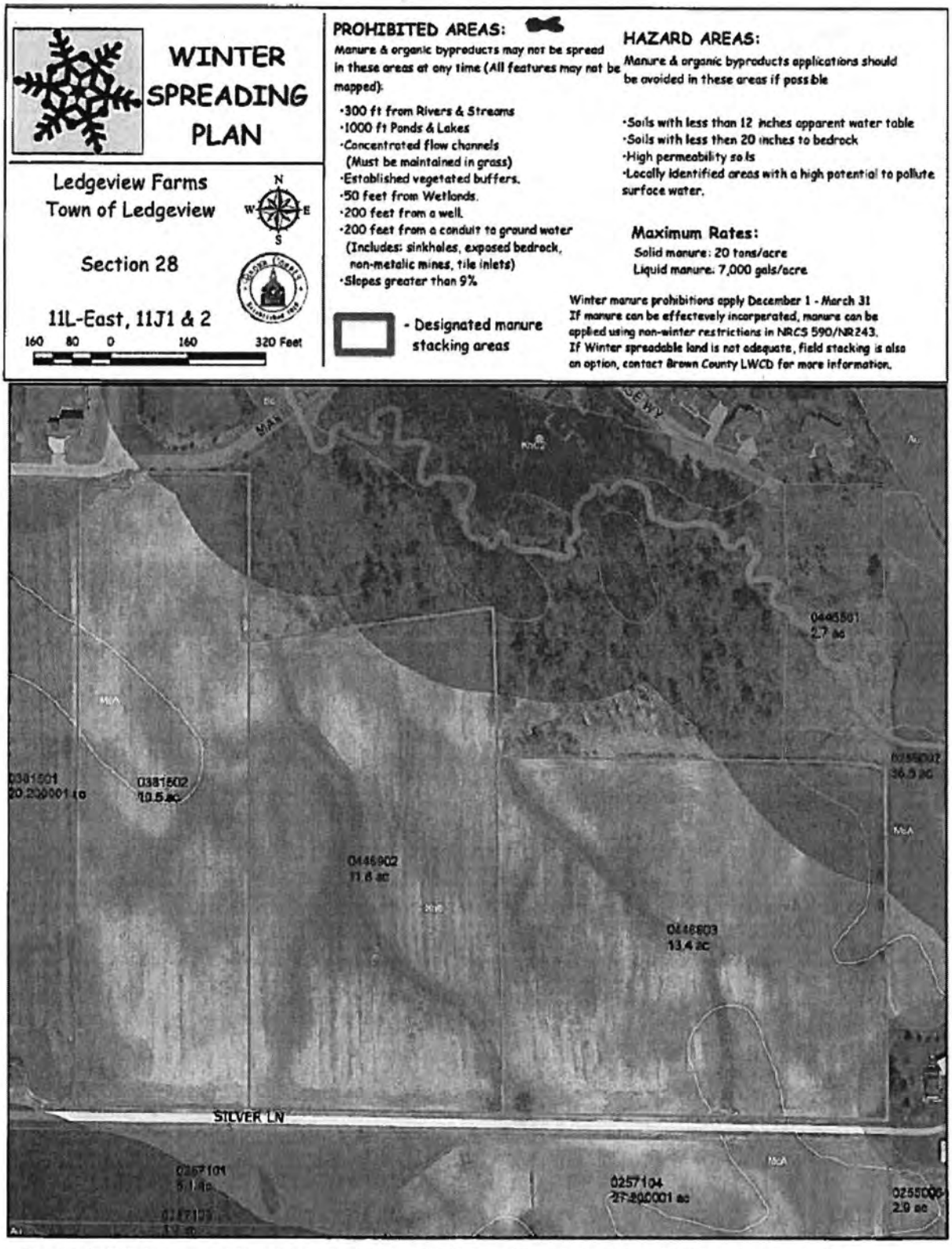


Figure 2. Winter spreading map created by the Brown County Land and Water Conservation Department for Ledgeview Farms LLC fields 11L1, 11L-East, and 11J1&2. Concentrated flow channels are identified on this map. This map was provided to Ledgeview Farms LLC when the winter spreading permit was approved by Brown County staff.

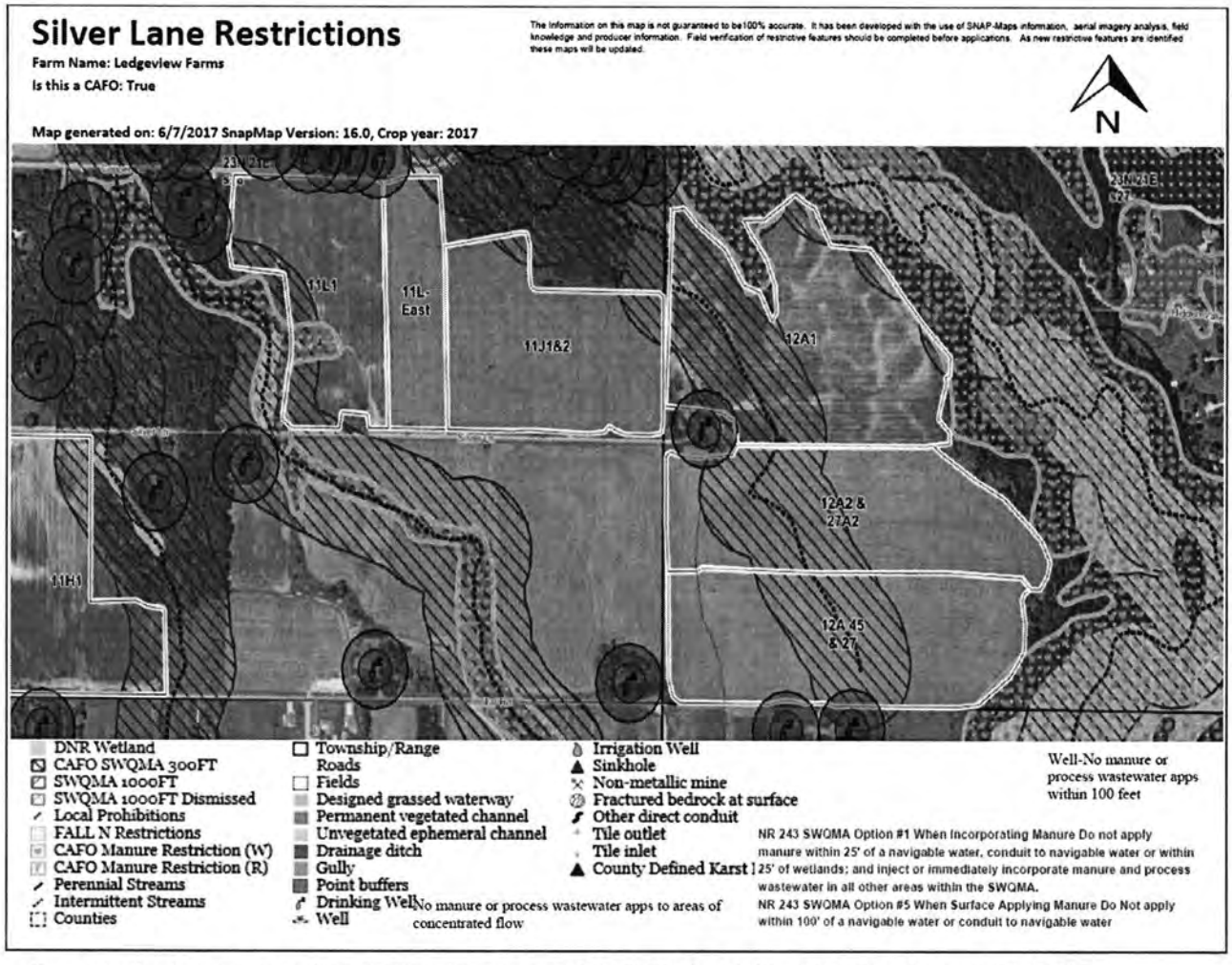


Figure 3. Restriction map from Ledgeview Farms LLC's NMP for fields 11L1, 11L-East, and 11J1&2. Concentrated flow channels are not identified on this map.

Photo 1: View of 11L-East from Silver Ln showing surface manure. Photo direction is north.

Photo 2: View of the east side of 11L-East from Silver Ln showing surface application of solid manure. Photo direction is north.

Photo 3: View of 11L-East from Silver Ln showing surface application of solid manure. Photo direction is north.

Photo 4: View of the west side of 11J1&2 from Silver Ln showing surface application of solid manure. Photo direction is NE.

Photo 5: View of the middle section of 11J1&2 from Silver Ln showing surface application of solid manure. Photo direction is north.

Photo 6: View of the east side of 11J1&2 from Silver Ln showing surface application of solid manure. Photo direction is north.

Photo 7: View of the south and west sections of 11J1&2 from Silver Ln showing one of the concentrated flow channels /grassed waterways (indicated by the green dashed arrows). Photo direction is NW.

Photo 8: Alternate view of the south and west sections of 11J1&2 from Silver Ln showing one of the concentrated flow channels /grassed waterways. Photo direction is NW.

Photo 9: Alternate view of the south and west sections of 11J1&2 from Silver Ln showing one of the concentrated flow channels /grassed waterways (indicated by the dashed green arrow). Photo direction is NW.

Photo 10: View of piles of solid manure in the southern section of 11J1&2. Photo direction is NW.

Photo 11: View of 11L1 from Silver Ln showing one of the concentrated flow channels /grassed waterways (indicated by the dashed green arrows). Photo direction is NW.

Photo 12: View of 11L1 from Copper Ln showing discharge (indicated by the dashed yellow arrows) of snowmelt runoff to the ditch north of the field. Photo direction is south.

Photo 13: View of the culvert north of Copper Ln where snowmelt discharged from field 11L1. Photo direction is down and north.

Photo 14: View of the NE corner of 11L-East showing ponded storm water from snowmelt. Photo direction is north.

Photo 15: View of 11L-East showing ponded storm water from snowmelt surface applied solid manure. Photo direction is south.

Photo 16: View of the northern section of 11J1&2 showing ponded storm water from snowmelt surface applied solid manure. Photo direction is east.

Photo 17: View of the northern section of 11J1&2 showing ponded storm water from snowmelt and the runoff flow path (indicated by the dashed yellow arrows). Photo direction is NE.

Photo 18: View of the northern section of 11J1&2 showing ponded storm water from snowmelt and the runoff flow path (indicated by the dashed yellow arrows). Photo direction is SW.

Photo 19: View of the discharge location and flow path (indicated by the dashed yellow arrows) of snowmelt storm water from field 11J1&2. Photo direction is SW and down.

Photo 20: View of the waterway in the wooded area north of field 11J1&2 where snowmelt storm water discharged from the field. Blue dashed arrows indicated flow direction. Photo direction is north.

Photo 21: Alternate view of the flow path of snowmelt storm water (indicated by the dashed yellow arrows) that discharged from field 11J1&2. Photo direction is SW.

Photo 22: View of ponded snowmelt and the middle section of field 11J1&2 where solid manure was spread. Yellow dashed arrow indicates flow path of snowmelt runoff. Photo direction is SE.

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
PO Box 7185
101 S. Webster Street
Madison WI 53707-7185

Scott Walker, Governor
Daniel L. Meyer, Secretary
Telephone 608-266-2621
FAX 608-267-3579
TTY Access via relay - 711

May 2, 2018

FILE REF: R-2017-0237
WPDES Permit #: WI-0065421

Jason Pansier
Ledgeview Farms, LLC
3870 Dickinson Rd.
De Pere, WI 54115

Subject: Revised Evaluation Review for Ledgeview Farms, LLC, (Headquarters and Heifer Farms), Sec 33, T23N, R21E, Ledgeview Township, Brown County – NO ADDITIONAL ACTION REQUIRED

Dear Mr. Pansier:

The letter is to inform you that the Wisconsin Department of Natural Resources (Department) has completed its review of the evaluation submitted under certification by Richard Seas, P.E., Roach & Associates, LLC on February 22, 2018 on behalf of Ledgeview Farms, LLC. The original evaluation was submitted on December 15, 2017. This revised letter is an update to the letters referenced as R-2017-0237, 0237i and 0237p dated February 1, 2018.

The Department reviewed the submitted evaluation in accordance with s. 243.16, Wis. Adm. Code. Under s. 243.16(3), Wis. Adm. Code, the Department may require additional practices, conditions, or permittee actions based on Department review of the submitted evaluation. The following facilities were assessed to meet the requirements of ch. NR 243, Wis. Adm. Code and the Department has determined **no additional actions** on your part are required.

Headquarters Farm

Transfer System: The transfer system meets the applicable requirements of ch. NR 243, Wis. Adm. Code. The system is made up of a channel and 2-cell pump station. The channel is 20 inches deep x ~24 inches wide and spans the width of barn L1. At the north end of the channel is a 2-cell (wet/dry) tank that receives the liquid manure. The wet cell is 10 ft x 12 ft x 8.5 ft deep and the dry cell is 16 ft x 12 ft x 8.5 ft deep. Transfer pipes are used to transfer liquid manure from the wet cell and milking parlor to waste storage pond #1.

- Assessment References: NRCS Standard 634 (1/14) and s. NR 243.15(2), Wis. Adm. Code.

Heifer Farm

Production Area Runoff Controls: The runoff controls for the feed storage area and animal lot meets the applicable requirements of ch. NR 243, Wis. Adm. Code. Plans and specifications were submitted to the Department under DNR project number R-2017-0226 and were approved.

- Post-construction documentation that assesses the ability of the facility to meet s. NR 243.15(9), Wis. Adm. Code will be submitted as part of the documentation for DNR project R-2017-0226.

Transfer Tank: The transfer tank was evaluated with respect to NRCS Standard 634 (1/14). The Department concurs that the tank is in compliance with s. NR 243.15(4), Wis. Adm. Code. The tank is located at the animal lot and is 20 ft x 24.8 ft x 7.5 ft deep.

Days of Available Storage: The evaluation included calculations that stated that Ledgeview Farms, LLC has 287 days of liquid manure storage based on the volumes listed in the table below with respect to s. NR 243.15(3)(i) to (k), Wis. Adm. Code. The volumes are based on waste storage pond #2 being constructed and put into use, on the NRCS spreadsheet and other estimated values.

Volume Information

Total Manure Storage Volume:	22,176,489 gallons
Total MOL Manure Storage Volume:	19,510,814 gallons
Manure and Bedding Produced Volume:	14,070,495 gallons
Parlor Wastewater Volume:	1,277,500 gallons
Total Feed Storage Leachate Volume:	138,145 gallons
Total Feed Storage Runoff Collected:	2,229,593 gallons based on a 25-year / 24-hour storm event
Total Feedlot Runoff Collected:	745,592 gallons
Net Precipitation on Storage Surfaces:	3,462,583 gallons
Other Wastes Collected:	2,856,484 gallons

Should you have any questions, please contact Jeff Kreider, DNR Madison office or your regional CAFO Specialist.

NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that the Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed. For judicial review of a decision pursuant to WIS. STAT. §§ 227.52 and 227.53, you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review must name the Department of Natural Resources as the respondent.

To request a contested case hearing pursuant to WIS. STAT. § 227.42, you have 30 days after the decision is mailed, or otherwise served by the Department, to serve a petition for hearing on the Secretary of the Department of Natural Resources. All requests for contested case hearings must be made in accordance with WIS. ADMIN. CODE § NR 2.05(5), and served on the Secretary in accordance with WIS. ADMIN. CODE § NR 2.03. The filing of a request for a contested case hearing does not extend the 30-day period for filing a petition for judicial review.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

Jeff C Kreider

Jeff C. Kreider
Water Resources Engineer
Bureau of Watershed Management

Email:

Richard Seas, P.E.
Roach & Associated, LLC
(920) 833-6340; richard@jmroach.com

Mike Mushinski; County Conservationist
Brown County
(920) 391-4621; Mushinski_ML@co.brown.wi.us

Matt Woodrow, P.E.
DATCP
(920) 427-8505; matthew.woodrow@wisconsin.gov

Heidi Schmitt Marquez; DNR CAFO Specialist
DNR, Northeast Region
(920) 662-5187; Heidi.SchmittMarquez@Wisconsin.gov

Jeff Kreider
DNR, Central Office
(608) 266-0856; jeff.kreider@wisconsin.gov

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
PO Box 7185
101 S. Webster Street
Madison WI 53707-7185

Scott Walker, Governor
Daniel L. Meyer, Secretary
Telephone 608-266-2621
FAX 608-267-3579
TTY Access via relay - 711

May 3, 2018

FILE REF: R-2017-0237a
WPDES Permit #: WI-0065421

Jason Pansier
Ledgeview Farms, LLC
3870 Dickinson Rd.
De Pere, WI 54115

Subject: Revised Evaluation Review for Ledgeview Farms, LLC, (Headquarters and Heifer Sites), Sec 33, T23N, R21E, Ledgeview Township, Brown County – FURTHER ACTIONS ARE REQUIRED

Dear Mr. Pansier:

This letter is to inform you that the Wisconsin Department of Natural Resources (Department) requires additional actions in order to complete its review of an evaluation submitted under certification by Richard Seas, P.E., Roach & Associates, LLC on December 15, 2017 on behalf of Ledgeview Farms, LLC. Richard Seas, P.E. evaluated the facilities listed below based on applicable NRCS Standards and ch. NR 243 Wis. Adm. Code.

The Department reviews submitted evaluations in accordance with s. 243.16, Wis. Adm. Code, and applicable NRCS standards. Under s. 243.16(3), Wis. Adm. Code, the Department may require additional practices, conditions, or permittee actions based on Department review of the submitted evaluation. For the following facilities, additional practices, conditions or permittee actions are required. The original evaluation was submitted on December 15, 2017. This revised letter is an update to the letters referenced as R-2017-0237, 0237i and 0237p dated February 1, 2018.

Headquarters Farm Waste Storage Facility #1: Due to the facility's location, an emergency overflow is necessary to direct a potential overflow away from a residential neighborhood to the north and to maintain the structural integrity of the facility. The following actions must be completed:

- Documentation that permanent markers have been installed in accordance with s. NR 243.15(3)(e), Wis. Adm. Code as well as identifying the location and elevation.
- Documentation for the installation of the emergency overflow. This is considered a maintenance activity because the overflow is armoring the liner. Therefore, no plans and specifications are required.

Headquarters Feed Storage Bunker: The bunker is an 8,700 ft^2 earthen lined bunker. The evaluation states that there are no runoff controls and that runoff flows into the "surface water drainage system". The drainage system naturally flows to the wetland and an unnamed stream that are located about 115 and 190 feet to the west respectively. The stream flows into Bower Creek, a navigable water.

- Submit plans and specifications to construct feed storage area runoff controls in accordance with s. NR 243.15(2), Wis. Adm. Code.

Headquarters Farm Production Area Runoff Controls: The animal lot is located on the east side of barn L5 and is about 6,000 ft^2. The evaluation stated that the animal lot has no containment for manure laden runoff. The runoff will flow west to an intermittent stream and then into Hower Creek.

- Submit plans and specifications for the production area runoff controls in accordance with s. NR 243.15(2), Wis. Adm. Code.

Abandonments: The evaluation stated that the facilities listed below need to be abandoned due to structural defects or the cost for maintenance activities. Should a facility be repurposed, an abandonment plan is still required, however an evaluation shall also be submitted to the Department to demonstrate that the facility will be in compliance with its new use.

- Headquarters Farm Pit #1 and Pit #2: Submit plans and specifications for the abandonment plan in accordance with s. NR 243.17(7), Wis. Adm. Code.

- Headquarters Farm Solids Stacking Area: Submit plans and specifications for the abandonment plan in accordance with s. NR 243.17(7), Wis. Adm. Code. This area is located east of barns L5 and L6.
- Heifer Farm Stacking Area: Submit plans and specifications for the abandonment plan in accordance with s. NR 243.17(7), Wis. Adm. Code. This area is located east of barns L1.

Plans and specifications must be submitted via the DNR's e-Permitting system at http://dnr.wi.gov/permits/water/ according to the due dates within the Schedules section of the WPDES permit, due date listed in an enforcement notice or date scheduled by the DNR CAFO Specialist in the permit. Questions concerning the review may be directed to Jeff Kreider, and questions concerning timelines and permit issues may be directed to the DNR CAFO Specialist. (Contact information at the end of this letter.)

NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that the Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed. For judicial review of a decision pursuant to WIS. STAT. §§ 227.52 and 227.53, you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review must name the Department of Natural Resources as the respondent.

To request a contested case hearing pursuant to WIS. STAT. § 227.42, you have 30 days after the decision is mailed, or otherwise served by the Department, to serve a petition for hearing on the Secretary of the Department of Natural Resources. All requests for contested case hearings must be made in accordance with WIS. ADMIN. CODE § NR 2.05(5), and served on the Secretary in accordance with WIS. ADMIN. by the Department, to serve a petition for hearing on the Secretary of the Department of Natural Resources. All requests for contested case hearings must be made in accordance with WIS. ADMIN. CODE § NR 2.05(5), and served on the Secretary in accordance with WIS. ADMIN.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

Mary Anne Lowndes
Mary Anne Lowndes
Chief, Runoff Management Section
Bureau of Watershed Management

Jeff C Kreider
Jeff C. Kreider
Water Resources Engineer
Bureau of Watershed Management

Email:
Richard Seas, P.E.
Roach & Associated, LLC
(920) 833-6340; richard@jmroach.com

Mike Mushinski; County Conservationist
Brown County
(920) 391-4621; Mushinski_ML@co.brown.wi.us

Matt Woodrow, P.E.
DATCP
(920) 427-8505; matthew.woodrow@wisconsin.gov

Heidi Schmitt Marquez; DNR CAFO Specialist
DNR, Northeast Region
(920) 662-5187; Heidi.SchmittMarquez@Wisconsin.gov

Jeff Kreider
DNR, Central Office
(608) 266-0856; jeff.kreider@wisconsin.gov

135: RIMG0144
Description: Process wastewater and feed solids were observed throughout the grassed area.

136: RIMG0145
Description: Process wastewater and feed solids were observed throughout the grassed area.

137: RIMG0146
Description: Process wastewater and feed solids were observed throughout the grassed area.

138: RIMG0147
Description: Process wastewater and feed solids were observed throughout the grassed area.

139: RIMG0148
Description: Process wastewater and feed solids were observed throughout the grassed area.

140: RIMG0149
Description: The process wastewater continued through the grassed area and outlet into the ditch. The culvert collected the flow which continued east under County Road V and east along the Silver Lane then north and continued northeast before connecting with an unnamed tributary

141: RIMG0150
Description: Process wastewater and feed solids were observed throughout the grassed area and the drainage paths leading to the grassed area.

142: RIMG0151
Description: Process wastewater and feed solids were observed throughout the grassed area and the drainage paths leading to the grassed area.

143: RIMG0152
Description: East end of heifer barn on satellite site.

144: RIMG0153
Description: East end of heifer barn on satellite site.

145: RIMG0154
Description: Drainage pathways from the feed bunkers flowed east to the grassed area. Process wastewater and feed solids were observed throughout the drainage pathways and the grassed area.

146: RIMG0155
Description: Drainage pathways from the feed bunkers flowed east to the grassed area. Process wastewater and feed solids were observed throughout the drainage pathways.

147: RIMG0156
Description: Drainage pathways from the feed bunkers flowed east to the grassed area. Process wastewater and feed solids were observed throughout the drainage pathways.

148: RIMG0157
Description: Drainage pathways from the feed bunkers flowed east to the grassed area. Process wastewater and feed solids were observed throughout the drainage pathways.

149: RIMG0158
Description: Drainage pathways from the feed bunkers flowed east to the grassed area. Process wastewater and feed solids were observed throughout the drainage pathways.

150: RIMG0159
Description: Drainage pathways from the feed bunkers flowed east to the grassed area. Process wastewater and feed solids were observed throughout the drainage pathways.

151: RIMG0160
Description: Drainage pathways from the feed bunkers flowed east to the grassed area. Process wastewater and feed solids were observed throughout the drainage pathways.

152: RIMG0161
Description: Drainage pathways from the feed bunkers flowed east to the grassed area. Process wastewater and feed solids were observed throughout the drainage pathways.

153: RIMG0162
Description: Drainage pathways from the feed bunkers flowed east to the grassed area. Process wastewater and feed solids were observed throughout the drainage pathways.

154: RIMG0163
Description: Drainage pathways from the feed bunkers flowed east to the grassed area. Process wastewater and feed solids were observed throughout the drainage pathways.

155: RIMG0164
Description: Drainage pathways from the feed bunkers flowed east to the grassed area. Process wastewater and feed solids were observed throughout the drainage pathways.

156: RIMG0165
Description: Drainage pathways from the feed bunkers flowed east to the grassed area. Process wastewater and feed solids were observed throughout the drainage pathways.

157: RIMG0166
Description: A drainage pathways from the southeast end of the feed bunkers flowed south into a field.

158: RIMG0167
Description: Silage leachate was observed along the south wall of the new bunker. The leachate seeped through the rock/soil and flowed overland to the unnamed tributary.

159: RIMG0168
Description: Silage leachate was observed along the south wall of the new bunker. The leachate seeped through the rock/soil and flowed overland to the unnamed tributary.

160: RIMG0169
Description: Sample S01 was taken at 11:14 a.m. of process wastewater from the new bunker.

161: RIMG0170
Description: Sample S01 was taken at 11:14 a.m. of process wastewater from the new bunker.

162: RIMG0171
Description: Process wastewater from the new bunker flowed into the unnamed tributary.

163: RIMG0172
Description: Process wastewater from the new bunker flowed into the unnamed tributary.

164: RIMG0173
Description: Process wastewater from the new bunker flowed into the unnamed tributary.

165: RIMG0174
Description: Process wastewater from the new bunker flowed into the unnamed tributary.

166: RIMG0175
Description: Process wastewater from the new bunker flowed into the unnamed tributary.

167: RIMG0176
Description: Process wastewater from the new bunker flowed into the unnamed tributary.

168: RIMG0177
Description: Process wastewater from the new bunker flowed into the unnamed tributary.

169: RIMG0178
Description: Sample S02 was taken at 11:25 a.m. of process wastewater emanating from the new bunker and flowing into an unnamed tributary.

170: RIMG0179
Description: Sample S02 was taken at 11:25 a.m. of process wastewater emanating from the new bunker and flowing into an unnamed tributary.

171: RIMG0180
Description: The leachate was draining west through tire ruts and into the unnamed tributary.

172: RIMG0181
Description: Sample S03 was taken at 11:32 a.m. from process wastewater in the grassed area.

173: RIMG0182
Description: Sample S03 was taken at 11:32 a.m. from process wastewater in the grassed area.

174: RIMG0183
Description: Sample S03 was taken at 11:32 a.m. from process wastewater in the grassed area.

175: RIMG0184
Description: Sample S03 was taken at 11:32 a.m. from process wastewater in the grassed area.

176: RIMG0185
Description: Sample S04 was taken at 11:35 a.m. from process wastewater before entering a culvert under County Road V.

177: RIMG0186
Description: Sample S04 was taken at 11:35 a.m. from process wastewater before entering the culvert under County Road V.

178: RIMG0187
Description: Sample S04 was taken at 11:35 a.m. from process wastewater before entering the culvert under County Road V.

179: RIMG0188
Description: Sample S04 was taken at 11:35 a.m. from process wastewater before entering the culvert under County Road V.

180: RIMG0189
Description: Sample S04 was taken at 11:35 a.m. from process wastewater before entering the culvert under County Road V.

181: RIMG0190
Description: The sand berm in the northwest corner of the Milk Cow Barn had degraded since the start of the walkthrough. Manure and process wastewater were observed on the concrete.

182: RIMG0191
Description: The sand berm in the northwest corner of the Milk Cow Barn had degraded since the start of the walkthrough. Manure and process wastewater were observed on the concrete.

183: RIMG0192
Description: The access way between the feed bunker and the Milk Cow Barn contained the tracking of manure and process wastewater. Additionally, feed and leachate from the feed bunker were observed on the access way. Process wastewater drained north to the field north of the Milk Cow Barn.

184: RIMG0193
Description: Process wastewater drained north to the field north of the Milk Cow Barn.

185: RIMG0194
Description: Sample S05 was taken at 12:45 p.m. from the process wastewater in the drainage pathway at the unnamed tributary on the east side of the Home site.

186: RIMG0195
Description: Sample S05 was taken at 12:45 p.m. from the process wastewater in the drainage pathway at the unnamed tributary on the east side of the Home site.

187: RIMG0196
Description: The unnamed tributary on the east side of the Home site contained a bed and bank.

188: RIMG0197
Description: Sample S05 was taken at 12:45 p.m. from the process wastewater in the drainage pathway at the unnamed tributary on the east side of the Home site.

189: RIMG0198
Description: The unnamed tributary on the east side of the Home site contained a bed and bank.

190: RIMG0199
Description: Sample S05 was taken at 12:45 p.m. from the process wastewater in the drainage pathway at the unnamed tributary on the east side of the Home site.

191: RIMG0200
Description: Sample S05 was taken at 12:45 p.m. from the process wastewater in the drainage pathway at the unnamed tributary on the east side of the Home site.

192: RIMG0201
Description: The drainage pathway flowed to the unnamed tributary.

193: RIMG0202
Description: Red/orange sediment covered the forest floor. The sediment had been deposited from the borrow area.

194: RIMG0203
Description: Red/orange sediment covered the forest floor. The sediment had been deposited from the borrow area.

195: RIMG0204
Description: Red/orange sediment covered the forest floor. The sediment had been deposited from the borrow area.

196: RIMG0205
Description: Red/orange sediment covered the forest floor. The sediment had been deposited from the borrow area.

197: RIMG0206
Description: Red/orange sediment covered the forest floor. The sediment had been deposited from the borrow area. The drainage pathway flowed to the unnamed tributary.

198: RIMG0207
Description: Red/orange sediment covered the forest floor. The sediment had been deposited from the borrow area. The drainage pathway flowed to the unnamed tributary.

199: RIMG0208
Description: The drainage pathway flowed to the unnamed tributary.

200: RIMG0209
Description: The drainage pathway flowed to the unnamed tributary.

201: RIMG0210
Description: The drainage pathway flowed to the unnamed tributary. Foam was observed in the drainage pathway.

202: RIMG0211
Description: The drainage pathway flowed to the unnamed tributary. Foam was observed in the drainage pathway.

203: RIMG0212
Description: The drainage pathway flowed to the unnamed tributary. Foam was observed in the drainage pathway.

204: RIMG0213
Description: The drainage pathway flowed to the unnamed tributary. Foam was observed in the drainage pathway.

205: RIMG0214
Description: The drainage pathway flowed to the unnamed tributary. Foam was observed in the drainage pathway.

206: RIMG0215
Description: The drainage pathway flowed to the unnamed tributary.

207: RIMG0216
Description: The drainage pathway flowed to the unnamed tributary.

208: RIMG0217
Description: The drainage pathway flowed to the unnamed tributary.

209: RIMG0218
Description: The drainage pathway flowed to the unnamed tributary.

210: RIMG0219
Description: The drainage pathway flowed to the unnamed tributary.

211: RIMG0220
Description: The drainage pathway flowed to the unnamed tributary.

212: RIMG0221
Description: The drainage pathway flowed to the unnamed tributary.

213: RIMG0222
Description: The drainage pathway flowed to the unnamed tributary.

214: RIMG0223
Description: The drainage pathway flowed to the unnamed tributary.

215: RIMG0224
Description: The drainage pathway flowed to the unnamed tributary.

216: RIMG0225
Description: The drainage pathway flowed to the unnamed tributary.

217: RIMG0226
Description: The drainage pathway flowed to the unnamed tributary.

218: RIMG0227
Description: The drainage pathway flowed to the unnamed tributary.

219: RIMG0228
Description: The drainage pathway flowed to the unnamed tributary.

220: RIMG0229
Description: The drainage pathway flowed to the unnamed tributary.

221: RIMG0230
Description: The drainage pathway flowed to the unnamed tributary.

222: RIMG0231
Description: The drainage pathway flowed to the unnamed tributary.

MAP A

Heifer Site

Headquarters Site

TOWN OF LEDGEVIEW

TOWN OF GLENMORE

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

- Municipal Boundary
- Public Utility Boundary
- Properties Served by Public Utilities
- Ledgeview Farm Parcels
- Stream
- Water Body

Ledgeview
Set your sights high

Ledgeview Farms

Ledgeview Farm Parcels and Public Utility Boundary

0 400 800 1,200 1,600 Feet

N

Mead & Hunt

Date: 5/8/2018

Image Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, 2014, Brown County Planning and Land Information Department

Path: X:\12162-00\131455.01\TECH\GIS\Maps\Pansier Farms\FINAL MAPS\LedgeviewPansierFarmsPolygon_update.mxd

MAP B

MEADOW SOUND DR

BEACHMONT RD

LIME KILN RD

COPPER LN

350'

600'

700'

1,000'

LIME KILN RD

LIME KILN RD

DOLLAR RD

DOLLAR RD

Legend

- Municipal Boundary
- Heifer Site Parcels
- 350 Foot Buffer
- 600 Foot Buffer
- 700 Foot Buffer
- 1000 Foot Buffer

Ledgeview
Set your sights high

0 400 Feet

N

Mead & Hunt

Ledgeview Farms

Heifer Site Right of Way Buffers

Date: 5/23/2018

Path: X:\112162-00\131455.01\TECH\GIS\Maps\Pansier Farms\LedgeviewPansierFarms_Heifer Site ROW Buffers.mxd

MAP C

CITY OF GREEN BAY

TOWN OF HUMBOLDT

VILLAGE OF ALLOUEZ

VILLAGE OF BELLEVUE

CITY OF DE PERE

TOWN OF LEDGEVIEW

TOWN OF EATON

TOWN OF GLENMORE

TOWN OF ROCKLAND

TOWN OF NEW DENMARK

TOWN OF COOPERSTOWN

Manure Spreading Fields layer digitized from Ledgeview Farms Nutrient Management Plan - Spreading Plan Feild Maps (2018-2022)

Legend

- Municipal Boundary
- Public Utility Boundary
- Ledgeview Farms Parcels
- 5 Mile Buffer
- Manure Spreading Fields

Ledgeview
Set your sights high

Ledgeview Farms

Manure Spreading Field Map (2018-2022 NMP)

0 2,000 4,000 6,000 8,000 10,000 12,000 Feet

N

Mead & Hunt

Path: X:\12162-00\131455.01\TECH\GIS\Maps\Pansier Farms\LedgeviewPansierFarms_Spreading.mxd

Date: 5/8/2018

MAP D

172

V

43

VILLAGE OF BELLEVUE

TOWN OF LEDGEVIEW

HEIFER SITE

HQ

V

G

MM

G

TOWN OF GLENMORE

Manure Spreading Fields layer digitized from Ledgeview Farms Nutrient Management Plan - Spreading Plan Feild Maps (2018-2022)

Legend

- Municipal Boundary
- Public Utility Boundary
- Ledgeview Farms Parcels
- 1 Mile Buffer
- 1/2 Mile Buffer
- Manure Spreading Fields

Ledgeview
Set your sights high

Ledgeview Farms

Manure Spreading Field Map (2018-2022 NMP)

0 400 800 1,200 1,600 2,000 2,400 Feet

N

Mead & Hunt

Date: 5/23/2018

2794

Path: X:\12162-00\131455.01\TECH\GIS\Maps\Pansier Farms\LedgeviewPansierFarms_Spreading_One Mile.mxd

MAP E

VILLAGE OF BELLEVUE

TOWN OF LEDGEVIEW

MEADOW RIDGE DR
LIME KILN RD
HARVESTMOON CT
BARKWOOD CI
FOREST LN
WOOD DUCK CT
WOOD VIOLET CT
HONEYLOCUST DR
MEADOW BREEZE CT
EURO LN
FOX DEN CT
MEADOW SOUND DR
AMBER LN
WEATHERWOOD LN
PHEASANT RUN TR
KETTLE CREEK CT
BEACHMONT RD
COUNTRY WINDS CT
RIDGE HAVEN CT
COPPER LN
MARBLE RO
N HIDDEN FALLS CT
HALF CROWN RN
EURO LN
PESO PL
S HIDDEN FALLS CT
D-166-3
D-185
D-168
LIME KILN RD
D-172
D-166-1
D-166-5
D-166-2
D-172-1
SILVER LN
D-170-1
D-188
D-169
D-170
D-173
THREE PENNY CT
HALF CROWN RN
D-188-1
D-188-2
HEIFER SITE
DOLLAR RD
KENDLEWOOD CT
D-214-3
D-248-1
STONE VISTA LN
D-244-1
DOLLAR LN
AMBERWOOD CT
HALF CROWN RN
D-214
D-249
D-248-3
D-248-2
QUARRY VIEW CT
LIME KILN RD
THREE PENNY CT
D-249-2
V
D-255
G
D-218-4
D-221
D-220
D-254
D-246
D-221-1
HQ
D-256
DICKINSON RD
HAWTHORNE HEIGHTS DR
D-222
D-253
D-258
DUTCHMAN RD
D-257-1
ROCKLEDGE CT
D-237
D-262
D-261
D-267
D-239
D-238
D-257-2
G
WHISPER LN
D-239-4
D-265
D-268
D-242
D-241
D-264
D-263
D-240-2
LIME KILN RD
D-268-2
DICKINSON RD
D-265-1
GRAY HILL RD

TOWN OF LEDGEVIEW

TOWN OF GLENMORE

Legend

- Municipal Boundary
- Public Utility Boundary
- Ledgeview Farms Parcels
- 1/2 Mile Buffer
- Private Water and Septic within 1/2 Mile

Ledgeview
Set your sights high

Ledgeview Farms

Private Water and Septic (1/2 Mile Buffer)

0 400 800 1,200 1,600 Feet

N

Mead & Hunt

Date: 5/8/2018

Image Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, 2014, Brown County Planning and Land Information Department

Path: X:\121162-001\131455.01\TECH\GIS\Maps\Pansier Farms\LedgeviewPansierFarms_.05 mile Buffer.mxd

MAP F

CITY OF GREEN BAY

VILLAGE OF ASHWAUBENON

VILLAGE OF ALLOUEZ

VILLAGE OF BELLEVUE

CITY OF DE PERE

TOWN OF LEDGEVIEW

TOWN OF HUMBOLDT

TOWN OF EATON

TOWN OF ROCKLAND

TOWN OF GLENMORE

TOWN OF NEW DENMARK

TOWN OF WRIGHTSTOWN

Legend

- Municipal Boundary
- Public Utility Boundary
- Ledgeview Farms Parcels
- 5-Mile Buffer
- Private Water and Septic within 1/2 Mile

Ledgeview
Set your sights high

Ledgeview Farms

Private Water & Septic (5 Mile Buffer)

0 2,000 4,000 6,000 8,000 10,000 12,000 Feet

N

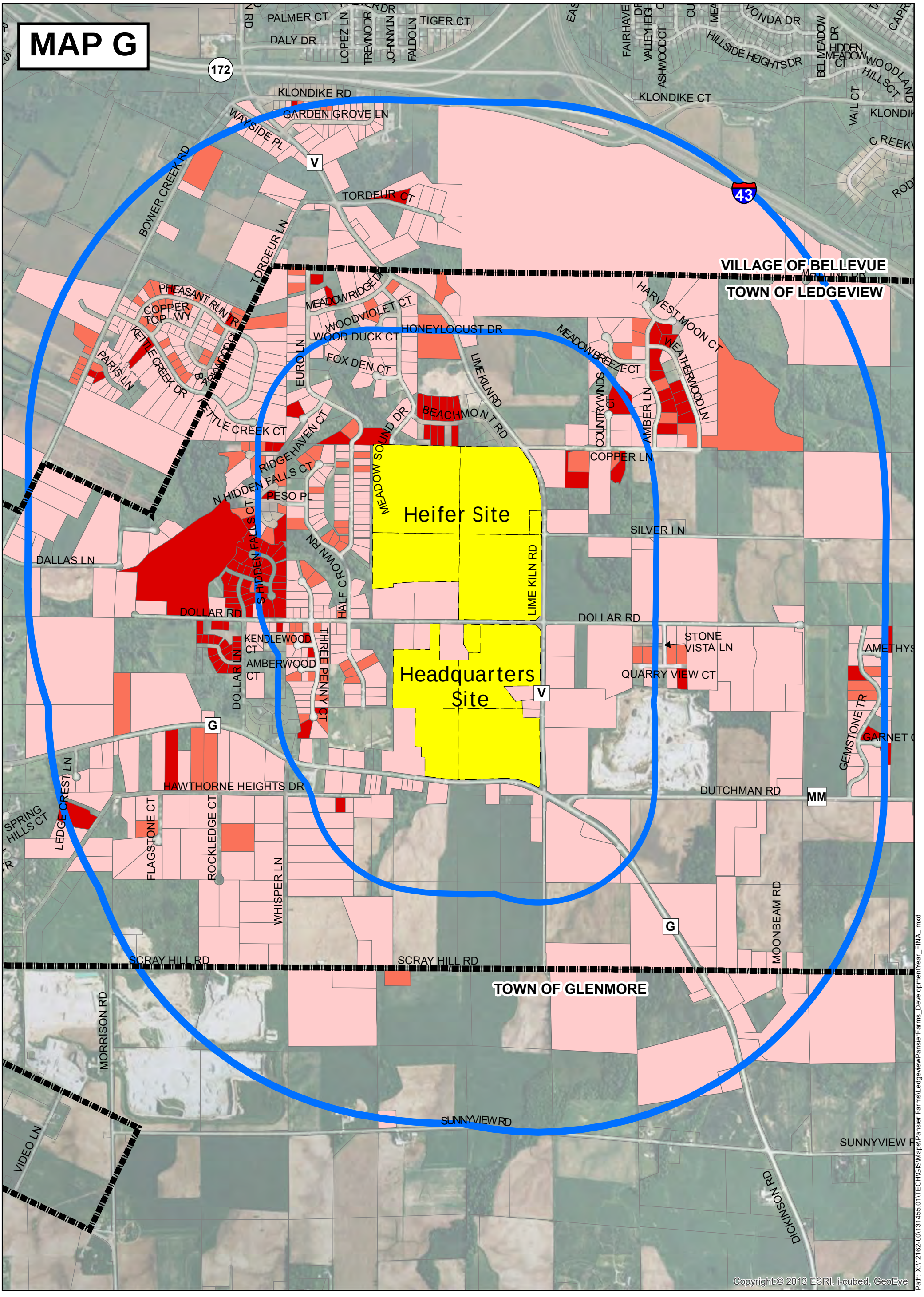
Mead & Hunt

Date: 5/8/2018

2796

Path: X:\12162-00\131455.01\TECH\GIS\Maps\Pansier Farms\LedgeviewPansierFarms_5 mile Buffer.mxd

MAP G



Legend

- Municipal Boundary
- Ledgeview Farms Parcels
- 1 Mile Radius
- 1/3 Mile Radius

Development Year

- 1850-2008
- 2009-2013
- 2014-2018

Ledgeview
Set your sights high

Ledgeview Farms
Development Year

0 400 800 1,200 1,600 2,000 2,400 Feet

N

2797 Mead & Hunt

Date: 5/22/2018

Image Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, 2014, Brown County Planning and Land Information Department

Path: X:\12162-00\131455.01\TECH\GIS\Maps\Pansier Farms\LedgeviewPansierFarms_DevelopmentYear_FINAL.mxd

memorandum

To: Ledgeview Town Board
From: Dustin Wolff, AICP, Town Planner
Cc: Sarah Burdette, Town/Clerk Administrator
Scott Brosteau, PE, Town Engineer
Larry Konopacki, Attorney
Vanessa Wishart, Attorney
Date: May 28, 2018
RE: Ledgeview Farms Conditional Use Permit and Livestock Siting Approval

EXECUTIVE SUMMARY

Petitioner

Jason Pansier, on behalf of Ledgeview Farms

Location

3875 Dickinson Road (Headquarters Site) and 3499 Lime Kiln Road (Heifer Site)

Requested Action

Conditional Use Permit (CUP) and Livestock Siting Approval for a new or expanding facility that will be used to keep cattle and will have more than 500 animal units. Specifically, the request is to approve:

1. Expansion of the farm livestock operations to 3,483 animal units at the Headquarters and Heifer sites.
2. Construction of an approximately 13M gallon waste storage facility at the Heifer Site.
3. Expansion of the feed storage area at the Heifer Site.
4. Construction of a feed storage and animal lot leachate runoff management system at the Heifer Site.
5. Construction of a Yard Runoff Transfer System to collect leachate and contaminated runoff and transfer to the proposed waste storage facility at the Heifer Site.

In addition, as explained in more detail in subsequent sections of this memo, Town approval is required for the following. The first two represent existing but noncompliant practices or facilities that have never been approved or permitted and the third is a facility that is depicted on various submissions in the application but for which approval has not been appropriately requested and no supporting information is included.

1. The existing non-compliant concentrated animal feeding operations of 1,084 milking and dry cows, 770 heifers, and 838 steers (approximately 2,818 animal units) at the Headquarters and Heifer sites
2. The 5M gallon waste storage facility constructed in 2015 without permits or approvals at the Headquarters site.
3. Construction of a new, ~114' x ~640' (~72,960 SF) freestall heifer barn at the Heifer site.

Summary of Noncompliance

The following is an abbreviated listing of how Ledgeview Farms is currently in noncompliance with state and federal law or local regulations for their current operations.

1. Under state and federal law, a farm must obtain a Wisconsin Pollutant Discharge Elimination System (WPDES) permit prior to expanding such that the farm would have 1,000 animal units (AUs) or more (considered a "concentrated animal feeding operation" or "CAFO"). WDNR staff documented that Ledgeview Farms met the definition of and was considered to be a CAFO in 2008, but had not sought or obtained a WPDES permit. WDNR initiated the enforcement process to work with Ledgeview to gain compliance with statutory and administrative code requirements. Ledgeview Farms agreed to reduce animal numbers and resolve runoff and storage issues, and the WDNR closed the enforcement case in 2010. Part of the enforcement case closure included clarification that Ledgeview was prohibited from exceeding 1,000 AUs prior to applying for a WPDES permit.

2. USEPA documented unauthorized discharges of manure and process wastewater on April 18, 2013 & April 9, 2015 from Ledgeview Farms into an unnamed tributary at the west end of the farm. USEPA issued an administrative order for compliance on September 13, 2013 requiring Ledgeview Farms to operate and maintain interim measures until permanent storage facilities are constructed in accordance with an approved Nutrient Management Plan (NMP) and to submit a complete application for a WPDES permit to the WDNR.

3. In 2013 the USEPA identified that Ledgeview Farms had again exceeded 1,000 animal units on the site. Ledgeview Farms had not applied for, nor received, CAFO approval or a WPDES permit from the WDNR.

4. Ledgeview Farms constructed an approximately 5M gallon waste storage facility at the Headquarters site in 2015. This facility was constructed without approval of the WDNR, and without obtaining local (Town of Ledgeview) building and soil disturbance permits. As of September 2017, Ledgeview Farms had not submitted an application to WDNR for a WPDES permit, and no permit has been issued to date.

5. Since Ledgeview Farms has never obtained a WPDES permit, all of the records and reports that would be required by a WPDES permit have not been submitted to the WDNR by the farm operators. Record-keeping and reporting that is required under a WPDES permit must be reviewed in detail during the conditional use and livestock siting permit drafting/issuance process.

The following is a listing of how the applications submitted by Ledgeview Farms for their proposed operations/expansion are deficient with respect to state law and Town of Ledgeview conditional use and livestock siting requirements, both of which are explained further in the remainder of this report.

1. The waste storage facility proposed at the Heifer site is indicated to be set back 350-feet from the Lime Kiln Road right-of-way (ROW) to presumably comply with the regulations of ATCP 51. The proposed facility, as illustrated, is only 270-feet from the Lime Kiln Road ROW.

2. The waste storage facility as proposed does not comply with the required minimum setback specified in the Section 135-85 of the Town's Zoning Code. The required setback of 1,320-feet is not provided.

3. A new, ~114' x ~640' (~72,960 SF) freestall heifer barn is illustrated on the plan set at the Heifer site. This facility appears to have a setback of 40-feet off of the Lime Kiln Road ROW. ATCP 51 would require a 100-foot setback from the ROW, and this is not proposed.

4. The required engineering plan and construction details are not provided for the freestall heifer barn proposed at the Heifer site.

5. The Town's Livestock Siting regulations require a minimum setback of 1,000-feet for the freestall barn. The proposed facility does not meet this requirement.

6. The plans for the expansion of the feed storage area at the Heifer Site do not illustrate the inclusion of a subsurface system to collect leachate that could penetrate the concrete floor of the feedlot.

7. The unpermitted waste storage facility constructed in 2015 does not include secondary containment systems or liquid level monitoring system beyond the permeant level markers to prevent overtopping in its design.

8. The waste storage facility proposed at the Heifer site does not include secondary containment systems or liquid level monitoring system beyond the permeant level markers to prevent overtopping in its design.

9. The modifications of the Animal Lot at the Headquarters site does not proved adequate capacity to contain one (1) day's manure production, the rainfall 25yr/24hr rainfall event, and 6 inches of freeboard for safety.

10. The Town has no information indicating that each of the unauthorized discharges of manure and process wastewater indicated in the USEPA violation correspondence, described below, have been or will be corrected.

DEVELOPMENT HISTORY

The following is a brief, "recent" history of the Ledgeview Farms site based upon telephone conversations with Heidi Schmitt-Marquez, Agricultural Runoff Management Specialist, with the Wisconsin Department of Natural Resources (WDNR), and review of the U.S. Environmental Protection Agency (USEPA) Order for Compliance. Ms. Schmitt-Marquez is the WDNR staff person responsible for the review of the Ledgeview Farms proposal for the WDNR. Our conversations occurred on Monday May 7th and Friday May 18th, 2018. The USEPA documentation is dated September 13, 2013 and July 18, 2014. This history is intended to provide some context for the submittal of a Siting Application by Ledgeview Farms, and is not exhaustive. The WDNR should be consulted directly for a detailed history of the site growth, permitting, and action record.

In late 2007 the WDNR came to understand that Ledgeview Farms reached the threshold—more than 1,000 animal units (AUs)—to be categorized as a Concentrated Animal Feeding Operation (CAFO). Once an operation has reached this threshold, state and federal law requires the facility to obtain a series of permits/approvals from various state and federal agencies regarding their operations.

On February 19, 2009, the WDNR issued Ledgeview Farms a Notice of Violation for failure to obtain WPDES permit coverage for a large CAFO. Discussion between the WDNR and Ledgeview Farms included the option of either (A) depopulation of site to below 1,000 AU, or (B) applying for and obtaining a CAFO permit. In order to resolve that Notice of Violation, Respondent indicated that it would depopulate to below 1,000 animal units and would apply for a WPDES permit for a CAFO prior to depopulating.

Sometime after 2009, the Farm again exceeded the 1,000 AU threshold. No detailed information was available regarding a more exact date when the threshold was exceeded. The WDNR noted that no application for CAFO or WPDES permit was submitted to correspond to the increase in AUs on the farm.

The USEPA conducted its first site inspection on April 13, 2013, in part in response to a complaint from a resident who had walked through knee-deep manure while hiking along an unnamed tributary at a location adjacent to the Headquarters site. Based on livestock numbers identified by Ledgeview Farms in 2013, the animal numbers listed in Table 1 were present. Per the USEPA, the Farm was considered a medium dairy Animal Feeding Operation (AFO) due to the number of mature dairy cows maintained on the facility. There was no National Pollutant Discharge Elimination System (NPDES) permit allowing discharge from the site and the facility had never applied for one. USEPA personnel identified the following problems on the Farm in April 2013, which would be violations of the Clean Water Act even if the farm was operating under a WPDES permit:

a) At the Home (Headquarters site in the CUP application) site, septic looking waste and process wastewater was leaking out of a hole in the east concrete pit and flowing to the unnamed tributary. The hole in the east concrete pit was a manmade conveyance that facilitates the flow of process wastewater to the unnamed tributary on the east end of the site.
b) At the Home (Headquarters) Site, manure and process waste water from the feed bunker and the open lot west of the Milk Cow Barn did not have containment and was flowing north through pathways that led to the unnamed tributary on the west end of the site. The rip-rap pathway, paved open lot and access road are manmade conveyances that facilitate the flow of process wastewater to the unnamed tributary on the west end of the site.
c) At the Home (Headquarters) Site, animals had direct access to the unnamed tributary on the east end of the site.
d) At the Satellite (Heifer) Site, manure and process wastewater runoff generated at the open lot and feed bunkers were flowing east to the ditch. The ditch and culverts are manmade conveyances that facilitate the flow of process wastewater to an unnamed tributary.

USEPA communicated with WDNR that the USEPA would take the lead on compliance. It was noted that deficient manure storage facilities (structural problems) existed on the site. The Ledgeview Farms operations required a permit from WDNR to address discharges. The USEPA and WDNR determined that Ledgeview Farms needed to provide new, additional waste storage facilities.

On September 13, 2013, the USEPA issued an Administrative Order V-W-13-AO-22 to Ledgeview Farms for its facilities at 3875 Dickinson Road and 3688 County Road V (Lime Kiln Road). On September 26, 2013, EPA sent Ledgeview a letter providing a Compliance Schedule as an aid to understand the compliance deadlines of the Order. USEPA notified Ledgeview that the Order was effective as of September 28, 2013.

As part of this Order, Ledgeview Farms was required to submit to EPA a Permit Compliance Plan by December 27, 2013. On March 13, 2014, USEPA notified Ledgeview Farms by letter that EPA had not received the Permit Compliance Plan required under the Order. On March 18, 2014, David Wetenkamp of Brown County Land and Water Conservation (BCLWC) emailed documents pertaining to a Permit

Compliance Plan to EPA. According to Mr. Wetenkamp, those documents were sent at the request of Ledgeview Farms.

In correspondence dated July 18, 2014, USEPA reviewed and disapproved of the draft Permit Compliance Plan submitted and required revisions to the draft Permit Compliance Plan, pursuant to paragraph 43 of the Order.

On April 4, 2014, Ledgeview Farms submitted an application for a WPDES permit. Ledgeview Farms developed plans with the Brown County Land & Water Conservation staff for a new 5M gallon manure storage lagoon on the Headquarters site (3875 Dickinson Road). The plans were submitted to WDNR for review in March 2015. WDNR determined the plans to be incomplete—specifically there was no overflow facility as required to be part of the design. WDNR required supplemental information to be provided, or for the plans to be withdrawn and resubmitted. The plans were withdrawn in May 2015 by Ledgeview Farms and Brown County to be revised and resubmitted. The resubmittal of the plans never occurred according to WDNR documentation, and WDNR never granted approval for construction. Nonetheless, in the Summer of 2015, Ledgeview Farms began construction of a 5-million gallon waste storage lagoon. It is unknown whether Brown County issued a permit for construction. The required Town permits have never been issued for construction of this facility. The storage lagoon was completed in late-2015 or early 2016. To date, the 5M gallon lagoon constructed in 2015/16 still has no approval from WDNR or the Town. Specifically, there is no approved WPDES permit from WDNR which also covers reviewable structures (manure storage facilities). The farm is still non-compliant as there is no emergency overflow for the lagoon.

In correspondence dated November 29, 2016, USEPA informed Ledgeview Farms of their intent to file a Civil Administrative Complaint for violations of the Clean Water Act (CWA). Specifically, that Ledgeview Farms has violated the CWA by having seven unauthorized discharges of manure and process wastewater and having one unauthorized discharge of construction sediment to Waters of the United States. USEPA indicated that based on information available to them, they planned to propose a penalty of up to $128,000 for the violations.

PROPOSED FACILITY IMPROVEMENTS REVIEW

Animal Units

Table 1 illustrates the past five (5) years of operational growth of Ledgeview Farms. Ledgeview Farms has not provided definitive values for their current operations with the permit application. As such, current livestock levels and corresponding animal units (AUs) have been calculated from the basic narrative provided by Ledgeview Farms in the Siting Application dated Feb. 2, 2018.

TABLE 1: Ledgeview Farms Livestock Numbers and Animal Units

	AU	2013[a]		2013[b]		2104[c]		CURRENT[d]		REQUESTED	
LIVESTOCK TYPE	FACTOR	#	AUs	#	AUs	#	AUs	#	AUs	#	AUs
Milking/Dry Cows	1.4	365	511	550	770	555	777	1,084	1,518	1,355	1,897
Heifers (800-1200 lbs)	1.1	100	110	200	220	205	226	-	-	450	495
Heifers (400-800 lbs)	0.6	-	-	130	78	135	81	770	462	270	162
Calves (<400 lbs)	0.2	140	28	375	75	370	74	-	-	270	54
Steers/Cows (600 lbs to market)	1.0	200	200	425	425	420	420	838	838	675	675
Calves (<600 lbs)	0.5	-	-	-	-	-	-	-	-	400	200
Bulls (each)	1.4	-	-	-	-	-	-	-	-	-	-
TOTALS		805	849	1,680	1,568	1,685	1,578	2,692	2,818	3,420	3,483

[a] Livestock numbers identified by USEPA during site inspection on April 13, 2013.
[b] Livestock numbers identified by Ledgeview Farms in 2013 Annual Report submitted to USEPA and WDNR.
[c] Livestock numbers identified by Ledgeview Farms in 2014 Annual Report submitted to USEPA and WDNR.
[d] Current livestock numbers and corresponding AUs are calculated from the narrative provided by Ledgeview Farms in the Siting Application dated Feb. 2, 2018. Ledgeview Farms has not provided definitive values for their current operations with the permit application.

Of particular concern with the growth at Ledgeview Farms is the lack of communication with the Town of Ledgeview, DATCP, WDNR, or USEPA about their increase in operations. Ledgeview Farms knowingly grew their herd size but did not take any steps to ensure compliance with state or federal requirements until they were observed to be discharging manure and process waste water to the unnamed tributary on the west end of the property.

Proposed Facility Evaluation

First adopted in May of 2006, ATCP 51 established the statewide framework of standards and procedures required to implement Wisconsin's livestock facility siting law. The requirements only apply to livestock operators located in jurisdictions that have adopted ordinances requiring permits for new or expanding livestock facilities that exceed a certain size (commonly 500 animal units). The rule establishes standard setback requirement for manure storage structures and livestock housing structures.

The Department of Agriculture Trade and Consumer Protection (DATCP) is required by law to review ATCP 51 every four (4) years in accordance with statute. To this end, DATCP convened a Technical Expert Committee that provided recommendations regarding changes to ATCP 51. The proposed rule changes recommended new minimum property line setbacks for manure storage structures and livestock housing structures based on the size of the livestock facility.

At the July 20, 2017 meeting of the Board of Agriculture Trade and Consumer Protection, DATCP asked the Board to authorize public hearings on the newly drafted rules revising ATCP 51 for livestock facility siting. To date, the Board has not taken action on this proposal.

The purpose of Table 2 is to convey and compare the varying facility siting setback requirements in the existing ATCP 51 rule, the proposed 2017 rule changes to ATCP 51, and the setback requirements adopted under Town ordinance. Standards more stringent than the state standards (ATCP 51) must “be based on reasonable and scientifically defensible findings of fact,” and “clearly show that the standards are needed to protect public health or safety.” Consistent with the recommendations of the DATCP

Technical Expert Committee, the Town has required greater setbacks than the current ATCP 51 rules. The Town has cited a series of studies in its approved livestock siting ordinance that support greater setbacks to protect public health and safety.

TABLE 2: Comparison of Facility Siting Setback Requirements

Facility	Size of Farm Operations	Setbacks Under Existing Siting Rules for ATCP 51	Min. Setbacks Under Proposed Siting Rules Changes to ATCP 51	Min. Setbacks Under Town Siting Regulations
Livestock Housing Structures	Less than 1,000 animal units (<1,000 AU)	max. 100'	400'	400'
	1,000 to 2,500 animal units (1,000 - 2,500 AU)	min. 200'	700'	700'
	2,500 to 4,000 animal units (2,500 - 4,000 AU)	min. 200'	1,000'	1,000'
	More than 4,000 animal units (>4,000 AU)	min. 200'	1,200'	1,200'
Manure or Waste Storage Facility	Less than 1,000 animal units (<1,000 AU)	min. 350'	600'	1,320'
	1,000 to 2,500 animal units (1,000 - 2,500 AU)	min. 350'	1,000'	1,320'
	2,500 to 4,000 animal units (2,500 - 4,000 AU)	min. 350'	1,400'	1,320'
	More than 4,000 animal units (>4,000 AU)	min. 350'	1,700' + 200 additional feet for every 1,000 AU above 4,000 AU to a max. of 2,500'	1,320'

Proposed Waste Storage Facilities

Heifer Site. At the Heifer site, the waste storage facility is proposed to the north of the existing farm improvements, nearest to neighboring non-farm property and development. At its closest it will be about 400-feet from the residence to the north. The location proposed is furthest away from the residences of the actual owners of Ledgeview Farms—nearly 4,100 feet.

The facility will have a surface area of approximately 5.75 acres, be 12-feet in depth, and contain a volume of approximately 13M gallons. The facility also parallels Lime Kiln Road, and is illustrated to be setback 350-feet from the Lime Kiln Road right-of-way (ROW) to presumably comply with the regulations of ATCP 51, reproduced above.

Review of the plans submitted indicates that the setback illustrated is not correct. The setback was measured from the ROW on the eastern side of Lime Kiln Road. This should have been measured from the western side of the road ROW. The ROW width measures 80-feet, as such, the proposed facility would be only 270-feet from the Lime Kiln Road ROW. Even if the Town ordinances did not require an additional setback, this proposed facility does not even meet the standard setback requirements in ATCP 51.

In addition, the proposed waste storage facility does not comply with the required minimum setback specified in the Section 135-85 of the Town's Zoning Code. The required setback of 1,320-feet is not provided.

For comparison, the proposed ATCP 51 rules—developed by DATCP's Technical Expert Committee—would require a setback of 1,400-feet for this facility for an operation of the size proposed by Ledgeview Farms.

Ledgeview Farms owns hundreds of acres approximately 1-mile to the south of the proposed improvements that appear to provide an alternative location for this proposed waste storage facility that may be able to meet setback requirements. A broader analysis than just setbacks is needed, but other alternatives are available to be reviewed besides a single, large waste storage facility in the proposed location.

Headquarters Site. According to the WDNR, the 5M gallon waste storage facility illegally constructed in 2015 without permits or approvals at the Headquarters site will be included under the farm's WPDES permit at this time. This facility is located approximately 680-feet from the Lime Kiln Road ROW, and 860-feet from the Dickinson Road ROW. The WDNR indicated that this facility was constructed improperly and needs an emergency overflow to be retro-fitted to be compliant.

This facility was constructed prior to the Town having a Siting Ordinance, but a permit from the Town was still required for the excavation and grading. Ledgeview Farms did not apply for or obtain the required Town permits.

Proposed Freestall Barn

The site plans submitted indicate the siting of a new, ~114' x ~640' (~72,960 SF) freestall heifer barn at the Heifer site. This facility appears to have a setback of 40-feet off of the Lime Kiln Road ROW. Currently ATCP 51 would require a 100-feet setback from the ROW. In addition, as the Town's Siting Ordinance requires a setback for the Freestall Barn of a minimum of 1,000-feet for an operation the size proposed by Ledgeview Farms. The proposed facility does not meet either the state or Town requirements for setbacks.

Map A illustrates a series of setback distances from Lime Kiln Road, Dollar Road, and north and west property lines. These setbacks correspond to the required setbacks for the facilities proposed.

Odor and Air Emissions

Waste Storage Facility

DATCP's 2009 *Final Report on the Dairy and Livestock Odor and Air Emission Project* investigated the air impacts of different manure management practices on typical large animal feeding operations. This Report was cited in the Town's findings as part of the siting ordinance. Over the course of two years, staff from the DATCP and the WDNR measured odors and airborne concentrations of ammonia and hydrogen sulfide, both on and around manure storage lagoons on farms employing these different practices.

DATCP concluded that installing an impermeable cover will significantly reduce near lagoon ambient concentrations of ammonia and hydrogen sulfide. Installing an impermeable cover on the manure storage lagoon effectively controlled all ambient odors that had been emitted prior to the installation of the cover (100% reduction). This result can logically be applied to other lagoons, assuming that the covers remain air-tight and that the gasses that form under the cover are collected and burned in a flare or generator set. If installing a new waste storage lagoon, consider incorporating an impermeable cover. A cover greatly reduces odors and other impacts on neighbors. It is far more economical to add a cover to a new storage lagoon than it is to retrofit one later.

Installing a permeable cover on the manure storage lagoon only resulted in about an 80% reduction in ambient odors from that source in the first year. However, there was only a 60% reduction in the second year.

Surface ammonia concentrations, as well as general nearby ambient concentrations of both compounds increased following aeration. While most near lagoon concentrations of hydrogen sulfide are below air toxics limits for property lines, the data indicated the presence of highly concentrated and compact plumes near areas of agitation which could potentially travel significant distances before fully dispersing.

Separation distance is a simple, yet effective, tool you can use to reduce impacts on neighbors. When planning for new facilities, and especially manure storage lagoons, the DATCP Report recommends to site them as far from neighbors as possible, and with consideration for prevailing winds. Odors are far less noticeable at 800-feet than they are at 200-feet or even 400-feet (the distance to the dozens of residences impacted by this proposal).

While Ledgeview Farms owns hundreds of acres nearly one mile south of the Heifer and Headquarters sites, they have not offered any alternative sites to meet their waste storage needs. Their other lands (see Map B) to the south are located in a much less populated area and appear to be able to meet setback requirements. Understandably, a broader analysis than just setbacks is needed. Thus, it appears that there are other alternatives available to be evaluated. Additionally, the farm has only proposed the single, large waste storage facility rather than smaller facilities located in the areas where they conduct spreading (see Map C) probably because it is the least costly solution for the farm. And finally, Ledgeview Farms has not proposed installing a permanent cover for the proposed facility to reduce or eliminate odor impacts to neighborhood residences.

Feedlot

Expansion of the feed storage area at the Heifer Site is proposed with this application. This facility is located behind to the (west) of existing structures. The plans illustrate the inclusion of a system to collect leachate, but not necessarily a subsurface system to collect leachate. This should be clarified on the plans submitted. DATCP also recommends in its report to keep stored feed clean and dry to reduce odors, as well as, to protect feed quality. This could be accomplished by constructing a structure to cover the feed lot site.

Public Health Concerns and Nutrient Management

Manure is required to be managed and land-applied consistent with technical guidelines established by the USDA. These guidelines dictate how, when, and where manure may be spread on land. The goal of these standards is to "minimize nutrient entry into surface water, groundwater, and atmospheric resources while maintaining and improving the physical, chemical, and biological condition of the soil." Brown County, in conjunction with the WNDR, enforce their ordinances, rules, and statutes, respectively.

County ordinances require a permit for new or modified manure storage structures, ensuring design and construction according to NRCS technical standards. A nutrient management plan must be developed to ensure that stored manure is properly land applied. County Land & Water Conservation Departments help farmers identify special design considerations for sensitive sites, as well as explain other County requirements such as winter manure spreading plans. Through a siting permit—in the Town's case the conditional use permit—a municipality can reinforce compliance with local codes and regulations.

On April 28, 2018 I attended an event where UW-Oshkosh Geology Professor Dr. Maureen Muldoon and USDA Agricultural Researcher Dr. Mark Borchardt were the keynote speakers. Dr. Muldoon has researched groundwater flow in fractured carbonate aquifers for decades, and recent projects focused on groundwater quality in Kewaunee County and the role of groundwater in various wetlands in Door County. Dr. Borchardt is a research microbiologist for the USDA Agricultural Research Service and program leader for the Laboratory for Infectious Disease and the Environment, US Geological Survey, and Wisconsin Water Science Center. His expertise is on the measurement, fate, transport and health effects of human and agricultural zoonotic pathogens in the environment. At this event, both speakers shared their expert understanding of the unique geology and aquifer in Karst topographies that is formed on limestone and dolomite, and explained what their years of research data in the area show about how animal waste can endanger ground water.

The Eastern Dolomite/Silurian Aquifer—a carbonate aquifer—is located in Brown, Door, Kewaunee, and Manitowoc Counties. The Eastern Dolomite Aquifer is the regional divide between flow to Lake Michigan and flow to the Fox Valley. Flow characteristics in the aquifer are typified by a dense and universal fracture network; shallow soil surface, little surface runoff, and water easily infiltrates to the subsurface. Recharge is exceedingly rapid, and carries surface contaminants to the water table. Flow within the aquifer occurs primarily along bedding plane fractures with little to no reduction of contaminants within the aquifer.

The flow rates vary from tens of feet to hundreds of feet per day. Water recharge reaches the aquifer within 1 to 2 days following an event, even with sediment thicknesses up to 18-feet and depth to groundwater more 50-feet. The geologic setting makes the area extremely vulnerable to groundwater contamination. The exceedingly rapid recharge carries surface contaminants deeply into the aquifer. Little or no filtration of pollutants takes place once the water reaches large fractures in the dolomite.

Their team conducted random sampling of 4,896 participating private wells throughout Kewaunee County. Well findings were stratified by the soil depth to bedrock—less than 5-feet, 5- to 20-feet, and more than 20-feet. More 300 wells were sampled for multiple days following rain events and manure applications. Analysis found that important risk factors for manure contamination are recharge, depth to groundwater,

depth to bedrock, and the interaction between agricultural use/manure application/groundwater recharge. Well casing was found to be an unimportant factor.

In the end, they found an association between animal waste storage facilities (manure lagoons) and the presence of coliform bacteria (i.e. – E.coli) and nitrates in the drinking water. Where waste storage facilities are located there is a greater likelihood of manure spreading in the immediate area to reduce the cost of transport the manure to other fields regularly. There is a significant likelihood—far greater than the state-wide average—of high nitrates and coliforms within 2,500-feet (just under ½-mile) of a waste storage facility. The rate does not fall below the state-wide average until the distance exceeds 5,000-feet (just under 1-mile). By comparison, the Town code only requires a waste storage facility to have a setback of 1,320-feet from property lines and the state would only require 350-feet.

Areas with similar hydrogeography and where soil depth is less than 50-feet are at risk. An email correspondence between BCSWC and WDNR in 2009 indicated that upon digging three (3) 19-foot deep test holes at the Heifer Site on Friday April 3rd two of the three test holes filled completely with water by Saturday morning. Seven (7) test holes were dug at the Headquarters site, and bedrock contact was made at each test hole within 5-feet of the surface. This information makes it clear that the Ledgeview Farms sites have high groundwater and shallow soil to bedrock, making the sites at risk for contamination.

Map D illustrates that the lands proposed to be used for manure spreading by Ledgeview Farms, and highlights the lands within ½-mile and 1-mile of the proposed Ledgeview Farms operations. Properties that are served by private wells and septic systems are especially vulnerable to contamination. Map E illustrates the properties within ½-mile of the Ledgeview Farms sites that are on private systems. These sites were specifically compromised as a result of the farm's disregard for permits and approvals when the USEPA discovered the Ledgeview Farm waste being dispatched directly into adjacent tributaries. Further, Map F illustrates the considerable number of properties within 5-miles (corresponding to the manure spreading areas identified in the Nutrient Management Plan) that are on private water systems.

It is my understanding that Dr. Mark Borchardt and Dr. Maureen Muldoon will provide presentations to the Board on their areas of expertise at it relates to the proposed facilities and public health impact on water quality and hydrogeology.

Potential Impact of Operations to Nearby Property Values

In a response to property owners in Kewaunee County contesting assessments of their properties due to the presence of CAFOs, in November 2017 the Wisconsin Department of Revenue (WDOR) conducted a sales study of all recent (past three years) arms-length residential sales in Kewaunee County townships. Specifically, the WDOR desired to test whether the proximity to a CAFO impacts property values and if so, to what extent. The study examined 184 sales of properties that took place near Kewaunee County's six largest CAFOs and one other CAFO just over the county line in Brown County. Each CAFO was permitted for at least 2,860 cows. The WDOR study found:

- The value of property located more than 1.0-miles away from a large CAFO is not impacted.
- The value of property located within 0.3-miles of a large CAFO may be reduced by 13%.

- The value of property located between ¼ mile and one mile of a large CAFO may be reduced by 8%.

Map G attached illustrates the residences within 0.3-mile and 1.0-mile of Ledgeview Farms that could have their property value negatively impacted by the growth of Ledgeview Farms as proposed.

DESIGN & ALTERANTIVES DISCUSSION

Based on what little information is known/provided from Ledgeview Farms, the petitioner did not evaluate other alternatives, or present any alternatives for evaluation. All of the farm's eggs are in the "13M gallon manure pit at the Heifer site" basket. That specific location may be the most convenient and cost-effective for the farm, but it is also the most impactful to the community.

Mead & Hunt consulted with Resource Engineering Associates, Inc. (REA) in the evaluation of the design plans proposed by Ledgeview Farms and in identifying potential alternatives. REA has more than 20 years of experience in providing agricultural, civil, and environmental engineering services and REA staff served on the DATCP Technical Expert Committee for Livestock Siting Rules. REA recommended that Ledgeview Farms explore alternatives to their proposal, including the following, which could be used in combination or as separate elements to comply with WDNR CAFO requirements.

- If the proposed Heifer Site storage is not feasible based on the Town's Livestock Siting Ordinance limitations and other factors, the use of alternative liquid manure storage site south of the Headquarters or Heifer site may be a long-term option. This could involve a pipeline—essentially a sewer line—to/from the Heifer Site and/or Headquarters Site. The feasibility for this pipeline would depend on topography, bedrock, pumping losses, Town approval, DNR approval, route conflicts, and cost. Concepts for potential areas could be prepared by the Farm for consideration by the Town's consultants to discuss sites consistent with the Town's Livestock Siting Ordinance objectives.

- Frequently, liquid manure storage locations are planned in areas where significant cropland is close by for land application so long hauling can occur as time allows instead of during the busy manure application season. The objective would be to locate the storage facilities so manure application can be by a hose drag system to limit further hauling cost and application can occur in more time efficient manner. Multiple storage sites are safer and reduce spill/overflow issues.

- We understand bedpack manure is planned to be comingled with feed lot runoff and feed storage runoff. Mixing the solid and liquid wastes creates a larger liquid manure volume. Bedpack manure may be able to be handled as a solid keeping the volume of material needed to be stored as a liquid smaller, therefore requiring a smaller liquid manure storage. The solid manure could be stored in a separate building or stacked in accordance with NRCS Standard 318 -Short Term Storage of Animal Waste and By-Products.

- Runoff from outside cattle lots creates liquid manure which in accordance with WDNR CAFO requirements would need to be handled as a liquid for which storage capacity for at least 180 days is required. If the lot runoff could be eliminated by maintaining the animals under roof on an absorbent bedding, the manure could be handled as a solid as described above.

- Heifers generating outside lot manure runoff or liquid manure inside housing structures may, alternatively, be relocated for contract raising at an alternative site as is practiced by many operators.

- Feed storage leachate and runoff could be stored separately, and not combined with manure, reducing the needed capacity for liquid manure storage. Feed storage runoff can be managed differently than manure, potentially allowing for more handling options.

- Expansion of the feed storage area at the Heifer Site is proposed with this application. This facility is located behind (to the west of) existing structures. The plans illustrate the inclusion of a system to collect leachate, but not necessarily a subsurface system to collect leachate. DATCP also recommends that the feedlot area also recommends stored feed be kept clean and dry to reduce odors, as well as, to protect feed quality. This could be accomplished by constructing a structure to cover the feed lot site.

The concepts described above could be considered to provide alternative approaches as part of long-term planning to limit the amount of liquid manure storage capacity needed and start a discussion on options for the Farm to fill their obligation to meet WPDES requirements consistent with the Town's Ordinances.

EMERGENCY MANAGEMENT

Due to the proximity of significant environmental resources to the facilities—combined with the poor safety and incident response record of Ledgeview Farms—additional measures should be taken to protect surrounding plan uses and water resources.

All of the waste storage facilities should include secondary containment systems and a liquid level monitoring system beyond the permeant level markers to prevent overtopping should be included in the designs.

Regarding the modifications of the Animal Lot at the Headquarters Farm, the review by REA found that the lot does not have adequate capacity to contain one (1) day's manure production, the rainfall 25yr/24hr rainfall event, and 6 inches of freeboard. Per NRCS 634 criteria,

> "Reception structures receiving runoff and/or precipitation shall be sized to contain a minimum of one full day's manure production, plus six inches extra depth for safety, and the volume of runoff and/or precipitation from a 25-year, 24-hour rainfall event. The increase in storage volume due to runoff and/or precipitation may be reduced if a portion of this runoff and/or precipitation can be safely routed to and contained within the waste management system."

Total volume of proposed lot = 3,439 ft^3. The lot containment does not provide adequate containment based on the above NRCS standard. Ledgeview farms must also confirm this lot does not receive roof runoff.

1 day manure production	48 FT^3
25yr 24hr event	3,439 FT^3
0.5-FT freeboard x 5,976 SF (lot area)	2,070 FT^3
Total Volume	5,557 ft3

Per our calculations (above), the total volume to be contained is 5,557 FT^3. The proposed facilities do not meet this requirement.

COMPLIANCE WITH REGULATIONS & COMMUNITY TRUST

Ledgeview Farms has not been very forthcoming with the Town or Town staff about their operations. In my dealing with their representatives during the update to the Town's Comprehensive Plan and the Town's Farmland Preservation Zoning, they have purported themselves as a "small family farm" concerned about any potential regulations that might affect their operations. They continually reminded the Town that the farm was operating long before the surrounding growth occurred.

In my time working with the Town, the community has been fully supportive of farming activity in Ledgeview. The Town has previously believed that the County, State, and Federal agencies were effectively addressing the regulation of Ledgeview Farms' operations. Until USEPA became involved due to the discharge of manure and process waste water from Ledgeview Farms into the unnamed tributary on the west end of the property, the Town was unaware of any deficiencies in the farm's operations. Reviewing the site history of the farm operations is very alarming. As a result of these significant violations the Town decided it needed to be more involved in the approval and decision-making for livestock siting and CAFO operations in the community. In the summer of 2017, the Town enacted its Local Siting Ordinance and Conditional Use Permit process that is in effect.

The DATCP regulations are clear: if an operation is or plans to populate to 1,000 AUs or more and become a CAFO, it must have a Wisconsin Pollutant Discharge Elimination System (WPDES) permit to manage pollution issues. There is a "zero" discharge standard for runoff to navigable waters from CAFO animal production areas (areas where animals are housed or otherwise confined, manure is stored and feed is stored). CAFO WPDES permits ensure farms use proper planning, nutrient management, and structure/system construction to protect Wisconsin waters. DATCP also advises that twelve (12) months before an operation becomes a CAFO, it must begin the WPDES permit application process. Ledgeview Farms has consistently failed to comply with state and federal requirements. It is the Farms' responsibility to know the rules and regulations that impact their business operations regardless of the size of the operations.

The Ledgeview Farms animal growth values referenced in Table 1 are important to discuss. Since 2009, Ledgeview Farms has been in violation of a series of regulations, yet they continued to grow. If the farm could not be trusted to operate within the law when it was small (less than 1,000 AUs), it is not clear that they can be trusted to do so with 3,500 AUs.

Given the significant historical noncompliance, it is my opinion that Ledgeview Farms should reduce the farm's size below 1,000 AUs, and come into compliance for a farm of that size before pursuing expansion. In addition to the requisite infrastructure improvements, a series of operations requirements

required by law (outlined in the following table) must be adhered to, including visual inspections, monitoring and reporting requirements, response plans and training for manure and non-manure spills by the farm operator, and off-site/roadway clean-up.

TABLE 3: Summary of Required Farm Inspections and Reporting to WDNR

INSPECTION TIMEFRAME	INSPECTION ACTIVITY
Daily	▪ Inspect water lines that could potentially come into contact with pollutants or drain to storage, containment structures or runoff control structures for leakage. Examples of these water lines include cattle waterers or sprinklers.
Weekly	▪ Stormwater controls to ensure proper operation of all stormwater diversion devices. ▪ Runoff controls to ensure proper operation of all devices channeling contaminated runoff to storage or containment structures. ▪ Storage/containment inspections of liquid storage and containment structures for: leakage, seepage, erosion, cracks and corrosion, rodent damage, excessive vegetation and other signs of structural weakness. ▪ Read depth marker and record the level of material in all liquid storage and containment facilities. Record in feet or inches above or below the margin of safety level.
Quarterly	▪ Production area inspections including outdoor animal pens, barnyards, raw material storage areas and CAFO outdoor vegetated areas. ▪ A quarterly summary of inspections is required to be submitted with the annual report. A copy of the calendar properly completed can be included as part of the annual report. The WDNR may request additional information if needed.

Ledgeview Farms has done none of these required tasks over the past decade, yet it continued to grow. An application for expansion should be revisited only after Ledgeview Farms has exhibited to the agencies and Town that it can be a good operator and good neighbor by adhering to local, state, and federal requirements. Based on standard practice, the Town would not allow an operational increase or facility expansion for any other business or industry in the community with such a history of noncompliance.

Map G illustrates the residential growth within one mile of Ledgeview Farms that occurred from 2009 – 2013 and 2013 – 2018. These date ranges correspond to the non-compliance and violations of Ledgeview Farms becoming a CAFO. Development occurred under the assumption that Ledgeview Farms was a small, family farm as they never applied for a WPDES permit or CAFO approval. Table 4 highlights the value of investment made in properties during the date ranges.

TABLE 4: Current (2018) Value of Residential Development Within One Mile of Ledgeview Farms

Development Date Range	Land Value	Improvement Value	Total Value
2009 – 2013	$10,082,800	$48,441,900	$58,524,700
2013 – 2018	$5,809,600	$26,787,000	$32,596,600
TOTALS	$15,892,400	$75,228,900	$91,121,300

As neither DATCP nor the WDNR had permitted or identified Ledgeview Farms as a CAFO, the public had no idea the scale of the operations that were occurring here, nor about the non-compliance issues. It is likely that

developers would not have invested in the nearby lands for residential development as the certainty of land and homes sales would have been unknown. Property owners have expressed to the Town—verbally and in writing—that they would not have purchased their homes had they known that the farm was so large, much less planning to get larger. They do not want to deal with the noise, air quality, water quality, and other environmental/health impacts associated with living near large farm operations. Once again, the secrecy and noncompliance of Ledgeview Farms has, at least in part, resulted in extensive development at its borders. Had the Town known the long-range plans of the farm it could have helped protect the farm from incompatible neighboring land uses. The farm should be trying to move the most impactful aspects of its operations, such as any new manure storage facilities, away from the established residential development rather than towards it. At this point, allowing Ledgeview Farms to expand would be a poor decision as it would only exacerbate the documented problems.

Charlotte Nagel

From: Sarah Burdette <sburdette@ledgeviewwisconsin.com>
Sent: Tuesday, May 29, 2018 9:39 AM
To: jasonpansier@gmail.com
Cc: 'John Roach'; eric.mcleod@huschblackwell.com
Subject: Ledgeview Farms Conditional Use Permit (CUP) and Livestock Siting Memorandum
Attachments: CUP-Ledgeview Farms Exapansion_Map Exhibits_2018 05 23.pdf; CUP-Ledgeview Farms Expansion_2018 05 28.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Mr. Pansier,
Please find attached for your review, the Memorandum and Map Exhibits that has been provided to the Ledgeview Town Board regarding the Ledgeview Farms CUP and Livestock Siting Application.

Regards,
Sarah Burdette

Sarah K. Burdette
Administrator
Town of Ledgeview

Ledgeview

3700 Dickinson Road
De Pere, WI 54115
Phone: 920.336.3360, ext. 108
Mobile: 920-639-6083
sburdette@ledgeviewwisconsin.com www.LedgeviewWisconsin.com

memorandum

To: Ledgeview Town Board
From: Dustin Wolff, AICP, Town Planner
Cc: Sarah Burdette, Town/Clerk Administrator
Scott Brosteau, PE, Town Engineer
Larry Konopacki, Attorney
Vanessa Wishart, Attorney
Date: May 28, 2018
RE: Ledgeview Farms Conditional Use Permit and Livestock Siting Approval

EXECUTIVE SUMMARY

Petitioner

Jason Pansier, on behalf of Ledgeview Farms

Location

3875 Dickinson Road (Headquarters Site) and 3499 Lime Kiln Road (Heifer Site)

Requested Action

Conditional Use Permit (CUP) and Livestock Siting Approval for a new or expanding facility that will be used to keep cattle and will have more than 500 animal units. Specifically, the request is to approve:

1. Expansion of the farm livestock operations to 3,483 animal units at the Headquarters and Heifer sites.
2. Construction of an approximately 13M gallon waste storage facility at the Heifer Site.
3. Expansion of the feed storage area at the Heifer Site.
4. Construction of a feed storage and animal lot leachate runoff management system at the Heifer Site.
5. Construction of a Yard Runoff Transfer System to collect leachate and contaminated runoff and transfer to the proposed waste storage facility at the Heifer Site.

In addition, as explained in more detail in subsequent sections of this memo, Town approval is required for the following. The first two represent existing but noncompliant practices or facilities that have never been approved or permitted and the third is a facility that is depicted on various submissions in the application but for which approval has not been appropriately requested and no supporting information is included.

1. The existing non-compliant concentrated animal feeding operations of 1,084 milking and dry cows, 770 heifers, and 838 steers (approximately 2,818 animal units) at the Headquarters and Heifer sites
2. The 5M gallon waste storage facility constructed in 2015 without permits or approvals at the Headquarters site.
3. Construction of a new, ~114' x ~640' (~72,960 SF) freestall heifer barn at the Heifer site.

Summary of Noncompliance

The following is an abbreviated listing of how Ledgeview Farms is currently in noncompliance with state and federal law or local regulations for their current operations.

1. Under state and federal law, a farm must obtain a Wisconsin Pollutant Discharge Elimination System (WPDES) permit prior to expanding such that the farm would have 1,000 animal units (AUs) or more (considered a "concentrated animal feeding operation" or "CAFO"). WDNR staff documented that Ledgeview Farms met the definition of and was considered to be a CAFO in 2008, but had not sought or obtained a WPDES permit. WDNR initiated the enforcement process to work with Ledgeview to gain compliance with statutory and administrative code requirements. Ledgeview Farms agreed to reduce animal numbers and resolve runoff and storage issues, and the WDNR closed the enforcement case in 2010. Part of the enforcement case closure included clarification that Ledgeview was prohibited from exceeding 1,000 AUs prior to applying for a WPDES permit.

2. USEPA documented unauthorized discharges of manure and process wastewater on April 18, 2013 & April 9, 2015 from Ledgeview Farms into an unnamed tributary at the west end of the farm. USEPA issued an administrative order for compliance on September 13, 2013 requiring Ledgeview Farms to operate and maintain interim measures until permanent storage facilities are constructed in accordance with an approved Nutrient Management Plan (NMP) and to submit a complete application for a WPDES permit to the WDNR.

3. In 2013 the USEPA identified that Ledgeview Farms had again exceeded 1,000 animal units on the site. Ledgeview Farms had not applied for, nor received, CAFO approval or a WPDES permit from the WDNR.

4. Ledgeview Farms constructed an approximately 5M gallon waste storage facility at the Headquarters site in 2015. This facility was constructed without approval of the WDNR, and without obtaining local (Town of Ledgeview) building and soil disturbance permits. As of September 2017, Ledgeview Farms had not submitted an application to WDNR for a WPDES permit, and no permit has been issued to date.

5. Since Ledgeview Farms has never obtained a WPDES permit, all of the records and reports that would be required by a WPDES permit have not been submitted to the WDNR by the farm operators. Record-keeping and reporting that is required under a WPDES permit must be reviewed in detail during the conditional use and livestock siting permit drafting/issuance process.

The following is a listing of how the applications submitted by Ledgeview Farms for their proposed operations/expansion are deficient with respect to state law and Town of Ledgeview conditional use and livestock siting requirements, both of which are explained further in the remainder of this report.

1. The waste storage facility proposed at the Heifer site is indicated to be set back 350-feet from the Lime Kiln Road right-of-way (ROW) to presumably comply with the regulations of ATCP 51. The proposed facility, as illustrated, is only 270-feet from the Lime Kiln Road ROW.

2. The waste storage facility as proposed does not comply with the required minimum setback specified in the Section 135-85 of the Town's Zoning Code. The required setback of 1,320-feet is not provided.

3. A new, ~114' x ~640' (~72,960 SF) freestall heifer barn is illustrated on the plan set at the Heifer site. This facility appears to have a setback of 40-feet off of the Lime Kiln Road ROW. ATCP 51 would require a 100-foot setback from the ROW, and this is not proposed.

4. The required engineering plan and construction details are not provided for the freestall heifer barn proposed at the Heifer site.

5. The Town's Livestock Siting regulations require a minimum setback of 1,000-feet for the freestall barn. The proposed facility does not meet this requirement.

6. The plans for the expansion of the feed storage area at the Heifer Site do not illustrate the inclusion of a subsurface system to collect leachate that could penetrate the concrete floor of the feedlot.

7. The unpermitted waste storage facility constructed in 2015 does not include secondary containment systems or liquid level monitoring system beyond the permeant level markers to prevent overtopping in its design.

8. The waste storage facility proposed at the Heifer site does not include secondary containment systems or liquid level monitoring system beyond the permeant level markers to prevent overtopping in its design.

9. The modifications of the Animal Lot at the Headquarters site does not proved adequate capacity to contain one (1) day's manure production, the rainfall 25yr/24hr rainfall event, and 6 inches of freeboard for safety.

10. The Town has no information indicating that each of the unauthorized discharges of manure and process wastewater indicated in the USEPA violation correspondence, described below, have been or will be corrected.

DEVELOPMENT HISTORY

The following is a brief, "recent" history of the Ledgeview Farms site based upon telephone conversations with Heidi Schmitt-Marquez, Agricultural Runoff Management Specialist, with the Wisconsin Department of Natural Resources (WDNR), and review of the U.S. Environmental Protection Agency (USEPA) Order for Compliance. Ms. Schmitt-Marquez is the WDNR staff person responsible for the review of the Ledgeview Farms proposal for the WDNR. Our conversations occurred on Monday May 7th and Friday May 18th, 2018. The USEPA documentation is dated September 13, 2013 and July 16, 2014. This history is intended to provide some context for the submittal of a Siting Application by Ledgeview Farms, and is not exhaustive. The WDNR should be consulted directly for a detailed history of the site growth, permitting, and action record.

In late 2007 the WDNR came to understand that Ledgeview Farms reached the threshold—more than 1,000 animal units (AUs)—to be categorized as a Concentrated Animal Feeding Operation (CAFO). Once an operation has reached this threshold, state and federal law requires the facility to obtain a series of permits/approvals from various state and federal agencies regarding their operations.

On February 19, 2009, the WDNR issued Ledgeview Farms a Notice of Violation for failure to obtain WPDES permit coverage for a large CAFO. Discussion between the WDNR and Ledgeview Farms included the option of either (A) depopulation of site to below 1,000 AU, or (B) applying for and obtaining a CAFO permit. In order to resolve that Notice of Violation, Respondent indicated that it would depopulate to below 1,000 animal units and would apply for a WPDES permit for a CAFO prior to depopulating.

Sometime after 2009, the Farm again exceeded the 1,000 AU threshold. No detailed information was available regarding a more exact date when the threshold was exceeded. The WDNR noted that no application for CAFO or WPDES permit was submitted to correspond to the increase in AUs on the farm.

The USEPA conducted its first site inspection on April 13, 2013, in part in response to a complaint from a resident who had walked through knee-deep manure while hiking along an unnamed tributary at a location adjacent to the Headquarters site. Based on livestock numbers identified by Ledgeview Farms in 2013, the animal numbers listed in Table 1 were present. Per the USEPA, the Farm was considered a medium dairy Animal Feeding Operation (AFO) due to the number of mature dairy cows maintained on the facility. There was no National Pollutant Discharge Elimination System (NPDES) permit allowing discharge from the site and the facility had never applied for one. USEPA personnel identified the following problems on the Farm in April 2013, which would be violations of the Clean Water Act even if the farm was operating under a WPDES permit:

a) At the Home (Headquarters site in the CUP application) site, septic looking waste and process wastewater was leaking out of a hole in the east concrete pit and flowing to the unnamed tributary. The hole in the east concrete pit was a manmade conveyance that facilitates the flow of process wastewater to the unnamed tributary on the east end of the site.
b) At the Home (Headquarters) Site, manure and process waste water from the feed bunker and the open lot west of the Milk Cow Barn did not have containment and was flowing north through pathways that led to the unnamed tributary on the west end of the site. The rip-rap pathway, paved open lot and access road are manmade conveyances that facilitate the flow of process wastewater to the unnamed tributary on the west end of the site.
c) At the Home (Headquarters) Site, animals had direct access to the unnamed tributary on the east end of the site.
d) At the Satellite (Heifer) Site, manure and process wastewater runoff generated at the open lot and feed bunkers were flowing east to the ditch. The ditch and culverts are manmade conveyances that facilitate the flow of process wastewater to an unnamed tributary.

USEPA communicated with WDNR that the USEPA would take the lead on compliance. It was noted that deficient manure storage facilities (structural problems) existed on the site. The Ledgeview Farms operations required a permit from WDNR to address discharges. The USEPA and WDNR determined that Ledgeview Farms needed to provide new, additional waste storage facilities.

On September 13, 2013, the USEPA issued an Administrative Order V-W-13-AO-22 to Ledgeview Farms for its facilities at 3875 Dickinson Road and 3688 County Road V (Lime Kiln Road). On September 26, 2013, EPA sent Ledgeview a letter providing a Compliance Schedule as an aid to understand the compliance deadlines of the Order. USEPA notified Ledgeview that the Order was effective as of September 28, 2013.

As part of this Order, Ledgeview Farms was required to submit to EPA a Permit Compliance Plan by December 27, 2013. On March 13, 2014, USEPA notified Ledgeview Farms by letter that EPA had not received the Permit Compliance Plan required under the Order. On March 18, 2014, David Wetenkamp of Brown County Land and Water Conservation (BCLWC) emailed documents pertaining to a Permit

Compliance Plan to EPA. According to Mr. Wetenkamp, those documents were sent at the request of Ledgeview Farms.

In correspondence dated July 18, 2014, USEPA reviewed and disapproved of the draft Permit Compliance Plan submitted and required revisions to the draft Permit Compliance Plan, pursuant to paragraph 43 of the Order.

On April 4, 2014, Ledgeview Farms submitted an application for a WPDES permit. Ledgeview Farms developed plans with the Brown County Land & Water Conservation staff for a new 5M gallon manure storage lagoon on the Headquarters site (3875 Dickinson Road). The plans were submitted to WDNR for review in March 2015. WDNR determined the plans to be incomplete—specifically there was no overflow facility as required to be part of the design. WDNR required supplemental information to be provided, or for the plans to be withdrawn and resubmitted. The plans were withdrawn in May 2015 by Ledgeview Farms and Brown County to be revised and resubmitted. The resubmittal of the plans never occurred according to WDNR documentation, and WDNR never granted approval for construction. Nonetheless, in the Summer of 2015, Ledgeview Farms began construction of a 5-million gallon waste storage lagoon. It is unknown whether Brown County issued a permit for construction. The required Town permits have never been issued for construction of this facility. The storage lagoon was completed in late-2015 or early 2016. To date, the 5M gallon lagoon constructed in 2015/16 still has no approval from WDNR or the Town. Specifically, there is no approved WPDES permit from WDNR which also covers reviewable structures (manure storage facilities). The farm is still non-compliant as there is no emergency overflow for the lagoon.

In correspondence dated November 29, 2016, USEPA informed Ledgeview Farms of their intent to file a Civil Administrative Complaint for violations of the Clean Water Act (CWA). Specifically, that Ledgeview Farms has violated the CWA by having seven unauthorized discharges of manure and process wastewater and having one unauthorized discharge of construction sediment to Waters of the United States. USEPA indicated that based on information available to them, they planned to propose a penalty of up to $128,000 for the violations.

PROPOSED FACILITY IMPROVEMENTS REVIEW

Animal Units

Table 1 illustrates the past five (5) years of operational growth of Ledgeview Farms. Ledgeview Farms has not provided definitive values for their current operations with the permit application. As such, current livestock levels and corresponding animal units (AUs) have been calculated from the basic narrative provided by Ledgeview Farms in the Siting Application dated Feb. 2, 2018.

TABLE 1: Ledgeview Farms Livestock Numbers and Animal Units

LIVESTOCK TYPE	AU FACTOR	2013[a] #	2013[a] AUs	2013[b] #	2013[b] AUs	2104[c] #	2104[c] AUs	CURRENT[d] #	CURRENT[d] AUs	REQUESTED #	REQUESTED AUs
Milking/Dry Cows	1.4	365	511	550	770	555	777	1,084	1,518	1,355	1,897
Heifers (800-1200 lbs)	1.1	100	110	200	220	205	226	-	-	450	495
Heifers (400-800 lbs)	0.6	-	-	130	78	135	81	770	462	270	162
Calves (<400 lbs)	0.2	140	28	375	75	370	74	-	-	270	54
Steers/Cows (600 lbs to market)	1.0	200	200	425	425	420	420	838	838	675	675
Calves (<600 lbs)	0.5	-	-	-	-	-	-	-	-	400	200
Bulls (each)	1.4	-	-	-	-	-	-	-	-	-	-
TOTALS		805	849	1,680	1,568	1,685	1,578	2,692	2,818	3,420	3,483

[a] Livestock numbers identified by USEPA during site inspection on April 13, 2013.
[b] Livestock numbers identified by Ledgeview Farms in 2013 Annual Report submitted to USEPA and WDNR.
[c] Livestock numbers identified by Ledgeview Farms in 2014 Annual Report submitted to USEPA and WDNR.
[d] Current livestock numbers and corresponding AUs are calculated from the narrative provided by Ledgeview Farms in the Siting Application dated Feb. 2, 2018. Ledgeview Farms has not provided definitive values for their current operations with the permit application.

Of particular concern with the growth at Ledgeview Farms is the lack of communication with the Town of Ledgeview, DATCP, WDNR, or USEPA about their increase in operations. Ledgeview Farms knowingly grew their herd size but did not take any steps to ensure compliance with state or federal requirements until they were observed to be discharging manure and process waste water to the unnamed tributary on the west end of the property.

Proposed Facility Evaluation

First adopted in May of 2006, ATCP 51 established the statewide framework of standards and procedures required to implement Wisconsin's livestock facility siting law. The requirements only apply to livestock operators located in jurisdictions that have adopted ordinances requiring permits for new or expanding livestock facilities that exceed a certain size (commonly 500 animal units). The rule establishes standard setback requirement for manure storage structures and livestock housing structures.

The Department of Agriculture Trade and Consumer Protection (DATCP) is required by law to review ATCP 51 every four (4) years in accordance with statute. To this end, DATCP convened a Technical Expert Committee that provided recommendations regarding changes to ATCP 51. The proposed rule changes recommended new minimum property line setbacks for manure storage structures and livestock housing structures based on the size of the livestock facility.

At the July 20, 2017 meeting of the Board of Agriculture Trade and Consumer Protection, DATCP asked the Board to authorize public hearings on the newly drafted rules revising ATCP 51 for livestock facility siting. To date, the Board has not taken action on this proposal.

The purpose of Table 2 is to convey and compare the varying facility siting setback requirements in the existing ATCP 51 rule, the proposed 2017 rule changes to ATCP 51, and the setback requirements adopted under Town ordinance. Standards more stringent than the state standards (ATCP 51) must "be based on reasonable and scientifically defensible findings of fact," and "clearly show that the standards are needed to protect public health or safety." Consistent with the recommendations of the DATCP

Technical Expert Committee, the Town has required greater setbacks than the current ATCP 51 rules. The Town has cited a series of studies in its approved livestock siting ordinance that support greater setbacks to protect public health and safety.

TABLE 2: Comparison of Facility Siting Setback Requirements

Facility	Size of Farm Operations	Setbacks Under Existing Siting Rules for ATCP 51	Min. Setbacks Under Proposed Siting Rules Changes to ATCP 51	Min. Setbacks Under Town Siting Regulations
Livestock Housing Structures	Less than 1,000 animal units (<1,000 AU)	max. 100'	400'	400'
	1,000 to 2,500 animal units (1,000 - 2,500 AU)	min. 200'	700'	700'
	2,500 to 4,000 animal units (2,500 - 4,000 AU)	min. 200'	1,000'	**1,000'**
	More than 4,000 animal units (>4,000 AU)	min. 200'	1,200'	1,200'
Manure or Waste Storage Facility	Less than 1,000 animal units (<1,000 AU)	min. 350'	600'	1,320'
	1,000 to 2,500 animal units (1,000 - 2,500 AU)	min. 350'	1,000'	1,320'
	2,500 to 4,000 animal units (2,500 - 4,000 AU)	min. 350'	1,400'	**1,320'**
	More than 4,000 animal units (>4,000 AU)	min. 350'	1,700' + 200 additional feet for every 1,000 AU above 4,000 AU to a max. of 2,500'	1,320'

Proposed Waste Storage Facilities

Heifer Site. At the Heifer site, the waste storage facility is proposed to the north of the existing farm improvements, nearest to neighboring non-farm property and development. At its closest it will be about 400-feet from the residence to the north. The location proposed is furthest away from the residences of the actual owners of Ledgeview Farms—nearly 4,100 feet.

The facility will have a surface area of approximately 5.75 acres, be 12-feet in depth, and contain a volume of approximately 13M gallons. The facility also parallels Lime Kiln Road, and is illustrated to be setback 350-feet from the Lime Kiln Road right-of-way (ROW) to presumably comply with the regulations of ATCP 51, reproduced above.

Review of the plans submitted indicates that the setback illustrated is not correct. The setback was measured from the ROW on the eastern side of Lime Kiln Road. This should have been measured from the western side of the road ROW. The ROW width measures 80-feet, as such, the proposed facility would be only 270-feet from the Lime Kiln Road ROW. Even if the Town ordinances did not require an additional setback, this proposed facility does not even meet the standard setback requirements in ATCP 51.

In addition, the proposed waste storage facility does not comply with the required minimum setback specified in the Section 135-85 of the Town's Zoning Code. The required setback of 1,320-feet is not provided.

For comparison, the proposed ATCP 51 rules—developed by DATCP's Technical Expert Committee—would require a setback of 1,400-feet for this facility for an operation of the size proposed by Ledgeview Farms.

Ledgeview Farms owns hundreds of acres approximately 1-mile to the south of the proposed improvements that appear to provide an alternative location for this proposed waste storage facility that may be able to meet setback requirements. A broader analysis than just setbacks is needed, but other alternatives are available to be reviewed besides a single, large waste storage facility in the proposed location.

Headquarters Site. According to the WDNR, the 5M gallon waste storage facility illegally constructed in 2015 without permits or approvals at the Headquarters site will be included under the farm's WPDES permit at this time. This facility is located approximately 680-feet from the Lime Kiln Road ROW, and 860-feet from the Dickinson Road ROW. The WDNR indicated that this facility was constructed improperly and needs an emergency overflow to be retro-fitted to be compliant.

This facility was constructed prior to the Town having a Siting Ordinance, but a permit from the Town was still required for the excavation and grading. Ledgeview Farms did not apply for or obtain the required Town permits.

Proposed Freestall Barn

The site plans submitted indicate the siting of a new, ~114' x ~640' (~72,960 SF) freestall heifer barn at the Heifer site. This facility appears to have a setback of 40-feet off of the Lime Kiln Road ROW. Currently ATCP 51 would require a 100-feet setback from the ROW. In addition, as the Town's Siting Ordinance requires a setback for the Freestall Barn of a minimum of 1,000-feet for an operation the size proposed by Ledgeview Farms. The proposed facility does not meet either the state or Town requirements for setbacks.

Map A illustrates a series of setback distances from Lime Kiln Road, Dollar Road, and north and west property lines. These setbacks correspond to the required setbacks for the facilities proposed.

Odor and Air Emissions

Waste Storage Facility

DATCP's 2009 *Final Report on the Dairy and Livestock Odor and Air Emission Project* investigated the air impacts of different manure management practices on typical large animal feeding operations. This Report was cited in the Town's findings as part of the siting ordinance. Over the course of two years, staff from the DATCP and the WDNR measured odors and airborne concentrations of ammonia and hydrogen sulfide, both on and around manure storage lagoons on farms employing these different practices.

DATCP concluded that installing an impermeable cover will significantly reduce near lagoon ambient concentrations of ammonia and hydrogen sulfide. Installing an impermeable cover on the manure storage lagoon effectively controlled all ambient odors that had been emitted prior to the installation of the cover (100% reduction). This result can logically be applied to other lagoons, assuming that the covers remain air-tight and that the gasses that form under the cover are collected and burned in a flare or generator set. If installing a new waste storage lagoon, consider incorporating an impermeable cover. A cover greatly reduces odors and other impacts on neighbors. It is far more economical to add a cover to a new storage lagoon than it is to retrofit one later.

Installing a permeable cover on the manure storage lagoon only resulted in about an 80% reduction in ambient odors from that source in the first year. However, there was only a 60% reduction in the second year.

Surface ammonia concentrations, as well as general nearby ambient concentrations of both compounds increased following aeration. While most near lagoon concentrations of hydrogen sulfide are below air toxics limits for property lines, the data indicated the presence of highly concentrated and compact plumes near areas of agitation which could potentially travel significant distances before fully dispersing.

Separation distance is a simple, yet effective, tool you can use to reduce impacts on neighbors. When planning for new facilities, and especially manure storage lagoons, the DATCP Report recommends to site them as far from neighbors as possible, and with consideration for prevailing winds. Odors are far less noticeable at 800-feet than they are at 200-feet or even 400-feet (the distance to the dozens of residences impacted by this proposal).

While Ledgeview Farms owns hundreds of acres nearly one mile south of the Heifer and Headquarters sites, they have not offered any alternative sites to meet their waste storage needs. Their other lands (see Map B) to the south are located in a much less populated area and appear to be able to meet setback requirements. Understandably, a broader analysis than just setbacks is needed. Thus, it appears that there are other alternatives available to be evaluated. Additionally, the farm has only proposed the single, large waste storage facility rather than smaller facilities located in the areas where they conduct spreading (see Map C) probably because it is the least costly solution for the farm. And finally, Ledgeview Farms has not proposed installing a permanent cover for the proposed facility to reduce or eliminate odor impacts to neighborhood residences.

Feedlot

Expansion of the feed storage area at the Heifer Site is proposed with this application. This facility is located behind to the (west) of existing structures. The plans illustrate the inclusion of a system to collect leachate, but not necessarily a subsurface system to collect leachate. This should be clarified on the plans submitted. DATCP also recommends in its report to keep stored feed clean and dry to reduce odors, as well as, to protect feed quality. This could be accomplished by constructing a structure to cover the feed lot site.

Public Health Concerns and Nutrient Management

Manure is required to be managed and land-applied consistent with technical guidelines established by the USDA. These guidelines dictate how, when, and where manure may be spread on land. The goal of these standards is to "minimize nutrient entry into surface water, groundwater, and atmospheric resources while maintaining and improving the physical, chemical, and biological condition of the soil." Brown County, in conjunction with the WNDR, enforce their ordinances, rules, and statutes, respectively.

County ordinances require a permit for new or modified manure storage structures, ensuring design and construction according to NRCS technical standards. A nutrient management plan must be developed to ensure that stored manure is properly land applied. County Land & Water Conservation Departments help farmers identify special design considerations for sensitive sites, as well as explain other County requirements such as winter manure spreading plans. Through a siting permit—in the Town's case the conditional use permit—a municipality can reinforce compliance with local codes and regulations.

On April 28, 2018 I attended an event where UW-Oshkosh Geology Professor Dr. Maureen Muldoon and USDA Agricultural Researcher Dr. Mark Borchardt were the keynote speakers. Dr. Muldoon has researched groundwater flow in fractured carbonate aquifers for decades, and recent projects focused on groundwater quality in Kewaunee County and the role of groundwater in various wetlands in Door County. Dr. Borchardt is a research microbiologist for the USDA Agricultural Research Service and program leader for the Laboratory for Infectious Disease and the Environment, US Geological Survey, and Wisconsin Water Science Center. His expertise is on the measurement, fate, transport and health effects of human and agricultural zoonotic pathogens in the environment. At this event, both speakers shared their expert understanding of the unique geology and aquifer in Karst topographies that is formed on limestone and dolomite, and explained what their years of research data in the area show about how animal waste can endanger ground water.

The Eastern Dolomite/Silurian Aquifer—a carbonate aquifer—is located in Brown, Door, Kewaunee, and Manitowoc Counties. The Eastern Dolomite Aquifer is the regional divide between flow to Lake Michigan and flow to the Fox Valley. Flow characteristics in the aquifer are typified by a dense and universal fracture network; shallow soil surface, little surface runoff, and water easily infiltrates to the subsurface. Recharge is exceedingly rapid, and carries surface contaminants to the water table. Flow within the aquifer occurs primarily along bedding plane fractures with little to no reduction of contaminants within the aquifer.

The flow rates vary from tens of feet to hundreds of feet per day. Water recharge reaches the aquifer within 1 to 2 days following an event, even with sediment thicknesses up to 18-feet and depth to groundwater more 50-feet. The geologic setting makes the area extremely vulnerable to groundwater contamination. The exceedingly rapid recharge carries surface contaminants deeply into the aquifer. Little or no filtration of pollutants takes place once the water reaches large fractures in the dolomite.

Their team conducted random sampling of 4,896 participating private wells throughout Kewaunee County. Well findings were stratified by the soil depth to bedrock—less than 5-feet, 5- to 20-feet, and more than 20-feet. More 300 wells were sampled for multiple days following rain events and manure applications. Analysis found that important risk factors for manure contamination are recharge, depth to groundwater,

depth to bedrock, and the interaction between agricultural use/manure application/groundwater recharge. Well casing was found to be an unimportant factor.

In the end, they found an association between animal waste storage facilities (manure lagoons) and the presence of coliform bacteria (i.e. – E.coli) and nitrates in the drinking water. Where waste storage facilities are located there is a greater likelihood of manure spreading in the immediate area to reduce the cost of transport the manure to other fields regularly. There is a significant likelihood—far greater than the state-wide average—of high nitrates and coliforms within 2,500-feet (just under ½-mile) of a waste storage facility. The rate does not fall below the state-wide average until the distance exceeds 5,000-feet (just under 1-mile). By comparison, the Town code only requires a waste storage facility to have a setback of 1,320-feet from property lines and the state would only require 350-feet.

Areas with similar hydrogeography and where soil depth is less than 50-feet are at risk. An email correspondence between BCSWC and WDNR in 2009 indicated that upon digging three (3) 19-foot deep test holes at the Heifer Site on Friday April 3rd two of the three test holes filled completely with water by Saturday morning. Seven (7) test holes were dug at the Headquarters site, and bedrock contact was made at each test hole within 5-feet of the surface. This information makes it clear that the Ledgeview Farms sites have high groundwater and shallow soil to bedrock, making the sites at risk for contamination.

Map D illustrates that the lands proposed to be used for manure spreading by Ledgeview Farms, and highlights the lands within ½-mile and 1-mile of the proposed Ledgeview Farms operations. Properties that are served by private wells and septic systems are especially vulnerable to contamination. Map E illustrates the properties within ½-mile of the Ledgeview Farms sites that are on private systems. These sites were specifically compromised as a result of the farm's disregard for permits and approvals when the USEPA discovered the Ledgeview Farm waste being dispatched directly into adjacent tributaries. Further, Map F illustrates the considerable number of properties within 5-miles (corresponding to the manure spreading areas identified in the Nutrient Management Plan) that are on private water systems.

It is my understanding that Dr. Mark Borchardt and Dr. Maureen Muldoon will provide presentations to the Board on their areas of expertise at it relates to the proposed facilities and public health impact on water quality and hydrogeology.

Potential Impact of Operations to Nearby Property Values

In a response to property owners in Kewaunee County contesting assessments of their properties due to the presence of CAFOs, in November 2017 the Wisconsin Department of Revenue (WDOR) conducted a sales study of all recent (past three years) arms-length residential sales in Kewaunee County townships. Specifically, the WDOR desired to test whether the proximity to a CAFO impacts property values and if so, to what extent. The study examined 184 sales of properties that took place near Kewaunee County's six largest CAFOs and one other CAFO just over the county line in Brown County. Each CAFO was permitted for at least 2,860 cows. The WDOR study found:

- The value of property located more than 1.0-miles away from a large CAFO is not impacted.
- The value of property located within 0.3-miles of a large CAFO may be reduced by 13%.

- The value of property located between ¼ mile and one mile of a large CAFO may be reduced by 8%.

Map G attached illustrates the residences within 0.3-mile and 1.0-mile of Ledgeview Farms that could have their property value negatively impacted by the growth of Ledgeview Farms as proposed.

DESIGN & ALTERANTIVES DISCUSSION

Based on what little information is known/provided from Ledgeview Farms, the petitioner did not evaluate other alternatives, or present any alternatives for evaluation. All of the farm's eggs are in the "13M gallon manure pit at the Heifer site" basket. That specific location may be the most convenient and cost-effective for the farm, but it is also the most impactful to the community.

Mead & Hunt consulted with Resource Engineering Associates, Inc. (REA) in the evaluation of the design plans proposed by Ledgeview Farms and in identifying potential alternatives. REA has more than 20 years of experience in providing agricultural, civil, and environmental engineering services and REA staff served on the DATCP Technical Expert Committee for Livestock Siting Rules. REA recommended that Ledgeview Farms explore alternatives to their proposal, including the following, which could be used in combination or as separate elements to comply with WDNR CAFO requirements.

- If the proposed Heifer Site storage is not feasible based on the Town's Livestock Siting Ordinance limitations and other factors, the use of alternative liquid manure storage site south of the Headquarters or Heifer site may be a long-term option. This could involve a pipeline—essentially a sewer line—to/from the Heifer Site and/or Headquarters Site. The feasibility for this pipeline would depend on topography, bedrock, pumping losses, Town approval, DNR approval, route conflicts, and cost. Concepts for potential areas could be prepared by the Farm for consideration by the Town's consultants to discuss sites consistent with the Town's Livestock Siting Ordinance objectives.

- Frequently, liquid manure storage locations are planned in areas where significant cropland is close by for land application so long hauling can occur as time allows instead of during the busy manure application season. The objective would be to locate the storage facilities so manure application can be by a hose drag system to limit further hauling cost and application can occur in more time efficient manner. Multiple storage sites are safer and reduce spill/overflow issues.

- We understand bedpack manure is planned to be comingled with feed lot runoff and feed storage runoff. Mixing the solid and liquid wastes creates a larger liquid manure volume. Bedpack manure may be able to be handled as a solid keeping the volume of material needed to be stored as a liquid smaller, therefore requiring a smaller liquid manure storage. The solid manure could be stored in a separate building or stacked in accordance with NRCS Standard 318 -Short Term Storage of Animal Waste and By-Products.

- Runoff from outside cattle lots creates liquid manure which in accordance with WDNR CAFO requirements would need to be handled as a liquid for which storage capacity for at least 180 days is required. If the lot runoff could be eliminated by maintaining the animals under roof on an absorbent bedding, the manure could be handled as a solid as described above.

- Heifers generating outside lot manure runoff or liquid manure inside housing structures may, alternatively, be relocated for contract raising at an alternative site as is practiced by many operators.

- Feed storage leachate and runoff could be stored separately, and not combined with manure, reducing the needed capacity for liquid manure storage. Feed storage runoff can be managed differently than manure, potentially allowing for more handling options.

- Expansion of the feed storage area at the Heifer Site is proposed with this application. This facility is located behind (to the west of) existing structures. The plans illustrate the inclusion of a system to collect leachate, but not necessarily a subsurface system to collect leachate. DATCP also recommends that the feedlot area also recommends stored feed be kept clean and dry to reduce odors, as well as, to protect feed quality. This could be accomplished by constructing a structure to cover the feed lot site.

The concepts described above could be considered to provide alternative approaches as part of long-term planning to limit the amount of liquid manure storage capacity needed and start a discussion on options for the Farm to fill their obligation to meet WPDES requirements consistent with the Town's Ordinances.

EMERGENCY MANAGEMENT

Due to the proximity of significant environmental resources to the facilities—combined with the poor safety and incident response record of Ledgeview Farms—additional measures should be taken to protect surrounding plan uses and water resources.

All of the waste storage facilities should include secondary containment systems and a liquid level monitoring system beyond the permeant level markers to prevent overtopping should be included in the designs.

Regarding the modifications of the Animal Lot at the Headquarters Farm, the review by REA found that the lot does not have adequate capacity to contain one (1) day's manure production, the rainfall 25yr/24hr rainfall event, and 6 inches of freeboard. Per NRCS 634 criteria,

> "Reception structures receiving runoff and/or precipitation shall be sized to contain a minimum of one full day's manure production, plus six inches extra depth for safety, and the volume of runoff and/or precipitation from a 25-year, 24-hour rainfall event. The increase in storage volume due to runoff and/or precipitation may be reduced if a portion of this runoff and/or precipitation can be safely routed to and contained within the waste management system."

Total volume of proposed lot = 3,439 ft^3. The lot containment does not provide adequate containment based on the above NRCS standard. Ledgeview farms must also confirm this lot does not receive roof runoff.

1 day manure production	48 FT^3
25yr 24hr event	3,439 FT^3
0.5-FT freeboard x 5,976 SF (lot area)	2,070 FT^3
Total Volume	5,557 ft3

Per our calculations (above), the total volume to be contained is 5,557 FT^3. The proposed facilities do not meet this requirement.

COMPLIANCE WITH REGULATIONS & COMMUNITY TRUST

Ledgeview Farms has not been very forthcoming with the Town or Town staff about their operations. In my dealing with their representatives during the update to the Town's Comprehensive Plan and the Town's Farmland Preservation Zoning, they have purported themselves as a "small family farm" concerned about any potential regulations that might affect their operations. They continually reminded the Town that the farm was operating long before the surrounding growth occurred.

In my time working with the Town, the community has been fully supportive of farming activity in Ledgeview. The Town has previously believed that the County, State, and Federal agencies were effectively addressing the regulation of Ledgeview Farms' operations. Until USEPA became involved due to the discharge of manure and process waste water from Ledgeview Farms into the unnamed tributary on the west end of the property, the Town was unaware of any deficiencies in the farm's operations. Reviewing the site history of the farm operations is very alarming. As a result of these significant violations the Town decided it needed to be more involved in the approval and decision-making for livestock siting and CAFO operations in the community. In the summer of 2017, the Town enacted its Local Siting Ordinance and Conditional Use Permit process that is in effect.

The DATCP regulations are clear: if an operation is or plans to populate to 1,000 AUs or more and become a CAFO, it must have a Wisconsin Pollutant Discharge Elimination System (WPDES) permit to manage pollution issues. There is a "zero" discharge standard for runoff to navigable waters from CAFO animal production areas (areas where animals are housed or otherwise confined, manure is stored and feed is stored). CAFO WPDES permits ensure farms use proper planning, nutrient management, and structure/system construction to protect Wisconsin waters. DATCP also advises that twelve (12) months before an operation becomes a CAFO, it must begin the WPDES permit application process. Ledgeview Farms has consistently failed to comply with state and federal requirements. It is the Farms' responsibility to know the rules and regulations that impact their business operations regardless of the size of the operations.

The Ledgeview Farms animal growth values referenced in Table 1 are important to discuss. Since 2009, Ledgeview Farms has been in violation of a series of regulations, yet they continued to grow. If the farm could not be trusted to operate within the law when it was small (less than 1,000 AUs), it is not clear that they can be trusted to do so with 3,500 AUs.

Given the significant historical noncompliance, it is my opinion that Ledgeview Farms should reduce the farm's size below 1,000 AUs, and come into compliance for a farm of that size before pursuing expansion. In addition to the requisite infrastructure improvements, a series of operations requirements

required by law (outlined in the following table) must be adhered to, including visual inspections, monitoring and reporting requirements, response plans and training for manure and non-manure spills by the farm operator, and off-site/roadway clean-up.

TABLE 3: Summary of Required Farm Inspections and Reporting to WDNR

INSPECTION TIMEFRAME	INSPECTION ACTIVITY
Daily	▪ Inspect water lines that could potentially come into contact with pollutants or drain to storage, containment structures or runoff control structures for leakage. Examples of these water lines include cattle waterers or sprinklers.
Weekly	▪ Stormwater controls to ensure proper operation of all stormwater diversion devices. ▪ Runoff controls to ensure proper operation of all devices channeling contaminated runoff to storage or containment structures. ▪ Storage/containment inspections of liquid storage and containment structures for: leakage, seepage, erosion, cracks and corrosion, rodent damage, excessive vegetation and other signs of structural weakness. ▪ Read depth marker and record the level of material in all liquid storage and containment facilities. Record in feet or inches above or below the margin of safety level.
Quarterly	▪ Production area inspections including outdoor animal pens, barnyards, raw material storage areas and CAFO outdoor vegetated areas. ▪ A quarterly summary of inspections is required to be submitted with the annual report. A copy of the calendar properly completed can be included as part of the annual report. The WDNR may request additional information if needed.

Ledgeview Farms has done none of these required tasks over the past decade, yet it continued to grow. An application for expansion should be revisited only after Ledgeview Farms has exhibited to the agencies and Town that it can be a good operator and good neighbor by adhering to local, state, and federal requirements. Based on standard practice, the Town would not allow an operational increase or facility expansion for any other business or industry in the community with such a history of noncompliance.

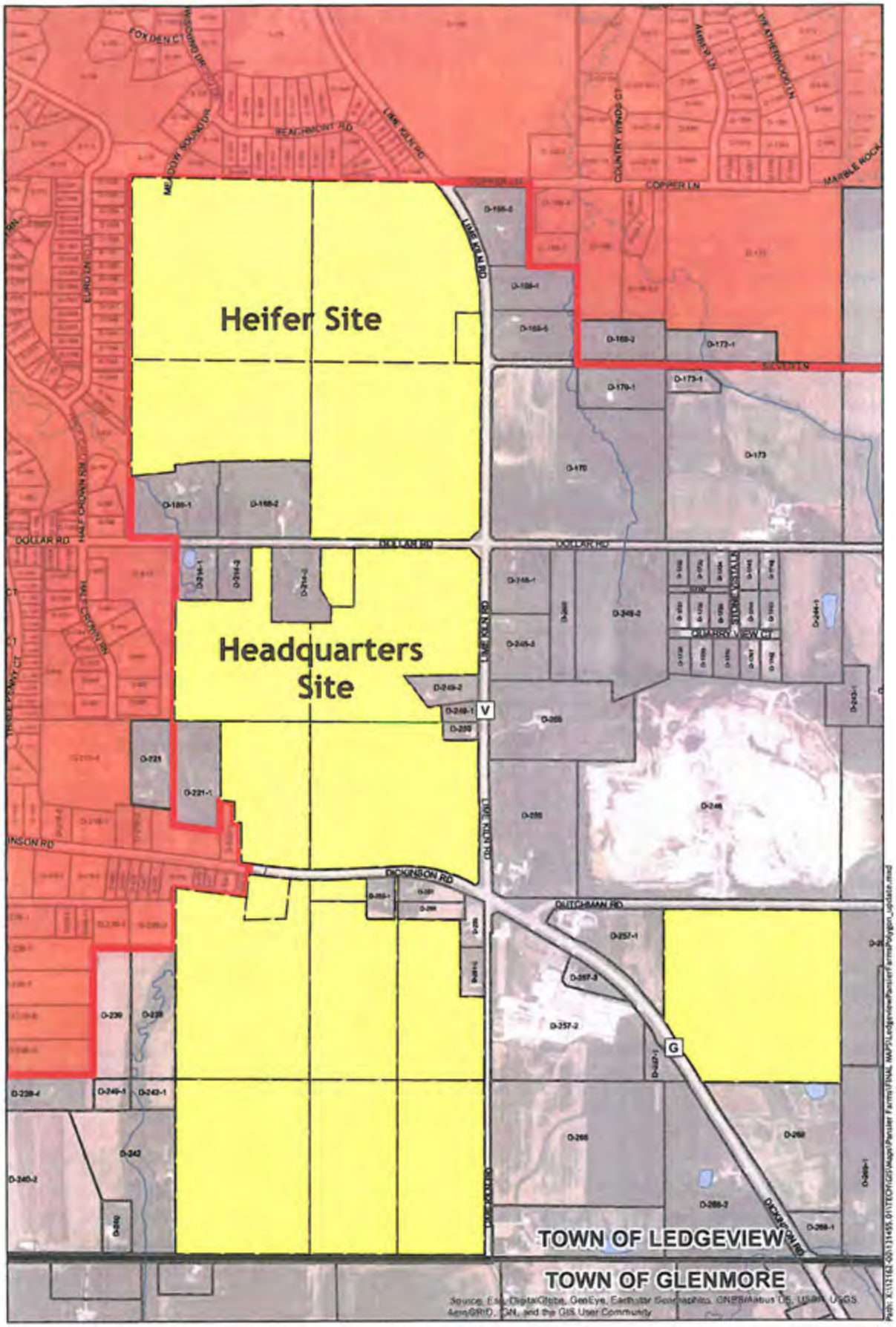
Map G illustrates the residential growth within one mile of Ledgeview Farms that occurred from 2009 – 2013 and 2013 – 2018. These date ranges correspond to the non-compliance and violations of Ledgeview Farms becoming a CAFO. Development occurred under the assumption that Ledgeview Farms was a small, family farm as they never applied for a WPDES permit or CAFO approval. Table 4 highlights the value of investment made in properties during the date ranges.

TABLE 4: Current (2018) Value of Residential Development Within One Mile of Ledgeview Farms

Development Date Range	Land Value	Improvement Value	Total Value
2009 – 2013	$10,082,800	$48,441,900	$58,524,700
2013 – 2018	$5,809,600	$26,787,000	$32,596,600
TOTALS	**$15,892,400**	**$75,228,900**	**$91,121,300**

As neither DATCP nor the WDNR had permitted or identified Ledgeview Farms as a CAFO, the public had no idea the scale of the operations that were occurring here, nor about the non-compliance issues. It is likely that

developers would not have invested in the nearby lands for residential development as the certainty of land and homes sales would have been unknown. Property owners have expressed to the Town—verbally and in writing—that they would not have purchased their homes had they known that the farm was so large, much less planning to get larger. They do not want to deal with the noise, air quality, water quality, and other environmental/health impacts associated with living near large farm operations. Once again, the secrecy and noncompliance of Ledgeview Farms has, at least in part, resulted in extensive development at its borders. Had the Town known the long-range plans of the farm it could have helped protect the farm from incompatible neighboring land uses. The farm should be trying to move the most impactful aspects of its operations, such as any new manure storage facilities, away from the established residential development rather than towards it. At this point, allowing Ledgeview Farms to expand would be a poor decision as it would only exacerbate the documented problems.



Legend

- Municipal Boundary
- Public Utility Boundary
- Properties Served by Public Utilities
- Ledgeview Farm Parcels
- Stream
- Water Body

Ledgeview — Set your sights high

Ledgeview Farms

Ledgeview Farm Parcels and Public Utility Boundary

0 400 800 1,200 1,600 Feet

Mead & Hunt

Date: 5/8/2018

Image Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, 2014, Brown County Planning and Information Department