
Livestock Facility Siting Application

Submitted: 12/06/2017

Amended: 02/02/2018

For

**Ledgeview Farm, LLC
3875 Dickinson Road
DePere, WI 54115
Jason's Cell (920) 655-3875
jasonpansier@gmail.com**

Prepared by

**Roach & Associates, LLC
856 N. Main Street
Seymour, WI 54165**

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

I, Renae Peters, on behalf of the Town of Ledgeview, acknowledge that
I have received the following Ledgeview Farm, LLC Livestock Facility Siting Application and
processing fee:

- One (1) Livestock Facility Siting Application, with Original signatures
- Four (4) duplicate copies of the Livestock Facility Siting Application
- \$1,000.00 check for processing the Livestock Facility Siting Application

Renae Peters

Signature

12-6-17

Date

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Ledgeview Farm, LLC

Livestock Facility Siting Application Narrative

Background Information & Current Operations

Ledgeview Farm, LLC is an existing farm owned and managed by Roy, Glen and Jason Pansier. Currently the farm is operating under a Wisconsin Pollution Discharge Elimination System (WPDES) Permit; however, the WPDES Permit has not yet been issued.

The farm enterprise conducts livestock activities at two production sites. The Headquarters Site (HQ) located at 3875 Dickinson Road DePere. The Heifer Site (HS) is located at 3499 Lime Kiln Road, in Ledgeview Township, in Brown County Wisconsin. The Livestock Facility Siting Application is for new facilities that will be constructed at the Heifer Site.

Ledgeview Farm, LLC (LF) currently has approximately 1,084 milking and dry cows. In addition, the entity raises the replacement heifers (770) and steers (838) from birth to 24 months housed at the HQ and Heifer Sites. This application is to allow expanding livestock Animal Units to 3,483 (Worksheet 1) and construction of a waste storage facility, feed storage and animal lot runoff management system.

Headquarters Site

Structures include:

- Milking Center
- Four (4) Freestall Barns
- Calf Barn
- Heifer Barn (Bedded Pack).
- Machinery Storage
- Shop
- Residence
- Waste Storage Facility
- Feed Storage Area

Heifer Site

Structures include:

- Heifer - Freestall Barn (L2)
- Heifer – Bedded Pack (L1)
- Concrete Yard (Y1)
- Feed Storage Area
- Machinery Storage
- Shop
- Residence

At present, LF has no Waste Storage Facility at the HS. Ledgeview Farm, LLC operates under a Nutrient Management Plan (NMP) and works with Kevin Beckard, of Ag Source to develop the Nutrient Management Plan.

Heifer Site Expansion Plans

The Wisconsin Department of Natural Resources (WDNR) and the Environmental Protection Agency (EPA) are requiring LF to install a Y1 Yard Runoff Collection System and a Leachate Management System (LMS) to collect leachate and contaminated runoff. In addition, the agencies require LF to construct additional waste storage capacity, to allow for storage of manure and processed wastewater for a minimum of 180 days. Currently LF has waste storage capacity of approximately 100 days.

New Facilities

- Expansion of the FSA
- LMS to collect leachate and contaminated runoff from the FSA and transfer to waste storage
- Y1 Yard Runoff Transfer System to waste storage
- Waste Storage Facility

Siting Application Supplemental Information

Exhibit 1 contains Area Maps of the Livestock Facility. *Exhibit 2* contains Site Maps of the Livestock Facility. The maps are required by the Livestock Facility Siting Application.

The proposed Feed Storage Expansion and Waste Storage Facility meet the applicable setback requirements outlined in Wisconsin Administrative Code ATCP 51 as well as the requirements of Brown County. The Town of Ledgeview operates under Wisconsin Administrative Code ATCP 51. The L2 Barn does not meet the setback requirements from a livestock structure to a road right-of-way however; the structure was constructed prior to the Town of Ledgeview adopting Chapter ATCP 51.

There are two (2) well installations at the HS. The existing wells that serve the production site, meets the requirements contained in Wis. Adm. Code NR 811 and NR 812 Table A, as well as the requirements found in Wis. Adm. Code NR 243.15 (1) (2).

As part of the Livestock Facility Siting Application, LF has developed an employee-training plan used to train new and existing employees. *Exhibit 3* contains LF Employee Training Plan.

Ledgeview Farm, LLC has an Environmental Incident Response Plan (EIRP) in place and a copy of the plan is contained in *Exhibit 4*. A Manure or Hazardous Material Spill Accident Worksheet is included as part of the EIRP.

Ledgeview Farm, LLC has developed an Odor Management Plan to reduce the effect of odors produced by the production sites on local residences. *Exhibit 5* contains the LF Odor Management Plan.

Animal Units:

Ledgeview Farm, LLC plans to grow milking cow numbers grow slowly at the HQ site. The HQ site housing will allow milking cow numbers to be expanded internally without purchasing cattle or adding additional housing. Worksheet 1 of the Livestock Facility Siting application contains the animal unit numbers that are supported by the current NMP and allow for the expansion of livestock from the current numbers. If additional animal units are proposed in the future, beyond the animal units requested in

Worksheet 1, LF will file an amendment to the Livestock Siting Application as well as updated the NMP to show the land base will support the proposed additional livestock.

Odor Management:

As part of the Livestock Facility Siting Law, expanded livestock operations with more than 1,000 animal units are required to pass the odor standard.

For the purpose of calculating the Odor Score, Chapter ATCP 51 – Livestock Siting allows an applicant to group livestock structures separated by greater than 750 feet into Clusters. The distance between the livestock structures at the Headquarter Site and the Heifer Site is greater than 1,500 feet. Ledgeview Farm, LLC has elected to designate the livestock structures located at the Headquarters Site as Cluster A and the livestock structures located at the Heifer Site as Cluster B. The Odor scores and maps determined a closest neighbor for each Cluster.

Cluster A – Headquarters Site

For Cluster A there are four (4) residences owned by others for which, Odor Scores were calculated. The residence identified as N1 is the residence closest to the WSF at 334 feet. The residence identified as E1 is the residence closest to the L1 Barn (429'). The residence identified as W1 is the residence closest to the L2 Barn (376'), L3 Barn (594') & L4 Barn (465'). The residence identified as S1 is the residence closest to the L5 Barn (398'), L6 Barn (285') and the Y1 Yard (368'). All of the closest neighbors have odor scores above the Livestock Siting Application minimum score of 500. The Nearest Neighbor Site Plan, Odor Score Worksheets and Distance to Neighbor Table are found in *Exhibit 10*.

Cluster B – Heifer Site

For Cluster B there are three (3) residences owned by others for which, Odor Scores were calculated. The residence identified as N1 is the residence closest to the WSF at 361 feet. The residence identified as E1 is the residence closest to the Collection Basin (1,156'), L1 Barn (855') and Y1 Yard (930'). The residence identified as S1 is the residence closest to the L2 Barn (1,043') and Y2 Yard (1,079'). All of the closest neighbors have odor scores above the Livestock Siting Application minimum score of 500. The Nearest Neighbor Site Plan, Odor Score Worksheets and Distance to Neighbor Table are found in *Exhibit 11*.

Waste and Nutrient Management:

At expanded conditions, it is estimated that approximately 24.8 million gallons of manure and wastewater is generated annually at both production sites. According to the Nutrient Management Plan (NMP), there is adequate cropland to land apply manure and wastewater for the expanded livestock numbers.

Waste Storage and Transfer Facilities:

As part of the WDNR, Wisconsin Pollution Discharge Elimination System (WPDES) permit, Roach & Associates, LLC inspected and developed an evaluation of the existing facilities at the HQ and HS. Roach & Associates, LLC designed the proposed facilities including the Waste Storage Facility, Manure Transfer System, Feed Storage Area and LMS to meet the criteria found in the Natural Resources Conservation Service (NRCS), Field Office Technical Guide (FOTG), Section IV, Standard 313 Waste Storage Facility,

Standard 522 Pond Sealing or Lining – Concrete, Standard 634 Waste Transfer and Standard 629 Waste Treatment. In addition; all of the criteria found in Wis. Admin. Code ch. NR 243 are met.

1

Chapter ATCP 51
APPENDIX A
APPLICATION FORM AND WORKSHEETS

Application for Local Approval
New or Expanded Livestock Facility



Wisconsin Department of Agriculture, Trade and Consumer Protection
2811 Agriculture Drive
P.O. Box 8911
Madison, WI 53708-8911
(608) 224-4622
(608) 224-4500

Introduction

Use this application form to obtain local approval for a *new* or *expanded* livestock facility (cattle, swine, poultry, sheep or goats) that will exceed 500 "animal units" (or a lower threshold established by local zoning ordinance prior to July 19, 2003).

Some local governments require local approval, but others do not. Check with your local government (county and town or municipality) to see if local approval is required in your area.

In some cases, you may need local approval from more than one local government (for example, the county and the town, or 2 towns if your livestock facility straddles the town line). But the application and approval process should be the same.

The construction of a new or altered *livestock structure* does not, by itself, constitute an "expansion" (unless there will also be an increase in *animal units*). If you already have a permit or local approval, you may not need another approval unless your planned expansion exceeds the number of animals previously authorized by your local government.

Local approval, if required, is governed by statewide uniform standards in Wisconsin Statutes s. 93.90 and Wisconsin Administrative Code chapter ATCP 51. This application documents compliance with those standards.

The Livestock Facility

A livestock facility includes livestock, livestock structures, the land on which they are located (it does not include pastures or winter grazing areas). *Related livestock facilities* (see definition below) are treated as a single livestock facility, for purposes of local approval. However:

- A *separate species facility* (see definition below) may be treated as a separate livestock facility, even if it is owned by the same person and located on the same land parcel as another livestock facility.
- A mere acquisition of a neighboring livestock facility does not constitute an *expansion* unless more *animal units* are added to the combined facilities.

Completing the Application

If local approval is required, complete this entire application form (including the worksheets). Follow the instructions in the application form. Attach all of the supplementary documentation required. Your application must be complete, credible and internally consistent.

The application form and worksheets ask for information to show compliance with Wisconsin livestock facility siting standards. A local government has *very limited* authority to modify the standards by local ordinance (modifications, if any, must be reflected in the local version of this application form).

As part of your application, you must specify the number of *animal units* that you will keep at a new or expanded livestock facility. If the local government approves your requested number, this will be the maximum number that you may keep for 90 days or more in any 12-month period.

A local government may require you to submit up to 4 duplicate copies of the complete application, worksheets, maps and other attachments. But you are not required to submit duplicate copies of engineering design specifications.

Worksheets

This application includes the following worksheets:

- *Animal units* (worksheet 1)
- *Odor management* (worksheet 2)
- *Waste and nutrient management* (worksheet 3)
- *Waste storage facilities* (worksheet 4)
- *Runoff management* (worksheet 5)

Complete the worksheets following all instructions (including those on each worksheet). You may use a convenient automated spreadsheet in place of Tables A and B of worksheet 2 if you prefer (results are identical). The spreadsheet is available at <http://www.datcp.state.wi.us>.

If the Wisconsin Department of Natural Resources (DNR) has issued a Wisconsin Pollutant Discharge Elimination System (WPDES) permit for your proposed livestock facility, you can check a box on worksheets 3, 4 and 5, and submit a copy of that permit with the worksheets. A WPDES permit does not affect the requirements for completing worksheets 1 and 2.

Fees

A local government may require a fee to offset its reasonable costs to review and process this application. The fee, if any, must be established by local ordinance and may not exceed \$1,000. A local government may NOT charge any other fee, or require you to post any bond or security.

Local Approval Process

If you complete the application properly, the local government **MUST APPROVE** the proposed livestock facility unless it finds, based on clear and convincing evidence in the local record, that the facility fails to meet the state standards.

Within 45 days after you submit your application, the local government must notify you whether your application is complete. If you failed to complete part of the application, you must submit the missing information. The local government must grant or deny the application within 90 days after it declares the application complete, and issue its decision in writing. The approval must include a duplicate copy of the approved application, marked "approved." The duplicate copy shall include all the worksheets, maps, and other attachments included in the application, with the exception of the engineering design specifications. The local government must make a record of its decision making process, and the evidence supporting its decision. The record must include your application.

Appeal of Local Decision

If you disagree with the local government's decision on your application, you may appeal that decision to the Wisconsin Livestock Facility Siting Review Board ("Board"). Other "aggrieved persons" may also appeal to the Board. An "aggrieved person" includes any person who resides or owns land within 2 miles of your proposed livestock facility.

You must file your appeal within 30 days after the local government issues its decision (or, if you pursue a local administrative appeal process first, within 30 days after that appeal process is complete). The Board will review the local decision based on the evidence in the local record (it will not hold a new hearing or accept new testimony or evidence). You must file your appeal in writing at the following address:

Wisconsin Livestock Facility Siting Review Board
c/o Secretary, Department of Agriculture, Trade and Consumer Protection
P.O. Box 8911
Madison, WI 53708-8911

Terms Used in this Application Form

In this application form, you will see a number of *italicized* terms. Those terms are defined below (for more specific definitions, see ATCP 51):

"Adjacent" – Located on land parcels that touch each other, or on land parcels that are separated only by a river, stream, or transportation or utility right-of-way.

"Affected Neighbors" – Residences or *high-use buildings* within 2500 feet of any livestock structure at the proposed facility, other than those owned by the applicant or by persons who have agreed to exclude them from the applicant's odor score calculation. The total odor score for a *livestock facility* depends, in part, on the proximity and density of "affected neighbors."

"Animal housing area" – That portion of an animal housing structure to which animals have access, and in which manure may accumulate. "Animal housing area" includes free-stalls and travel lanes. It does NOT include holding areas, feed alleys, storage areas or milking parlors.

"Animal lot" – A feedlot, barnyard or other outdoor facility where livestock are concentrated for feeding or other purposes. Pastures and winter grazing areas are NOT "animal lots." Treat multiple "animal lots" as a single "animal lot" if runoff from the "animal lots" drains to the same treatment area or if runoff from the "animal lot" treatment areas converges or reaches the same surface water within 200 feet of any of those treatment areas.

"Animal units" – Equivalent units of *livestock*. The number of animals constituting an "animal unit" varies by species. For example, one milking dairy cow equals 1.4 "animal units." A beef animal over 600 lbs. equals 1.0 "animal units." A pig over 55 lbs. equals 0.4 "animal units." A laying chicken equals 0.01 "animal unit." The number of "animal units" kept at a *livestock facility* means the largest number of "animal units" that will be at the *livestock facility* on at least 90 days in any 12-month period. Calculate "animal units" according to worksheet 1.

"BARNY runoff model" – The Wisconsin version of a model that is commonly used to predict nutrient runoff from *animal lots*. An Excel computer spreadsheet version is available on the DATCP website (engineering directory).

"Certified agricultural engineering practitioner" – A practitioner who is properly qualified under ATCP 50.46.

"Cluster" – Any group of one or more *livestock structures* within a *livestock facility*. If you wish to do so, you may calculate separate odor scores for "clusters" that are separated by more than 750 feet.

"Complete application for local approval" – An application that contains everything required under ss. ATCP 51.30(1) to (4).

"DATCP" – Wisconsin Department of Agriculture, Trade and Consumer Protection. The application form cites DATCP rules including Wis. Adm. Code chs. *ATCP 51* (livestock facility siting), *ATCP 50* (soil and water resource management) and *ATCP 17* (livestock premises registration).

"DNR" – Wisconsin Department of Natural Resources. The application form cites DNR rules including Wis. Adm. Code chs. *NR 243* (WPDES permits), *NR 811* (community wells) and *NR 812* (private wells).

"Expanded livestock facility" – The entire *livestock facility* created by an *expansion*, including new, existing and altered *livestock structures* (existing structures are subject to less rigorous standards). Your application must indicate the maximum number of *animal units* that you will keep at the "expanded livestock facility."

"Expansion" – An increase in the largest number of *animal units* kept at a *livestock facility* on at least 90 days in any 12-month period. The acquisition of an existing livestock facility, by the operator of an *adjacent* facility, is not an "expansion" unless the operator increases the largest number of *animal units* kept at the combined livestock facilities on at least 90 days in any 12-month period.

"High-use building" – A residential building that has at least 6 distinct dwelling units; a restaurant, hotel, motel, or tourist rooming house; a school building; a hospital or licensed care facility; or a non-farm business or workplace that is open at least 40 hours a week. The odor score for your *livestock facility* depends, in part, on the proximity and density of neighboring "high-use buildings."

"Karst features" – Sinkholes, fractured bedrock or like features that may result in direct pollution runoff to groundwater.

"Livestock" – Cattle, swine, poultry, sheep or goats.

"Livestock facility" – A feedlot, dairy farm, or other operation where *livestock* are or will be fed, confined, maintained, or stabled for a total of 45 days or more in any 12-month period. A "livestock facility" includes all of the tax parcels on which the facility is located, but it does NOT include a parcel used only for *pasture* or as a *winter grazing area*. *Related livestock facilities* are considered a single "livestock facility," except a livestock operator may elect to treat a *separate species facilities* as a separate livestock facility.

"Livestock structure" – A building or structure such as a barn, milking parlor, feed storage facility, feeding facility, *animal lot* or *waste storage structure*. *Pastures*, *winter grazing areas* and machine sheds are NOT "livestock structures."

"Local approval" – A license, permit, special zoning exception, conditional use permit, or other local authorization for a *new or expanded livestock facility*. This application form applies, regardless of the form of local approval. However, this application form does NOT cover any of the following permits (for which separate requirements may apply):

- Building, electrical or plumbing permits (if local standards are consistent with state code).
- Manure storage system permits (see *ATCP 50.56*), UNLESS construction is part of a *new or expanded livestock facility*.
- Permits required by certain local ordinances related to shoreland zoning, floodplain zoning, construction site erosion control or stormwater management.

"New livestock facility" – A *livestock facility* used for the first time, or for the first time in at least 5 years.

"NRCS" – The Natural Resource Conservation Service of the United States Department of Agriculture. Wisconsin livestock siting standards refer to NRCS Technical Guide standards.

"Pasture" – Land on which livestock graze or otherwise seek feed in a manner that maintains the vegetative cover over all of the grazing or feeding area.

"Premises ID" – The unique ID number assigned to your *livestock facility* under the Wisconsin Livestock Premises Registration Program (*ATCP 17*). Go to <http://www.datcp.state.wi.us> for more information. To register your *livestock facility*, go to <http://www.wild.org/>.

"Qualified nutrient management planner" – A person, other than the applicant, who is qualified under *ATCP 50.48*.

"Related livestock facilities" – Two or more *livestock facilities* that are owned or managed by the same person and meet any of the following criteria:

- They are located on the same tax parcel or *adjacent* tax parcels.
- They use any of the same *livestock structures* to collect or store manure.
- They generate manure that is applied to the same parcel of land.

"Separate Species Facility" – A distinct part of a *livestock facility* that meets all of the following criteria:

- It has only one of the following types of livestock, and that type is not found in any other part of the *livestock facility*:
 - Cattle
 - Swine
 - Poultry
 - Sheep
 - Goats
- It has no more than 500 *animal units*.
- Its animal housing and manure storage structures, if any, are located at least 750 feet from *livestock structures* that are used by other parts of the *livestock facility*.

"Substantially altered" livestock structure – A *livestock structure* that undergoes a material change in construction or use such as:

- An increase in the capacity of a *waste storage facility*.
- The addition of a liner to a *waste storage facility*.
- An increase of more than 20% in the area or capacity of a *livestock structure* used to house, feed, or confine *livestock* or to store livestock feed.
- An increase of more than 20% in the number of *animal units* that will be kept in a *livestock structure* on at least 90 days in any 12-month period.

"Waste storage structure" – An embankment structure, excavated pit, dugout or fabricated structure that is used to store manure, milking center waste or other organic waste generated by a *livestock facility*. For the purposes of waste storage structure setback (application form, A-2) and worksheet 2, a "waste storage structure" does not include a structure used to collect and store waste under an animal housing facility, or a manure digester consisting of a sealed structure in which manure is subjected to managed biological decomposition.


"Waste storage facility" – A *waste storage structure* and any attached piping or equipment used to load or unload the structure.

"Winter grazing area" – Cropland or *pasture* where *livestock* feed on dormant vegetation or crop residue, with or without supplementary feed, during the period October 1 to April 30. "Winter grazing area" does not include any of the following:

- An area, other than a *pasture*, where *livestock* are kept during the period from May 1 to September 30.
- An area which at any time has an average of more than 4 *animal units* per acre.
- An area from which *livestock* have unrestricted access to navigable waters of the state.
- An area in which manure deposited by *livestock* causes nutrient levels to exceed standards in ATCP 51.16.

"WPDES permit" – Wisconsin Pollutant Discharge Elimination System permit issued by DNR for a concentrated animal feeding operation over 1000 *animal units*, or for operations of any size that discharge pollutants directly to waters of the state.

arm-lwr- 11/04 January, 2006

 **Wisconsin Department of Agriculture, Trade and Consumer Protection**
2811 Agriculture Drive, PO Box 8911, Madison WI 53708-8911
Phone: (608) 224-4622 or (608) 224-4500

Application for Local Approval Wis. Statutes s. 93.90
New or Expanded Livestock Facility Wis. Adm. Code ch. ATCP 51

1. Legal Name of Applicant (Business Entity): Ledgerview Farm, LLC

2. Type of Business Entity: check one

<input type="checkbox"/> Individual	<input type="checkbox"/> Corporation	<input type="checkbox"/> Partnership	<input type="checkbox"/> Cooperative	<input checked="" type="checkbox"/> LLC
<input type="checkbox"/> Trust	<input type="checkbox"/> Other	Describe:		

3. Other names, if any, under which applicant does business (list all):

4. Contact Individual: Name: Jason Pansier

Phone: 920-655-3875 E-mail: jasonpansier@gmail.com

5. Business Address: Street Address: 3875 Dickinson Rd

City/Village/Town: DePere County: Brown State: WI Zip: 54115

6. Principal Owners or Officers (list if applicant is an entity other than an individual):

Name: Jason Pansier	Title: Member	Phone: 920-655-3875
Address: 3875 Dickinson Rd	City: DePere	State: WI Zip: 54115
Name: Roy Pansier	Title: Member	Phone: 920-655-1844
Address: 3875 Dickinson Rd	City: DePere	State: WI Zip: 54115
Name: Glen Pansier	Title: Member	Phone: 920-655-0416
Address: 3875 Dickinson Rd	City: DePere	State: WI Zip: 54115

7. Description of Proposed Livestock Facility Leachate Management System, VI Yard Runoff Transfer System
Waste Storage Facility, Feed Storage Area, Barn Expansion

Check one: ☐ New Livestock Facility ☒ Expanded Livestock Facility Premises ID: 00KKELB

Address of Proposed Livestock Facility: 3499 Lime Kiln Rd

City/Village/Town: Green Bay County: Brown State: WI Zip: 54311

Town #: 23 Range # (E or W): 21E Section #: 28 1/4 Section #: SE

Application (continued)	
<p>8. Total Animal Units</p> <p>Enter total animal units from worksheet 1:</p> <p>Total Animal Units: <u>3,483</u> This is the maximum <i>livestock facility</i> size for which the applicant requests approval at this time.</p>	
<p>9. Area Map of Livestock Facility Exhibit 1</p> <p>Attach a scale map or aerial photo of the proposed <i>livestock facility</i> and surrounding area. The map or photo must be appropriately sized and marked, so that it clearly and legibly shows all of the following:</p> <ul style="list-style-type: none"> • All existing and proposed <i>livestock structures</i>. Label each <i>livestock structure</i> to show structure type, and whether existing or proposed. • The area lying within 2 miles of any of the <i>livestock structures</i>. Show all existing buildings, property lines, roadways, and navigable waters lying within that area. • All residences and <i>high use buildings</i> within 2500 ft. of any <i>livestock structure</i>. Show which (if any) of those buildings are owned by the applicant, or by persons who have agreed to exclude the buildings from the applicant's odor worksheet calculations. • Topographic lines at 10 ft. elevation intervals. • Map scale and north direction indicator. 	
<p>10. Site Map of Livestock Facility Exhibit 2</p> <p>Attach a scale map or aerial photo of the proposed <i>livestock facility</i> site. The map or photo shall be appropriately sized and marked, so that it clearly and legibly shows all of the following:</p> <ul style="list-style-type: none"> • All existing and proposed <i>livestock structures</i>. Label each <i>livestock structure</i> to show structure type, and whether existing or proposed. • The area lying within 1,000 ft. of any of the <i>livestock structures</i>. Show all existing buildings, property lines, roadways, navigable waters, and known <i>karst features</i> within that area. • Topographic lines, at 2 ft. elevation intervals, for the area within 300 feet of the <i>livestock structures</i>. • Map scale and north direction indicator. 	
<p>11. Location of Livestock Structures</p> <p>The applicant certifies that:</p> <ul style="list-style-type: none"> • All <i>livestock structures</i> comply with applicable local property line and road setbacks (see ATCP 51.12). • All <i>waste storage structures</i> comply with setbacks in ATCP 51.12(2). • All <i>livestock structures</i> comply with applicable local shoreland, wetland, and floodplain zoning ordinances (copies available from local government). • Wells comply with the Wisconsin well code (NR 811 and 812). <i>New or substantially altered livestock structures</i> are separated from existing wells (including neighbors' wells) by setback distances required in NR 811 and 812. 	

Application (continued)	
12. Employee Training Plan	Exhibit 3
<p>Attach an Employee Training Plan for employees who will work at the <i>livestock facility</i>. Applicant determines plan contents, as long as the plan identifies all of the following:</p> <ul style="list-style-type: none"> • Training topics including, at a minimum, nutrient management, odor management, runoff management, manure and waste handling, employee safety, and environmental incident response. • The number and job categories of employees to be trained. • The form and frequency of training, which at a minimum must include a plan for at least one training per year. • Training presenters (these may include <i>livestock facility</i> managers, consultants or professional educators). • A system for taking and recording attendance. 	
13. Environmental Incident Response Plan	Exhibit 4
<p>Attach an Environmental Incident Response Plan for the <i>livestock facility</i>. Applicant determines plans contents, as long as the plan identifies all of the following:</p> <ul style="list-style-type: none"> • Types of environmental incidents covered. These must include, at a minimum, overflows and spills from waste storage facilities, catastrophic system failures, manure spills during transport and application, movement of manure during or after application, catastrophic mortality disposal emergency, and odor complaints. • The name and business telephone number of at least one individual who will handle public questions and concerns related to environmental incidents. • The names and telephone numbers of first responders (e.g. DNR, fire departments, excavation contractors). • Incident response procedures, including emergency response, recordkeeping and reporting procedures. 	
14. Odor Management Plan (Optional)	Exhibit 5
<p>An applicant required to complete the odor management worksheet may attach an <i>optional</i> odor management plan. The applicant determines plan contents, as long as the plan addresses all of the following: activities to reduce community conflict; practices used to reduce dust; practices used to reduce odor from feed storage leachate; practices used to conserve water; and practices used to reduce odor from dead animals.</p>	

Application (continued)
<p>15. Other Laws</p> <p>The following laws, among others, may apply to the operation of a <i>livestock facility</i>. Local approval of a <i>livestock facility</i> siting application is NOT based on these laws, except as specifically provided in <i>ATCP 51</i>. However, violations may have other legal consequences:</p> <ul style="list-style-type: none"> • Soil conservation and nonpoint pollution laws (contact your county land conservation department). Livestock facilities that have 1,000 or more animal units, or that discharge pollutants directly to waters of the state, must also obtain a <i>WPDES permit</i> from <i>DNR</i>. • Pesticide and agricultural chemical laws administered by <i>DATCP</i>. • Animal disease control laws administered by <i>DATCP</i>. • Animal mortality laws administered by <i>DATCP</i>. • Vehicle weight limits and state prohibitions against spilling waste on roads. • Food safety and animal health licenses administered by <i>DATCP</i>. All livestock operations must register, and some (such as dairy farms) must hold a state license. • Air pollution control regulations administered by <i>DNR</i>. • Building, electrical, plumbing and sanitation codes administered by the Wisconsin Department of Safety and Professional Services. A local authority may disapprove a proposed <i>livestock facility</i> that violates a conforming local code. • Construction site erosion control laws administered by <i>DNR</i>. • Local erosion control and stormwater management ordinances. • Petroleum storage laws administered by the Wisconsin Department of Safety and Professional Services. • High capacity well regulations administered by <i>DNR</i>.
<p>16. Worksheets</p> <p>Complete worksheets as required (follow instructions on each worksheet) and attach to application.</p>
<p>Worksheet 1 – Animal Units.</p>
<p>Worksheet 2 – Odor Management.</p>
<p>Worksheet 3 – Waste and Nutrient Management. If you hold a <i>WPDES permit</i> from <i>DNR</i> for the same proposed <i>livestock facility</i> (for an equal or greater number of <i>animal units</i>), check the appropriate box on this worksheet, and submit a copy of the permit with this application.</p>
<p>Worksheet 4 – Waste Storage Facilities. If you hold a <i>WPDES permit</i> from <i>DNR</i> for the same proposed <i>livestock facility</i> (for an equal or greater number of <i>animal units</i>), check the appropriate box on this worksheet, and submit a copy of the permit with this application.</p>
<p>Worksheet 5 – Runoff Management. If you hold a <i>WPDES permit</i> from <i>DNR</i> for the same proposed <i>livestock facility</i> (for an equal or greater number of <i>animal units</i>), check the appropriate box on this worksheet, and submit a copy of the permit with this application.</p>

Application (continued)	
<p>Authorized Signature:</p> <p><i>I certify that the information contained in this application (including worksheets and all attachments) is complete and accurate to the best of my knowledge.</i></p>	
<p>_____ Signature of Applicant or Authorized Representative</p>	<p><u>2/2/2018</u> Date</p>
<p><u>Jason Pansier</u> Print Name</p>	<p><u>Owner / Partner</u> Title</p>
For Office Use Only:	
Application #:	
Date Application Received:	
Date Completeness Determined:	Date Notice Sent to Applicant:
Date Notice Sent to Adjacent Landowners:	
Decision Date:	
Approved or Disapproved:	
Date Appeal Filed (if any):	

arm-lwr-- 11/04 January 2006



Wisconsin Department of Agriculture, Trade and Consumer Protection
 2811 Agriculture Drive, PO Box 8911, Madison WI 53708-8911
 Phone: (608) 224-4622 or (608) 224-4500

Worksheet 1 – Animal Units

Instructions: Use this worksheet to determine the number of *animal units* for which you request approval. You may request approval for a number that is large enough to accommodate current and potential future expansions. If the local government approves the requested number of *animal units*, that is the maximum number that you may keep for 90 days or more in any 12-month period. You may not exceed that number without additional approval.

To complete this worksheet:

1. Identify each type of *livestock* that you might keep at the proposed facility. Enter the maximum number of animals of each type that you might keep for at least 90 days in any 12-month period.
2. Multiply the number of animals of each type by the relevant Animal Unit Factor to obtain *animal units* of each type.
3. Sum the *animal units* for all *livestock* types to obtain the Total *Animal Units* for which you request approval.

	Livestock Type	Animal Unit Factor	Animal Units For Proposed Facility		
<i>Example – Milking & Dry Cows</i>			1.4 x	800	= 1120 AU
Dairy	Milking and Dry Cows	1.4	1.4 x	1355	= 1897
	Heifers (800 lbs. to 1200 lbs.)	1.1	1.1 x	450	= 495
Cattle	Heifers (400 lbs. to 800 lbs.)	0.6	0.6 x	270	= 162
	Calves (up to 400 lbs.)	0.2	0.2 x	270	= 54
Beef	Steers or Cows (600 lbs. to market)	1.0	1.0 x	675	= 675
	Calves (under 600 lbs.)	0.5	0.5 x	400	= 200
	Bulls (each)	1.4	1.4 x		=
Swine	Pigs (55 lbs. to market)	0.4	0.4 x		=
	Pigs (up to 55 lbs.)	0.1	0.1 x		=
	Sows (each)	0.4	0.4 x		=
	Boars (each)	0.5	0.5 x		=
Poultry	Layers (each)	0.01	0.01 x		=
	Broilers (each)	0.005	0.005 x		=
	Broilers – continuous overflow watering	0.01	0.01 x		=
	Layers or Broilers – liquid manure system	0.033	0.033 x		=
	Ducks – wet lot (each)	0.2	0.2 x		=
	Ducks – dry lot (each)	0.01	0.01 x		=
	Turkeys (each)	0.018	0.018 x		=
Sheep (each)		0.1	0.1 x		=
Goats (each)		0.1	0.1 x		=
Total Animal Units for Which Applicant Requests Approval			= 3,483		

Jason Pault
 Signature of Applicant or Authorized Representative

2/2/18
 Date

Arm-lwr- 11/04 January 2006



Wisconsin Department of Agriculture, Trade and Consumer Protection
 2811 Agriculture Drive, PO Box 8911, Madison WI 53708-8911
 Phone: (608) 224-4622 or (608) 224-4500

Worksheet 2 – Odor Management *Cluster A - Exhibit 10*

Instructions: This worksheet addresses odor from *livestock structures*. You are NOT required to complete this worksheet if any of the following apply (check box if applicable):

- ☐ I am requesting approval for a *new livestock facility* with fewer than 500 *animal units*.
- ☐ I am requesting approval for an *expanded livestock facility* with fewer than 1,000 *animal units*.
- ☐ All *livestock structures* will be at least 2500 ft. from the nearest affected neighbor.

If you checked any of the above boxes, just sign below and submit this page with your application. If you did NOT check any of the above boxes, you must complete this worksheet to calculate the odor score (Box 4) for your proposed *livestock facility*. To meet the odor management standard, you must have a total odor score of 500 or more.

If *livestock structures* are located in *clusters* that are separated by more than 750 feet, you may elect to complete a separate worksheet for each *cluster*. If you choose that option, each *cluster* must meet the odor management standard.

A complete worksheet must include Tables A and B. You may use a convenient automated spreadsheet in place of Tables A and B if you prefer (submit spreadsheet output instead of tables, results will be identical). However, you must still sign and submit this signature page. The spreadsheet is available at the DATCP website, <http://www-datcp.state.wi.us>.

TO COMPLETE THIS WORKSHEET, FOLLOW THESE STEPS:

Step 1: Complete Table A to determine the Predicted Odor from your *livestock structures*. Enter the Predicted Odor in Box 3 below (NOT Box 1).

Step 2: Complete Table B to determine your Separation Score. Enter your Separation Score in Box 1 below. (NOT Box 2).

Step 3: Enter your management credits in Box 2 (maximum 100 points). All applicants may enter 80 points for completing required incident response and employee training plans (described on page A-3). Applicants completing an optional odor management plan (described on page A-3), may add an additional 20 points. Applicants determine plan contents, as long as the plan addresses the required topics.

Step 4: Add Box 1 and Box 2. Subtract Box 3 and enter the total in Box 4. This is your Odor Score.

569	+	100	-	78	=	591
Box 1 Separation Score (from Step 2)		Box 2 Management Score (from Step 3)		Box 3 Predicted Odor (from Step 1)		Box 4 Odor Score

A local government must approve a *livestock facility* with an odor score of 500 or more (Box 4). You may add odor control practices to increase your odor score to 500 or more. A local government may approve, but is not required to approve, a *livestock facility* with an odor score less than 500 but not less than 470.

Jordan Parmer
 Signature of Applicant or Authorized Representative

2/2/18
 Date

Arm-lwr- 11/04 January 2006

**Wisconsin Department of Agriculture, Trade and Consumer Protection**

2811 Agriculture Drive, PO Box 8911, Madison WI 53708-8911

Phone: (608) 224-4622 or (608) 224-4500

Worksheet 2 – Odor Management**Cluster B - Exhibit 11**

Instructions: This worksheet addresses odor from *livestock structures*. You are NOT required to complete this worksheet if any of the following apply (check box if applicable):

- ☐ I am requesting approval for a *new livestock facility* with fewer than 500 *animal units*.
- ☐ I am requesting approval for an *expanded livestock facility* with fewer than 1,000 *animal units*.
- ☐ All *livestock structures* will be at least 2500 ft. from the nearest affected neighbor.

If you checked any of the above boxes, just sign below and submit this page with your application. If you did NOT check any of the above boxes, you must complete this worksheet to calculate the odor score (Box 4) for your proposed *livestock facility*. To meet the odor management standard, you must have a total odor score of 500 or more.

If *livestock structures* are located in *clusters* that are separated by more than 750 feet, you may elect to complete a separate worksheet for each *cluster*. If you choose that option, each *cluster* must meet the odor management standard.

A complete worksheet must include Tables A and B. You may use a convenient automated spreadsheet in place of Tables A and B if you prefer (submit spreadsheet output instead of tables, results will be identical). However, you must still sign and submit this signature page. The spreadsheet is available at the DATCP website, <http://www-datcp.state.wi.us>.

TO COMPLETE THIS WORKSHEET, FOLLOW THESE STEPS:

Step 1: Complete Table A to determine the Predicted Odor from your *livestock structures*. Enter the Predicted Odor in Box 3 below (NOT Box 1).

Step 2: Complete Table B to determine your Separation Score. Enter your Separation Score in Box 1 below. (NOT Box 2).

Step 3: Enter your management credits in Box 2 (maximum 100 points). All applicants may enter 80 points for completing required incident response and employee training plans (described on page A-3). Applicants completing an optional odor management plan (described on page A-3), may add an additional 20 points. Applicants determine plan contents, as long as the plan addresses the required topics.

Step 4: Add Box 1 and Box 2. Subtract Box 3 and enter the total in Box 4. This is your Odor Score.

569	+	100	-	115	=	554
Box 1 Separation Score (from Step 2)		Box 2 Management Score (from Step 3)		Box 3 Predicted Odor (from Step 1)		Box 4 Odor Score

A local government must approve a *livestock facility* with an odor score of 500 or more (Box 4). You may add odor control practices to increase your odor score to 500 or more. A local government may approve, but is not required to approve, a *livestock facility* with an odor score less than 500 but not less than 470.

James Poutu
Signature of Applicant or Authorized Representative

2/2/18
Date

See Exhibits 10 + 11

TABLE A: Predicted Odor from Livestock Structures

Instructions: Complete Table A. You must measure all structures to the same affected neighbor. If the nearest neighbor is not the same for all livestock structures, you will need to complete the table once for each close neighbor. Compare the "H" Total of the table for each neighbor. The neighbor that has the lowest weighted distance is considered your nearest affected neighbor, and you should use that table to complete the odor worksheet. Enter the Column F total on page A-6 in Box 3. Enter the Column G result on page A-8 in Table B, Step 1. Add lines or use additional sheet, if needed, to list all structures.

Worksheet 2 (continued)

1. Animal Housing Areas – List each

Column A Manure Management Type Enter your housing buildings and the relevant 4-letter code from Chart 2. You may exclude up to 1000 calf/hutches and 4 structures less than the sq footage listed in Chart 2.	Column B Odor Generation Number From Chart 2	Column C Housing Area (ft ²) Use occupied animal area only. Exclude feed alleys, holding areas and milking parlors. Express in 10,000's. (Ex: 15,323 ft ² = 1.53)	Column D Odor Control Practice Codes List all that apply to each housing area from Chart 3	Column E Multiplier for Odor Control Practice List all that apply to each from Chart 3. Enter "1" if none.	Column F Predicted Odor Multiply columns B, C, and E	Column G Distance to Nearest Affected Neighbor (ft) Measure from corner of the building to corner of the neighbor's building. Measure all to the same neighbor.	Column H Weighted Distance (ft) Multiply columns F & G
1A.							
1B.							
1C.							
1D.							
1E.							

2. Waste Storage Facilities – List each

Column A Waste Storage Type Enter 4-letter type code from Chart 2	Column B Odor Generation Number From Chart 2	Column C Exposed Surface Area Measure surface area (ft ²) when pit is filled to capacity, excluding feedbed. Enter in 10,000's. (Ex: 75,575 = 7.56)	Column D Odor Control Practice Codes List all that apply to each facility from Chart 3	Column E Multiplier for Odor Control Practice List all that apply to each from Chart 3. Enter "1" if none.	Column F Predicted Odor Multiply columns B, C, and E	Column G Distance to Nearest Affected Neighbor (ft) Measure from top inside edge to neighbor's building corner. Measure to the same neighbor.	Column H Weighted Distance (ft) Multiply columns F & G
2A.							
2B.							
2C.							
2D.							

3. Animal Lots – List each

Column A Animal Lot Type Enter 4-letter type code from Chart 2	Column B Odor Generation Number From Chart 2	Column C Animal Lot Area (ft ²) Enter in 10,000's (Ex: 7438 = 74)	Column D Odor Control Practice Codes List all that apply to each facility from Chart 3	Column E Multiplier for Odor Control Practice List all that apply to each from Chart 3. Enter "1" if none.	Column F Predicted Odor Multiply columns B, C, and E	Column G Distance to Nearest Affected Neighbor (ft) Measure from corner to corner. Measure all structures to the same neighbor.	Column H Weighted Distance (ft) Multiply columns F & G
3A.							
3B.							
3C.							
					F Total	G = (H Total) ÷ (F Total)	H Total

Enter on page A-6, Box 3
Enter on page A-8, Table B, Step 1

Worksheet 2 (continued)

Table B: Separation Score

INSTRUCTIONS		RESULTS
Step 1: Enter, at right, the result from Table A, Column G (page A-7).		Distance (ft.) to Nearest Affected Neighbor: _____
Step 2: Select multiplier based on the compass direction looking from the livestock facility to the nearest affected neighbor. Enter at right.		Multiplier: _____
Compass Direction	Multiplier	
North	1.0	
Northeast	1.0	
East	1.1	
Southeast	1.2	
South	1.2	
Southwest	1.2	
West	1.3	
Northwest	1.1	
Step 3: Calculate wind-adjusted separation distance (Distance to nearest affected neighbor x multiplier). Enter at right.		Wind-Adjusted Separation Distance (ft.) _____
Step 4: Determine affected neighbor density and enter at right: <i>Low density</i> = No more than 5 residences and no high-use buildings within 1300 ft of each structure. <i>High density</i> = 6 or more residences or at least one high-use building within 1300 ft of each structure.		Low or High Density? _____
Step 5: Use results above and Chart 1 to find your Separation Score. Enter at right and on Page A-6 in Box 1.		Separation Score _____

Chart 1: Separation Score

Wind-Adjusted Separation Distance (ft.)	Low Density	High Density
0-99	505	503
100-149	506	504
150-199	511	507
200-249	516	510
250-299	521	514
300-349	527	518
350-399	534	523
400-449	541	528
450-499	548	533
500-599	560	542
600-699	577	555
700-799	595	569
800-899	615	585
900-999	636	601
1000-1099	658	619
1100-1199	681	637
1200-1299	705	657
1300-1399	730	
1400-1499	756	
1500-1599	783	
1600-1699	810	
1700-1799	839	
1800-1899	868	
1900-1999	899	
2000-2099	930	
2100-2199	962	
2200-2299	994	
2300-2399	1027	
2400-2499	1061	
2500-2749	1123	
2750-2999	1214	
3000-3249	1309	

Worksheet 2 (continued)

Chart 2: Odor Generation Numbers

Animal Housing Area Type	Housing/Management Type Code	Manure Management Method	Odor Generation Number	Exempt Buildings Maximum Size (ft ²) (May exclude up to 4)
Dairy Stanchion	DSDC	Daily to weekly cleaning	2	7500
Dairy Free Stall and Beef & Dairy Heifers (Forage Ration)	DBSS	Slatted floor (includes floor and pit below)	6	2500
	DBSC	Scrape	4	3500
	DBAF	Alley flush to storage	10	1500
	DBBP	Bedded pack	2	7500
Beef Finishing (High Energy Ration)	BFSF	Slatted floor (includes floor and pit below)	12	1000
	BFSC	Scrape	8	2000
	BFBP	Bedded pack	4	3500
Pork Gestation/ Farrow/Nursery	PGSF	Slatted floor (includes floor and pit below)	46	N/A
	PGPP	Pull plug to storage	22	N/A
Pork Finishing	PFSF	Slatted floor (includes floor and pit below)	34	N/A
	PFPP	Pull plug to storage	20	N/A
	PFSS	Scrape systems to storage	11	1500
	PFDB	Deep bedded	4	3500
Poultry	PBLT	Broiler (litter)	1	15000
	PDLO	Ducks (liquid)	20	N/A
	PLAY	Layers	20	N/A
	PTDL	Turkey and Ducks (litter)	2	7500

Type Codes	Waste Storage Facility Types <i>Note: Storage under slatted floor is addressed under animal housing.</i>	Odor Generation Number
WSSS	Solid (stack)	2
WSLT	Long term (6 months or longer as determined in Column E of worksheet 3)	13
WSST	Short term (less than 6 months as determined in Column E of worksheet 3)	28

Animal Lot Codes	Animal Lot Types		Odor Generation Number
ALPV	Paved		4
UPDB	Unpaved	Dairy/Beef/Sheep/Goats	6
UPSW		Swine/Poultry	11

Worksheet 2 (continued)

Chart 3: Odor Control Practices

Category	Practice Code	Practice Name (Practices must meet specifications on pages A-11 to A-13)	Multiplier*
Animal Housing Area			
A	A1	Diet manipulation	0.8
B (Choose only 1)	B1	Bio-filter	0.1
	B2	Vegetable oil sprinkling (for swine only)	0.4
	B3	Fresh water flush	0.4
	B4	Treated water flush	0.7
	B5	Air Dam (for swine only)	0.9
C	C1	Windbreak (includes man-made berms)	0.9
D	D1	Frequent cleaning of animal housing area	0.9
Waste Storage Facilities			
E (Choose only 1)	E1	Anaerobic digestion	0.2
	E2	Chemical or biological additives	0.8
	E3	Compost	0.2
	E4	Solids Separation and Reduction	0.6
	E5	Water Treatment	0.1
F (Choose only 1)	F1	Aeration	0.3
	F2	Bio-cover	0.4
	F3	Geotextile cover	0.5
	F4	Impermeable cover	0.1
	F5	Natural crust	0.3
	F6	Bottom fill	0.9
G	G1	Windbreak (includes man-made berms)	0.9
Animal Lots			
H (Choose only 1)	H1	Frequent cleaning of animal lot	0.4
	H2	Drag animal lot	0.5
I	I1	Animal lot moisture control	0.8
J	J1	Windbreak (includes man-made berms)	0.9

*Smaller multiplier = more odor controlled (e.g. a multiplier of 0.4 represents a 60% control).

Innovative Odor Control Practices (all odor sources):

You may take credit for odor control practices not listed in Chart 3 if DATCP pre-approves a multiplier for each of those practices. Follow the procedure in ATCP 51.14(5)(c) to obtain DATCP approval. If you obtain DATCP approval, you may include the approved practice and multiplier in odor worksheet calculations in the same manner as for odor control practices listed in Chart 3 (attach DATCP approval to your application).

Worksheet 2 (continued)

Odor Control Practice Specifications

Odor control practices identified in Chart 3 must meet the following specifications:

Animal Housing

Diet manipulation (A1) – Limit protein in animal diet by one of the following means:

- Match nutrient supply with animal requirements.
- Formulate low-protein amino acid supplemented diets.
- Add phytase enzyme ingredients.
- Process ingredients in ways that limit protein content of processed feed.
- Use phase feeding.
- Use split sex feeding.
- Minimize feed wastage.

Bio-filter (B1) – Vent air from *animal housing areas* through a bio-filter consisting of compost and wood chips, mixed at a rate of 30:70 to 50:50 (ratio by weight of compost to wood chips). The mixture must be at least 40% moisture by weight. The bio-filter must be 10" to 18" thick, and must have an area of at least 50 to 85 sq. ft. per 1000 cu. ft. per minute (cfm) of airflow.

Vegetable oil sprinkling (B2) – Sprinkle vegetable oil on floors in *animal housing areas* (swine) each day. Apply oil at start-up rate of approximately 40 milliliters per square meter per day (mL/m²-day) in the first 1–2 days of each production cycle. During the remainder of each production cycle, apply oil at maintenance rate of 5 mL/m²-day. Avoid oil applications to pens near fans, to areas near heaters, and to areas surrounding feeders.

Fresh water flush (B3) – Use fresh water to flush manure from floors of *animal housing areas* into collection or waste storage structures. Flush at least 3 times a day, and more often if necessary, to prevent manure from drying and sticking to floors. Flush must be adequate to remove manure solids effectively.

Treated water flush (B4) – Use treated manure effluent to flush manure from floors of *animal housing areas* into collection or waste storage structures. Flush at least 3 times a day, and more often if necessary, to prevent manure from drying and sticking to floors. Flush with waste storage effluent treated by one of the following means:

- *Solids Separation and Reduction (see E4 below).*
- *Aeration (see F1 below).*
- *Anaerobic digestion (see E1 below).*

Air Dam (B5) – Erect and maintain a wall (typically a 10-foot x 10-foot pipe frame and tarpaulin) placed at the end of a swine-finishing building, immediately downwind of the exhaust to deflect air and odor plume. Replace material used for the barriers (tarpaulins on a frame of solid wood, for example) as needed, which may be from a few years to decades, depending on the material.

Windbreak (C1) – Maintain a solid or porous windbreak, 10 to 50 feet from the odor source, which reduces forward momentum of airflow and vertically disperses the odor plume. The length of a windbreak shall be at least half of the perimeter of the animal housing. A windbreak may be constructed of vegetation or other materials. Vegetation windbreaks must contain at least 3 rows of trees and shrubs, of both fast and slow-growing species, that are well suited for the site. Windbreaks must be designed and constructed according to NRCS Technical Guide Standard 380 (June, 2002).

Frequent cleaning of animal housing area (D1) – Scrape and remove manure from *animal housing areas* at least 3 times a day.

Worksheet 2 (continued)

Waste Storage Facilities

Anaerobic digestion (E1) – Subject manure to managed biological decomposition within a sealed oxygen-free container (“digester”). Anaerobic digestion must meet design and operational standards necessary to achieve adequate odor control, including requirements for solids concentration, flow rates, retention time, and minimum temperatures. Systems must meet the following:

- *Plug flow digester.* Treats manure with a total solids concentration of 8 to 14%. Must be kept in the digester for at least 20 days at a temperature of 95° to 104° F. (35° to 40° C.). The digester’s ratio of flow path width to fluid depth must be between 3.5:1 and 5:1.
- *Complete mix digester.* Treats manure with a total solids concentration of 2.5 to 10%. Must be kept in the digester for at least 17 days at a temperature of 95° to 104° F. (35° to 40° C.). The digester must have appropriate mixing devices to ensure complete mixing.
- *Fixed film digester.* Treats manure with a total solids concentration of not more than 5%. Must be kept in the digester for 1 to 6 days at a temperature of 59° to 99° F. (15° to 39° C.). Microbial support material must have at least 3-inch openings.
- *Other systems.* Use proprietary design and performance specifications that are commonly accepted and provide adequate odor mitigation.

Chemical or biological additives (E2) – Apply, to stored manure, chemical or biological additives that are scientifically proven to be effective in reducing odor from that manure when applied under applicable conditions and in applicable amounts.

Compost (E3) – Aerobically treat solid or semi-solid manure to create compost. Compost must have a carbon: nitrogen ratio of 25:1 to 40:1, and must consist of at least 40 to 60% moisture by weight. Composted material must be held at a temperature of more than 130° F. (54° C.) for more than 5 days.

Solids Separation and Reduction (E4) – Reduce the solid content of stored manure to an average of less than 2% solids through separation, multi-tiered pits or other means.

Water Treatment (E5) – Install and use a physical, chemical or biological process that removes the majority of contaminants from the waste stream, resulting in a liquid effluent meeting surface water discharge standards. The remaining solid fraction or sludge must be accounted for based on its form, and the management it is subject to.

Aeration (F1) – Use aeration equipment to maintain aerobic activity in stored manure. Aeration must maintain an average of 2 milligrams of dissolved oxygen per liter of manure stored in the upper foot of manure stored in the aerated structure between April and October.

Bio-cover (F2) – Cover the surface of waste storage structure with an 8” to 12” thick blanket of dry wheat, barley or good quality straw. The blanket must cover nearly all of the waste surface between the months of April and October. Add to the blanket as necessary (typically every 6 weeks to 4 months) to maintain the required cover.

Geotextile cover (F3) – Cover the surface of waste storage structure with a geotextile membrane that is at least 2.4 mm thick. The membrane must cover nearly all of waste surface between the months of April and October.

Impermeable cover (F4) – Cover the surface of waste storage structure with an impermeable barrier that prevents gas from escaping. Gas must be drawn off, and either treated or burned.

Natural crust (F5) – Maintain a natural crust of dry manure on the surface of stored manure. The natural crust must cover a substantial amount of the surface area of the stored manure, for most of the time between the months of April and October.

Bottom fill (F6) – Add manure to a liquid *manure storage structure* from the bottom so as to limit disturbance to the surface of the stored manure.

Windbreak (G1) – Maintain a solid or porous windbreak, 10 to 50 feet from the odor source, which reduces forward momentum of airflow and vertically disperses the odor plume. The length of a windbreak shall be at least half of the perimeter of the *waste storage facility*. A windbreak may be constructed of vegetation or other materials. Vegetation windbreaks must contain at least 3 rows of trees and shrubs, of both fast and slow-growing species, that are well suited for the site. Windbreaks must be designed and constructed according to *NRCS Technical Guide Standard 380* (June, 2002).

Worksheet 2 (continued)

Animal Lots

Frequent cleaning of animal lot (H1) – Scrape and remove manure from *animal lot* surfaces at least once every 3 days. You may leave an undisturbed, compacted manure layer (1 to 2 inches thick) on the surface of unpaved *animal lots* to provide good surface sealing.

Drag animal lot (H2) – Drag manure in *animal lots* with harrow or disk at least once every 7 days during the months of April through October, to aerate and dry the manure.

Animal lot moisture control (I1) – Prevent runoff water from flowing onto *animal lots* from roofs and other surfaces. Use diversions or roof runoff systems identified in s. ATCP 50.70 or 50.85. *Animal lots* must have a grade of at least one percent to promote drainage and drying.

Windbreak (J1) – Maintain a solid or porous windbreak, 10 to 50 feet from the odor source, which reduces forward momentum of airflow and vertically disperses the odor plume. The length of a windbreak shall be at least half of the perimeter of the *animal lot*. A windbreak may be constructed of vegetation or other materials. Vegetation windbreaks must contain at least 3 rows of trees and shrubs, of both fast and slow-growing species, that are well suited for the site. Windbreaks must be designed and constructed according to NRCS Technical Guide Standard 380 (June, 2002).

Arm-lwr- 11/04 January 2006



Wisconsin Department of Agriculture, Trade and Consumer Protection

2811 Agriculture Drive, PO Box 8911, Madison WI 53708-8911
Phone: (608) 224-4622 or (608) 224-4500

Worksheet 3 – Waste and Nutrient Management

Part A. Waste Generation and Storage Summary

Instructions: You must complete Parts A and B of this worksheet. If your *livestock facility* will have fewer than 500 *animal units* you may be exempt from Part C, depending on results of Part B. If Part C applies, it must be signed by a *qualified nutrient management planner* (you must also sign).

You are NOT required to complete this worksheet if you already hold a *WPDES permit* for the proposed *livestock facility* (for the same or greater number of *animal units*). Simply check the following box, sign at the bottom of this page, and include a copy of the *WPDES permit* with your application.


☐ I enclose a copy of my *WPDES permit* in place of Worksheet 3.

Specify a single livestock type (dairy, beef, swine, etc.). *Use a separate worksheet for each livestock type.*

Livestock Type: _____

Description of Storage	Column A Waste Storage Capacity (Gallons or Tons)	Column B Source of Waste (Animal Waste, Wastewater, Leachate, etc.)	Column C Average Annual Volume of Waste Produced from Each Source (Gallons or Tons)	Column D Total Average Annual Volume Waste Produced (Gallons or Tons)	Column E Storage Duration in Days (Column A divided by Column D times 365 days)
Example: Unit 1 – lagoon	5,000,000 gallons	Animal waste	4,000,000 gallons	7,000,000 gallons	260 days
		Wastewater	1,000,000 gallons		
		Leachate	2,000,000 gallons		
Unit 1				Exhibit 6 See Summary of Waste Production and Storage	
Unit 2					
Unit 3					

Applicant affirms that the information provided in Part A is accurate.



Signature of Applicant or Authorized Representative

2/2/18

Date

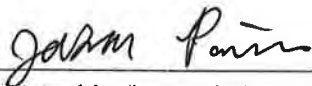
Arm-lwr- 11/04 January 2006 Part B – Land Base for Applying Nutrients	Worksheet 3 (continued)
1. Enter total <i>animal units</i> in proposed <i>livestock facility</i> (from worksheet 1): <u>3,483</u>	
2. What percentage of the waste from the <i>livestock facility</i> will be: a. Applied to land: <u>100</u> %. Attach map showing where waste will be applied to land. b. Processed and sold as commercial fertilizer, under a fertilizer license: <u>0</u> %. c. Disposed of in other ways: <u>0</u> %. Describe ways: <u>NA</u>	
3. Multiply the percent in line 2a by the number of <i>animal units</i> in line 1. Result (# of <i>animal units</i>): <u>3,483</u>	
4. Total acres of cropland currently available for land application (owned, rented, or landspreading agreement): <u>2,752</u>	
5. Divide # of acres in line 4 by # of <i>animal units</i> in line 3 to obtain ratio of acres to <i>animal units</i> : <u>0.79</u>	
6. Is the ratio in line 5 equal to or greater than the applicable ratio in Table 1? <u>No</u> If YES, and if the # of <i>animal units</i> in line 1 is less than 500, you need NOT complete Part C. Otherwise, complete Part C.	

Table 1: Acreage per Animal Unit

Animal Type	Acres per Animal Unit*
Dairy	1.5
Beef	1.5
Swine	1.0
Chickens/Ducks	2.5
Turkeys	5.5
Sheep/Goats	2.0

* NOTE: A *livestock facility* is NOT required to attain or exceed this ratio of acres to *animal units*. But IF your *livestock facility* will attain or exceed this ratio and will have fewer than 500 *animal units*, you need NOT complete Part C of this worksheet.

Applicant affirms that the information provided in Part B is accurate.



 Signature of Applicant or Authorized Representative

2/2/18

 Date

Worksheet 3 (continued)	
arm-hw-11/04 January 2006	
Part C – Nutrient Management Checklist	
Instructions: All applicants must submit this checklist unless exempted under Part A or B. The checklist is based on the NRCS Technical Guide Nutrient Management Standard 590 (September, 2005).	
County Name: <u>Brown</u>	Date Submitted: <u>11/22/17</u> Township (T. <u>23</u> N., S. – (R. <u>21</u> E.) W.)
Cropland Acres: (owned, rented, or with manure spreading agreement) <u>Own 735 Acres, Rents 1484 Acres, Rental Agreements 533 Acres</u>	Name of livestock operator submitting checklist: <u>Yes</u> <u>NA</u>
1. Are the following field features identified on maps or aerial photos?	
a) Field location, soil survey map unit(s), field boundary, and field identification number.	<input checked="" type="checkbox"/>
b) Areas prohibited from receiving nutrient applications: Surface water, established concentrated flow channels with perennial cover, permanent non-harvested vegetative buffer, non-farmed wetlands, sinkholes, lands where established vegetation is not removed, nonmetallic mines, and fields eroding at a rate exceeding tolerable soil loss (T).	<input checked="" type="checkbox"/>
c) Areas within 50 ft of a potable drinking water well where mechanically-applied manure is prohibited.	<input checked="" type="checkbox"/>
d) Areas prohibited from receiving winter nutrient applications: Slopes > 9% (12% if contour-cropped); Surface Water Quality Management Area (SWQMA) defined as land within 1,000 ft of lakes and ponds or within 300 ft of perennial streams draining to these waters, unless manure is deposited through winter gleaning/pasturing of plant residue and not exceeding the N and P requirements of this standard.	<input checked="" type="checkbox"/>
e) Areas where winter applications are restricted unless effectively incorporated within 72 hours: Land contributing runoff within 200 ft upslope of direct conduits to groundwater such as a well, sinkhole, fractured bedrock at the surface, tile inlet, or nonmetallic mine.	<input checked="" type="checkbox"/>
f) Sites vulnerable to N leaching: Areas within 1,000 ft of a municipal well, and soils listed in Appendix 1 of the Conservation Planning Technical Note W1-1.	<input checked="" type="checkbox"/>
2. Are erosion controls implemented so the crop rotation will not exceed T on fields that receive nutrients according to the conservation plan or WI P Index model?	
3. Check the methods below used to determine field soil nutrient levels:	
a) Soil samples were collected and analyzed within the last 4 years according to UW Publication A2100 recommendations.	<input checked="" type="checkbox"/>
b) For fields not meeting (a.) above, soil test phosphorus levels are assumed to be greater than 100 ppm soil test P.*	<input checked="" type="checkbox"/>
c) For fields not meeting (a.) above, preliminary estimates of soil nutrients were determined using limited soil sampling (> 5 acre per sample) but analyzed by a DATCP certified laboratory.*	<input checked="" type="checkbox"/>
*For fields with soil nutrient levels determined under (b) or (c), the applicant must collect and analyze soil samples meeting the requirements of A2100 within 12 months of siting approval, and revise the nutrient management plan accordingly.	
4. Using the field's predominant soil series and realistic yield goals, are planned nutrient application rates, timing, and methods of all forms of N, P, and K listed in the plan and consistent with UW Publication A2809, <i>Soil Test Recommendations for Field, Vegetable and Fruit Crops</i> , and the 590 standard?	<input checked="" type="checkbox"/>
5. Do manure production and collection estimates correspond to the acreage needed in the plan? Are manure application rates realistic for the calibrated equipment used?	<input checked="" type="checkbox"/>
6. Is a single phosphorus (P) assessment of either the P Index or soil test P management strategy uniformly applied to all fields within a tract?	<input checked="" type="checkbox"/>
7. Are areas of concentrated flow, resulting in reoccurring gullies, planned to be protected with perennial vegetative cover?	<input checked="" type="checkbox"/>
8. Will nutrient applications on non-frozen soil within the SWQMA comply with the following?	<input checked="" type="checkbox"/>
a) Unincorporated liquid manure on unsaturated soils will be applied according to Table 1 of the 590 standard to minimize runoff.	<input checked="" type="checkbox"/>
b) One or more of the following practices will be used: 1) Install/maintain permanent vegetative buffers, or 2) Maintain greater than 30% crop residue or vegetative coverage on the surface after nutrient application, or 3) Incorporate nutrients leaving adequate residue to meet tolerable soil loss, or 4) Establish fall cover crops promptly following application.	<input checked="" type="checkbox"/>
9. Is a narrative included which describes proposed manure collection, transportation, and application methods?	<input checked="" type="checkbox"/>

I certify that the documentation supporting this checklist is complete and accurate:

Signature of Qualified Nutrient Management Planner, other than applicant: Karen C. Buehler
(qualified by 1. NAICC-CPCC, 2. ASA-CCA, 3. ASA-Professional Agronomist, 4. SSSA-Soil Scientist)

Signature of Applicant or Authorized Representative: Quinn Brown

11P Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017

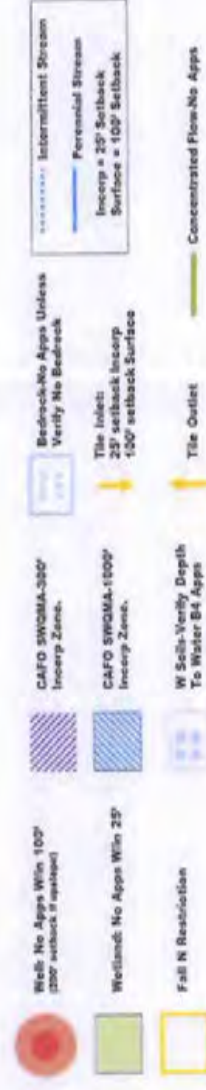
No Manure can be applied to this field unless verified >24" to bedrock.



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

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22 Restrictions

Farm Name: Ledgerview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017

Municipal water in this area



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Asch Restrictions

Farm Name: Ledgerview Farms
Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



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Aschebrenner Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

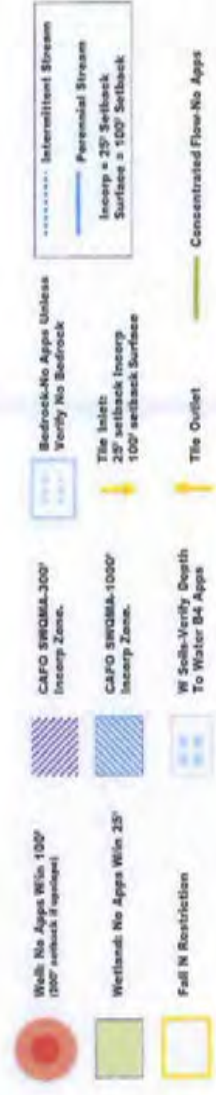
Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



NIR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

RR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

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Bowle Creek Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



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IR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

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Dairy Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

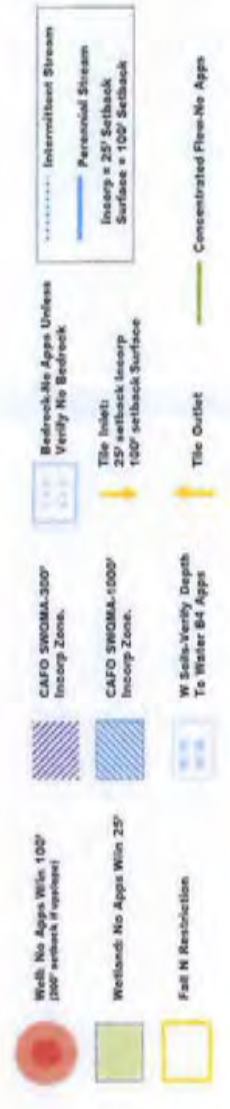
Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



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11S1, 11S2, 11Q1, 11R1 Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



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	Well No App's Within 100' (25' setback if adjacent)		CAFO SWQMA-100' Incorporation Zone		Bedrock-No Apps Unless Verify No Bedrock		Intermittent Stream
	Wetland No App's Within 25'		CAFO SWQMA-1000' Incorporation Zone		Tile Inlet: 25' setback Incorporation 100' setback Surface		Perennial Stream
	Full N Restriction		W Sub-Verify Depth To Water B4 Apps		Tile Outlet		Concentrated Flow-No Apps

Is this a CAFO: True

Municipal water in this area



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

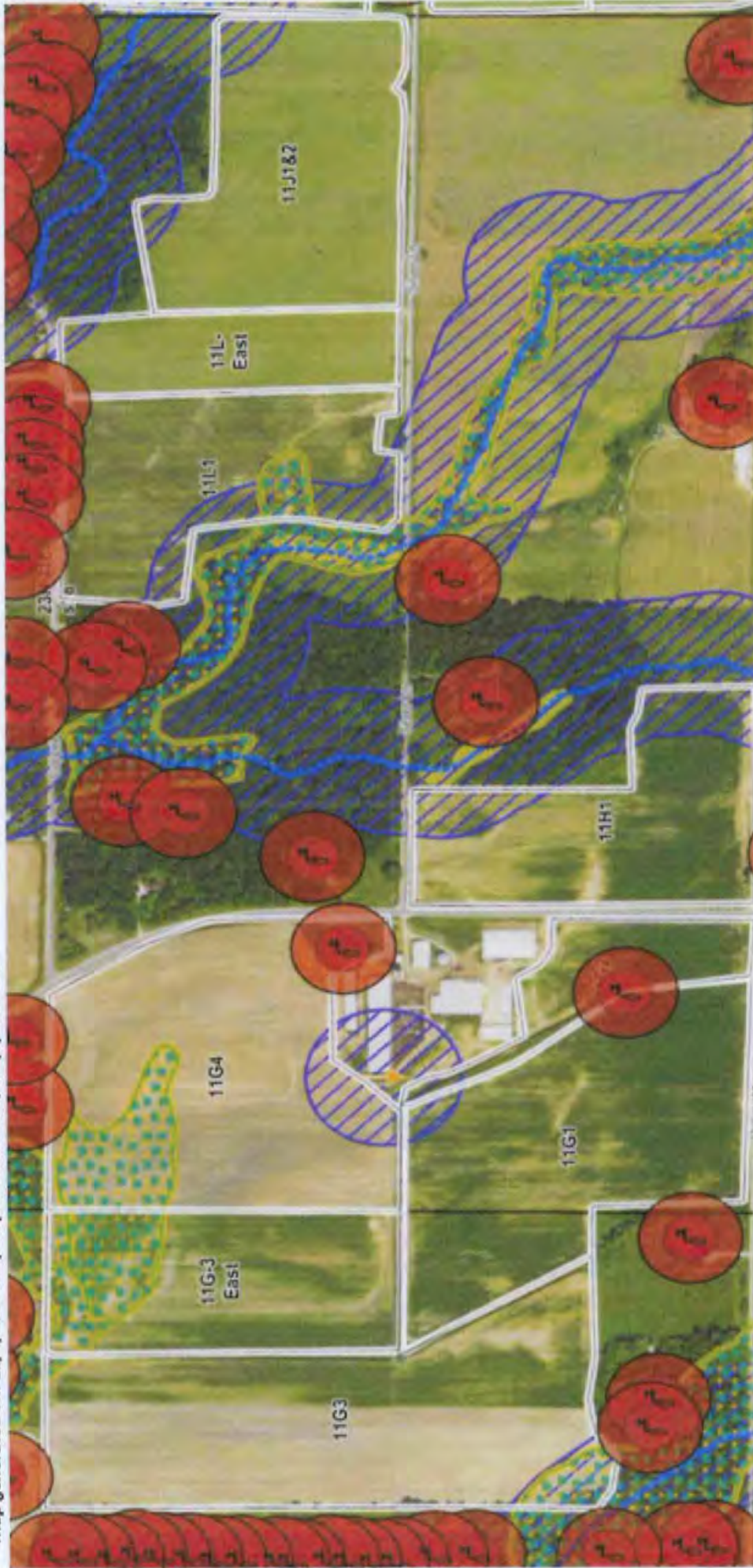
953
R 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

Heife, Site Restrictions

Farm Name: Ledgerview Farms

Is this a CAFO: True

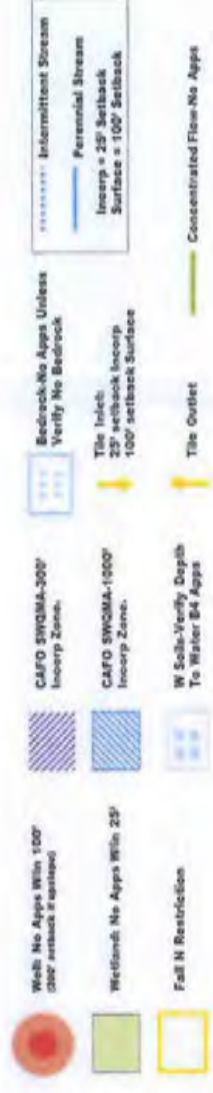
Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



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Herold Rd Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

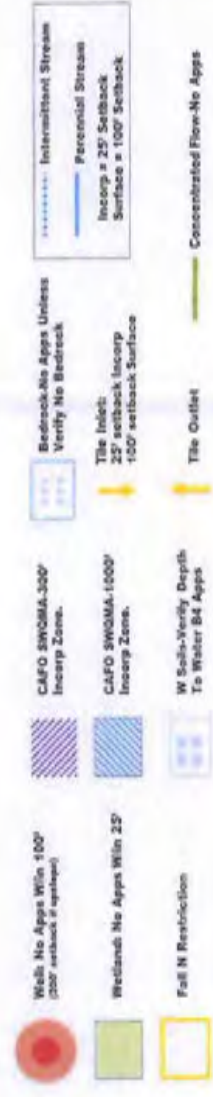
Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



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J Kaser Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



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J Kasler N-Collection Pt Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

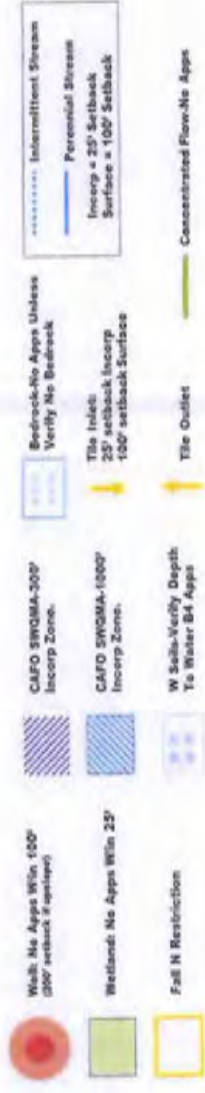
Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



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KB1-4 Restrictions

Farm Name: Ledgerview Farms
Is this a CAFO: True

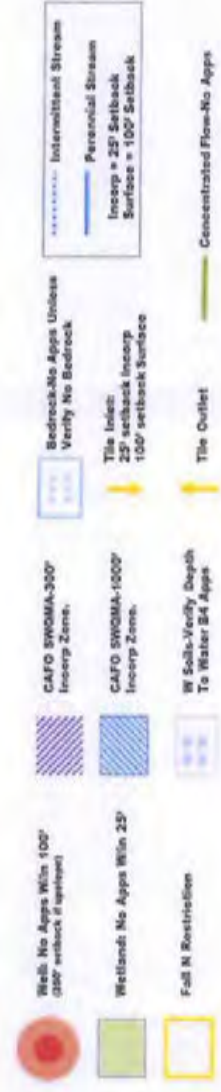
Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



HR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

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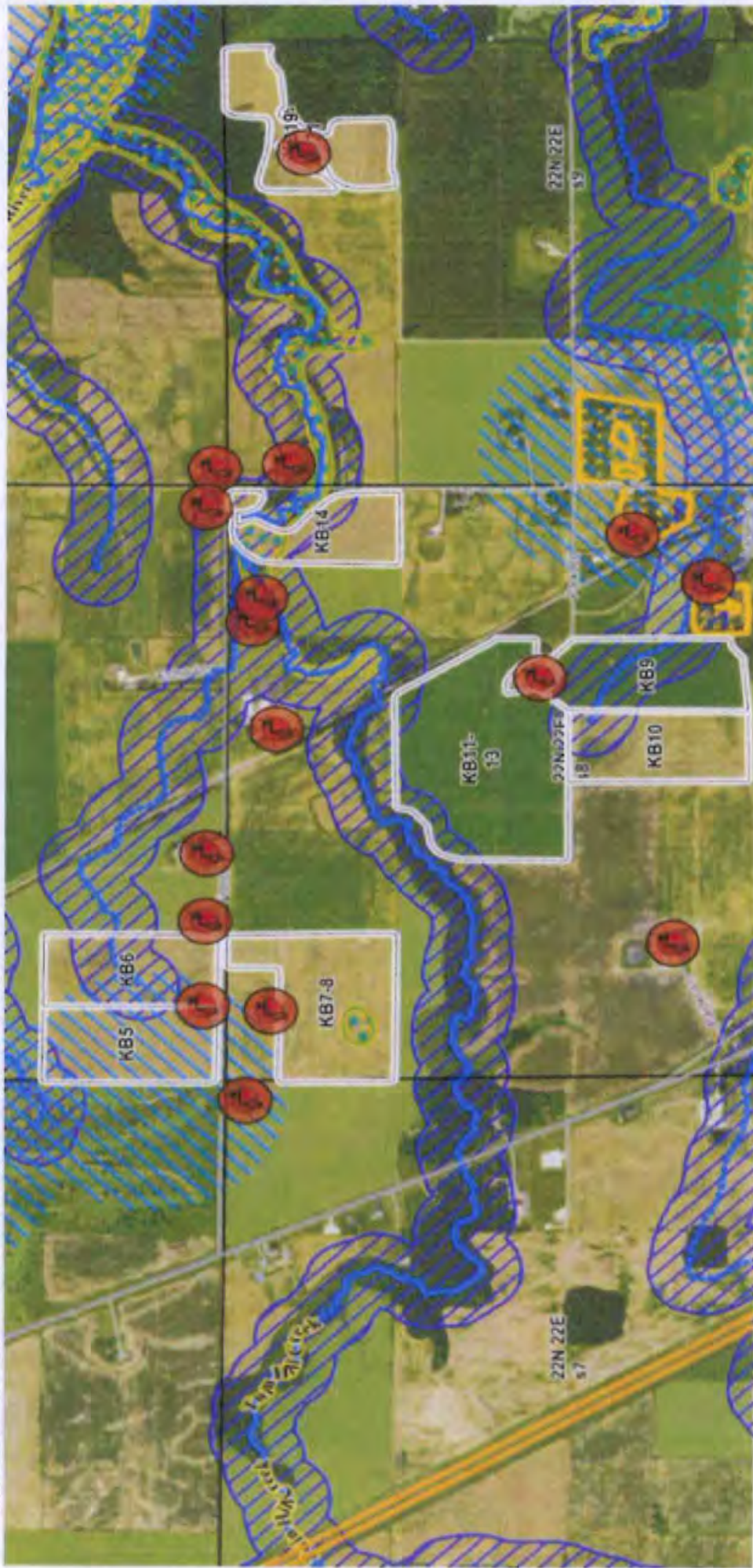


KB5-21 Restrictions

Farm Name: Ledgerview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



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Maternoski North Restrictions

Farm Name: Ledgerview Farms
Is this a CAFO: True

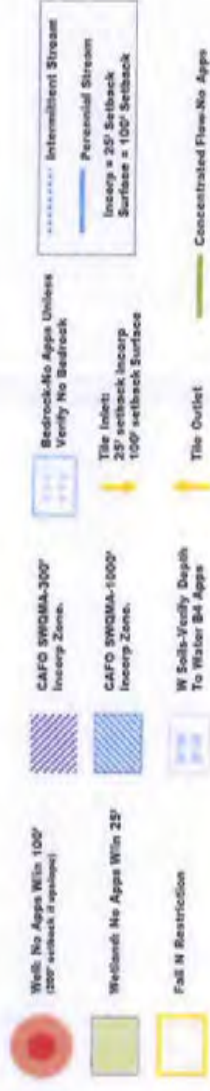
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Mateinoski South Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

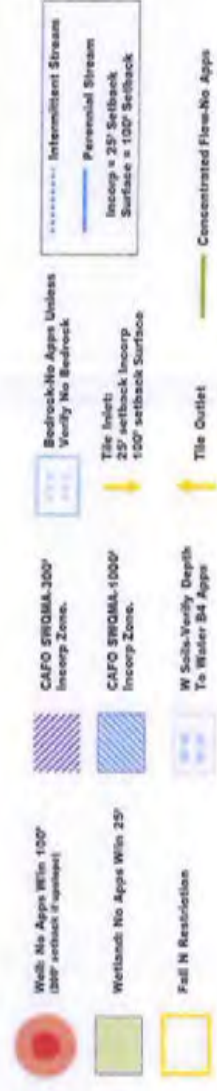
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Matzke Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017

No manure Apps -
Soil Test P >
200ppm..



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MM Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



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Silver Lane Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

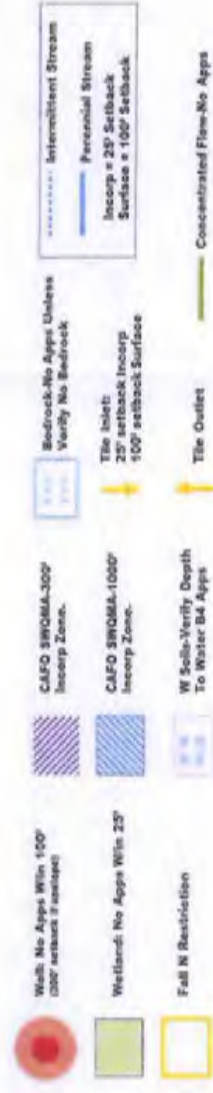
Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



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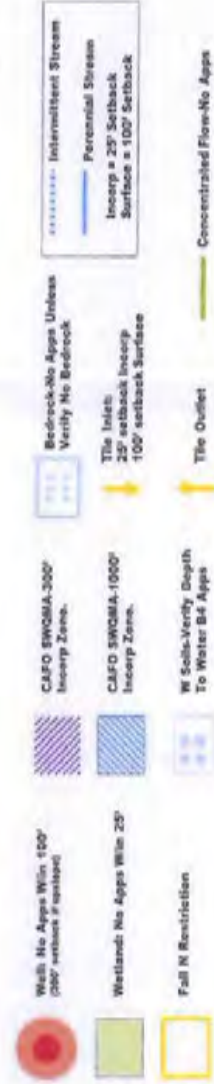
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Farm Name: Ledgeview Farms
Is this a CAFO: True

243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

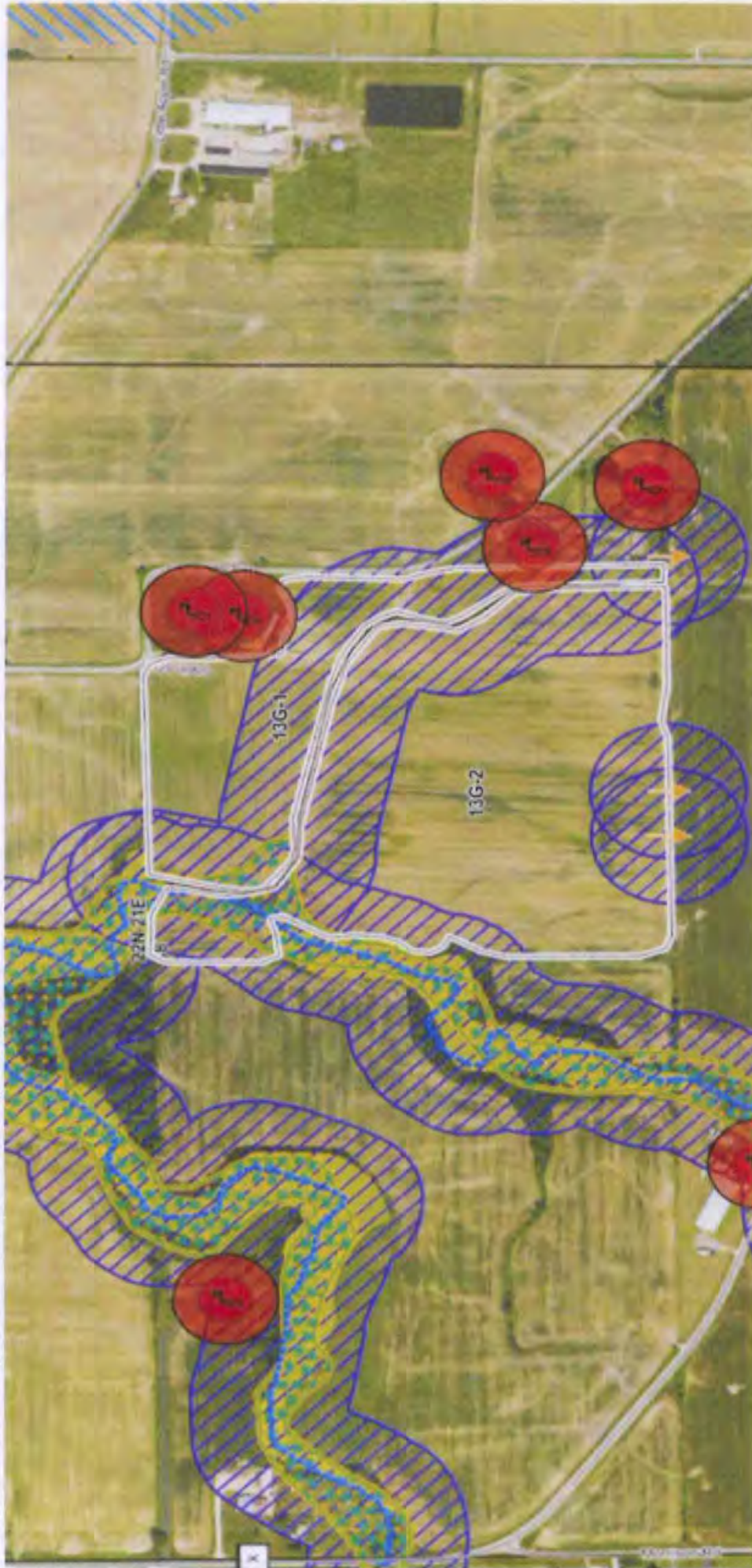
The information on this map is not guaranteed to be 100% accurate. It has been developed with the use of SHAUP-Ngaio information, aerial imagery analysis, field knowledge and producer information. Field verification of restrictive features should be completed before applications. As new restrictive features are identified these maps will be updated.



Stein Restrictions

Farm Name: Ledgerview Farms
Is this a CAFO: True

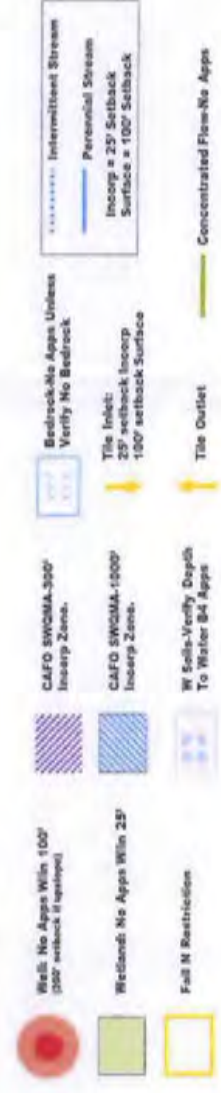
Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



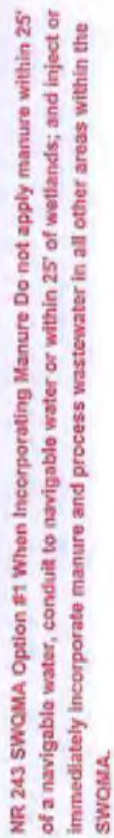
NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

The information on this map is not guaranteed to be 100% accurate. It has been developed with the use of SNAP-Maps information, aerial imagery analysis, field knowledge and producer information. Field verification of restrictive features should be completed before applications. As new restrictive features are identified these maps will be updated.



Farm Name: Ledgeview Farms
Is this a CAFO: True



Wells: No Apps With 100' (over setbacks if required)	CAFO SWQMA-300' Incorp Zone.	Bedrock-No Apps Unless Verify No Bedrock	<p>Intermittent Stream</p> <p>Perennial Stream</p> <p>Incorp = 25' Setback Surface = 100' Setback</p>
Wetland: No Apps With 25'	CAFO SWQMA-1000' Incorp Zone.	<p>Tie Inlet: 25' setback Incorp 100' setback Surface</p> <p>Tie Outlet</p>	
Full N Restriction	W Soils-Verify Depth To Water B4 Apps		Concentrated Flow-No Apps

Tower & W Restrictions

Farm Name: Ledgerview Farms
Is this a CAFO: True

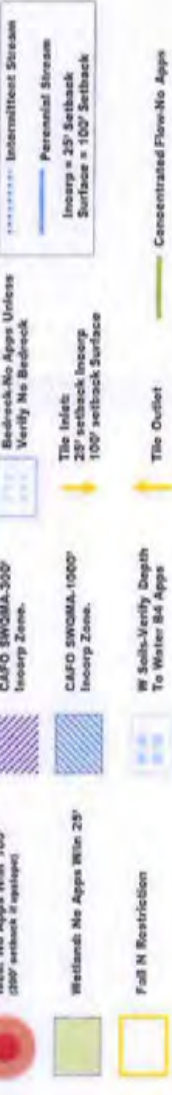
Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

The information on this map is not guaranteed to be 100% accurate. It has been developed with the use of SNAP-Maps information, aerial imagery analysis, field knowledge and producer information. Field verification of restrictive features should be completed before applications. As new restrictive features are identified these maps will be updated.



Van Curaten Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

The information on this map is not guaranteed to be 100% accurate. It has been developed with the use of SNAP-Map information, aerial imagery analysis, field knowledge and producer information. Field verification of restrictive features should be completed before applications. As new restrictive features are identified these maps will be updated.



VO-10,11 Restrictions

Farm Name: Ledgerview Farms
Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017

No Manure can be applied here unless verified >24" to bedrock.



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

The information on this map is not guaranteed to be 100% accurate. It has been developed with the use of SNAP-Maps information, aerial imagery analysis, field knowledge and producer information. Field verification of restrictive features should be completed before applications. As new restrictive features are identified these maps will be updated.



Ann-1w- 11/04 January 2006

**Wisconsin Department of Agriculture, Trade and Consumer Protection**

2811 Agriculture Drive, PO Box 8911, Madison WI 53708-8911

Phone: (608) 224-4622 or (608) 224-4500

Worksheet 4 – Waste Storage Facilities

Instructions: This worksheet must be signed by a registered professional engineer or *certified agricultural engineering practitioner*. This worksheet must identify every *waste storage facility* in the proposed *livestock facility* (including storage structures and transfer systems).

You are NOT required to complete this worksheet if you already hold a *WPDES permit* for the proposed *livestock facility* (for the same or greater number of *animal units*). Simply check the following box, sign at the bottom of this page, and include a copy of the *WPDES permit* with your application.

☐ I enclose a copy of my *WPDES permit* in place of Worksheet 4.

New or Substantially Altered Facilities: Design specifications for the following *new* or *substantially altered* waste storage facilities comply with *NRCS Technical Guide Standards 313* (November, 2004) and *634* (November, 2004). [Identify each facility and attach design specifications for each facility.]

Existing Facilities Retained: The following *waste storage facilities* will continue in use without being *substantially altered*. Each facility meets one of the following:

☐ The facility (list each facility _____) was constructed of concrete or steel or both, was constructed within the last 10 years according to then-existing *NRCS technical standards*, and shows no apparent signs of structural failure or significant leakage.

☒ The facility (list each facility WI WSF, TI Piston Pump Station + Transfer System) was constructed within the last 3 years according to then-existing *NRCS technical standards*, and shows no apparent signs of structural failure or significant leakage.

☐ The facility (list each facility _____) was constructed to *NRCS technical standards* that existed at the time of construction, is in good condition and repair and shows no apparent signs of structural failure or significant leakage.

☒ The facility (list each facility LI Collection Auger Channel + YI Yard Collection Basin) is in good condition and repair, shows no apparent signs of structural failure or significant leakage, and is located on a site at which the soils and separation distances to groundwater comply with *NRCS Technical Guide Manure Storage Facility Standard 313*, Table 1 (November, 2004).

☐ The facility (list each facility _____) is in good condition and repair, shows no apparent signs of structural failure or significant leakage, is located entirely above ground, and is located on a site at which the soils comply with *NRCS Technical Guide Manure Storage Facility Standard 313*, Table 5 (November, 2004).

Facilities To Be Abandoned: The following *waste storage facilities* will be closed according to a closure plan that complies with *NRCS Technical Guide Standard 360* (June, 2001). [Attach closure plan for each facility.]

Total Storage Capacity: The *waste storage facilities* in the proposed *livestock facility* have a combined useable storage capacity of 19,775,682 gallons or tons (cannot include required "freeboard" in useable capacity). Proposed HS 14,749,062 gallons

Richard Seas E25248Print Name of Engineer (Include WI License No.) or *Certified Agricultural Engineering Practitioner*Richard Seas

Signature of Engineer or Practitioner

2/2/18

Date

Roach+Associates, LLC 856 N. Main St. Seymour, WI 54165

Name of Firm and Address

Arm-lwr- 11/04 January 2006



Wisconsin Department of Agriculture, Trade and Consumer Protection
 2811 Agriculture Drive, PO Box 8911, Madison WI 53708-8911
 Phone: (608) 224-4622 or (608) 224-4500

Worksheet 5 – Runoff Management

Instructions: This worksheet must be signed by a registered professional engineer or *certified agricultural engineering practitioner* (you must also sign). Signers attest to statements in this worksheet. You are responsible for compliance.

You are NOT required to complete this worksheet if you already hold a *WPDES permit* for the proposed *livestock facility* (for the same or greater number of *animal units*). Simply check the following box, sign at the bottom of this page, and include a copy of the *WPDES permit* with your application.

☐ I enclose a copy of my *WPDES permit* in place of Worksheet 5.

Animal Lots¹

1. New or Substantially Altered Animal Lots: All *new or substantially altered animal lots* will be constructed according to the attached design specifications that comply with *NRCS Technical Guide Standard 635* (January, 2002). [Identify *animal lots* and attach design specifications for each *animal lot*.]

2. Existing Animal Lots Near Surface Waters: The following *animal lots* are located within 300 feet of a stream² or 1,000 feet of a lake. According to the *BARNY runoff model*, each of these *animal lots* has (or with minor alterations³ will have) predicted average annual phosphorus runoff of less than 5 lbs. per year (measured at the end of the treatment area). Runoff does not discharge to any direct conduit to groundwater. [Identify *animal lots* and minor alterations if any.]

3. Other Existing Animal Lots: The following *animal lots* are NOT located within 300 feet of a stream² or 1,000 feet of a lake. According to the *BARNY runoff model*, each *animal lot* has (or with minor alterations³ will have), a treatment area that reduces phosphorus runoff to an average of less than 15 lbs. per year (measured at the end of the treatment area). Runoff does not discharge to any direct conduit to groundwater. [Identify *animal lots* and minor alterations if any.]

Feed Storage *Headquarters Y1 Yard Heifer Site Y1 Yard*
All leachate + runoff will be collected + stored in the W1 or W2 waste storage facility

1. General. The operator agrees to manage feed storage to prevent significant discharge of leachate or polluted runoff to waters of the state.

2. Existing Feed Storage (High Moisture Feed). Existing paved areas and bunkers that may be used to store or handle high moisture feed (70% or higher moisture content) will meet the following standards:

- Surface water runoff will be diverted from entering the paved area or bunker.⁴
- Surface discharge of leachate will be collected before it leaves any paved area or bunker, if the paved area covers more than one acre. Collected leachate will be stored and disposed of in a manner that prevents discharge to waters of the state.⁵

¹ Treat multiple lots as one *animal lot* if runoff from the *animals lots* drains to the same treatment area or if runoff from the *animal lot* treatment areas converges or reaches the same surface water within 200 feet of any of those treatment areas.

² Indicated by a solid or dashed blue line on a 1:24,000 scale USGS topographic map.

³ "Minor alterations" are repairs or improvements that do not result in a *substantially altered animal lot*. "Minor alterations" may include conservation practices such as runoff diversions, contouring, and planting vegetation.

⁴ Runoff may be diverted by means of earthen diversions, curbs, walls, gutters, waterways or other practices, as appropriate.

⁵ Use safe methods to dispose of collected leachate. For example, leachate may be transferred to *waste storage structures* and then applied to land at agronomic rates.

**Ledgeview Farm, LLC
Headquarters Site – Cluster A**

Y1 Concrete Yard BARNY Summary

The existing Y1 Yard provides partial containment of runoff within the yard. For full containment, additional curbs will be installed at the Y1 Yard entrances on the east and west ends.

EXISTING BUFFER P OUTPUT (Based on BARNY)

Farmer: Ledgeview Farm, LLC Planner/Designer: JMR

Date: 2/1/18

41 Yard Headquarters Site - Cluster A

Input	Output
Closest City of similar climate: <input type="text" value="2"/>	1 Madison 2 Appleton 3 Wausau 4 Eau Claire
Paved lot area: <input type="text" value="5,954"/>	sq ft
Earth lot area: <input type="text" value="0"/>	sq ft
Animal Lot size: <input type="text" value="5,954"/>	sq ft
Is there a designed settling basin? <input type="text" value="2"/>	Yes= 1; No= 2
Animals on lot: <input type="text" value="200"/> number	<input type="text" value=""/> number
Type of animal: <input type="text" value="1"/>	(Dairy = 1; Beef=2)
Ave. Animal Weight: <input type="text" value="350"/> lbs	<input type="text" value=""/> lbs
Lot Use: <input type="text" value="3"/>	1= Heavy;2=Med;3= Light)

TRIBUTARY AREAS

Tributary area: <input type="text" value="0"/> sq ft	<input type="text" value=""/> sq ft
Runoff Curve Number: <input type="text" value="0"/>	See RCN tab below for typical values
Roof Trib. area: <input type="text" value="0"/> sq ft	

22.2 lbs P per year at downstream lot edge

Enter Existing Buffer Data:

Length: <input type="text" value=""/>	ft
Width: <input type="text" value=""/>	ft
Buffer area: <input type="text" value=""/>	
Slope: <input type="text" value=""/>	%
c value: <input type="text" value=""/>	For c values see table below

P Output: lb

**Ledgeview Farm, LLC
Heifer Site – Cluster B**

Y1 Concrete Yard BARNY Summary

The existing Y1 Yard provides partial containment of runoff within the yard. For full containment, when the proposed waste storage facility is constructed, a pipe will be added from the existing Catch Basin to the proposed waste storage facility. The pipe will provide full containment of runoff from the Y1 Yard.

DESIGN A BUFFER USING BARNY

Farmer: Ledgeview Farm, LLC Planner/Designer: JMR

Date: 2/1/18

Y1 Yard Heifer Site - Cluster B

	Input	Output	
Closest City of similar climate:	<input type="text" value="2"/>		1 Madison 2 Appleton 3 Wausau 4 Eau Claire
Paved lot area:	<input type="text" value="43,750"/>		sq ft
Earth lot area:	<input type="text"/>		sq ft
Animal Lot size:		<input type="text" value="43,750"/>	sq ft
Is there a designed settling basin?	<input type="text" value="1"/>		Yes= 1; No= 2
Animals on lot:	<input type="text" value="700"/>	<input type="text"/>	number
Type of animal:	<input type="text" value="1"/>		(Dairy = 1; Beef=2)
Ave. Animal Weight:	<input type="text" value="800"/>	<input type="text"/>	lbs
Lot Use:	<input type="text" value="1"/>		1= Heavy; 2=Med; 3= Light)

TRIBUTARY AREAS

Tributary area:	<input type="text"/>	sq ft	<input type="text"/>	sq ft
Runoff Curve Number:	<input type="text" value="98"/>			
Roof Trib. area:	<input type="text"/>	sq ft		

See RCN tab below for typical values

116.6 lbs P per year at downstream lot edge

Maximum P output that can be released	<input type="text" value="15"/>	lbs	Your choice based on impacted resources. Max is 15.
---------------------------------------	---------------------------------	-----	---

Buffer Sizing by trial and error:

Length:	<input type="text"/>	ft	
Width:	<input type="text"/>	ft	
Buffer area:		0 sq ft	NO GOOD, too small
Slope:	<input type="text"/>	%	Minimum buffer size is: 65,625
c value	<input type="text"/>		For c values see table below

P Output: lb

BUFFER SUMMARY

Length	ft
Width	ft
Slope	%

No buffer dimensions are shown because the P output is too high.

Worksheet 5 (continued)

3. New or Substantially Altered Feed Storage Structures (High Moisture Feed): *New or substantially altered feed storage structures (buildings, silos, bunkers or paved areas) used to store or handle high moisture feed (70% or higher moisture content) will be designed, constructed and maintained to the following standards [attach design specifications]:*

- a) Surface water runoff will be diverted from entering the feed storage structure.¹
- b) Surface discharge of leachate will be collected before it leaves the feed storage structure.²
- c) The top of the feed storage structure floor will be at least 3 vertical feet from groundwater and bedrock.³
- d) Any feed storage structure with an area greater than 10,000 sq. ft. will have a subsurface drainage system to collect leachate that may leak through the structure floor. The subsurface drainage system must consist of drainfill material below the surface material, a tile drainage network designed to collect the leachate and deliver it to storage, and a subliner. The tile drainage network must, at a minimum, be installed at the perimeter of the structure only on the downgradient side(s). The sub-liner must, at a minimum, consist of one of the following:
 - Two feet of soil, either in place or installed, having a minimum of 50% fine soil particles (that pass a #200 soil sieve).
 - Two feet of soil, either in place or installed, having a minimum of 30% fine soil particles (that pass a #200 soil sieve) and a minimum PI (plasticity index) of 7.
 - A 40 mil liner of HDPE, EPDM or PVC.
 - A geosynthetic clay liner.
- e) Collected leachate will be stored and disposed of in a manner that prevents discharge to waters of the state.²

Nonpoint Pollution Standards

The livestock facility will be designed, constructed and maintained to do all of the following:

1. Divert runoff from contact with *animal lots, waste storage facilities, paved feed storage areas or manure piles* within 300 ft. of a stream or 1,000 ft. of a lake.
2. Avoid having any unconfined manure pile within 300 ft. of a stream or 1,000 ft. of a lake.
3. Prevent any overflow of *waste storage facilities*.
4. Restrict livestock access to waters of the state, as necessary to maintain adequate vegetative cover on banks adjoining the water (this does not apply to properly designed, installed and maintained livestock or farm equipment crossings).



Jason Paine

Signature of Applicant or Authorized Representative

2/2/18

Date

Richard Seas E25248

Print Name of Engineer (include WI License No.) or Certified Practitioner

Richard Seas

Signature of Engineer or Practitioner

2/2/18

Date

Roach + Associates, LLC 856 N. Main St. Seymour WI 84165

Name of Firm and Address

¹ Runoff may be diverted by means of earthen diversions, curbs, walls, gutters, waterways or other practices, as appropriate.

² Use safe methods to dispose of collected leachate. For example, leachate may be transferred to waste storage and then applied to land at agronomic rates.

³ A tile system or curtain drain may be used to intercept lateral groundwater seepage, as necessary, to achieve the required distance to groundwater.

2

Exhibit 1 Index of Area Maps

Headquarters Site – Cluster A

Air Photo of Existing Facilities

Two Mile Radius Maps (10 Panels)

A Maps – Existing Buildings and Roads

B Maps – Property Lines, Navigable Waters and 10' Topographic Lines

2,500 Foot Radius Maps

See panels 5 and 8 of the Two Mile Radius Maps

Plat Map – Town of Ledgeview

Heifer Site – Cluster B

Air Photo of Existing Facilities

Air Photo of Proposed Facilities

Two Mile Radius Maps (10 Panels)

A Maps – Existing Buildings and Roads

B Maps – Property Lines, Navigable Waters and 10' Topographic Lines

2,500 Foot Radius Maps

See panels 5 and 8 of the Two Mile Radius Maps

Plat Map – Town of Ledgeview

Two Mile Radius Map – Clusters A & B

Because of the concentration of development within two miles of the proposed Ledgeview Farm, LLC facilities, the Two Mile Radius map is shown broken down into ten panels. Each panel is further broken down in two maps (A & B). The A maps are air photos that show existing buildings and roadways. The B maps show property lines, navigable waters and 10 foot topographic lines.

2,500 Foot Radius Map– Clusters A & B

The 2,500 Foot Radius Map is shown on the Two Mile Radius Map. The details of the 2,500 Foot Radius Map are shown on Panels 5 & 8 in the A & B maps for both Clusters.

Cluster A

Headquarters Site



DATE:	11/22/2017	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISIONS BY	DATE	DESCRIPTION OF REVISION
DRAWN BY:	MTS						
CHECKED BY:	JMR						

LEDGEVIEW FARMS, LLC
2017 WASTE STORAGE FACILITY AND LEACHATE
MANAGEMENT SYSTEM
BROWN COUNTY, WISCONSIN

SCALE:
1"=150'

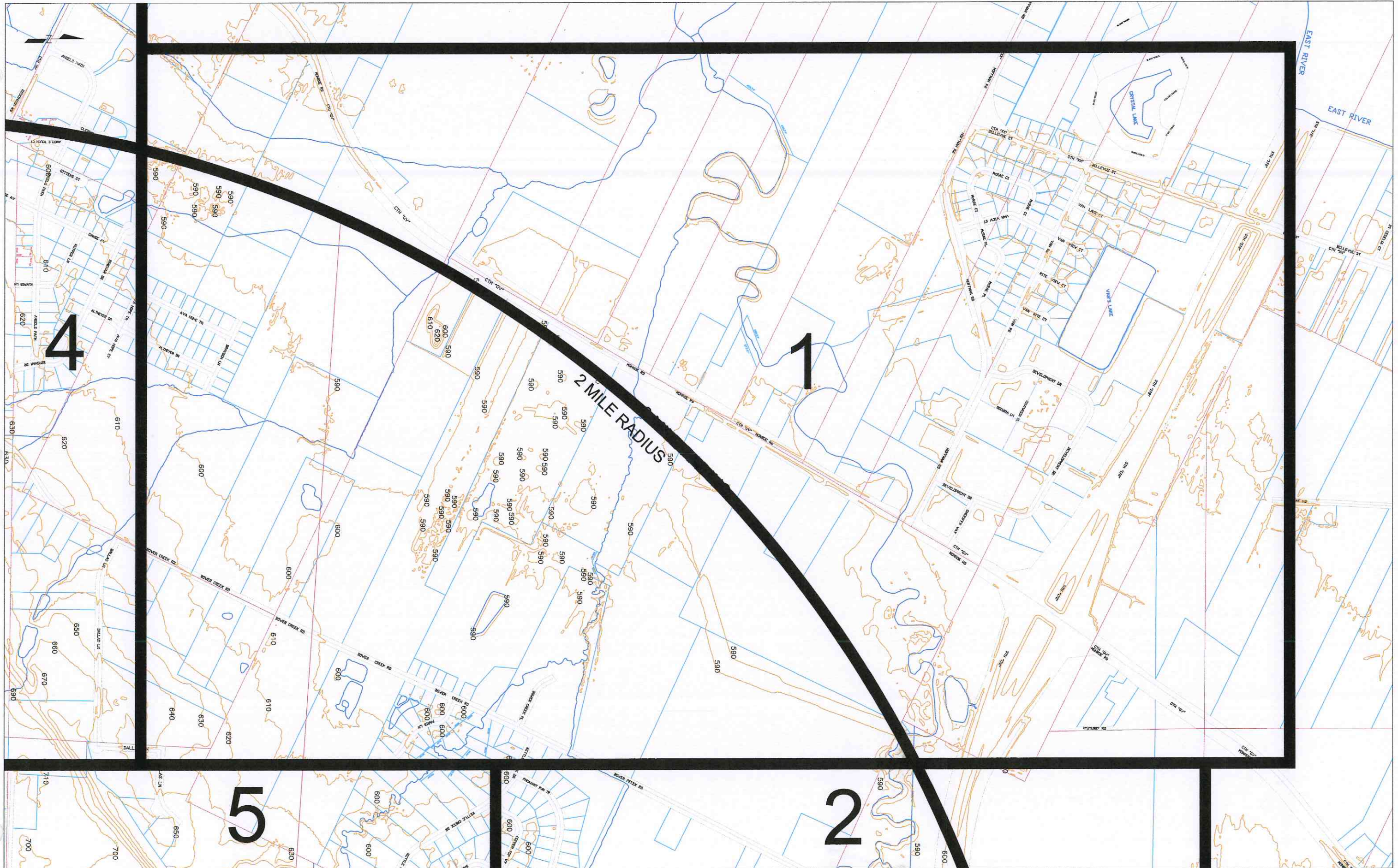
EXISTING
FACILITIES

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO.
1.1B 981







DATE: DRAWN BY: CHECKED BY:	10/30/17 MHP JMR	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
		*	*	*	*	*	*

LEDGEVIEW FARM LLC
CLUSTER A-HEADQUARTERS
BROWN COUNTY, WISCONSIN

SCALE:
1" = 800'

PANEL 1B
2 MI. AREA MAP OF LIVESTOCK FACILITIES
PROPERTY LINES/ROADWAYS/NAVIGABLE
WATERS/10' TOPOGRAPHIC LINES

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO.
984



DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
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CHECKED BY:	JMR						

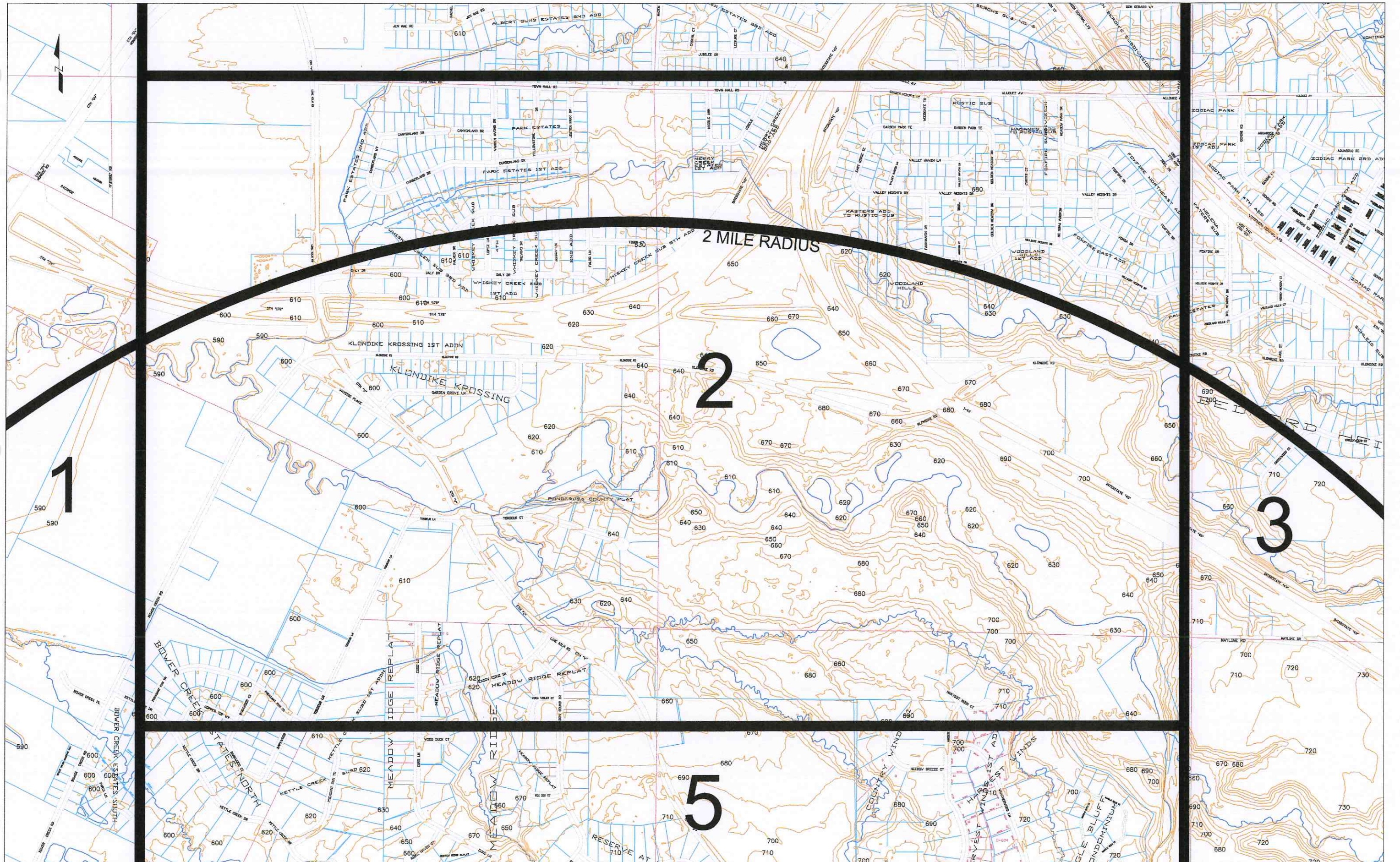
LEDGEVIEW FARM LLC
CLUSTER A-HEADQUARTERS
BROWN COUNTY, WISCONSIN

SCALE:
1" = 1025'

PANEL 2A
2 MI. AREA MAP OF LIVESTOCK FACILITIES
EXISTING BUILDINGS/ROADWAYS

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO.
985





DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DRAWN BY:	MHP	*	*	*	*	*	*
CHECKED BY:	JMR						

LEDGEVIEW FARM LLC
CLUSTER A-HEADQUARTERS
BROWN COUNTY, WISCONSIN

SCALE:
1" = 1250'

PANEL 3A
2 MI. AREA MAP OF LIVESTOCK FACILITIES
EXISTING BUILDINGS/ROADWAYS

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO.

9876



DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DRAWN BY:	MHP	*	*	*	*	*	*
CHECKED BY:	JMR						

LEDGEVIEW FARM LLC
CLUSTER A-HEADQUARTERS
BROWN COUNTY, WISCONSIN

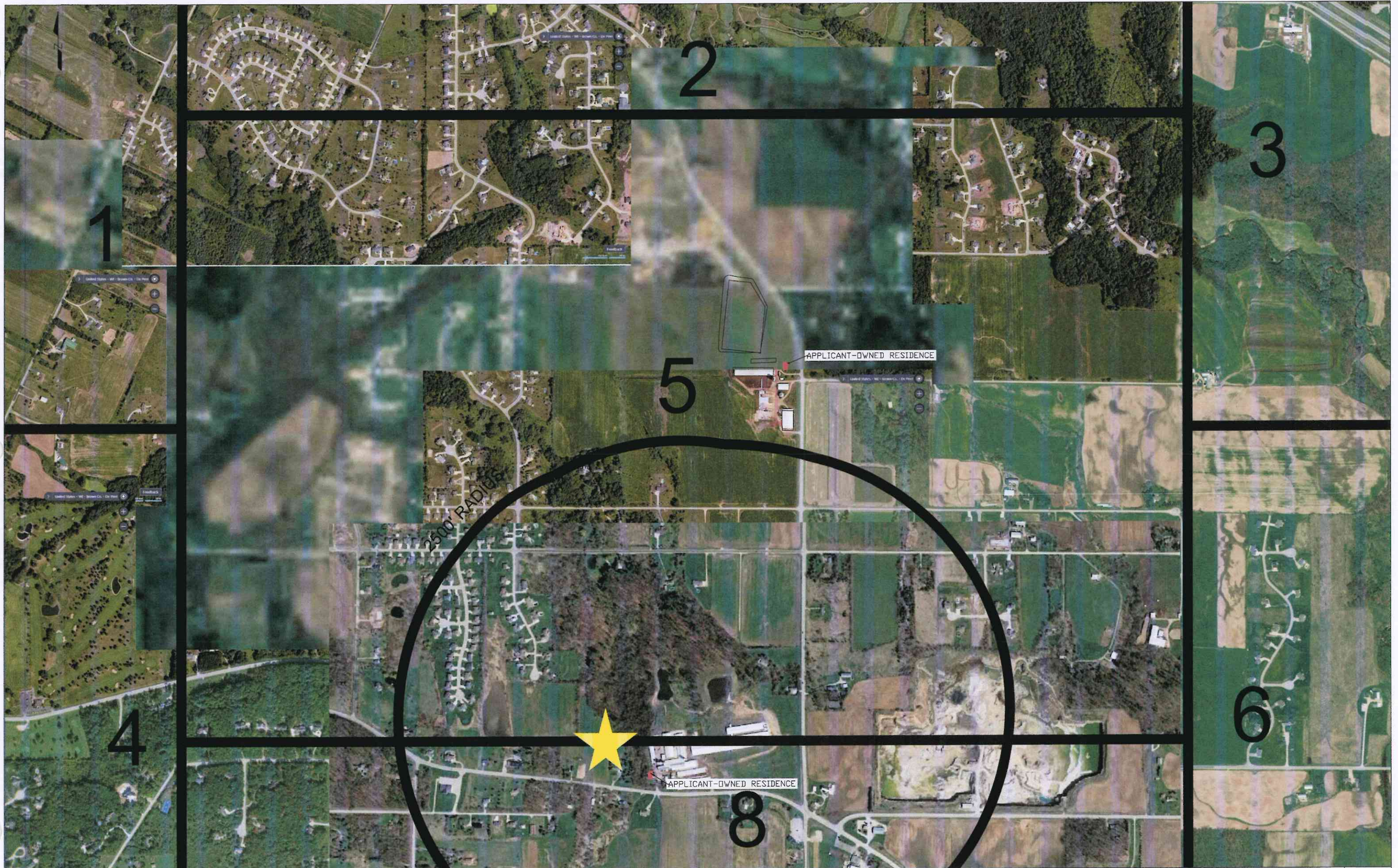
SCALE:
1" = 875'

PANEL 4A
2 MI. AREA MAP OF LIVESTOCK FACILITIES
EXISTING BUILDINGS/ROADWAYS

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
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SHEET NO.
988





DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DRAWN BY:	MHP	*	*	*	*	*	*
CHECKED BY:	JMR						

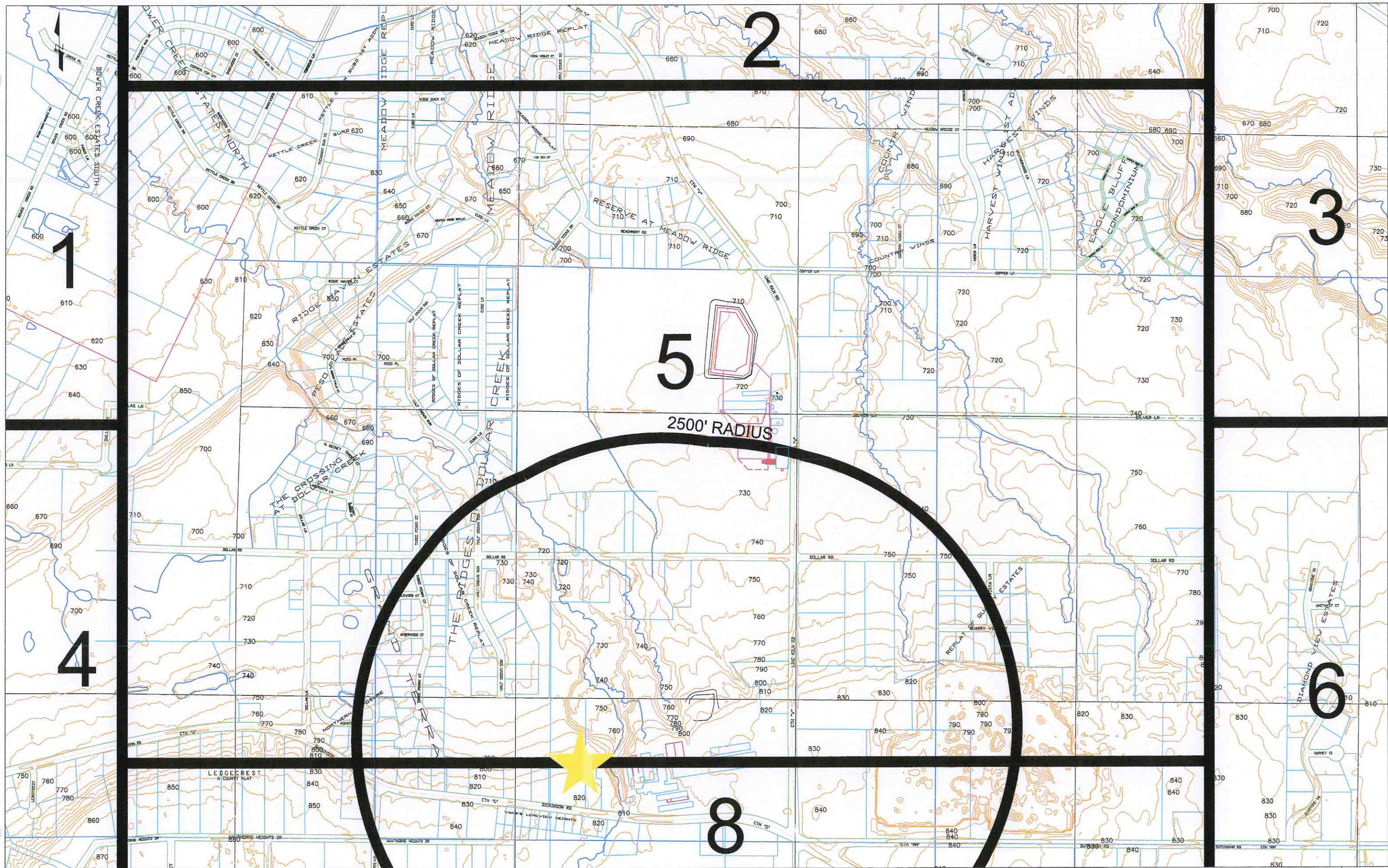
LEDGEVIEW FARM LLC
CLUSTER A-HEADQUARTERS
BROWN COUNTY, WISCONSIN

SCALE:
1" = 625'

PANEL 5A
2 MI. AREAL MAP OF LIVESTOCK FACILITIES
EXISTING BUILDINGS/ROADWAYS/
MARKED RESIDENCE AND HIGH USE BUILDINGS

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO.
9910



DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DRAWN BY:	MHP						
CHECKED BY:	JMR						

LEDGEVIEW FARM LLC
CLUSTER A-HEADQUARTERS
BROWN COUNTY, WISCONSIN

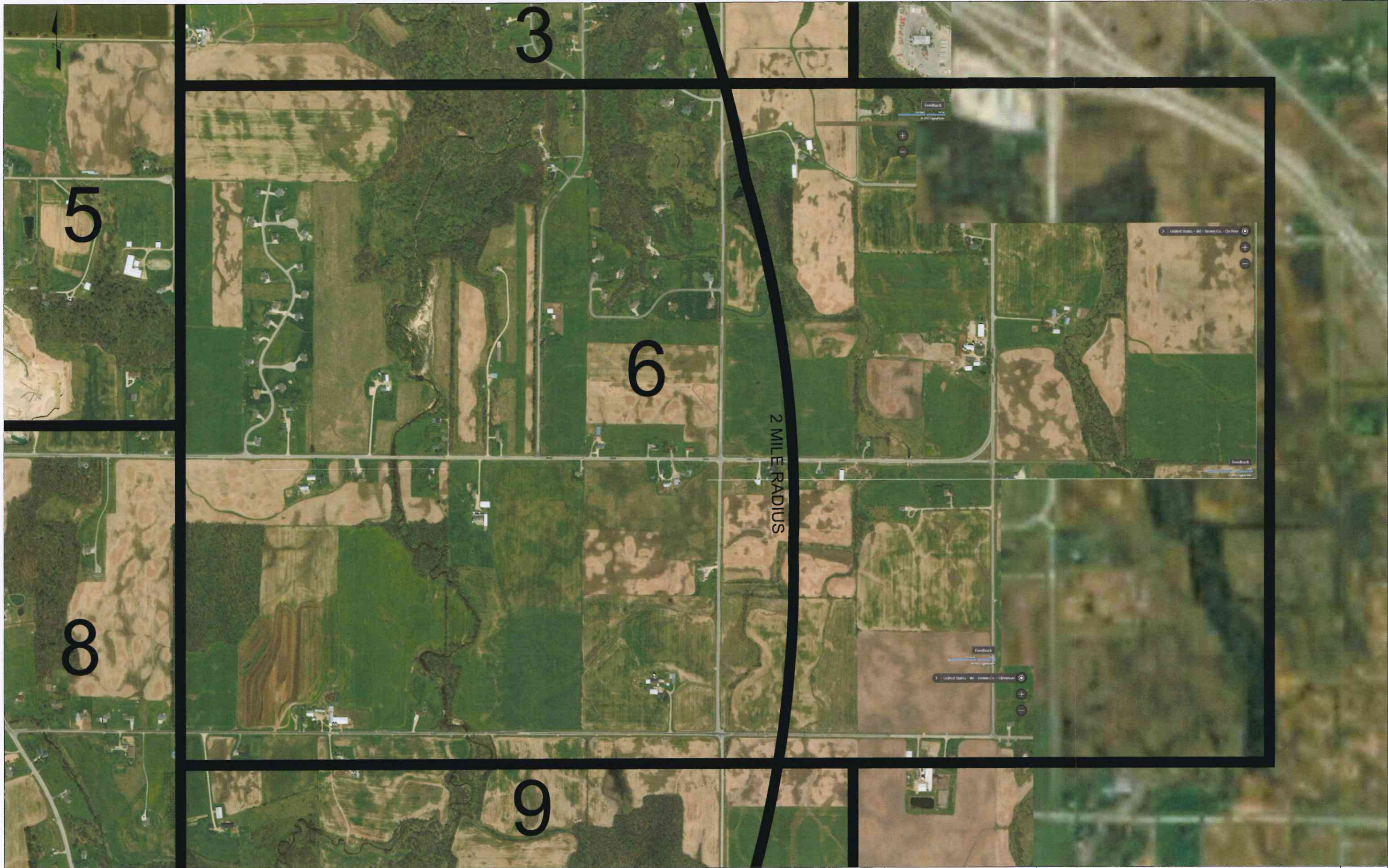
SCALE:
1" = 675'

PANEL 5B

2 MI. AREA MAP OF LIVESTOCK FACILITIES
PROPERTY LINES/ROADWAYS/NAVIGABLE WATERS/
10' TOPOGRAPHIC LINES

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO.
992 1



DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DRAWN BY:	MHP	*	*	*	*	*	*
CHECKED BY:	JMR						

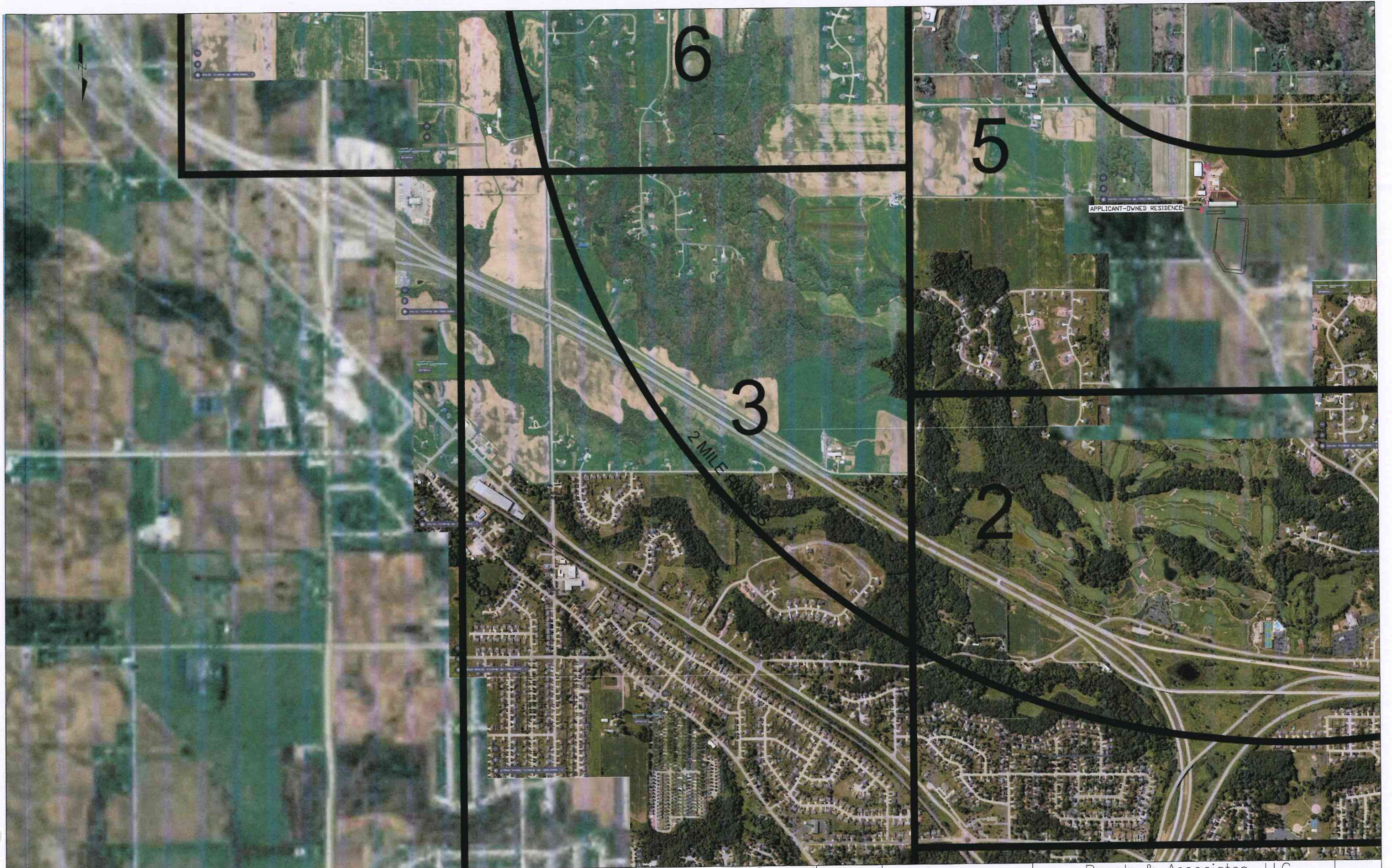
LEDGEVIEW FARM LLC
CLUSTER A-HEADQUARTERS
BROWN COUNTY, WISCONSIN

SCALE:
1" = 675'

PANEL 6A
2 MI. AREA MAP OF LIVESTOCK FACILITIES
EXISTING BUILDINGS/ROADWAYS

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO.
12
993



DATE: DRAWN BY: CHECKED BY:	10/30/17 MHP JMR	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
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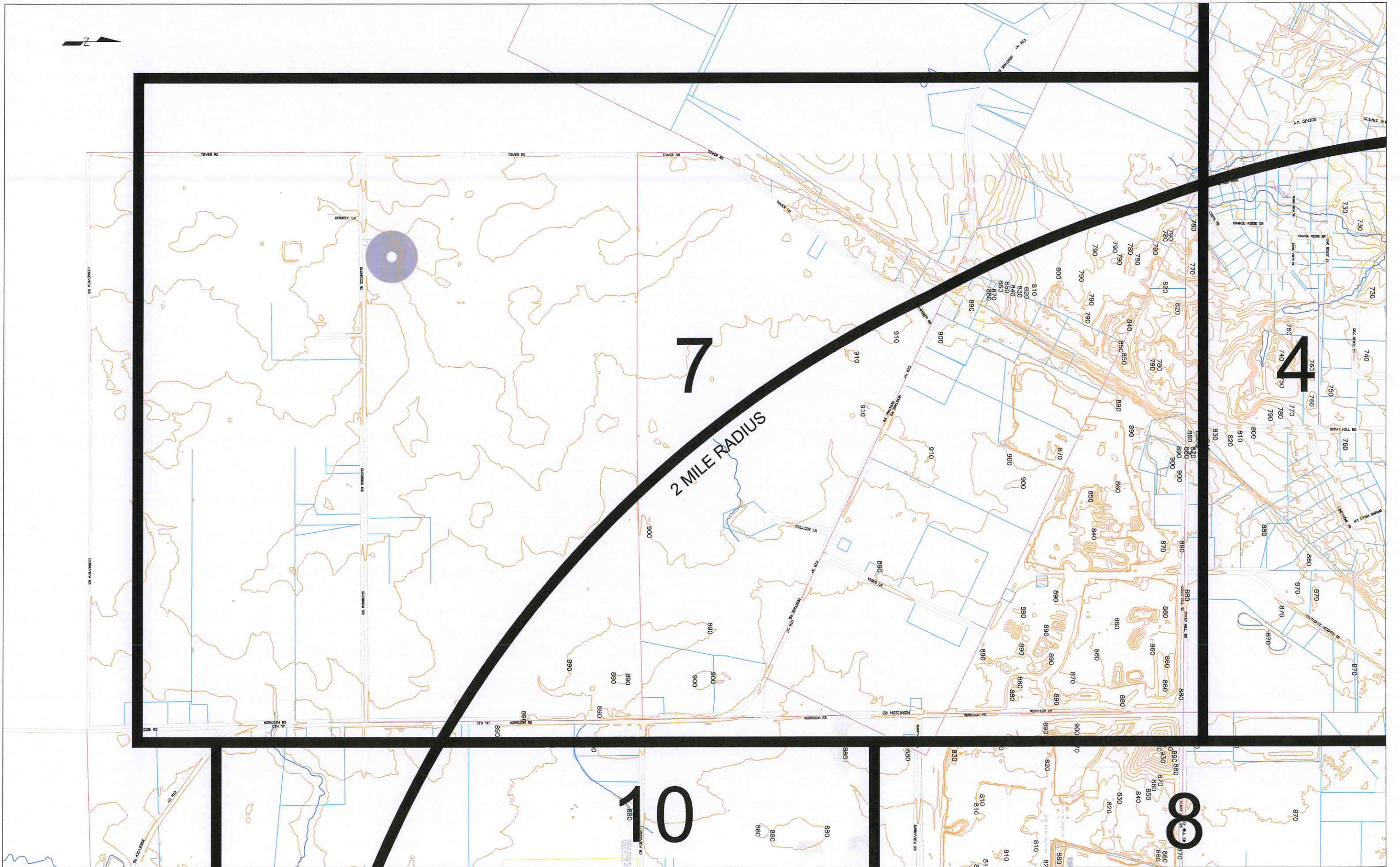
LEDGEVIEW FARM LLC
CLUSTER A-HEADQUARTERS
BROWN COUNTY, WISCONSIN

SCALE:
1" = 1250'

PANEL 7A
2 MI. AREA MAP OF LIVESTOCK FACILITIES
EXISTING BUILDINGS/ROADWAYS

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9859

SHEET NO.
14



DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DRAWN BY:	MHP	*	*	*	*	*	*
CHECKED BY:	JMR						

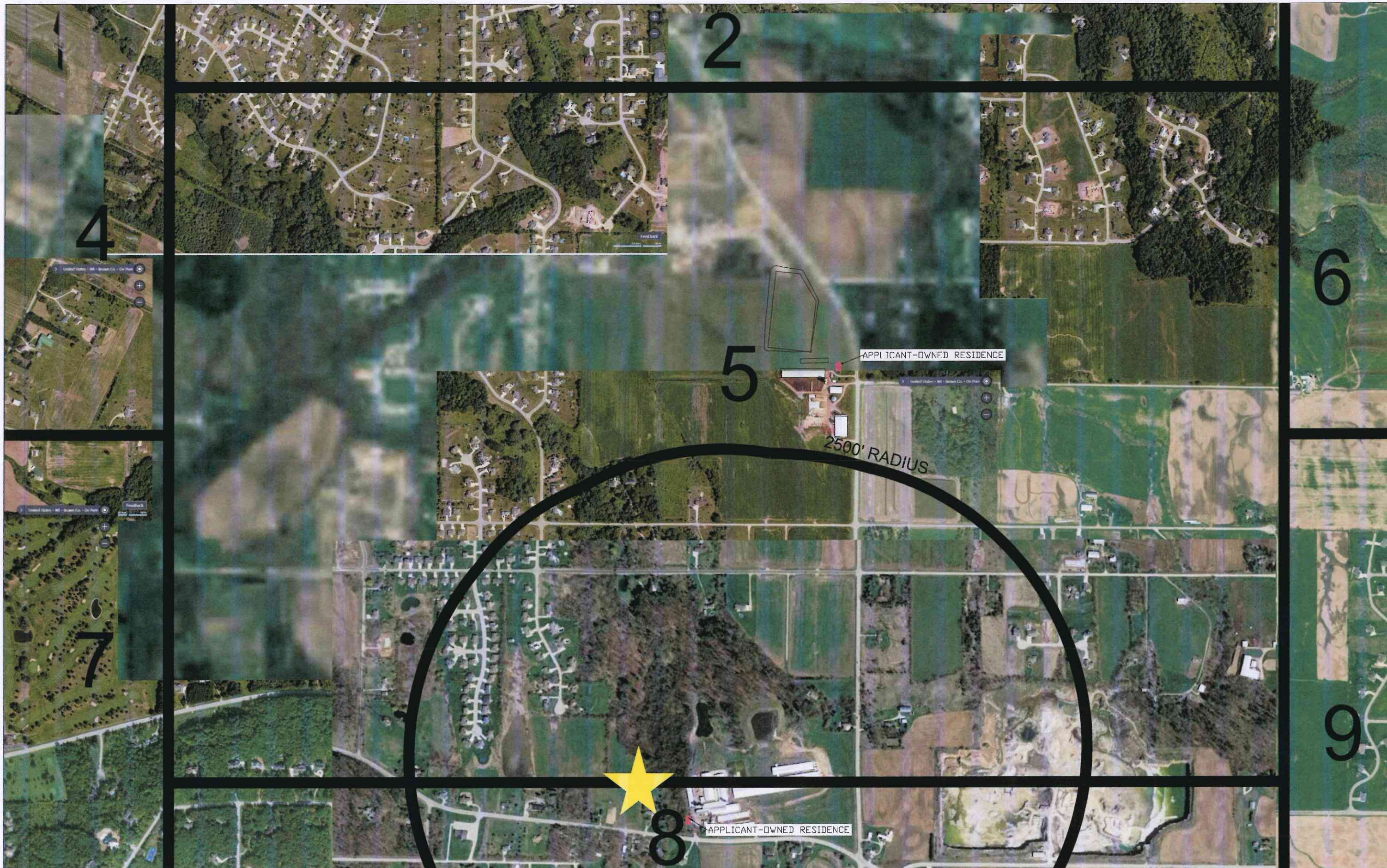
LEDGEVIEW FARM LLC
CLUSTER A-HEADQUARTERS
BROWN COUNTY, WISCONSIN

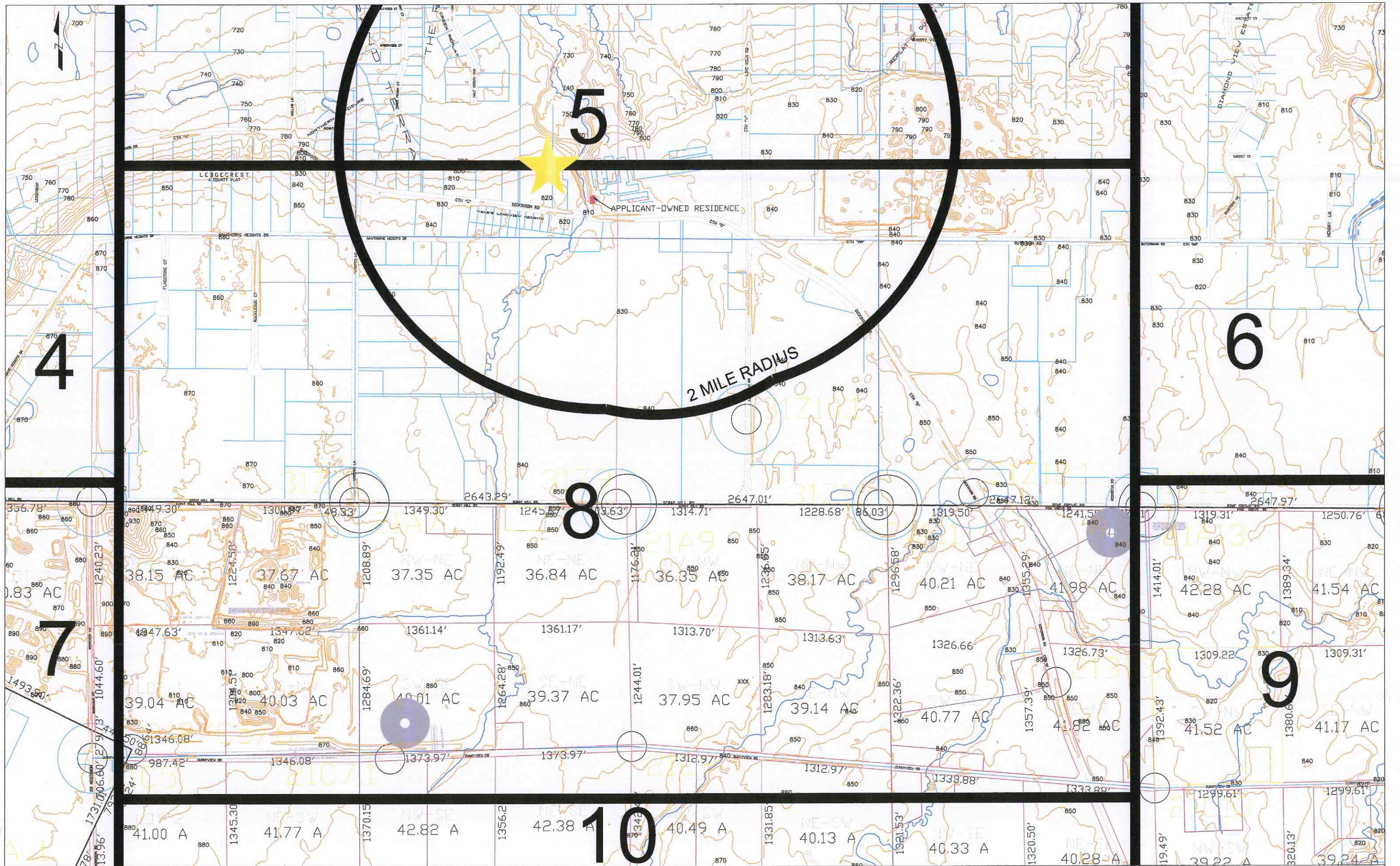
SCALE:
1" = 675'

PANEL 7B
2 MI. AREA MAP OF LIVESTOCK FACILITIES
PROPERTY LINES/ROADWAYS/NAVIGABLE
WATERS/10' TOPOGRAPHY LINES

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO.
9965





DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
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CHECKED BY:	JMR						

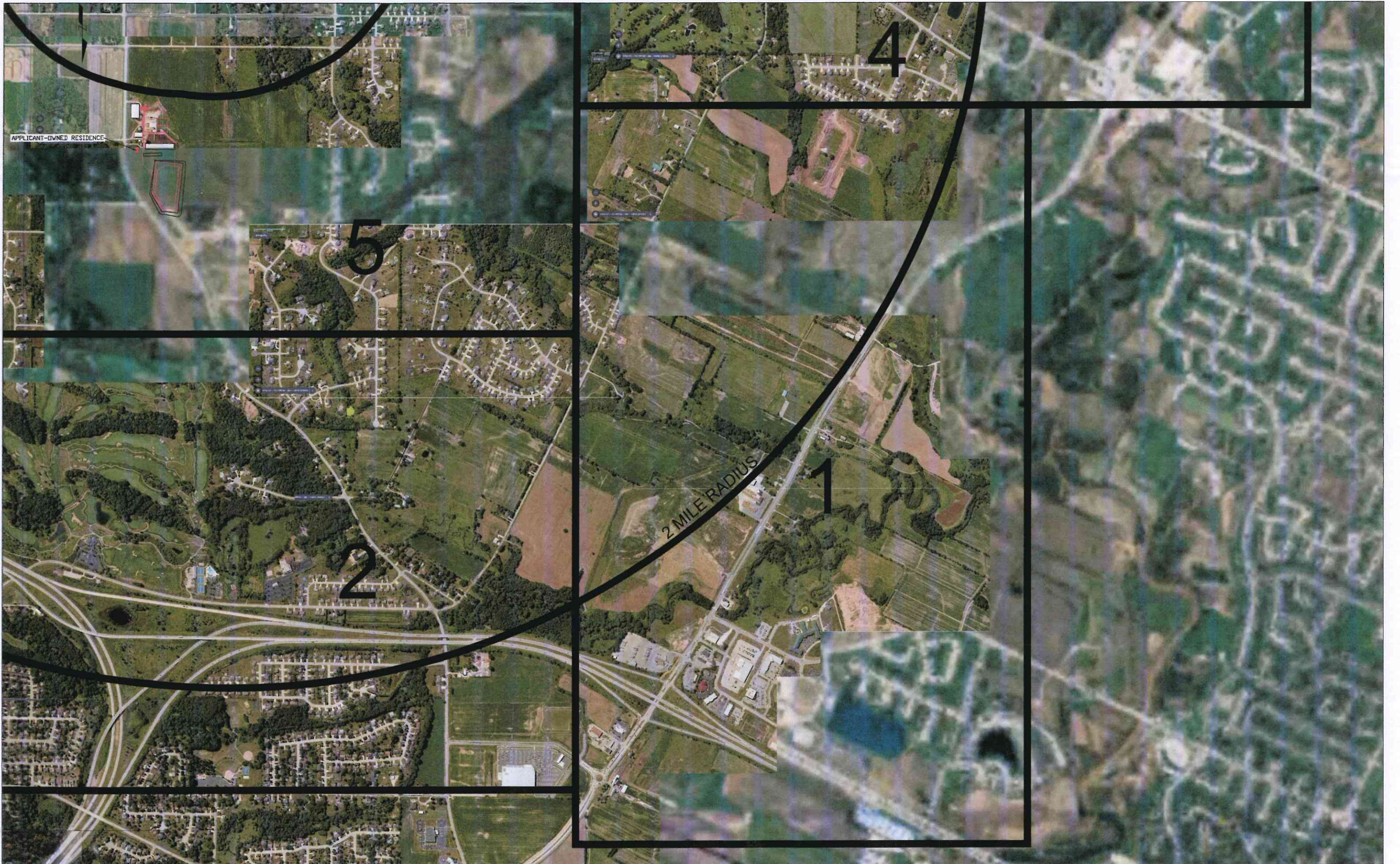
LEDGEVIEW FARM LLC
CLUSTER A-HEADQUARTERS
BROWN COUNTY, WISCONSIN

SCALE:
1" = 900'

PANEL 8B
2 MI. AREA MAP OF LIVESTOCK FACILITIES
PROPERTY LINES/ROADWAYS/NAVIGABLE
WATERS/10' TOPOGRAPHIC LINES

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
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9987



DATE: DRAWN BY: CHECKED BY:	10/30/17 MHP JMR	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
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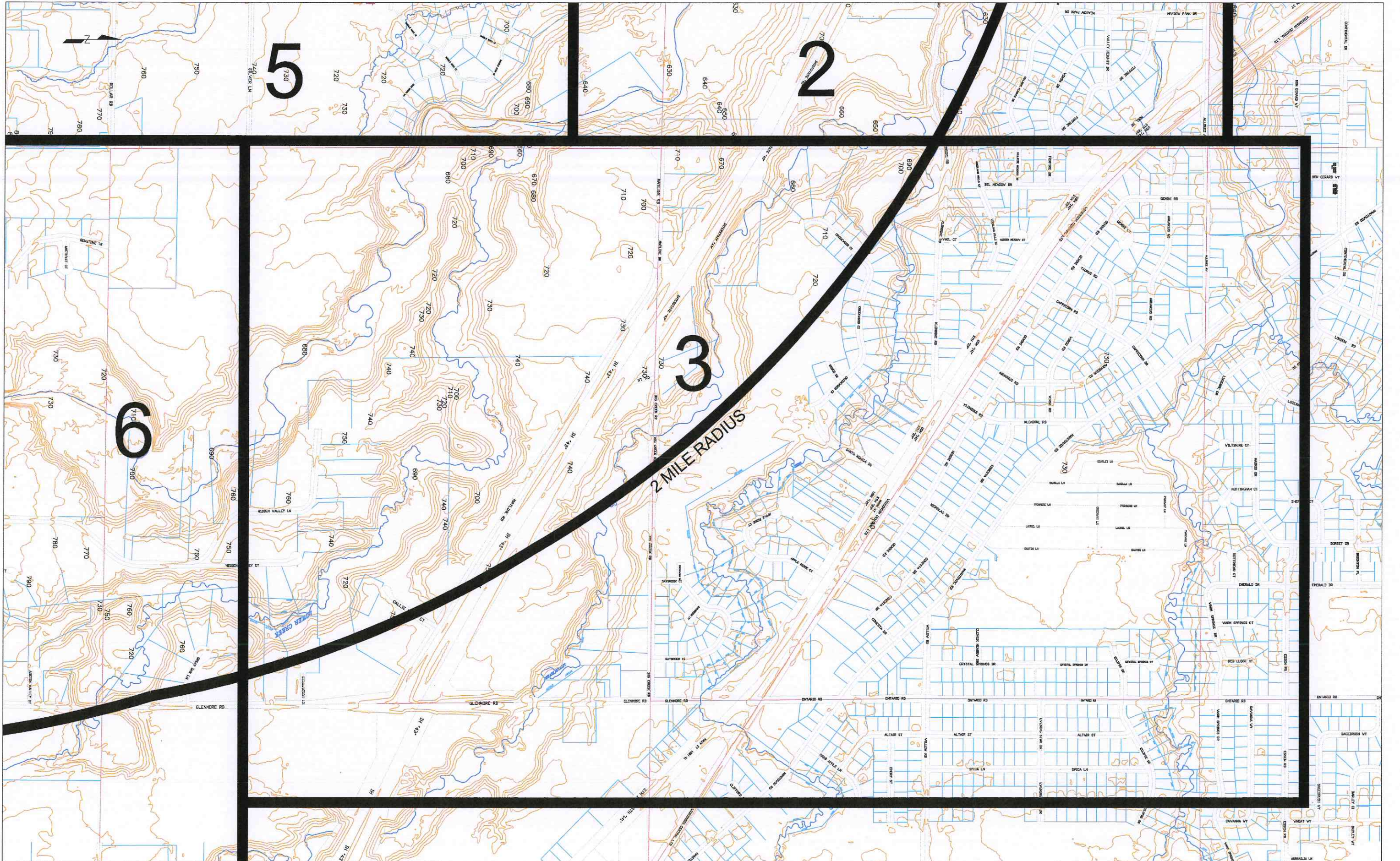
LEDGEVIEW FARM LLC
CLUSTER A-HEADQUARTERS
BROWN COUNTY, WISCONSIN

SCALE:
1" = 1250'

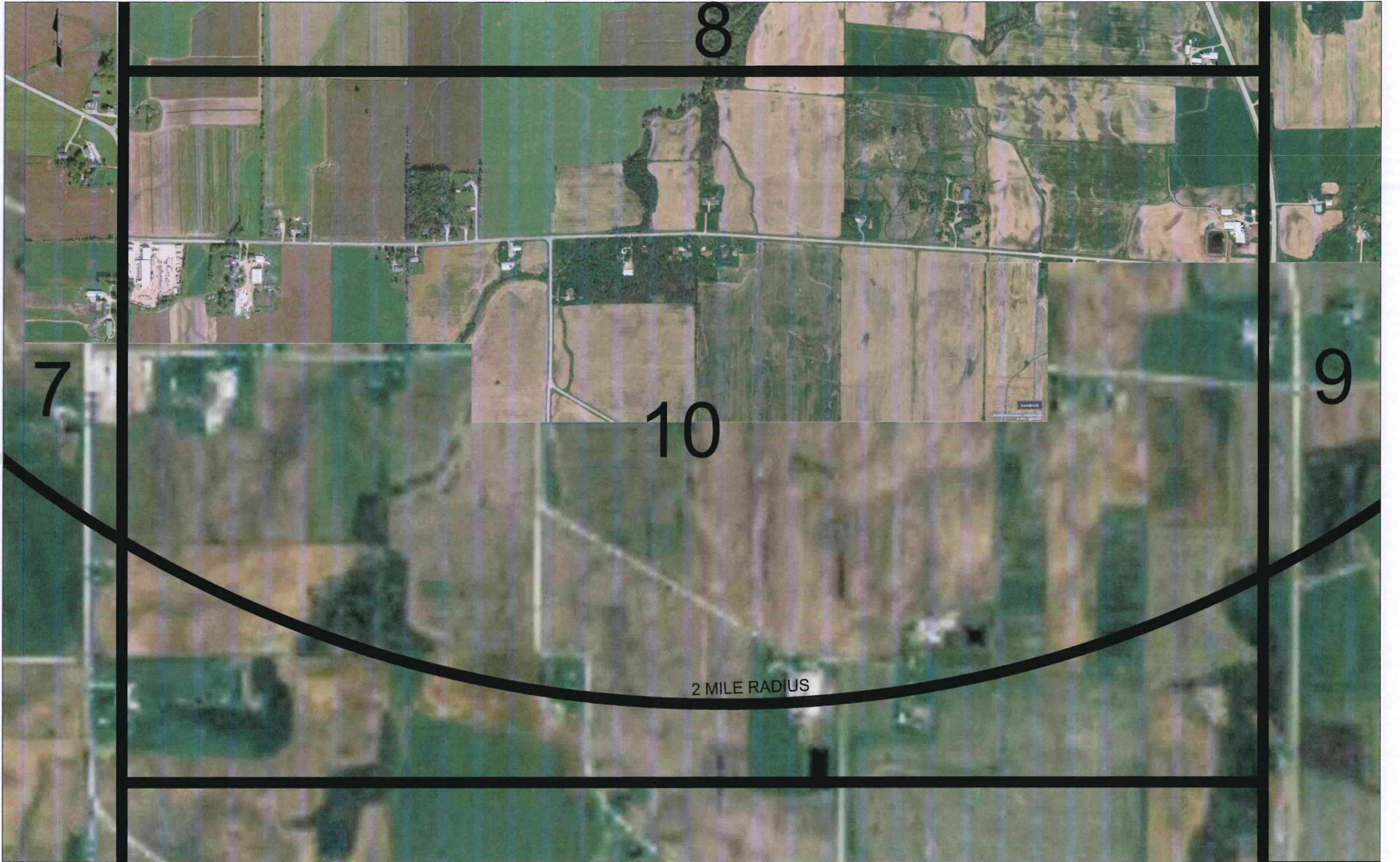
PANEL 9A
2 MI. AREA MAP OF LIVESTOCK FACILITIES
EXISTING BUILDINGS/ROADWAYS

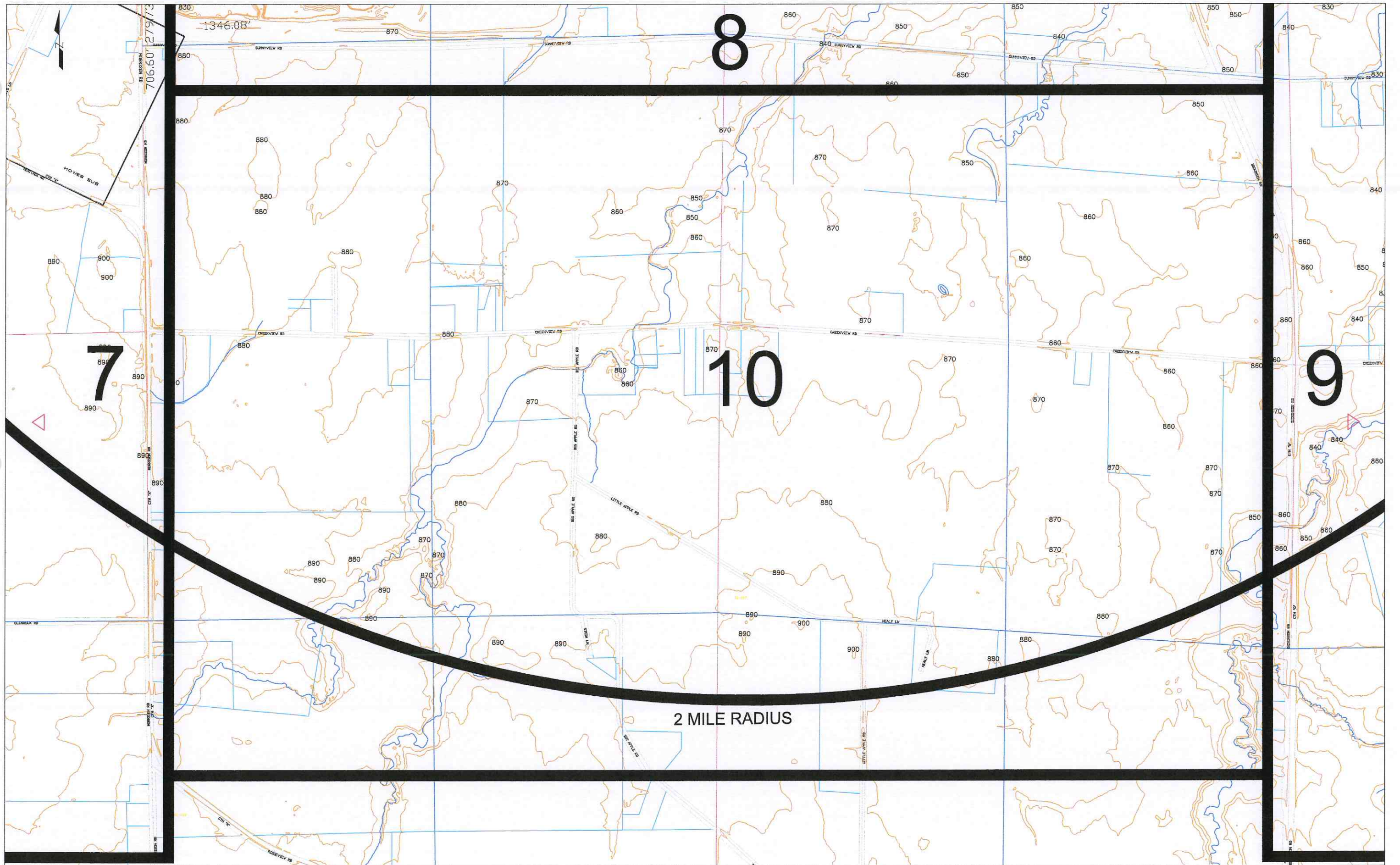
Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO.
9998



DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION	LEDGEVIEW FARM LLC CLUSTER A-HEADQUARTERS BROWN COUNTY, WISCONSIN	SCALE: 1" = 675'	PANEL 9B 2 MI. AREA MAP OF LIVESTOCK FACILITIES PROPERTY LINES/ROADWAYS/NAVIGABLE WATERS/10'TOPOGRAPHY LINES	Roach & Associates, LLC Dairy Business and Management Consulting Environmental Engineering 856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851	SHEET NO. 10009
DRAWN BY:	MHP	*	*	*	*	*	*					
CHECKED BY:	JMR											



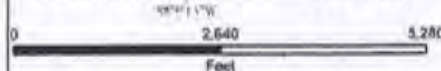
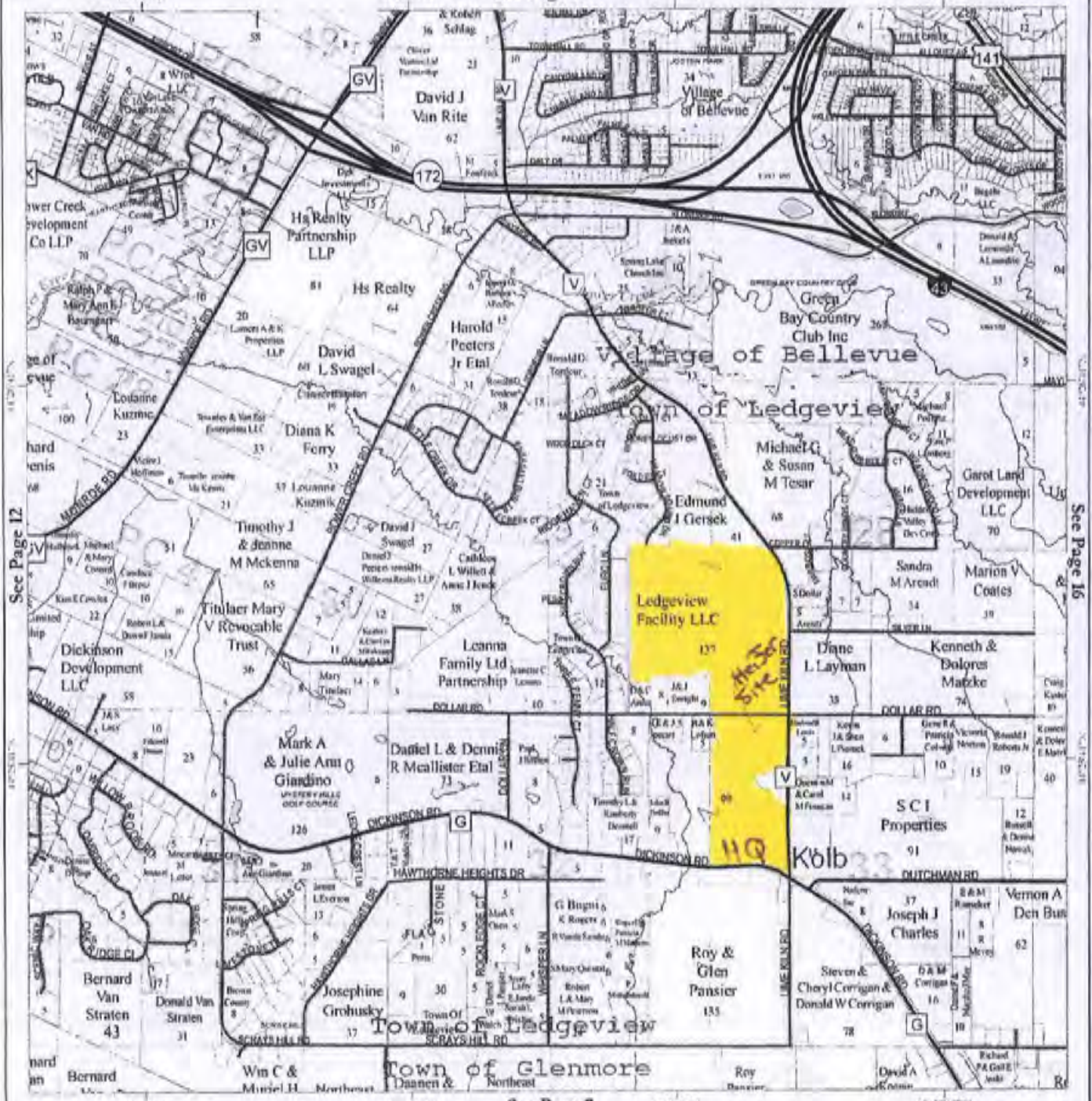


DATE: DRAWN BY: CHECKED BY:	10/30/17 MHP JMR	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION	LEDGEVIEW FARM LLC CLUSTER A-HEADQUARTERS BROWN COUNTY, WISCONSIN	SCALE: 1" = 675'	PANEL 10B 2 MI. AREA MAP OF LIVESTOCK FACILITIES PROPERTY LINES/ROADWAYS/NAVIGABLE WATERS/10' TOPOGRAPHIC LINES	Roach & Associates, LLC Dairy Business and Management Consulting Environmental Engineering 856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851	SHEET NO. 21 1002
		*	*	*	*	*	*					

T23N R21E (SW) Ledgeview & Bellevue(SW)



See Page 17



**The acreages shown on this map are based on the latest and most accurate parcel mapping which may differ slightly from the acreages shown on the tax roll.

For more detailed or up-to-date maps
please visit us online at:
www.gis.co.brown.wi.us

15

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Planning & Land Services
Aug 04, 2006

Map Legend

Property Boundaries (with acreages)**	Lakes, Ponds, & Rivers
Municipal Boundaries	Trails
Interstate, U.S. or State Highway	Woodlands/Natural Areas
County Highway	Address Grid numbering
Other Road or Street	Section or other PLSS line
Railroads	Section numbers



15

Cluster B

Heifers Site

Ledgeview Farms, LLC
Heifer Farm-Current Facilities



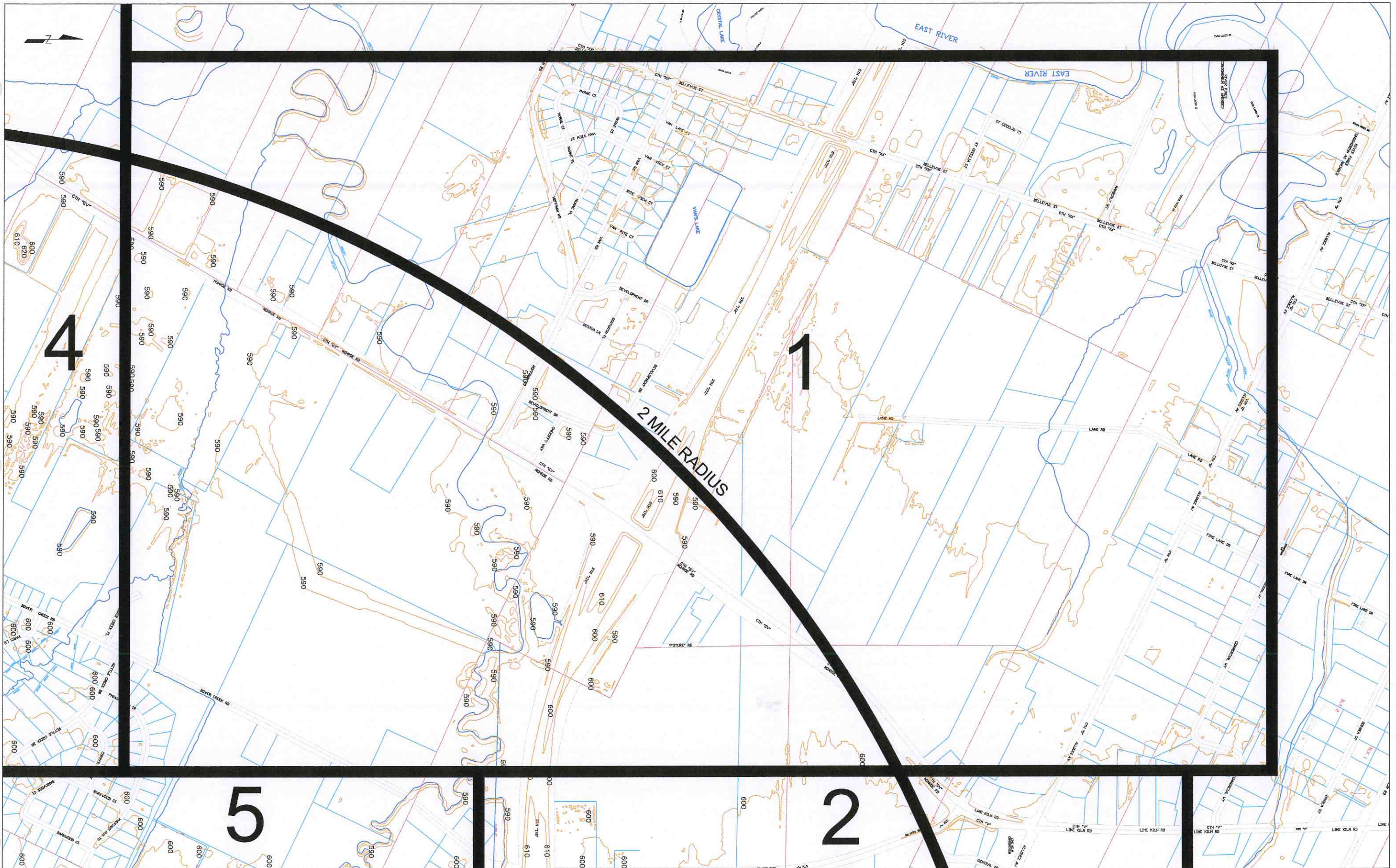


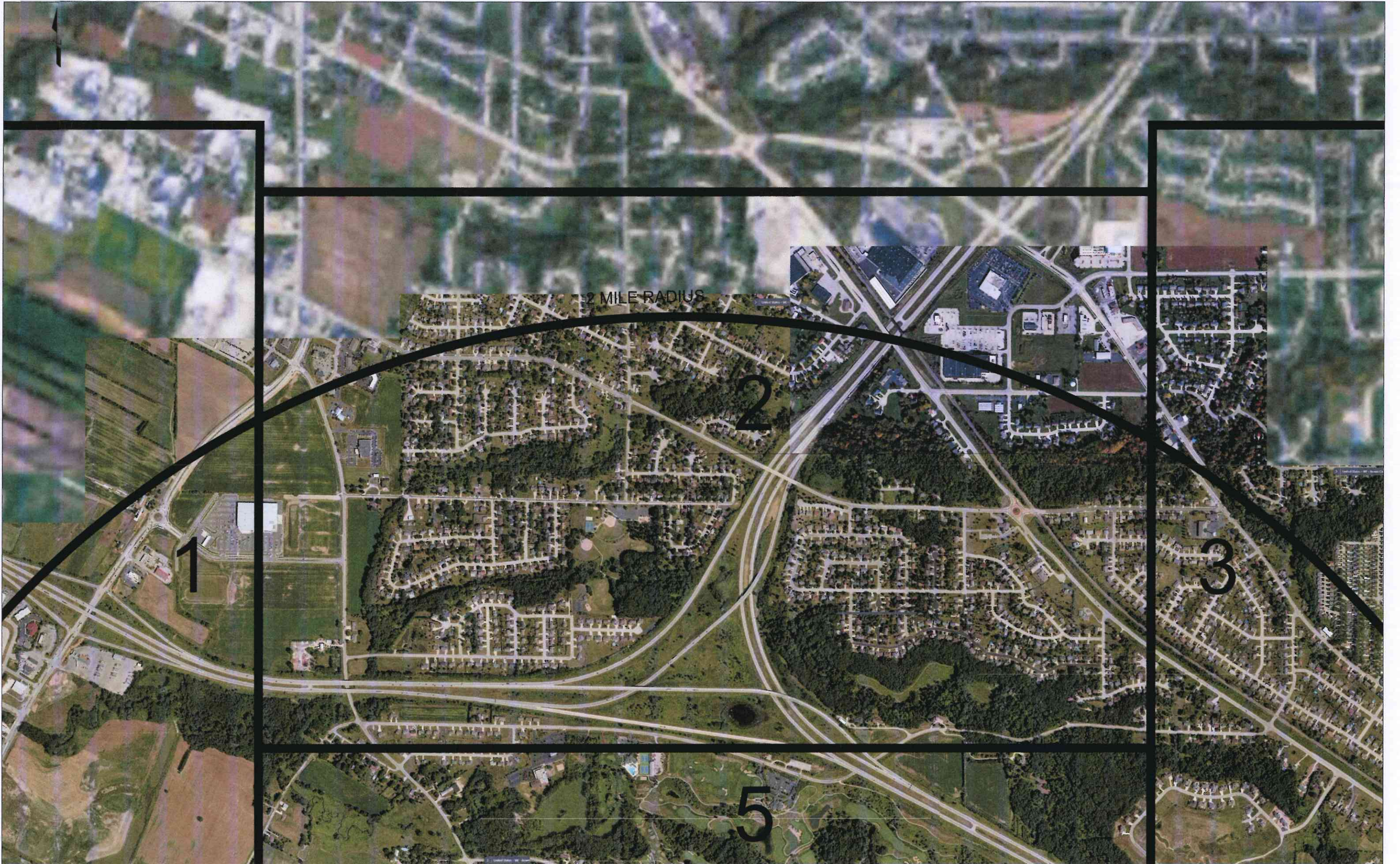
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DATE: DRAWN BY: CHECKED BY:	10/30/17 MHP JMR	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION	LEDGEVIEW FARM LLC CLUSTER B-HEIFER FACILITY BROWN COUNTY, WISCONSIN	SCALE: 1" = 1225'	PANEL 1A 2 MI. AREA MAP OF LIVESTOCK FACILITIES EXISTING BUILDINGS/ROADWAYS	Roach & Associates, LLC Dairy Business and Management Consulting Environmental Engineering 856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851	SHEET NO. 10082
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DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
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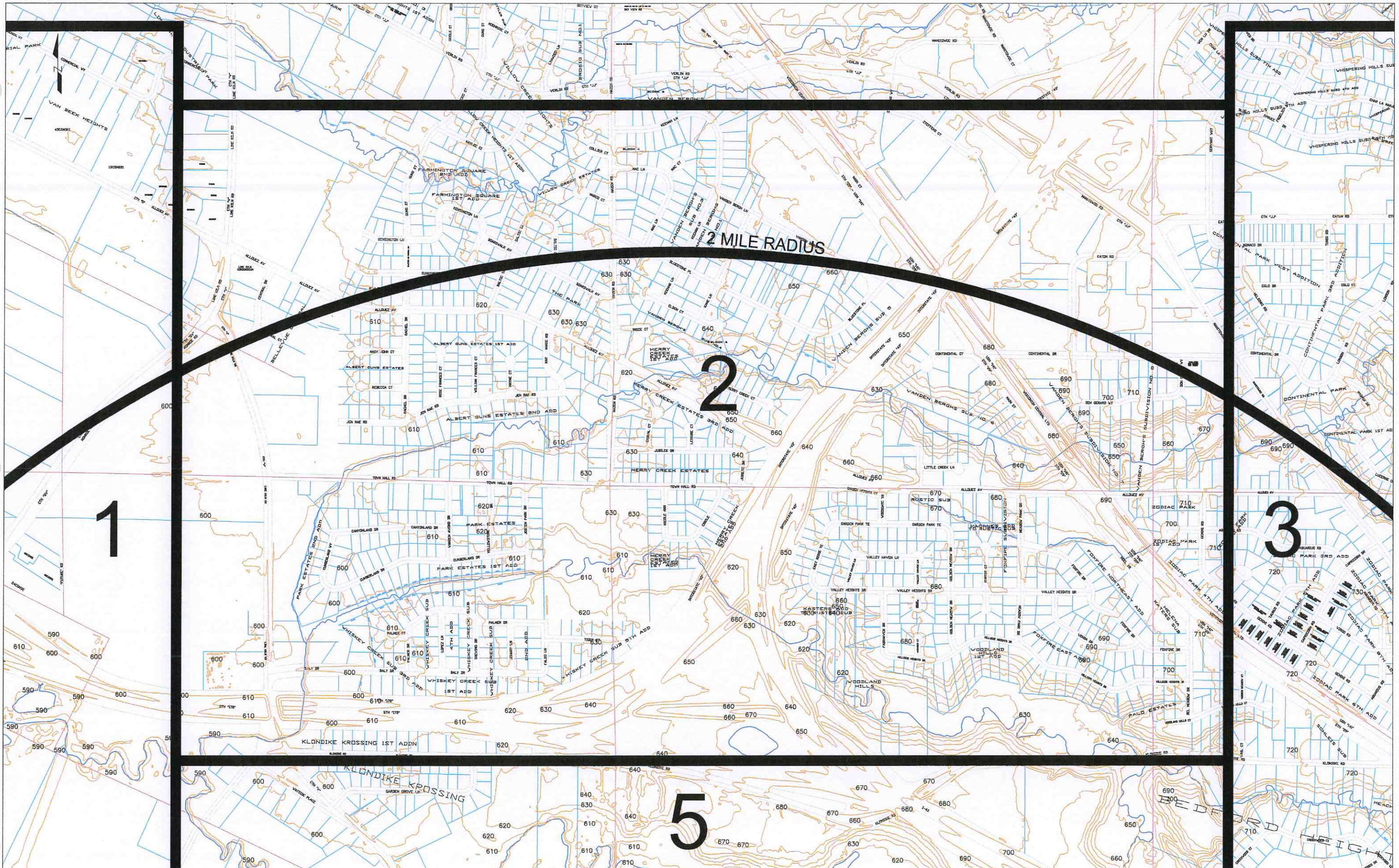
LEDGEVIEW FARM LLC
CLUSTER B—HEIFER FACILITY
BROWN COUNTY, WISCONSIN

SCALE:
1" = 1025'

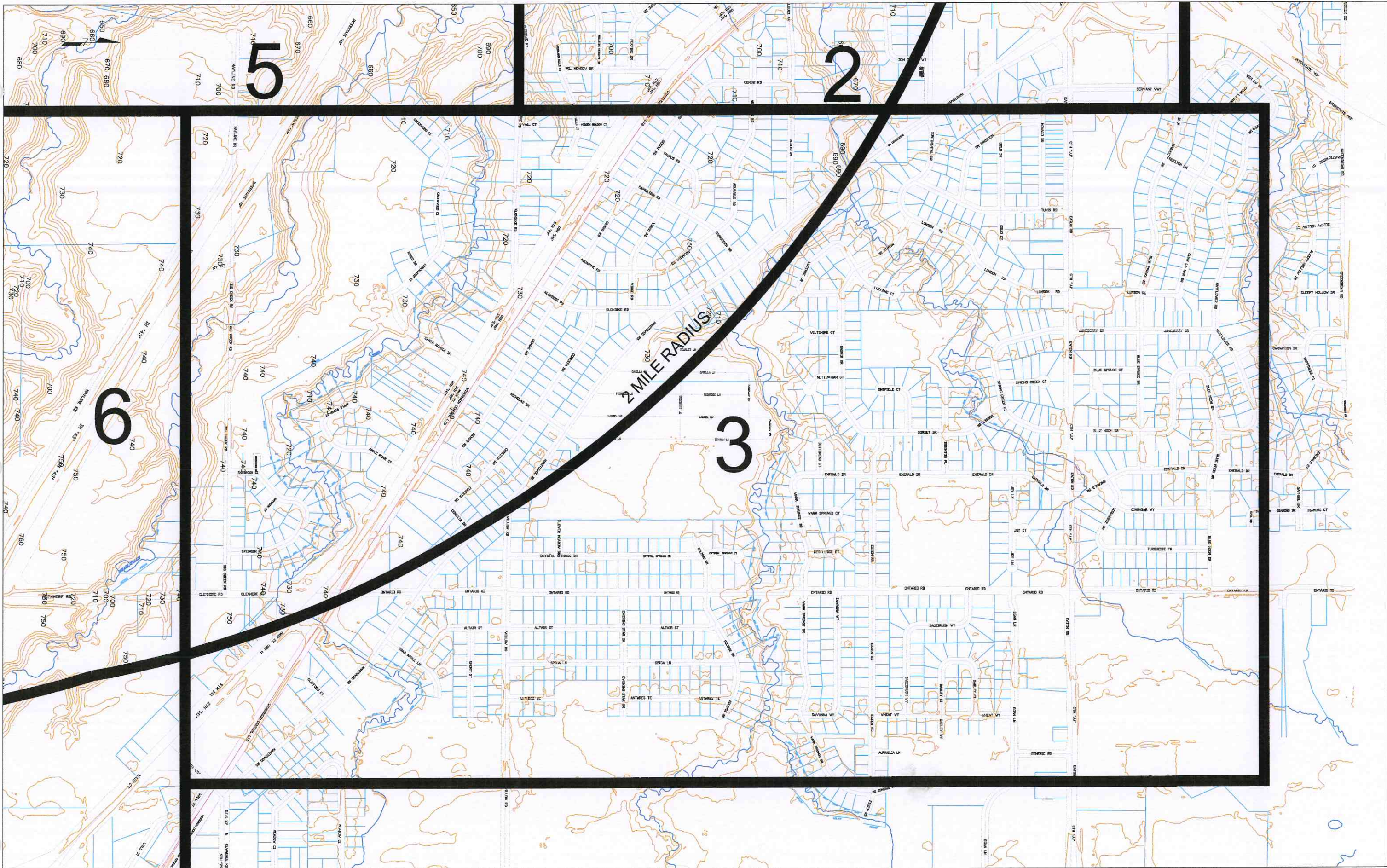
PANEL 2A
2 MI. AREA MAP OF LIVESTOCK FACILITIES
EXISTING BUILDINGS/ROADWAYS

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO.
1010









DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
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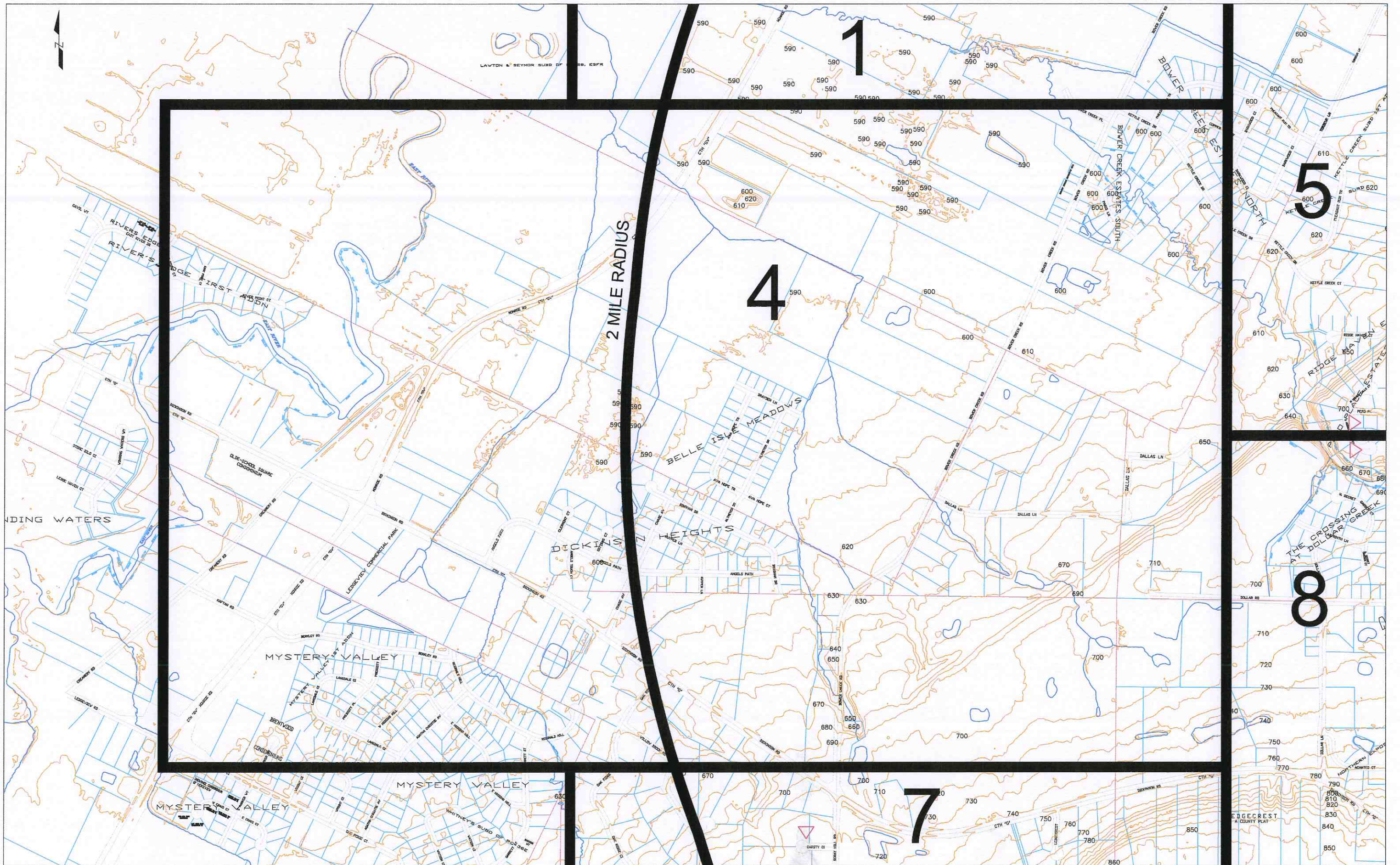
LEDGEVIEW FARM LLC
CLUSTER B—HEIFER FACILITY
BROWN COUNTY, WISCONSIN

SCALE:
1" = 875'

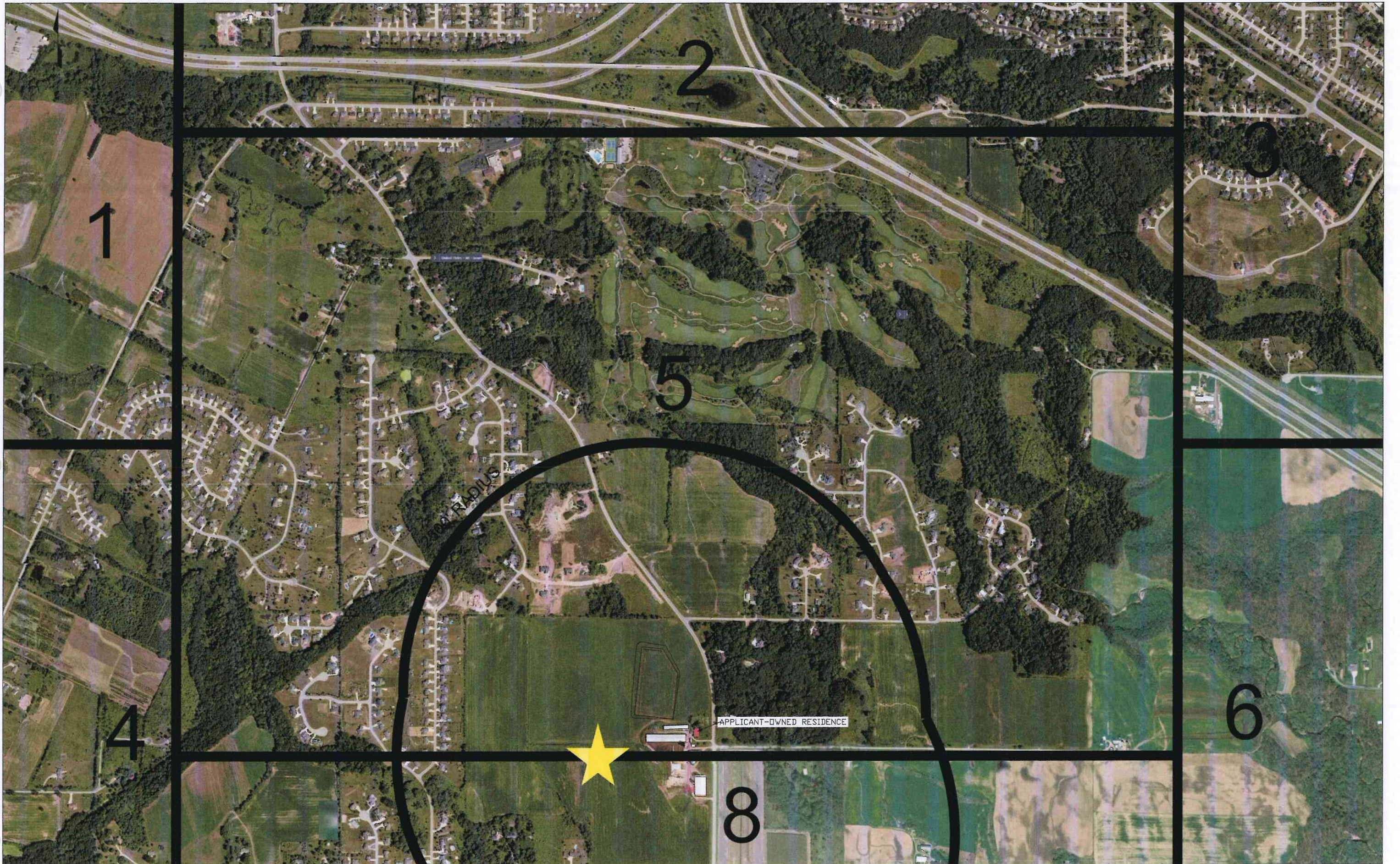
PANEL 4A
2 MI. AREA MAP OF LIVESTOCK FACILITIES
EXISTING BUILDINGS/ROADWAYS

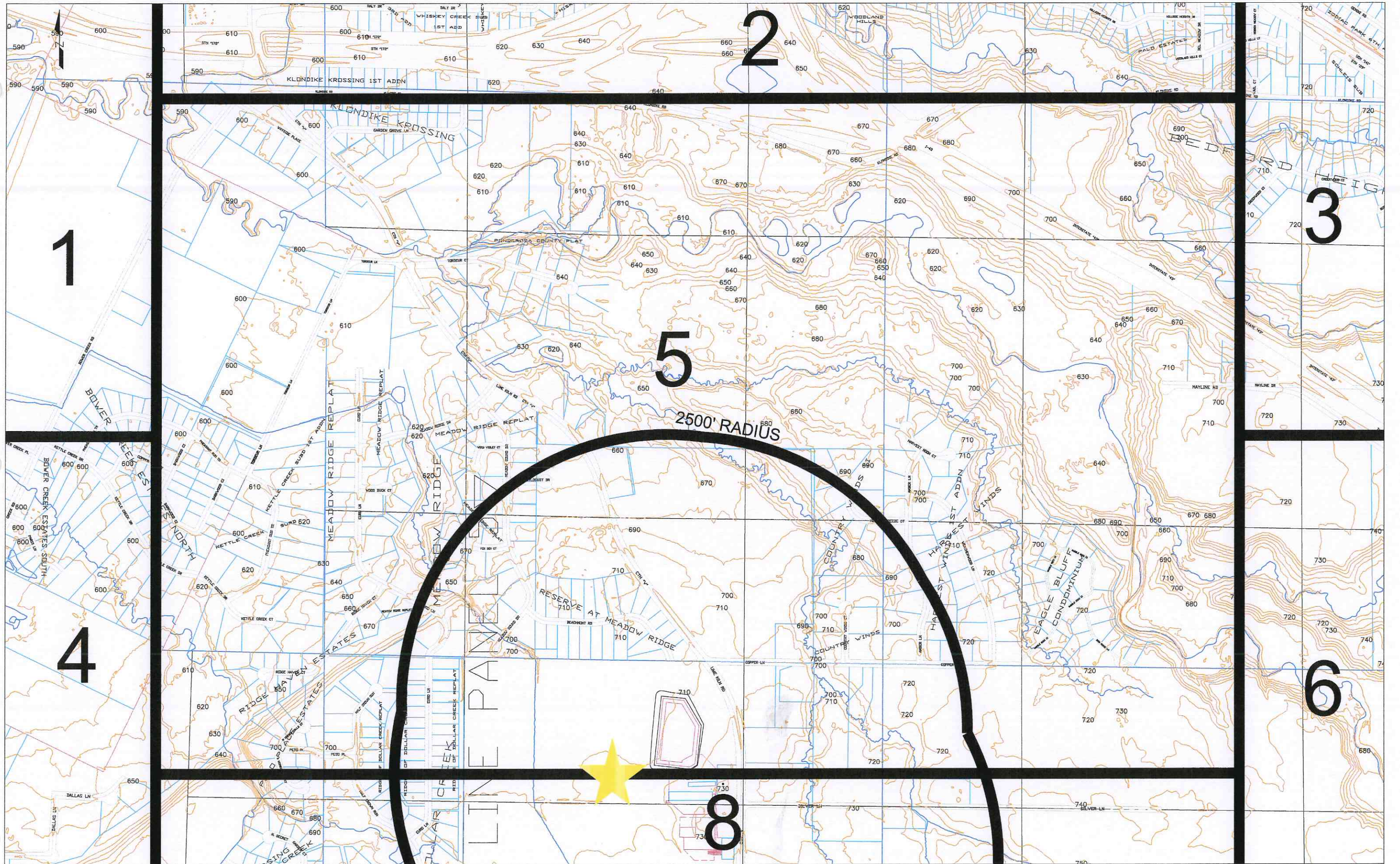
Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
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SHEET NO.
8
1014



DATE: DRAWN BY: CHECKED BY:	10/30/17 MHP JMR	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION	LEDGEVIEW FARM LLC CLUSTER B-HEIFER FACILITY BROWN COUNTY, WISCONSIN	SCALE: 1" = 675'	PANEL 4B 2 MI. AREA MAP OF LIVESTOCK FACILITIES PROPERTY LINES/ROADWAYS/NAVIGABLE WATERS/10' TOPOGRAPHIC LINES	Roach & Associates, LLC Dairy Business and Management Consulting Environmental Engineering 856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851	SHEET NO. 9
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DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
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CHECKED BY:	JMR						

LEDGEVIEW FARM LLC
CLUSTER B-HEIFER FACILITY
BROWN COUNTY, WISCONSIN

SCALE:
1" = 675'

PANEL 5B
2 MI. AREA MAP OF LIVESTOCK FACILITIES
PROPERTY LINES/ROADWAYS/NAVIGABLE WATERS/
10' TOPOGRAPHIC LINES

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Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851
SHEET NO. 11



DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
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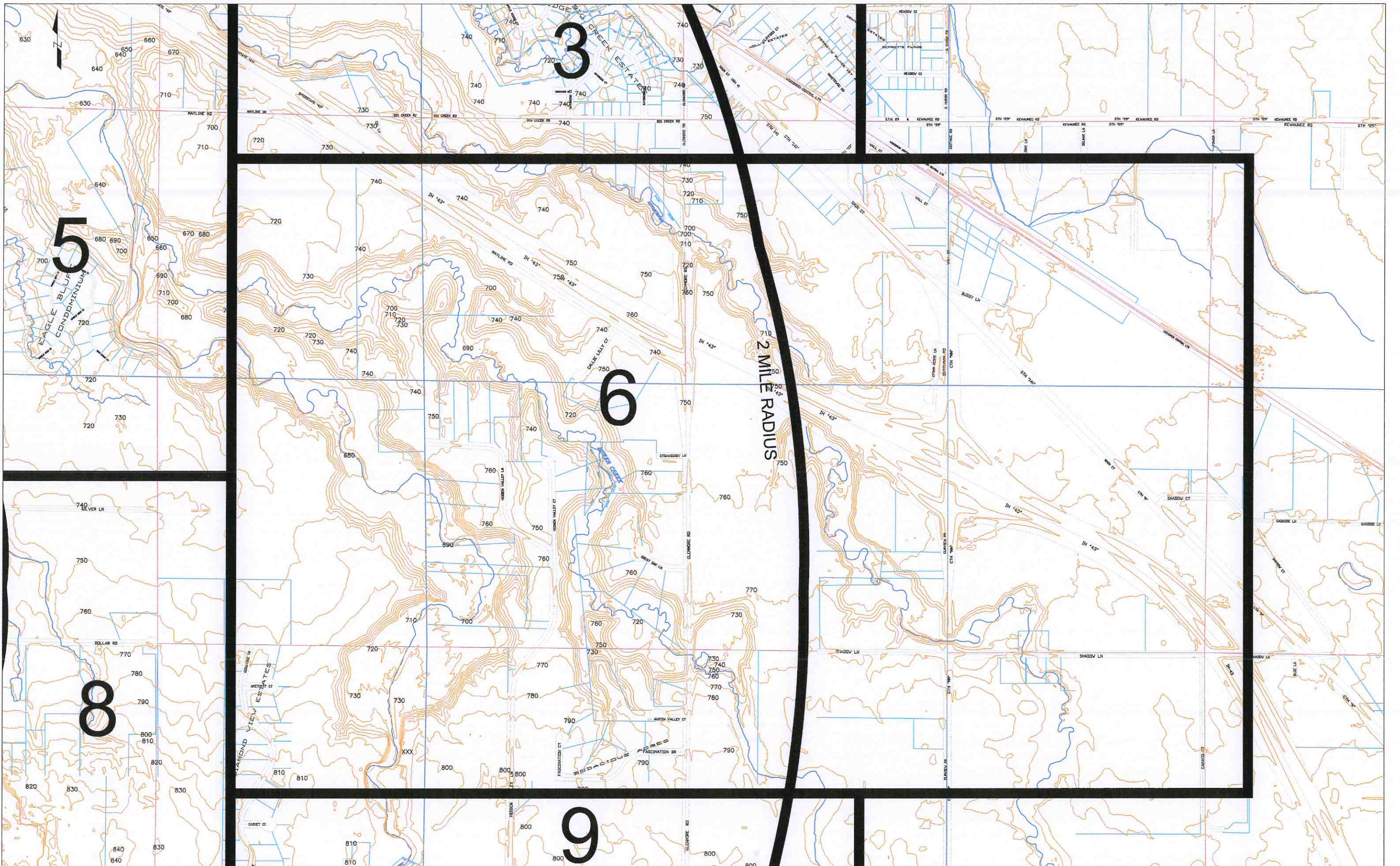
LEDGEVIEW FARM LLC
CLUSTER B—HEIFER FACILITY
BROWN COUNTY, WISCONSIN

SCALE:
1" = 675'

PANEL 6A
2 MI. AREA MAP OF LIVESTOCK FACILITIES
EXISTING BUILDINGS/ROADWAYS

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO.
1018¹²



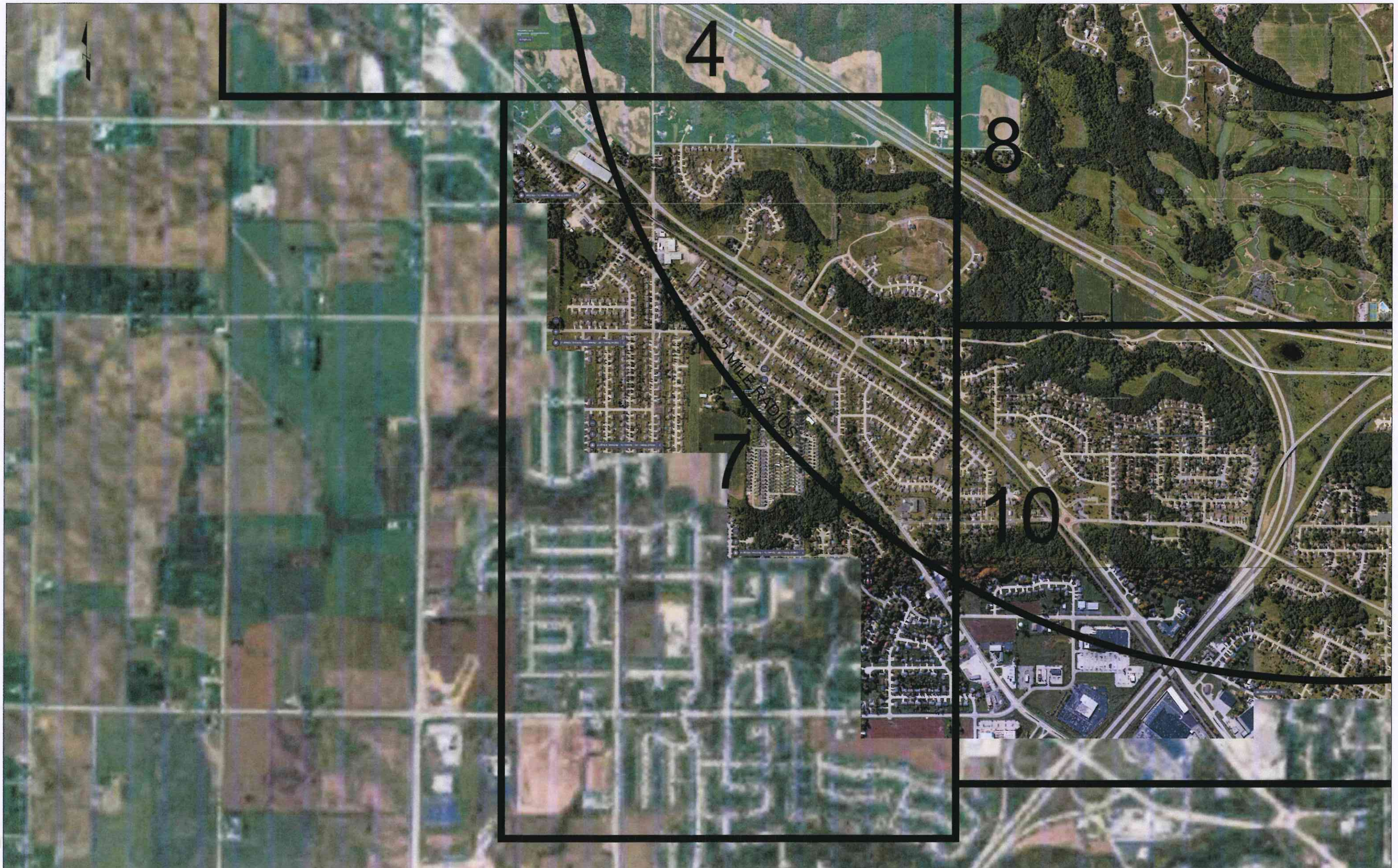
DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
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CHECKED BY:	JMR						

LEDGEVIEW FARM LLC
CLUSTER B-HEIFER FACILITY
BROWN COUNTY, WISCONSIN

SCALE:
1" = 900'

PANEL 6B
2 MI. AREA MAP OF LIVESTOCK FACILITIES
PROPERTY LINES/ROADWAYS/NAVIGABLE
WATERS/10' TOPOGRAPHIC LINES

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851
SHEET NO. 13



DATE: DRAWN BY: CHECKED BY:	10/30/17 MHP JMR	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
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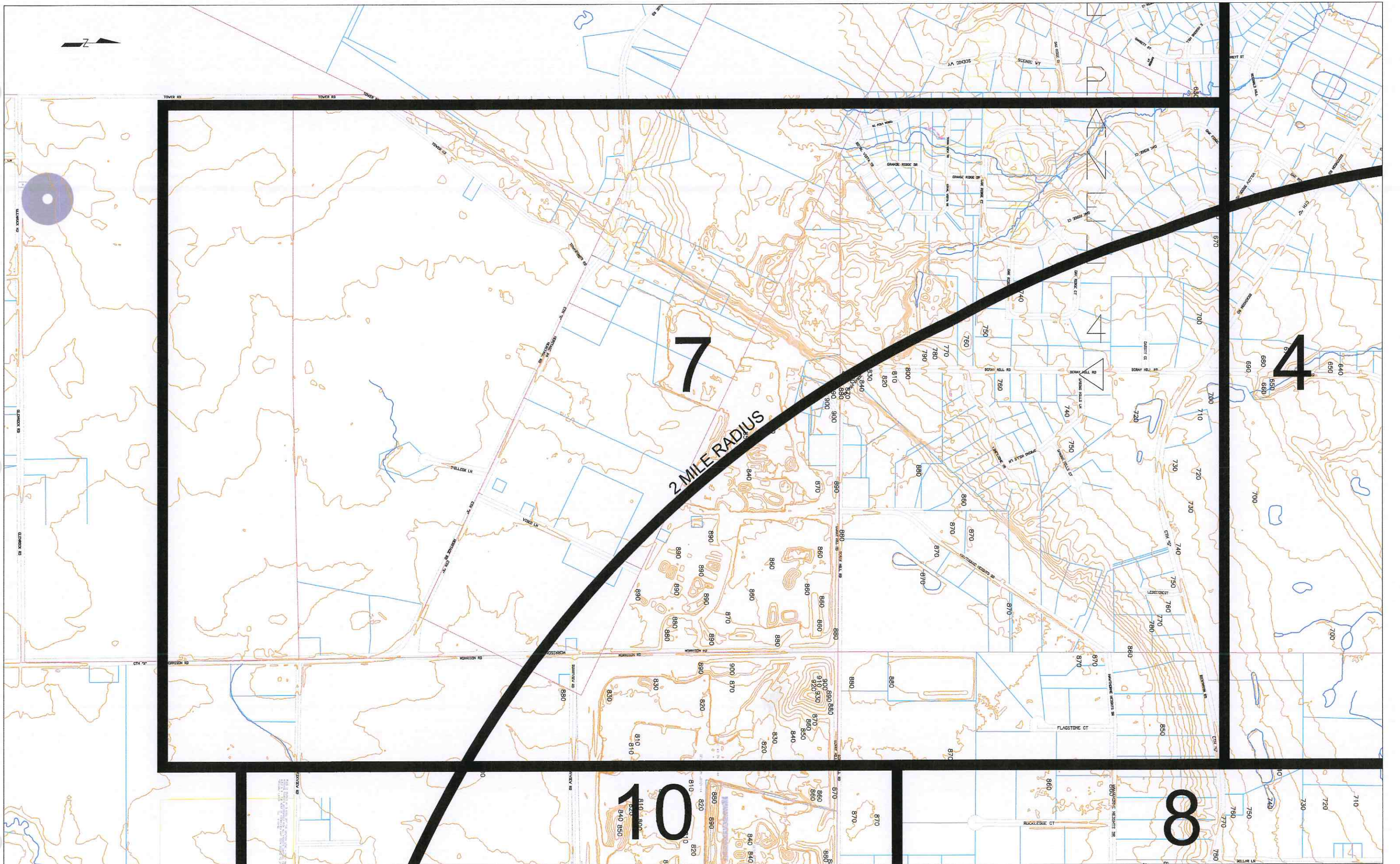
LEDGEVIEW FARM LLC
CLUSTER B-HEIFER FACILITY
BROWN COUNTY, WISCONSIN

SCALE:
1" = 1250'

PANEL 7A
2 MI. AREA MAP OF LIVESTOCK FACILITIES
EXISTING BUILDINGS/ROADWAYS

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

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10204



DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
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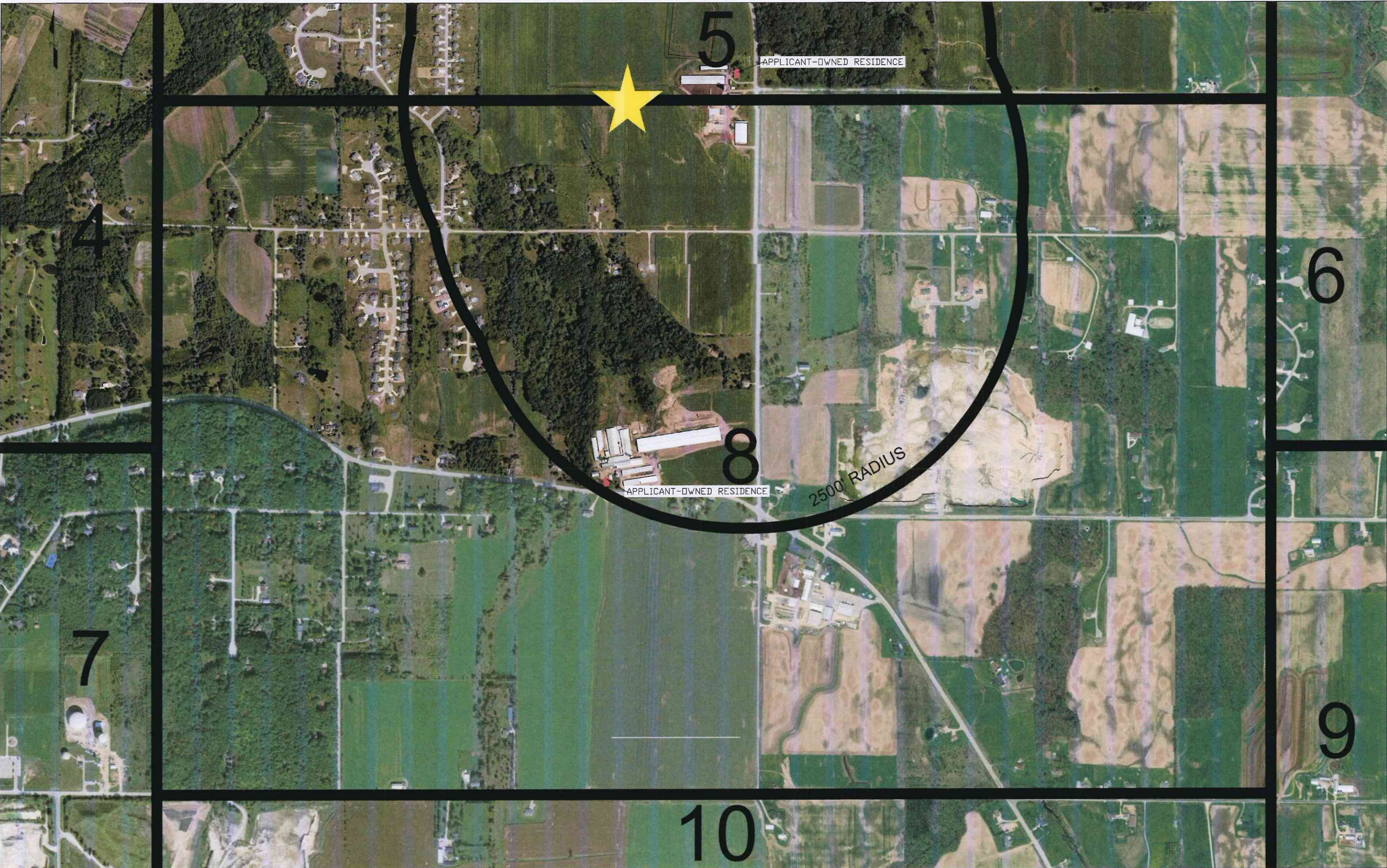
LEDGEVIEW FARM LLC
CLUSTER B-HEIFER FACILITY
BROWN COUNTY, WISCONSIN

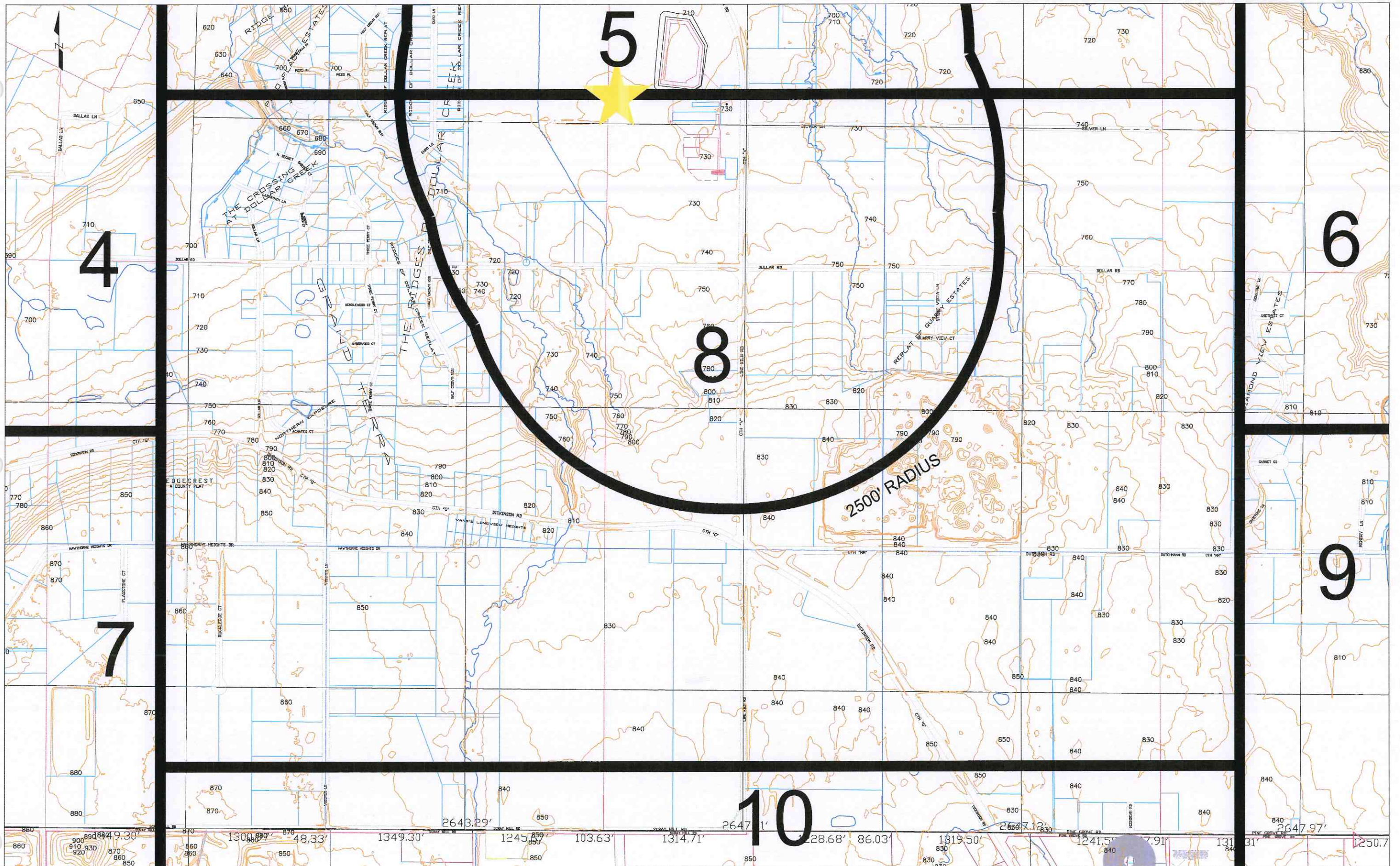
SCALE:
1" = 675'

PANEL 7B
2 MI. AREA MAP OF LIVESTOCK FACILITIES
PROPERTY LINES/ROADWAYS/NAVIGABLE
WATERS/10' TOPOGRAPHY LINES

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

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15





DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
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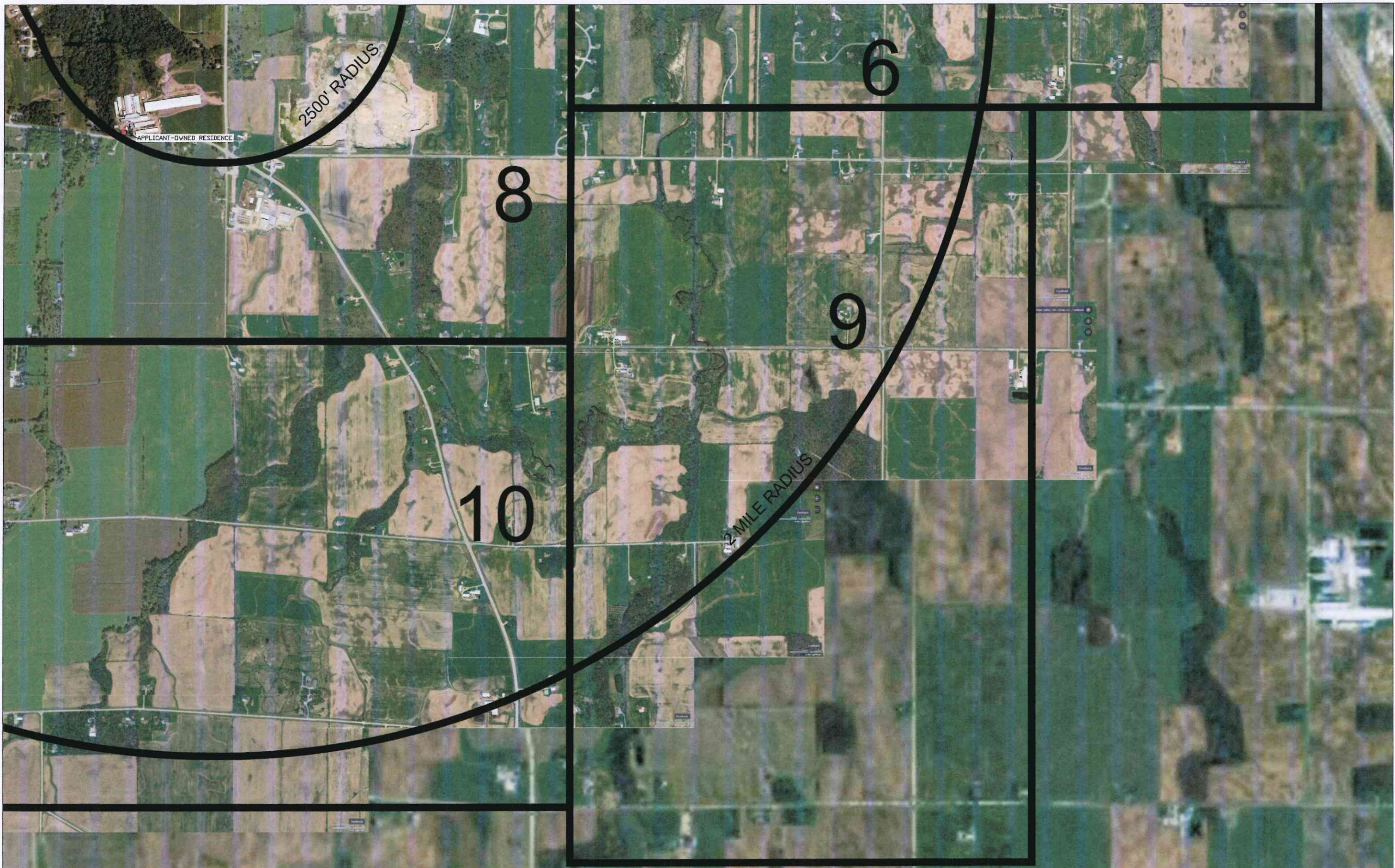
LEDGEVIEW FARM LLC
CLUSTER B—HEIFER FACILITY
BROWN COUNTY, WISCONSIN

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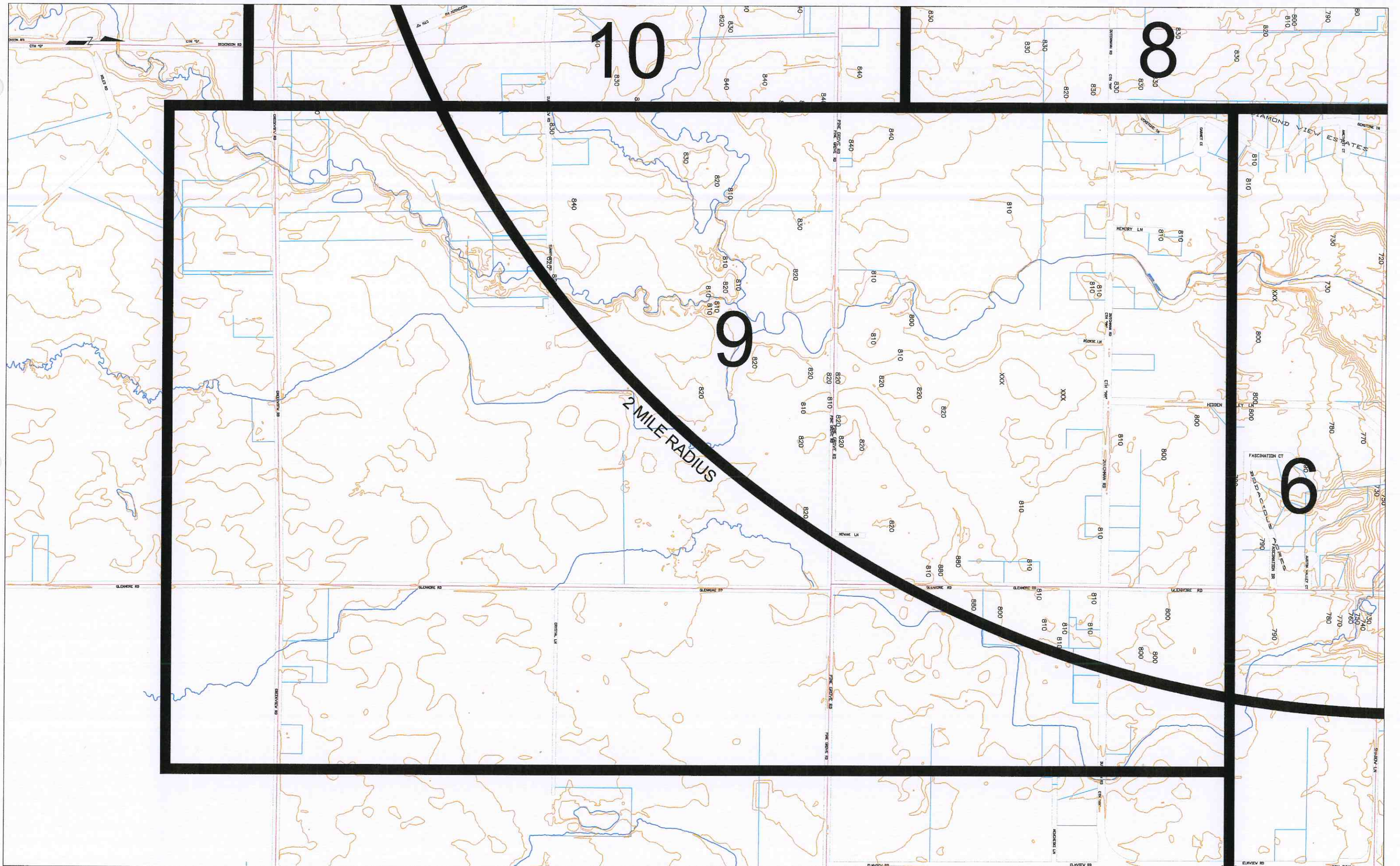
PANEL 8B
2 MI. AREA MAP OF LIVESTOCK FACILITIES
PROPERTY LINES/ROADWAYS/NAVIGABLE WATERS/
10' TOPOGRAPHIC LINES

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

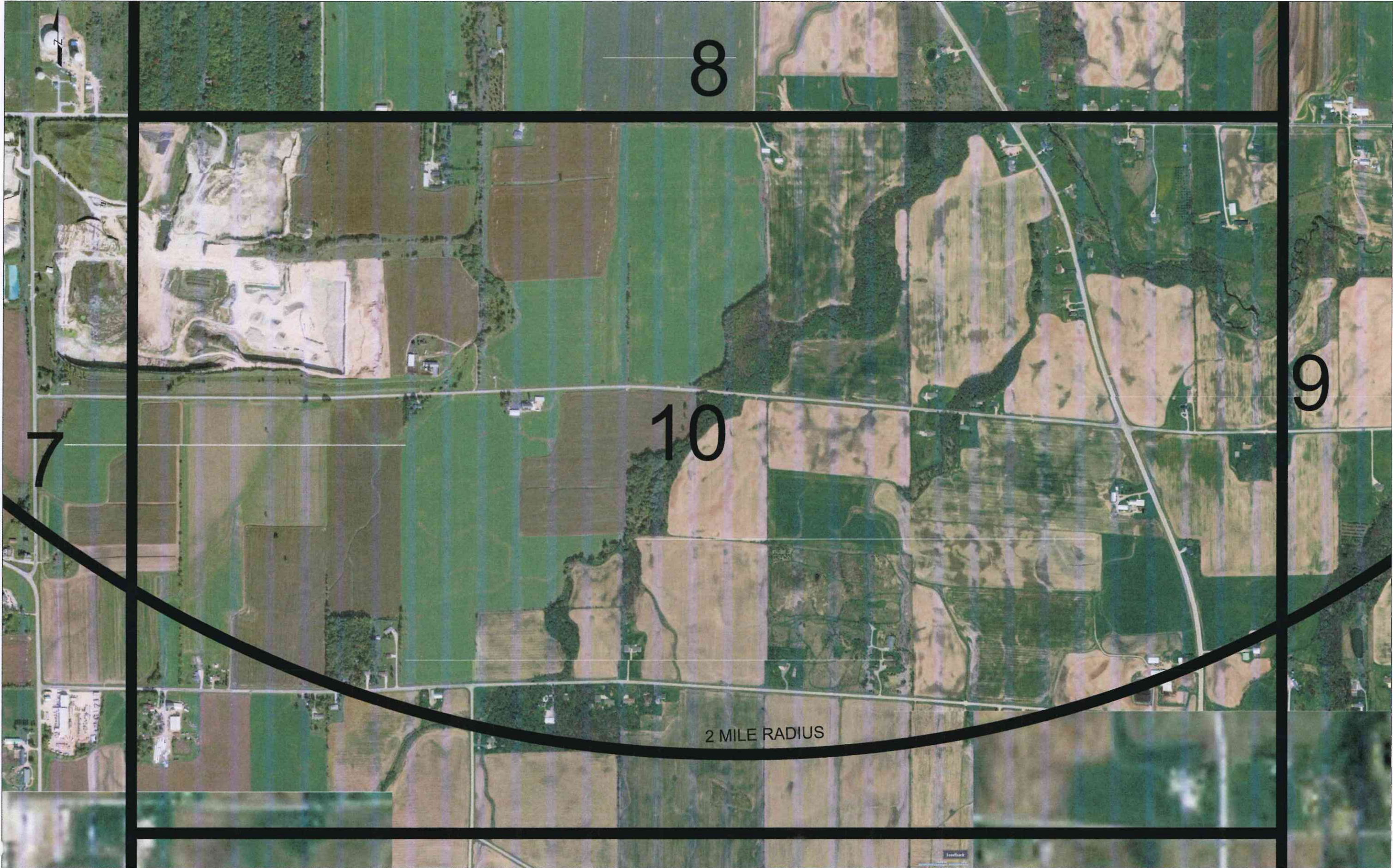
SHEET NO.
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1023



DATE: 10/30/17		REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION	LEDGEVIEW FARM LLC CLUSTER B-HEIFER FACILITY BROWN COUNTY, WISCONSIN		SCALE: 1" = 675'	PANEL 9A 2 MI. AREA MAP OF LIVESTOCK FACILITIES EXISTING BUILDINGS/ROADWAYS	Roach & Associates, LLC Dairy Business and Management Consulting Environmental Engineering 856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851		SHEET NO. 18
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CHECKED BY: JMR														



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		*	*	*	*	*	*					



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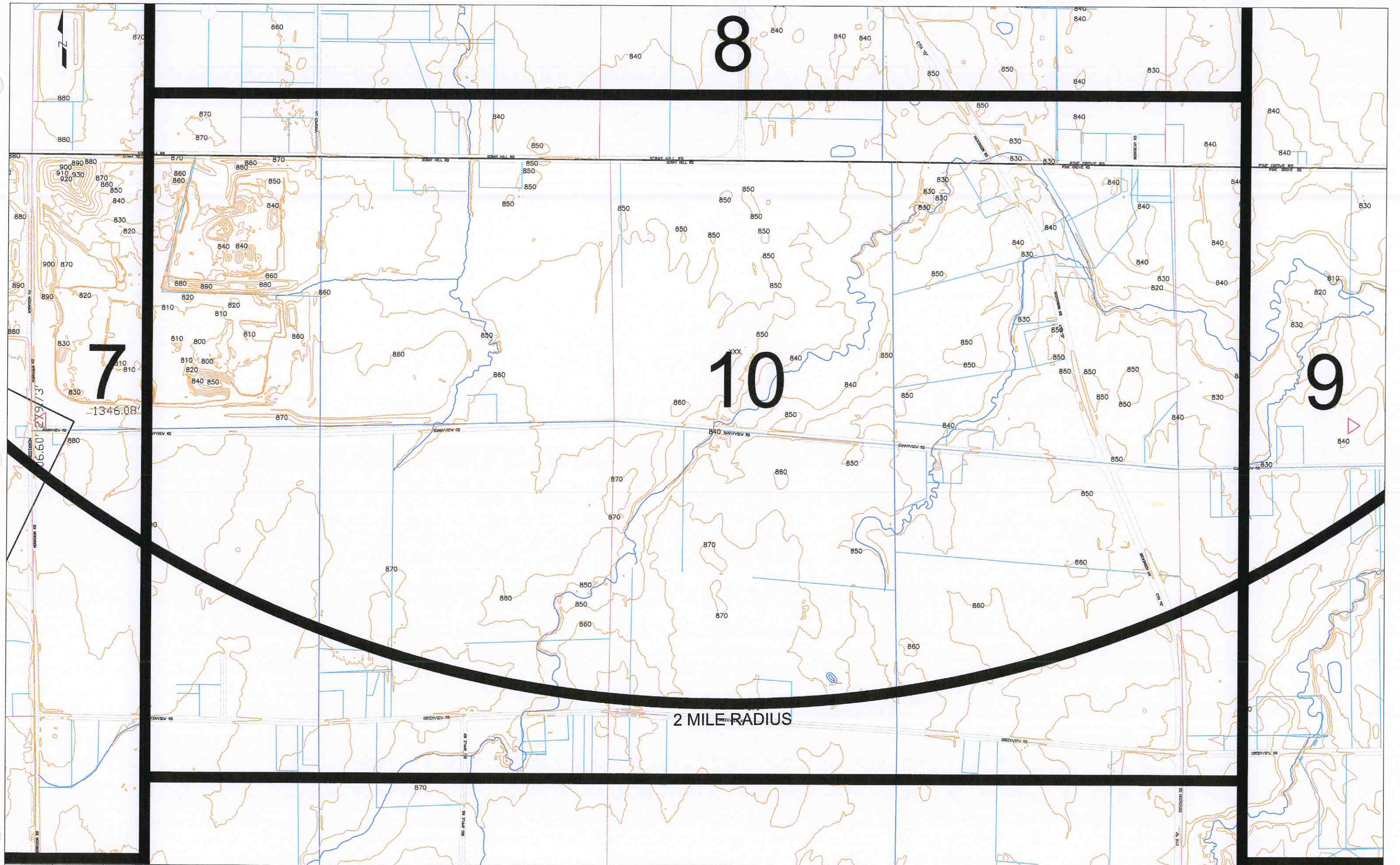
LEDGEVIEW FARM LLC
CLUSTER B—HEIFER FACILITY
BROWN COUNTY, WISCONSIN

SCALE:
1" = 800'

PANEL 10A
2 MI. AREA MAP OF LIVESTOCK FACILITIES
EXISTING BUILDINGS/ROADWAYS

Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
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20



DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
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CHECKED BY:	JMR						

LEDGEVIEW FARM LLC
CLUSTER B—HEIFER FACILITY
BROWN COUNTY, WISCONSIN

SCALE:
1" = 675'

PANEL 10B
2 MI. AREA MAP OF LIVESTOCK FACILITIES
PROPERTY LINES/ROADWAYS/NAVIGABLE
WATERS/10' TOPOGRAPHIC LINES

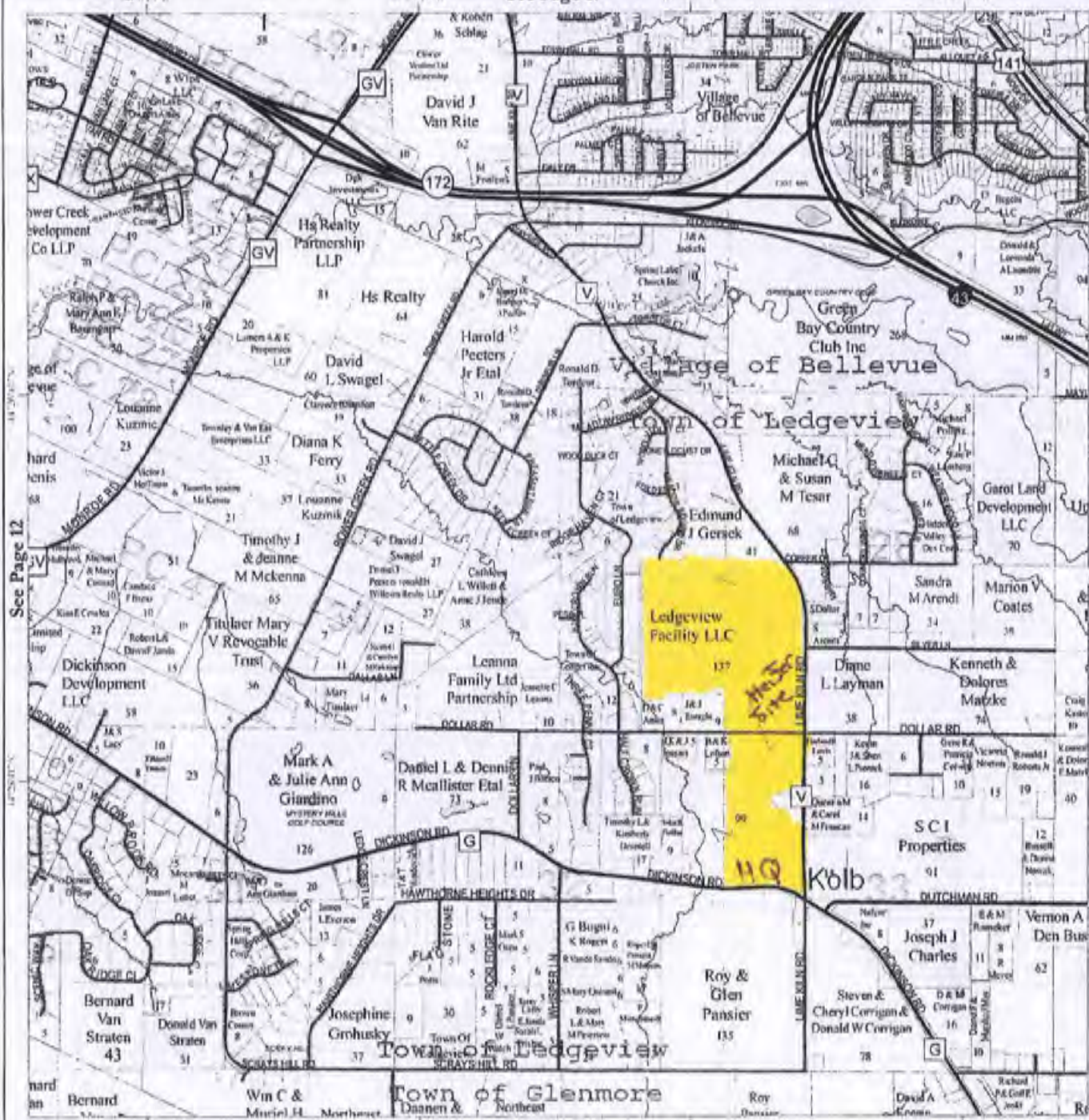
Roach & Associates, LLC
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Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO.
21
1027

T23N R21E (SW) Ledgeview & Bellevue(SW)



See Page 17



See Page 12

See Page 16

See Page 7

0 2,840 5,280
Feet



**The acreages shown on this map are based on the latest and most accurate parcel mapping which may differ slightly from the acreages shown on the tax roll.

For more detailed or up-to-date maps
please visit us online at:
www.gls.co.brown.wi.us

15

Copyright 2006 Brown County
Planning & Land Services
Map 06-2006

Map Legend

- Property Boundaries (with acreages)**
- Municipal Boundaries
- Interstate, U.S. or State Highway
- County Highway
- Other Road or Street
- Railroads
- Lakes, Ponds, & Rivers
- Trails
- Woodlands/Natural Areas
- Address Grid numbering
- Section or other PLSS line
- Section numbers

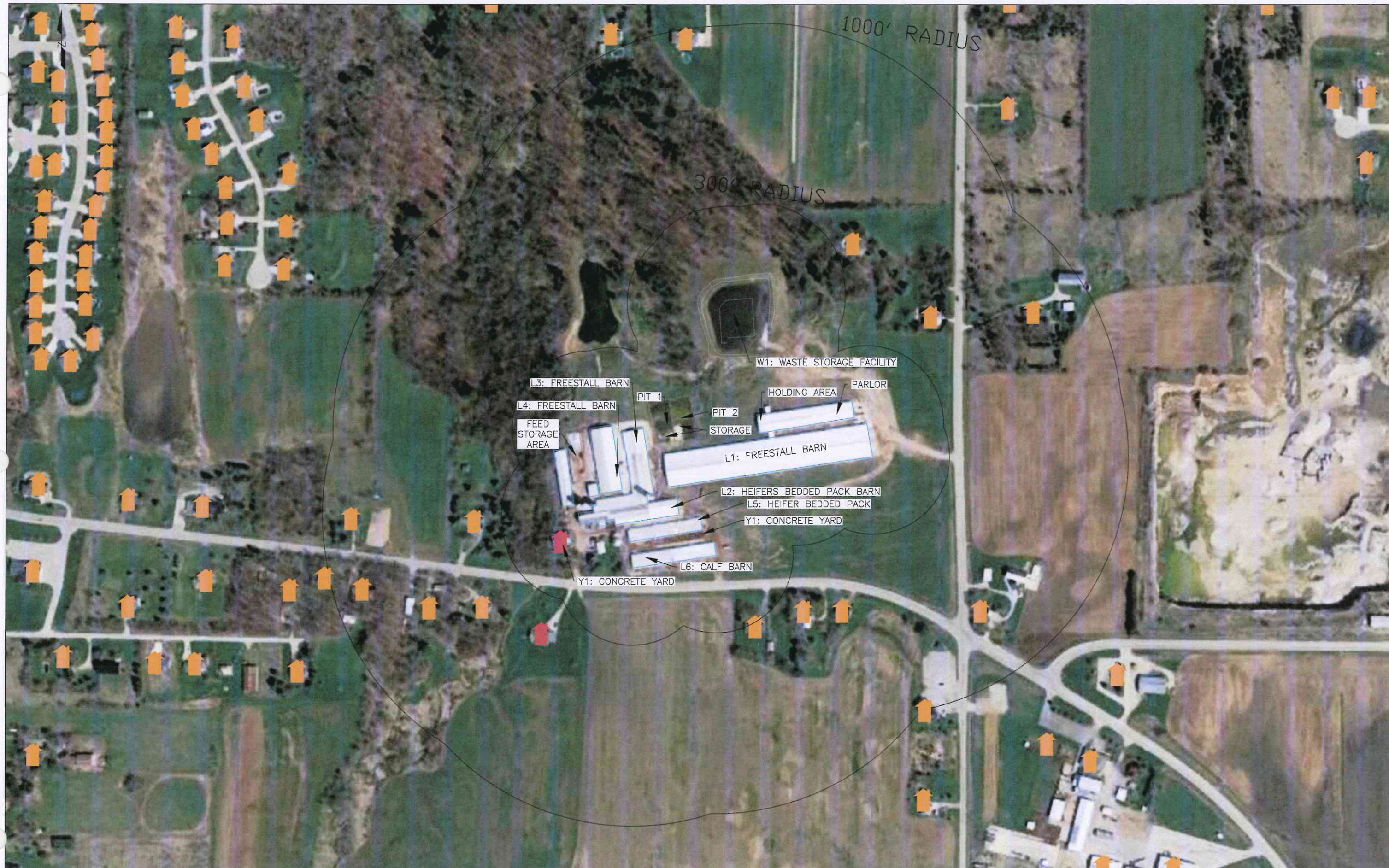


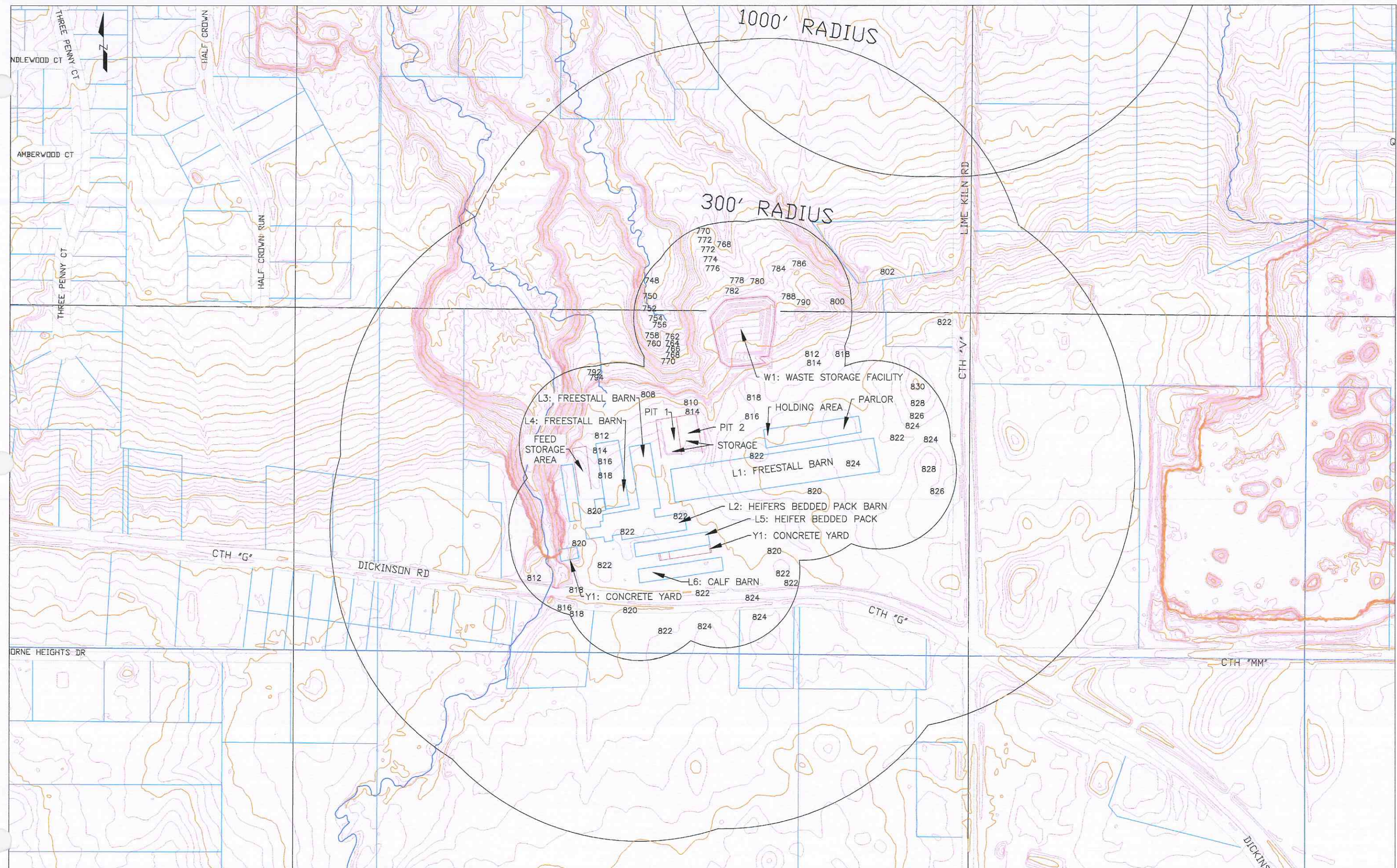
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3

Cluster A

Headquarters Site





DATE:	10/30/17	REVISION DATE	BY	DESCRIPTION OF REVISION	REVISION DATE	BY	DESCRIPTION OF REVISION
DRAWN BY:	MHP						
CHECKED BY:	JMR						

LEDGEVIEW FARM LLC
CLUSTER A-HEADQUARTERS
BROWN COUNTY, WISCONSIN

SCALE:
1" = 350'

SITE MAP 2 OF LIVESTOCK FACILITIES
PROPERTY LINES/ROADWAYS/NAVIGABLE WATERS/
KARST FEATURES/ 2' TOPOGRAPHIC LINES

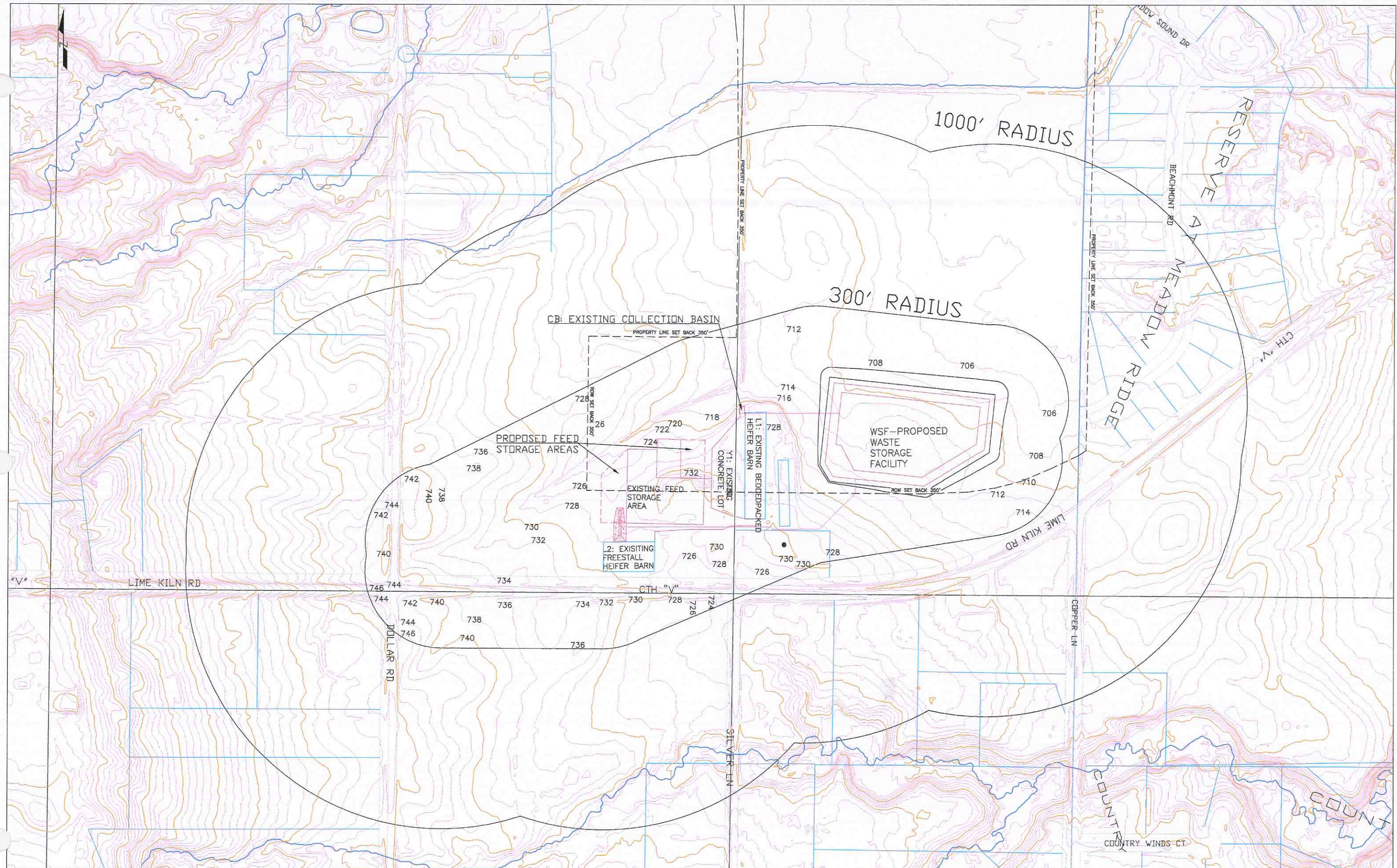
Roach & Associates, LLC
Dairy Business and Management Consulting
Environmental Engineering
856 North Main Street, Seymour, WI, 54165 PH: 920-833-6340 Fax: 920-833-9851

SHEET NO.
23

Cluster B

Heifers Site





4

Employee Training Plan

Ledgeview Farm, LLC

Table of Contents

	<u>Page</u>
Training Goals, Objectives, Activities	1
Requirements, Standards, Procedures and Practices	1
Training Content	
Employee / Work Place Safety	2
Environmental Incident Response	2
Nutrient Management	2
Manure and Waste Handling	2
Runoff Management	3
Odor Management	3
Employees to be Trained	3
Frequency and Form of Training	4
Training Presenters	4
Record Keeping	4
Employee Training Log	5

Goals

This Training Plan will enable employees and others to follow standards, procedures and protocols to ensure that Ledgeview Farm, LLC (LF) meets all Livestock Facility Siting Permit requirements as well as other goals of the business.

An employee-training plan is required as part of the local permit issued in accordance with Wis. Admin. Code ATCP 51, Livestock Facility Siting. The Training Plan for Ledgeview Farm, LLC, includes the following:

- Training on: nutrient management, odor management, runoff management, manure and waste handling, employee safety, and emergency response
- Employees to be trained
- Frequency of training
- Training presenters (these may include *livestock facility managers*, consultants or professional educators)
- A system for taking and recording attendance

Objectives

Those in attendance will learn and understand to follow all standards, procedures and practices related to their assigned duties and tasks.

1. Understand basic permit requirements including more stringent local standards, and follow specific standards, procedures and practices to ensure compliance with these permits.
2. Receive current, science-based information to most effectively address key management issues, with specific focus on nutrient management, odor management, runoff management, manure and waste handling, employee safety, and environmental incident response.
3. Provide feedback concerning future training needs, and participate in the design of annual training activities.

Training Activities

Training activities will be designed to provide the necessary knowledge and skills tailored to specific needs of employees and others. Training approaches will be selected to ensure that information is effectively communicated, and will include classroom sessions, individual reading assignments and field exercises. Annual training activities will be customized to reflect changes in requirements, equipment, standards, procedures or practices; accommodate specific training needs; or provide new information critical to the sound management of LF.

Requirements, Standards, Procedures and Practices

Employees and others will be provided training on the requirements of the local siting permit requirements as they relate to their assigned duties and tasks. They will learn the applicable standards as well as the procedures and practices to ensure compliance with permit requirements. They also will learn other standards, procedures and practices that apply to LF as required by this training plan.

Training will cover the use of checklists and other tools used to inspect and monitor farm operations.

Ledgeview Farm, LLC will explain the Livestock Facility Siting Permit and reporting requirements.

Training Content

Employee Safety

Standards, procedures and practices are in place to ensure the health and safety of employees and visitors to LF.

Training will include:

- Proper animal handling
- Proper equipment operations and certification where needed
- Accident reporting protocols
- Working in confined spaces requirements
- Avoidance of dangerous conditions (including exposure to noxious gases)
- Maintaining fences, grates and other safety equipment

Environmental Incident Response

Standards, procedures and practices are in place to ensure proper responses in the event of manure spill or other incident. A written document with response procedures and emergency contacts is readily available at the farm office.

Training will include:

- Review of emergency response plan
- Spill reporting and clean up procedures

Nutrient Management

Standards, procedures and practices are in place for all forms of manure application and must be followed by all employees, consultants and others contracted for manure application. LF Nutrient Management Plan is reviewed semi-annually by LF and their agronomist (Kevin Beckard). A copy of the plan is readily available at the farm office.

Training will include:

- Conservation plan crop rotation and tillage requirements
- Record keeping requirements – spreading logs and inspection sheets
- Recording and analyzing manure sample data
- Review soil fertility, crop rotations and yields
- Understanding manure spreading restriction maps and setback areas

Manure and Waste Handling

Standards, procedures and practices are in place to ensure proper storage, transfer and land application of manure and wastewater.

Training will include:

- Review operations and maintenance procedures for manure storage facilities, waste transfer systems and manure application equipment.
- Identification and use of proper agitation points
- Routine maintenance of equipment
- Review procedures for pump operation, hose placement and pickup, equipment cleanup
- Proper procedures for hauling and applying manure
- Record keeping requirements – inspection reports
- Safety procedures as they relate to manure and waste handling

Runoff Management

Procedures and practices are in place to control storm water runoff from the farm sites, and must be followed by all employees, contractors and visitors.

Training will include:

- Maintenance requirements of storm water system – clearing of gutters, diversions, drains and sediment basins.
- Proper feed bunker tire and plastic placement and removal
- Leachate collection system operation, including pump operation and maintenance as well as the transfer channel.
- Cleaning of traffic areas and pads
- Maintenance (e.g. regarding, seeding) and mowing of filter strips and other grassed areas.

Odor Management

Some basic procedures and practices are in place to minimize odor, and must be followed by all employees and contractors.

Training will include:

- Overview of issues associated with odors
- Review of LF odor management plan and complaint protocol
- Cleaning and maintenance procedures to control odor from the site
- Land application procedures to reduce odors
- Responding to odor complaints

Employees to Be Trained

- Managers
- Herdsman
- Assistant Herdsman
- Feeders
- Milkers
- Manure Handlers

Form and Frequency of Training

At a minimum, training will be provided annually to all employees of LF. Training may be provided through a variety of employee meetings at the farm as well as conferences

sponsored by professional organizations such as the Professional Dairy Producers of Wisconsin, The Dairy Business Association, Professional Nutrient Applicator Association of Wisconsin and other training opportunities sponsored by UW Extension. All of the procedures and protocols for each position will be located in the farm office.

Training Presenters

Presenters will include:

- Farm Managers
- Consultants
- Agronomy Professionals
- University of Wisconsin Extension
- Government Agency staff
- Professional Associations

Recording Attendance

Ledgeview Farm, LLC employees approximately 12 full and part time employees. For all training sessions, employee attendance will be recorded using a sign-up sheet that will include the date of the training and the employees who attended. Similar methods will be used to verify other training received at local meetings and conferences.

[illegible]

5

Emergency Response Contacts Summary

Farm Name: Ledgeview Farm, LLC

Owner/Operator: Jason Pansier

Phone: (920) 655-3875 Cell: _____

Owner/Operator: _____

Phone: _____ Cell: _____

Farm Address: 3499 Lime Kiln Road Green Bay WI 54311

Farm Location: T23N R21E Section 28 County: Brown

Driving Directions or Emergency Coordinates: From the Town of Ledgeview Municipal Building drive East 0.7 miles along Dickinson Rd and make a left turn on Lime Kiln Rd, head North 0.8 miles to the farm.

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.
2. 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
4. Prevent spillage from entering surface waters, tile intakes, or waterways.
5. Begin cleanup and land apply on approved cropland at appropriate rates.
6. 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's Department	911 or 920-448-4200
Farm Emergency Coordinator	Jason Pansier	920-655-3875
DNR Hazardous Spill Line		1-800-943-0003
DNR Permit Contact/Warden	Heidi Schmitt-Marquez	
Veterinarian	Ken Foust	920-336-7233
Equipment/Supplies	Contact Person (or Company)	Phone Number
On-Farm Equipment Operator	Glenn Pansier	920-655-0416
Excavation Contractor	Olson Excavation	920-621-7882
Manure Hauler	Schneider Manure Hauling	920-374-1327
Septic Tank Pumping Truck	Kiekhaefer Septic Service	920-864-7025
Mortality Disposal Contractor	Circle R Mink Ranch	920-434-0218
Local Government Contacts	Contact Person	Phone Number
Town Chairman Town of Ledgeview	Phil Danen	920-336-3360
LCD County Conservationist	Dave Wettencamp	920-391-4639
NRCS District Conservationist	John Malvitz	920-884-3910

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, and fire suppression equipment
- Location of emergency cutoff switches or valves.

Ledgeview Farm, LLC.

Environmental Incident and Emergency Response Plan

Reporting Emergencies

When there is a fire or other emergency that poses immediate danger to people, livestock, property or the environment call the appropriate telephone number listed for the emergency. Follow emergency evacuation procedures. Remain calm, notify others, and respond to the emergency as appropriate. Procedures for responding to specific types of emergencies are described below.

When you call 911 to report an emergency, provide the emergency dispatcher with the following information:

- Your Location
- Building or area name where the emergency response is required
- The location within building or area
- A brief description of emergency
- Your name

Unless there is a risk to your safety, remain on the line until told by the emergency dispatcher to hang up.

Manure Spills

Manure Storage Leak Overflow or Spill

- Stop flow from the manure storage facility.
- Assess the extent of the emergency and determine the help needed.
- Call for the needed help or equipment.
- Contain the spill immediately through the use of basins and berms.
- Divert manure from critical sites including: wells, channels, ditches, waterways, streams, rivers, lakes, ponds, tile inlets, broken tile lines, sinkholes, and bedrock near the surface.
- Repair storage facility immediately
- If field conditions allow, remove enough manure to stop the leak.
- Contact the County Land Conservation Department to make critical repairs.
- Following repairs, clean up the spill where possible.
- Take before and after (clean-up) pictures.
- Report the spill to the WDNR.
- Complete a spill worksheet

Manure spills during or after transport and application

- Stop manure pumps.
- If the manure is coming from a tanker move away from critical areas. If possible take to cropland.
- Close valves or separate pipes to stop the flow of manure.

- Assess the extent of the emergency and determine the help needed.
- Call for the needed help or equipment.
- If spill is on the road call the County Sheriff's office for traffic control
- Clean up the spill on roads immediately by spreading sawdust to absorb the manure and sweeping into piles. Remove piles and apply to cropland according to the 590 NMP.
- Contain the spill immediately through the use of basins and berms, straw bales or sawdust.
- If the flow is coming from a tile line plug or break the tile line to stop the flow.
- Stop the flow through incorporation where possible.
- Take before and after (clean-up) pictures.
- Report the spill to the WDNR.
- Complete a spill worksheet

Chemical Spills

The guidelines below should be followed in the event of a chemical incident in which there is potential for a significant release of hazardous materials.

Spill classifications: Spill response procedures vary depending on whether a spill is small, medium, or large. The following are descriptions of each type of spill:

- **Small spills.** This category includes spills where the major dimension of the spill is less than 18 inches in diameter.
- **Medium spills.** These are spills where the major dimension exceeds 18 inches, but is less than 6 feet.
- **Large spills.** This category includes:
 - Any spill involving a flammable liquid where the major dimension exceeds 6 feet in diameter; and
 - Any "running" spill, where the source of the spill has not been contained or the flow has not been stopped.

Evacuation: Persons in the immediate vicinity of a spill should immediately evacuate the premises. If the spill is "medium" or "large," or if the spill seems hazardous, immediately notify emergency response personnel.

General spill control techniques: Once a spill has occurred, the employees at the spill site must decide whether the spill is small enough to handle without outside assistance. Only employees with training in spill response should attempt to contain or clean up a spill.

Spill control equipment should be available wherever significant quantities of hazardous materials are received or stored. MSDS sheets, respiratory protection, absorbents, over-pack containers, container patch kits, spill dams, shovels, floor dry, acid/base neutralizers and "caution-keep out" signs are common spill response items

that should be stocked in such areas. Consult the Safety Department for more information on what to stock for your area.

Response and cleanup procedures for small spills: Small spills generally can be handled by internal personnel and usually do not require an emergency response by fire department HAZMAT personnel.

First, quickly contain the spill by stopping or securing the spill source. This could be as simple as uprighting a container and using absorbent pads to soak up spilled material. Wear gloves and protective clothing, if necessary. Put spill material and absorbents in secure containers. Do not wash the spill area until consulting with the MSDS sheet for spill and waste disposal procedures. Sometimes the area of the spill should not be washed with water. The spilled material and the absorbent sometimes might be classified as hazardous waste and must be disposed of in compliance with state and federal environmental regulations.

Response and cleanup procedures for medium spills: Police and fire department HAZMAT teams' response normally is required for medium spills. However, common sense also should be used when determining if outside help is necessary. Medium spills require the following actions:

- First, try to contain the spill at its source. This might involve quickly uprighting a container or putting a lid on a container. Do not use absorbents unless they are immediately available. Once you have made a quick attempt to contain the spill, leave the area. Call management or 911. Close, but do not lock, the doors as you leave.
- Second, evaluate the area outside of the spill. Engines and electrical equipment near the spill area must be turned off. This eliminates various sources of ignition in the area. Advise police or emergency responders on how to turn off engines or electrical sources. Do not go back into the spill area once you have left. Help emergency responders by trying to determine how to shut off heating, air conditioning equipment, or air circulating equipment, if necessary.
- If emergency responders evacuate the spill area, follow their instructions in leaving the area.
- After emergency responders have contained the spill, be prepared to assist them with any other information that may be necessary, such as MSDS sheets and questions about the facility.
- Emergency responders or trained personnel with proper personal protective equipment should clean up the spill residue. Do not re-enter the area until the responder in charge gives the all clear. Be prepared to assist these persons from outside the spill area with MSDS sheets, absorbents, containers, etc.
- Reports must be filed with proper authorities.

Response and cleanup procedures for large spills: The response for large spills is much the same as for medium spills, except that the exposure danger is greater. The response for large spills is as follows:

- First, since spill control or containment by management or on farm staff notify police (911). Again, give the operator the spill location, chemical spilled and approximate amount.
- Second, from a safe area, attempt to get MSDS information for the spilled chemical for the emergency responders to use. Also, be prepared to advise responders as to any ignition sources, engines, electrical power, or air conditioning/ventilation systems that may need to be shut off. Advise responders of any absorbents, containers, or spill control equipment that may be available.
- Only emergency response personnel, in accordance with their own established procedures, should handle spills greater than 6 feet in any dimension or that are continuous. Remember, once the emergency responders or HAZMAT team is on the job cleaning up spills or putting out fires, the area is under their control and no one may re-enter the area until the responder in charge gives the all clear.

Accidental Entry In To Manure Storage Enclosure Emergency

- If the person is still conscious attempt to get them out, but **DO NOT ENTER** the manure storage.
- Get additional help from farm staff to remove the person.
- If unable to remove the person, call for emergency help.
- Pump fresh air into the enclosure with fans or blowers until help arrives.
- Make repairs or install safety equipment to prevent further entry.
- Complete an emergency worksheet with events and corrective action to prevent the event from occurring in the future.

Disposal of Animal Carcasses in Emergency Circumstances

The disposal options for dead animals in emergency circumstances are as follows (in order of preference):

1. Rendering plant
2. Licensed landfill
3. Burial on farmland
4. Composting of carcasses (DNR approval required)

If the dead animals are buried on farmlands, every attempt should be made to bury the animals in an upland area away from surface water bodies and above the groundwater table to minimize the potential for contaminating the water. Disposal pits or trenches should be a minimum of 1,200 feet away from private or public water supply wells and 1,000 feet away from surface waters and other sensitive areas.

The carcasses should be buried in pits or trenches (usually easier for placement) that allow for at least 2 feet of soil cover over top of the carcasses. The carcasses should be placed in a single layer in the bottom of the pit/trench and then covered with barn lime and the 2 foot soil layer. This should help the decomposition of the carcasses and keep other animals from digging them back up. The cover soil should be sloped to divert

surface water away from the burial area and top soiled, seeded, and fertilized as soon as possible to maintain a healthy vegetative cover.

This guidance generally conforms to DATCP rules and policies. If there are any questions regarding the DATCP regulations or policies, please contact DATCP staff directly at (608) 224-4872.

Odor Complaint Response

Public relations, especially with neighbors, are an essential component of managing a large dairy business today. Ledgeview Farm, LLC will implement the following protocols to address odor concerns and reduce community conflicts.

- 1) The goal of Ledgeview Farm, LLC is to establish a relationship with neighbors and community members and implement management practices that limit complaints due to odors. Ledgeview Dairy, LLC will make every effort to inform neighbors before activities are undertaken that may increase odors from the dairy.
 - 2) Ledgeview Farm, LLC has designated Jason Pansier as the lead contact for all odor complaints. All odor complaints will be recorded on the "Record of Odor Complaints Form" at the end of this plan. This form records the date the complaint was received as well as who made the complaint and what concerns were expressed.
 - 3) Ledgeview Farm, LLC will evaluate all odor complaints to determine if any practices can be implemented immediately to help reduce the odors that have generated the complaint. Potential odor control strategies to be implemented are identified in this plan.
 - 4) Ledgeview Farm, LLC will follow up odor complaints to determine if the practices put in place helped to reduce odors after complaints have been received.
-

Ledgeview Farm, LLC
Manure or Hazardous Material Spill Accident Worksheet

Jason Pansier Manager/Owner
3499 Lime Kiln Road
Green Bay, WI 541311

Jason Pansier Cell – 920-655-3875

DNR Hazardous Spill Line 1-800-943-0003

Picture Information – Provide pictures of spill site: before cleanup ☐ after cleanup ☐

Spill Information

Date and time of the spill: _____

Spill Location: _____

Where Spill Material was Ultimately Deposited: _____

Property Owners Name: _____

Individuals Involved: _____

Material Spilled: _____

Quantity of Spill: _____

Actions Taken to Stop the Release or Minimize the Impact: _____

Potential Impact to Human Health and the Environment: _____

"I hereby declare the information provided above is true, accurate and complete."

Signature _____

Date _____

Ledgeview Farm, LLC Odor Management Plan

Odor Complaint Protocol

Public relations, especially with neighbors, are an essential component of managing a large dairy business today. Ledgeview Farm, LLC (LF) will implement the following protocols to address odor concerns and reduce community conflicts.

- 1) The goal of LF is to establish a relationship with neighbors and community members and implement management practices that limit complaints due to odors. LF will make every effort to inform neighbors before activities are undertaken that may increase odors from the dairy.
- 2) Ledgeview Farm, LLC has designated Jason Pansier as the lead contact for all odor complaints. All odor complaints will be recorded on the "Record of Odor Complaints Form" at the end of this plan. This form records the date the complaint was received as well as who made the complaint and what concerns were expressed.
- 3) Ledgeview Farm, LLC will evaluate all odor complaints to determine if any practices can be implemented immediately to help reduce the odors that have generated the complaint. Potential odor control strategies to be implemented are identified in this plan.
- 4) Ledgeview Farm, LLC will follow up odor complaints to determine if the practices put in place helped to reduce odors after complaints have been received.

Identified Sources of Odors and Odor Control Strategies

Waste Storage Facilities – Currently, LF has one (1), liquid, long-term Waste Storage Facilities (WSF) at the Headquarters site. Ledgeview Farm, LLC proposes to construct a new long term WSF on the Heifer site that will provide a combined 291 days of storage. The current Waste Storage Facilities are constructed with a sloped floor and a ramp to provide access for periodic waste removal and applied to adjacent crop fields in the spring and fall. After construction of the proposed WSF on the Heifer Farm, the liquid Waste Storage Facilities will have a combined surface area of approximately 5.75 acres that can produce odors. The odors from the Waste Storage Facilities have the potential to bring about odor complaints. The following odor control strategies will be implemented.

- Feeding strategies will be used to avoid overfeeding of protein to help minimize compounds in excreted manure that contribute to excessive odors.
- During agitation, manure will not be sprayed into the air.

Animal Housing – Currently there is a Bedded Packed Heifer Barn, L1, and a Freestall Barn, L2 that are used to house the cattle at the Heifer Farm. Odors from the Animal Housing Facilities are fairly constant throughout the year and provide a low potential to bring about odor complaints. The following odor control strategies will be implemented:

- Animal Housing Facilities will be cleaned frequently to help reduce the amounts of odors generated from these facilities. All litter alleys and travel lanes will be cleaned at least 3 times per week. Frequent cleaning will also prevent the build up of manure in the corners of the litter alleys.
- Water conservation practices are used on the Heifer Farm. Practices include:
 - Checking waters daily to ensure the floats are properly set and the waters are not running over.

- All barn floor surfaces will be kept as dry as possible
- Feeding strategies will be used to avoid overfeeding of protein to help minimize compounds in excreted manure that contribute to excessive odors.

Feed Storage Area – Corn silage and haylage are stored in concrete bunkers in the Feed Storage Area to the south of the Heifer production site. The odors from the Feed Storage Area will be fairly constant throughout the year and provide a low potential to bring about odor complaints. The following odor control strategies will be implemented:

- Feed will be harvested at optimal moisture (less than 70% moisture) to minimize the potential for excessive leachate coming from stored feeds.
- Feed will be covered with plastic and tires to reduce the amount of spoiled feed and dust production.
- Excess and waste feed will be removed frequently and properly land applied according to the Nutrient Management Plan.

Land application of manure – Currently LF has a long-term Waste Storage Facility on the Headquarters site. In addition, a new WSF will be constructed on the northeast part of the Heifer site. Long-term Manure Storage Facilities are generally emptied in the spring and fall of the year. The liquid manure is hosed and injected directly into nearby cropland. Tankers are used to apply manure onto distant cropland and manure is injected into cropland. The land application of manure has the potential to produce nuisance odors that can bring about odor complaints. The following odor and dust control strategies will be implemented:

- Manure applications will be completed as quickly as possible to reduce the amount of time that odors can be generated.
- Manure will be injected directly or incorporated as soon as possible after application, to reduce odors.
- All gravel access roads will be sprayed down with water periodically during manure hauling to reduce the amount of dust produced from truck traffic.
- Mud on roads or highways that results will be removed frequently.

Mortalities – Animals dying due to injury or other causes happens in the day-to-day operation of a dairy farm. The mortality rate is generally highest for newborn animals. Odors from mortalities have a low potential to produce odors complaints because LF contracts with Circle R Mink Ranch to remove all dead animals within 24 hours. Odors from mortality disposal practices have a low potential to bring about odor complaints. The following odor control strategies will be implemented:

- Ledgerview Farm, LLC will continue to contract with Circle R Mink Ranch to remove all dead animals within 24 hours of a death event.
- Dead animals will be stored out of public view to reduce other conflicts.

Ledgeview Farm, LLC

Record of Odor & Dust Complaints

Date/Time	Neighbor Expressing Concern	Concerns Expressed	Weather Conditions (circle)				Ledgeview Farm, LLC Follow Up Actions		
			Wind Speed	Wind Direction	Temp.	Conditions			
			0 - 5	NW	N	NE	< 30°	Sunny	
			5 - 10	W		E	30° to 40°	Partly Cloudy	
			10 - 15	SW	S	SE	40° to 50°	Mostly Cloudy	
			15 - 20				50° to 60°	Overcast	
			20 - 25				60° to 70°	Hazy	
			> 25				70° to 80°	Rain	
							80° to 90°	Snow	
							> 90°		

Date/Time	Neighbor Expressing Concern	Concerns Expressed	Weather Conditions (circle)				Ledgeview Farm, LLC Follow Up Actions		
			Wind Speed	Wind Direction	Temp.	Conditions			
			0 - 5	NW	N	NE	< 30°	Sunny	
			5 - 10	W		E	30° to 40°	Partly Cloudy	
			10 - 15	SW	S	SE	40° to 50°	Mostly Cloudy	
			15 - 20				50° to 60°	Overcast	
			20 - 25				60° to 70°	Hazy	
			> 25				70° to 80°	Rain	
							80° to 90°	Snow	
							> 90°		

Date/Time	Neighbor Expressing Concern	Concerns Expressed	Weather Conditions (circle)				Ledgeview Farm, LLC Follow Up Actions		
			Wind Speed	Wind Direction	Temp.	Conditions			
			0 - 5	NW	N	NE	< 30°	Sunny	
			5 - 10	W		E	30° to 40°	Partly Cloudy	
			10 - 15	SW	S	SE	40° to 50°	Mostly Cloudy	
			15 - 20				50° to 60°	Overcast	
			20 - 25				60° to 70°	Hazy	
			> 25				70° to 80°	Rain	
							80° to 90°	Snow	
							> 90°		

Exhibit 6-1**Waste Storage Facility Summary-Annual Storage Period Expanded Conditions
Leachate, Runoff Generation and Storage Capacity
Ledgeview Farm, LLC**

Source	Volume		Comments
	(ft ³)	(gallons)	
Waste Generation			
Manure and Wastewater-Dairy	2,051,871	15,347,995	Exhibit 6-2
Manure and Wastewater-Steers	382,284	2,859,484	Exhibit 6-3
FSA Leachate-Heifer Farm	16,786	125,556	Exhibit 6-4
FSA Runoff-Heifer Farm	285,046	2,132,140	Exhibit 6-6
FSA Leachate-HQ*	1,683	12,589	Exhibit 6-9
FSA Runoff-HQ*	13,029	97,453	Exhibit 6-11
Y1 Heifer Farm Lot Runoff	84,856	634,723	Exhibit 6-8
Y1 HQ Farm Lot Runoff*	14,822	110,869	Exhibit 6-13
Sub-total	2,850,376	21,320,809	
Net Precipitation**			
WSF 1	111,303	832,546	
WSF 2	351,609	2,630,038	
Sub-total	462,912	3,462,583	
Total Waste Generated	3,313,288	24,783,392	
Waste Stored Above the MOL			
FSA-Heifer Farm 25 yr-24 hr	41,427	309,873	Exhibit 6-5
FSA-HQ 25 yr-24hr*	3,199	23,927	Exhibit 6-10
Y1 Heifer Farm Lot Runoff 25 yr-24 hr	13,263	99,204	Exhibit 6-7
Y1 HQ Farm Lot 25 yr-24 hr*	2,070	15,483	Exhibit 6-12
Total Waste Above MOL	59,958	448,487	
Waste Storage Facilities***			
WSF 1	669,334	5,006,618	
WSF 2	1,971,800	14,749,062	
Total Storage Volume	2,641,134	19,755,680	
Storage Capacity Evaluation			
Total Storage Volume	2,641,134	19,755,680	
Average Annual Storage Period	291	days	

*Allowance for future runoff collection system

**Net precipitation; 1.7 ft/year x WSF surface area

***MOL volume, determined by CADD

Ex 6-2

WASTE STORAGE FACILITY DESIGN - 313 STANDARD

Ver. March 2015

CLIENT: Ledgeview Farm, LLC

COUNTY: BROWN

DATE: 12/4/17

DSN BY: JMR

CHK BY:

DATE:

COMMENTS: Waste Generation - Dairy Expanded Conditions

ANIMAL TYPE > 1 (1 = DAIRY, 2 = BEEF, 3 = VEAL, 4 = SWINE(finishing), 5 = SWINE(farrowing), 6 = POULTRY, 0 = OTHER)

For Dairy: Rolling Herd Average 25,000 lbs/cow/yr

Is it a stanchion barn? n (Y or N)

MANURE AND WASTEWATER

LIVESTOCK		AVG. WT. PER HEAD	DAILY OUTPUT, CU FT			DAYS OF STORAGE	VOLUME REQUIRED	ANIMAL UNITS
KIND	NUMBER		MANURE	BEDDING	TOTAL			
Cows Milk	1125	1,400	2.53	0.3	3183.8	365	1,162,069	1,575
Cows Dry	230	1,400	2.00	0.3	529.0	365	193,085	322
Heifers	450	1,000	1.60	0.3	855.0	365	312,075	450
Heifers	270	800	0.96	0.3	340.2	365	124,173	162
Calves	270	350	0.56	0.4	245.7	365	89,681	95

WASTEWATER: 3500 GAL/DAY 467.9 CU FT/DAY

2,604 TOT. A.U.

TOTAL DAILY VOLUME: 5621.6 CU FT / DAY

Total Manure and Wastewater

Expected % solids in waste (Includes runoff and precip.)

15,347,995	GALLONS
2,051,871	CU FT
9.9	%

Ex 6-3

WASTE STORAGE FACILITY DESIGN - 313 STANDARD

Ver. March 2015

CLIENT: Ledgeview Farm, LLC

COUNTY: BROWN

DATE: 12/4/17

DSN BY: JMR

CHK BY:

DATE:

MMENTS: Waste Generation Steers - Expanded Conditions

ANIMAL TYPE> 2 (1 = DAIRY, 2 = BEEF, 3 = VEAL, 4 = SWINE(finishing), 5 = SWINE(farrowing),
6 = POULTRY, 0 = OTHER)

MANURE AND WASTEWATER

LIVESTOCK		AVG. WT. PER HEAD	DAILY OUTPUT, CU FT			DAYS OF STORAGE	VOLUME REQUIRED	ANIMAL UNITS
KIND	NUMBER		MANURE	BEDDING	TOTAL			
Beef	550	350	0.35	0.3	357.5	365	130,488	193
Beef	525	850	1.00	0.3	682.5	365	249,113	446
Beef								

WASTEWATER: 55 GAL/DAY 7.4 CU FT/DAY 639 TOT. A.U.

TOTAL DAILY VOLUME: 1047.4 CU FT / DAY

Total Manure and Wastewater
Expected % solids in waste (Includes runoff and precip.)

2,859,483	GALLONS
382,284	CU FT
10.1	%

Exhibit 6-4

Leachate and First Flush Volume Calculation Worksheet **Ledgeview Farm, LLC - Heifer Farm**

Prepared By: Roach
Date: 2017

Input Data	Dimensions*		
	Length	Width	Area ft ²
Existing FSA	varies	varies	93,253
			-
			-
			-
Total Area With Apron			93,253 ft ²
Total Area With Apron			2.1 Acres
Total Feed Storage Area Less Apron			93,253 ft ²

Volume of Feed Stored In the Facility

Silage Height	12	ft
Silage Density (default)	60	lbs/ft ³
Silage Volume	33,571	tons

Calculated Annual Leachate Volume

Silage Stored	33,571	tons
Leachate Volume Generated per Ton	0.5	ft ³ /ton
Annual Leachate Generated	16,786	ft ³
Annual Leachate Generated	125,556	gal
Leachate Generated Per Day (30 day period)	4,185	gal/day
Leachate Generated Per Day (30 day period)	560	ft ³ /day

Calculated First Flush Runoff Generation

Total Feed Storage Area Less Apron	93,253	ft ²
First Flush Runoff Depth Collected per Rain Event	0	in
First Flush Volume Collected per Rain Event	-	ft ³ /event
First Flush Volume Collected per Rain Event	-	gal
Number of Rain Events (annual)		
Total Annual First Flush Volume Generated	-	ft ³
Total Annual First Flush Volume Generated	-	gal

Total Annual Leachate & First Flush Volume

Total Annual Leachate & First Flush Volume	125,556	gal
Total Daily Leachate & First Flush Volume	4,185	gal
Volume to Use For Calculation	7,500	gal

Leachate Collection Tank Volume

Leachate Volume	560	ft ³ /day
1st Flush Volume	-	ft ³ /event
Total Design Volume	560	ft³

20.72

Summary		
Annual Leachate Generated	16,786	ft ³
Annual First Flush Runoff Generated	-	ft ³
Total Annual Volume to Store	16,786	ft ³
Total Annual Volume to Store	125,556	gal

Cell to Enter Data Into

Cell has Formula and is Calculated

Exhibit 6-5

TR 55 PEAK RUNOFF CALCULATION (GRAPHICAL METHOD)

Ver 5-2008

CLIENT: Ledgerview Farm, LLC COUNTY: BROWN
 DSN BY: Roach CHK BY:
 COMMENTS: Feed Storage Area-Heifer Farm

DATE: 11/27/2017
 DATE:

Drainage Area
 Runoff Curve Number

2.78	Acres
98.00	

Time of Concentration 0.07 Hours

Frequency	yr	2	5	10	25	50	100
Rainfall, P (24 hour)	in	2.5	3.2	3.7	4.3	4.8	5.1
Initial Abstraction, Ia	in	0	0	0	0	0	0
Ia/P ratio		0.000	0.000	0.000	0.000	0.000	0.000
Unit Peak Discharge, qu	cfs/ac/in	1.720	1.720	1.720	1.720	1.720	1.720
Runoff	in	2.31	3.01	3.51	4.11	4.60	4.90
Peak Discharge, qp	ac-ft	0.54	0.70	0.81	0.95	1.07	1.14
	cfs	3.97	11.1	14.4	16.8	22.0	23.4

Total Runoff One Inch Rain = 0.19 ac-ft 8,381 cubic feet 62,690 gallons

Total Runoff 25 year Event = 0.95 ac-ft 41,427 cubic feet 309,873 gallons

Peak Flow = 19.63 cfs 8,810 gpm

Exhibit 6-6
Monthly Feed Storage Area Runoff-Heifer Farm
Ledgeview Farm, LLC

Month	FSA Runoff Volume*		Runoff Volume to WSF	
	(ft ³)	(gallons)	(ft ³)	(gallons)
Jan**	7,129	53,325	0	0
Feb**	6,463	48,343	0	0
March***	14,992	112,140	7,496	56,070
April	26,343	197,046	26,343	197,046
May	33,722	252,241	33,722	252,241
June	43,560	325,829	43,560	325,829
July	41,109	307,495	41,109	307,495
Aug	42,379	316,995	42,379	316,995
Sept	38,740	289,775	38,740	289,775
Oct	27,062	202,424	27,062	202,424
Nov	19,428	145,321	19,428	145,321
Dec***	<u>10,413</u>	<u>77,889</u>	<u>5,207</u>	<u>38,945</u>
	311,340	2,328,823	285,046	2,132,140
Winter Months (Nov-April)			58,474	437,382

*121,097 sq ft FSA, RCN 98

***Fifty percent snow removal

25 year, 24 hour rainfall runoff 41,427 cu ft 309,873 gallons

Exhibit 6-7

TR 55 PEAK RUNOFF CALCULATION (GRAPHICAL METHOD)

ver 5-2008

CLIENT: Ledgerview Farm, LLC COUNTY: BROWN DATE: 5/24/2011
 DSN BY: Roach CHK BY: DATE:
 COMMENTS: Y1 Animal Lot - Heifer Farm

Drainage Area 0.89 Acres
 Runoff Curve Number 98.00

Time of Concentration 0.07 Hours

Frequency	yr	2	5	10	25	50	100
Rainfall, P (24 hour)	in	1.00	2.5	3.2	3.7	4.3	5.1
Initial Abstraction, Ia	in	0.00	0	0	0	0	0
Ia/P ratio		0.00	0.000	0.000	0.000	0.000	0.000
Unit Peak Discharge, qu	cfs/ac/in	1.72	1.720	1.720	1.720	1.720	1.720
Runoff	in	0.83	2.31	3.01	3.51	4.11	4.60
	ac-ft	0.06	0.17	0.22	0.26	0.30	0.36
Peak Discharge, qp	cfs	1.27	3.5	4.6	5.4	6.3	7.5

Total Runoff One Inch Rain = 0.06 ac-ft 2,683 cubic feet 20,070 gallons

Total Runoff 25 year Event = 0.30 ac-ft 13,263 cubic feet 99,204 gallons

Peak Flow = 6.28 cfs 2,821 gpm

Exhibit 6-8
Monthly Animal Lot Runoff-Heifer Farm
Ledgeview Farm, LLC

Month	Y1 Runoff Volume*		Runoff Volume to WSF	
	(ft ³)	(gallons)	(ft ³)	(gallons)
Jan**	2,291	17,137	0	0
Feb**	2,077	15,536	0	0
March***	4,819	36,046	2,410	18,023
April	8,468	63,341	8,468	63,341
May	10,840	81,083	10,840	81,083
June	14,002	104,735	14,002	104,735
July	13,214	98,841	13,214	98,841
Aug	13,622	101,893	13,622	101,893
Sept	8,699	65,069	8,699	65,069
Oct	6,245	46,713	6,245	46,713
Nov	3,347	25,036	3,347	25,036
Dec***	<u>8,019</u>	<u>59,982</u>	<u>4,010</u>	<u>29,991</u>
	95,643	715,410	84,856	634,723
Winter Months (Nov-April)			18,234	136,390

*38,925 sq ft FSA, RCN 98

**Snow removal

***Fifty percent snow removal

25 year, 24 hour rainfall runoff 13,263 cu ft 99,204 gallons

Exhibit 6-9

Leachate and First Flush Volume Calculation Worksheet **Ledgeview Farm, LLC - Headquarters Farm**

Prepared By: Roach
Date: 2017

Input Data	Dimensions*		Area ft ²
	Length	Width	
FSA Home Farm	170	55	9,350
			-
			-
			-
			-
Total Area With Apron			9,350 ft ²
Total Area With Apron			0.2 Acres
Total Feed Storage Area Less Apron			9,350 ft ²

Volume of Feed Stored in the Facility

Silage Height	12	ft
Silage Density (default)	60	lbs/ft ³
Silage Volume	3,366	tons

Calculated Annual Leachate Volume

Silage Stored	3,366	tons
Leachate Volume Generated per Ton	0.5	ft ³ /ton
Annual Leachate Generated	1,683	ft ³
Annual Leachate Generated	12,589	gal
Leachate Generated Per Day (30 day period)	420	gal/day
Leachate Generated Per Day (30 day period)	56	ft ³ /day

Calculated First Flush Runoff Generation

Total Feed Storage Area Less Apron	9,350	ft ²
First Flush Runoff Depth Collected per Rain Event	0	in
First Flush Volume Collected per Rain Event	-	ft ³ /event
First Flush Volume Collected per Rain Event	-	gal
Number of Rain Events (annual)		
Total Annual First Flush Volume Generated	-	ft ³
Total Annual First Flush Volume Generated	-	gal

Total Annual Leachate & First Flush Volume

Total Annual Leachate & First Flush Volume	12,589	gal
Total Daily Leachate & First Flush Volume	420	gal
Volume to Use For Calculation		gal

Leachate Collection Tank Volume

Leachate Volume	56	ft ³ /day
1st Flush Volume	-	ft ³ /event
Total Design Volume	56	ft³

2.08

Summary		
Annual Leachate Generated	1,683	ft ³
Annual First Flush Runoff Generated	-	ft ³
Total Annual Volume to Store	1,683	ft ³
Total Annual Volume to Store	12,589	gal

Cell to Enter Data Into

Cell has Formula and is Calculated

Exhibit 6-10

TR 55 PEAK RUNOFF CALCULATION (GRAPHICAL METHOD)

ver 5-2008

CLIENT: Ledgerview Farm, LLC COUNTY: BROWN DATE: 5/24/2011
 DSN BY: Roach CHK BY: DATE:
 COMMENTS: Feed Storage Area Headquarters Farm

Drainage Area 0.21 Acres
 Runoff Curve Number 98.00

Time of Concentration 0.07 Hours

Frequency	yr	2	5	10	25	50	100
Rainfall, P (24 hour)	in	2.5	3.2	3.7	4.3	4.8	5.1
Initial Abstraction, Ia	in	0	0	0	0	0	0
Ia/P ratio		0.000	0.000	0.000	0.000	0.000	0.000
Unit Peak Discharge, qu	cfs/ac/in	1.720	1.720	1.720	1.720	1.720	1.720
Runoff	in	0.83	3.01	3.51	4.11	4.60	4.90
Peak Discharge, qp	ac-ft	0.01	0.05	0.06	0.07	0.08	0.09
	cfs	0.31	0.9	1.3	1.5	1.7	1.8

Total Runoff One Inch Rain = 0.01 ac-ft 647 cubic feet 4,841 gallons
 Total Runoff 25 year Event = 0.07 ac-ft 3,199 cubic feet 23,927 gallons

Exhibit 6-11

Monthly Feed Storage Area Runoff-Headquarters Farm
Ledgeview Farm, LLC

Month	FSA Runoff Volume*		Runoff Volume to WSF	
	(ft ³)	(gallons)	(ft ³)	(gallons)
Jan**	834	6,238	0	0
Feb**	779	5,827	0	0
March***	1,340	10,023	670	5,012
April	1,792	13,404	1,792	13,404
May	1,434	10,726	1,434	10,726
June	1,348	10,083	1,348	10,083
July	982	7,345	982	7,345
Aug	1,286	9,619	1,286	9,619
Sept	1,683	12,589	1,683	12,589
Oct	1,675	12,529	1,675	12,529
Nov	1,621	12,125	1,621	12,125
Dec***	<u>1,075</u>	<u>8,041</u>	<u>538</u>	<u>4,021</u>
	15,849	118,551	13,029	97,453
Winter Months (Nov-April)			4,621	34,561

*9,350 sq ft FSA, RCN 98

**Snow removal

***Fifty percent snow removal

25 year, 24 hour rainfall runoff 2,070 cu ft 15,481 gallons

Exhibit 6-12

TR 55 PEAK RUNOFF CALCULATION (GRAPHICAL METHOD)

ver 5-2008

CLIENT: Ledgerview Farm, LLC COUNTY: BROWN DATE: 5/24/2011
 DSN BY: Roach CHK BY: DATE:
 COMMENTS: Animal Lot Headquarters Farm

Drainage Area 0.14 Acres
 Runoff Curve Number 98.00

Time of Concentration 0.07 Hours

Frequency	yr	2	5	10	25	50	100
Rainfall, P (24 hour)	in	2.5	3.2	3.7	4.3	4.8	5.1
Initial Abstraction, Ia	in	0	0	0	0	0	0
Ia/P ratio		0.000	0.000	0.000	0.000	0.000	0.000
Unit Peak Discharge, qu	cfs/ac/in	1.720	1.720	1.720	1.720	1.720	1.720
Runoff	in	0.83	3.01	3.51	4.11	4.60	4.90
Peak Discharge, qp	ac-ft	0.01	0.03	0.04	0.05	0.05	0.06
	cfs	0.20	0.6	0.8	1.0	1.1	1.2

Total Runoff One Inch Rain = 0.01 ac-ft 419 cubic feet 3,132 gallons
 Total Runoff 25 year Event = 0.05 ac-ft 2,070 cubic feet 15,483 gallons

Exhibit 6-13

Monthly Animal Lot Runoff-Headquarters Farm
Ledgeview Farm, LLC

Month	FSA Runoff Volume*		Runoff Volume to WSF	
	(ft ³)	(gallons)	(ft ³)	(gallons)
Jan**	356	2,663	0	0
Feb**	323	2,416	0	0
March***	749	5,603	375	2,801
April	1,316	9,844	1,316	9,844
May	1,685	12,604	1,685	12,604
June	2,176	16,276	2,176	16,276
July	2,054	15,364	2,054	15,364
Aug	2,117	15,835	2,117	15,835
Sept	1,935	14,474	1,935	14,474
Oct	971	7,263	971	7,263
Nov	520	3,890	520	3,890
Dec***	<u>3,347</u>	<u>25,036</u>	<u>1,674</u>	<u>12,518</u>
	17,549	131,267	14,822	110,869
Winter Months (Nov-April)			3,884	29,052

*6,050 sq ft FSA, RCN 98

**Snow removal

***Fifty percent snow removal

25 year, 24 hour rainfall runoff 2,070 cu ft 15,481 gallons

8

WELL CONSTRUCTOR'S REPORT TO WISCONSIN STATE BOARD OF HEALTH
See Instructions on Reverse Side

1. County Brown Town ☒ De Pere
 Village ☐ City ☐ Check one and give name
2. Location N.W. 1/4 of S.W. 1/4 of sec. 28, T.23N, R.21E
 Name of street and number of premise or Section, Town and Range numbers
3. Owner ☒ or Agent ☐ Anton Dollar
 Name of individual, partnership or firm
4. Mail Address Route 2, DePere, Wisconsin
 Complete address required
5. From well to nearest: Building 20 ft; ^{driveway} sewer 80 ft; drain ft; septic tank ft;
 dry well or filter bed ft; abandoned well ft.
6. Well is intended to supply water for: Farm

7. DRILLHOLE:

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
8	0	20			
6	20	170			

8. CASING AND LINER PIPE OR CURBING:

Dia. (in.)	Kind and Weight	From (ft.)	To (ft.)
6	Standard Weight		
	Steel Pipe	0	54

9. GROUT:

Kind	From (ft.)	To (ft.)
Puddled Clay (fill)	0	20

11. MISCELLANEOUS DATA:

Yield test: 4 Hrs. at 10 GPM.
 Depth from surface to water-level: 33 ft.
 Water-level when pumping: 36 ft.
 Water sample was sent to the state laboratory at:
Green Bay on January 17, 1951
 City

10. FORMATIONS:

Kind	From (ft.)	To (ft.)
Red Clay	0	50
Gravel	50	54
Limestone	54	114
Shale & Limestone	114	170

Construction of the well was completed on:

January 17, 1951

The well is terminated 6 inches
☒ above, below ☐ the permanent ground surface.

Was the well disinfected upon completion?

Yes ☒ No ☐

Was the well sealed watertight upon completion?

Yes ☒ No ☐

Signature

Ray G. Kerner
 Registered Well Driller

1169 Pine Street, Green Bay, Wis.

Complete Mail Address

Please do not write in space below

Rec'd No

Ans'd

Interpretation



10 ml 10 ml 10 ml 10 ml 10 ml

Gas—24 hrs.

48 hrs.

Confirm

B. Coli

Examiner

Ledgeview Farm, LLC

Date	Activity
Waste Storage Facility, Feed Storage and Leachate Management System	
May 2018	Install erosion control measures
May 2018	Strip and stockpile topsoil from Waste Storage Facility
May 2018	Seed topsoil piles
June 2018	Inspect erosion control measures and take corrective action
June 2018	Excavation for Waste Storage Facility and fill Leachate channel
July 2018	Install concrete liner in Waste Storage Facility and construct Leachate Channel
July 2018	Install concrete liner in Waste Storage Facility and construct Leachate Channel
July 2018	Inspect erosion control measures and take corrective action
July 2018	Install topsoil, final grade and seed as needed
Heifer Barn Expansion and Y2 Yard	
June 2019	Install erosion control measures
June 2019	Strip and stockpile topsoil from barn area
June 2019	Seed topsoil piles
June 2019	Inspect erosion control measures and take corrective action
June 2019	Install footings and walls
June 2019	Install underground utilities
June 2019	Install litter and feed alleys
July 2019	Install columns and rafters
July 2019	Install utilities
July 2019	Complete barn construction
August 2019	Install topsoil, final grade and seed as needed

Exhibit 9

Other Laws & Permits

The following laws may apply to the operations of Ledgeview Farm, LLC:

- Town of Ledgeview Chapter ATCP 51 – Livestock Facility Siting
- Town of Ledgeview Conditional Use Permit
- Town of Ledgeview Building Permit
- Town of Ledgeview Construction Site Erosion Control Permit
- Brown County Animal Waste Management Ordinance
 - Animal Waste Storage Facility Permit
 - Animal Feedlot Permit
- Brown County – Nutrient Management Plan approval
- DNR Chapter NR 243 - Animal Feeding Operations - WPDES permit
- DNR - Plan & Specifications approval for all reviewable facilities
- DNR – Construction Site Erosion Control Permit



Ledgeview Farm, LLC

Cluster A

Livestock Siting Distance to Neighbors

Livestock Structures	Nearest Neighbors			
	N1	E1	W1	S1
	(feet)			
L1 Barn	649	429	736	573
L2 Barn	1,170	1,163	376	492
L3 Barn	1,051	1,159	594	618
L4 Barn	1,138	1,273	465	704
L5 Barn	1,179	1,134	567	398
L6 Barn	1,239	1,161	594	285
Waste Storage Facility - W1	334	600	1,116	1,061
Concrete Yard - Y1	1,218	1,161	664	368

1. Animal Housing

ID	Manure Management	Generation number	Occupied Area (Fl. ²)	Dist. to Nearest Neighbor (Fl.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
L1	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	90,743	429	Diet manipulation	0.8	None	1	29
L2	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	31,758	1,163	Diet manipulation	0.8	None	1	10
L3	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	16,523	1,159	Diet manipulation	0.8	None	1	5
L4	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	18,578	1,273	Diet manipulation	0.8	None	1	6
L5	Bedded Pack - Dairy and Beef	2	15,103	1,134	Diet manipulation	0.8	None	1	2
L6	Bedded Pack - Dairy and Beef	2	17,378	1,161	Diet manipulation	0.8	None	1	3
1G									
1H									
1I									
1J									
1K									
1L									

2. Waste Storage

ID	Storage type	Generation number	Surface Area (Fl. ²)	Dist. to Nearest Neighbor (Fl.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
W1	Liquid storage - Long term (pit and tank) Open anaerobic	13	56,189	600	None	1	None	1	73
2C					None		None		
2D									
2E									
2F									

3. Animal Lots

ID	Lot type	Generation number	Surface Area (Fl. ²)	Dist. to Nearest Neighbor (Fl.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
Y1	Paved	4	5,953	1,161	Clean frequently (within 3 days)	0.4	None	1	1
					None		None		

4. Separation Distance

Weighted Distance to Neighbor	684
Direction of Nearest Neighbor	East
Adjusted Weighted Distance	752
Density (neighbors within 1,300 ft.)	High

5. Management

Basic Management Plans	Required
Advanced Odor Management Plan?	Yes

Total Predicted Odor

129

Separation Score

569

Basic Management Score

80

Advanced Management Score

20

Odor Score

540

1. Animal Housing

ID	Manure Management	Generation number	Occupied Area (FL ²)	Dist. to Nearest Neighbor (FL)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
L1	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	90,743	649	Diet manipulation	0.8	None	1	29
L2	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	31,758	1,170	Diet manipulation	0.8	None	1	10
L3	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	16,523	1,051	Diet manipulation	0.8	None	1	5
L4	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	18,578	1,138	Diet manipulation	0.8	None	1	6
L5	Bedded Pack - Dairy and Beef	2	15,103	1,179	Diet manipulation	0.8	None	1	2
L6	Bedded Pack - Dairy and Beef	2	17,378	1,239	Diet manipulation	0.8	None	1	3
1G									
1H									
1I									
1J									
1K									
1L									

2. Waste Storage

ID	Storage type	Generation number	Surface Area (FL ²)	Dist. to Nearest Neighbor (FL)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
W1	Liquid storage - Long term (pit and tank) Open anaerobic	13	56,189	334	None	1	None	1	73
2C					None		None		
2D									
2E									
2F									

3. Animal Lots

ID	Lot type	Generation number	Surface Area (FL ²)	Dist. to Nearest Neighbor (FL)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
Y1	Paved	4	5,953	1,218	Clean frequently (within 3 days)	0.4	None	1	1
					None		None		

4. Separation Distance

Weighted Distance to Neighbor	576
Direction of Nearest Neighbor	North
Adjusted Weighted Distance	576
Density (neighbors within 1,300 ft.)	High

5. Management

Basic Management Plans	Required
Advanced Odor Management Plan?	Yes

Total Predicted Odor 129

Separation Score 542

Basic Management Score 80

Advanced Management Score 20

Odor Score 513

1. Animal Housing

ID	Manure Management	Generation number	Occupied Area (ft. ²)	Dist. to Nearest Neighbor (ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
L1	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	90,743	573	Diet manipulation	0.8	None	1	29
L2	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	31,758	492	Diet manipulation	0.8	None	1	10
L3	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	16,523	618	Diet manipulation	0.8	None	1	5
L4	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	18,578	704	Diet manipulation	0.8	None	1	6
L5	Bedded Pack - Dairy and Beef	2	15,103	398	Diet manipulation	0.8	None	1	2
L6	Bedded Pack - Dairy and Beef	2	17,378	285	Diet manipulation	0.8	None	1	3
1G									
1H									
1I									
1J									
1K									
1L									

2. Waste Storage

ID	Storage type	Generation number	Surface Area (ft. ²)	Dist. to Nearest Neighbor (ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
W1	Liquid storage - Long term (pit and tank) Open anaerobic	13	56,189	1,061	None	1	None	1	73
2C					None		None		
2D									
2E									
2F									

3. Animal Lots

ID	Lot type	Generation number	Surface Area (ft. ²)	Dist. to Nearest Neighbor (ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
Y1	Paved	4	5,953	368	Clean frequently (within 3 days)	0.4	None	1	1
					None		None		

4. Separation Distance

Weighted Distance to Neighbor	840
Direction of Nearest Neighbor	South
Adjusted Weighted Distance	1,008
Density (neighbors within 1,300 ft.)	High

5. Management

Basic Management Plans	Required
Advanced Odor Management Plan?	Yes

Total Predicted Odor

129

Separation Score

619

Basic Management Score

80

Advanced Management Score

20

Odor Score

590

1. Animal Housing

ID	Manure Management	Generation number	Occupied Area (FL ²)	Dist. to Nearest Neighbor (FL)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
L1	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	90,743	519	Diet manipulation	0.8	None	1	29
L2	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	31,756	586	Diet manipulation	0.8	None	1	10
L3	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	16,523	718	Diet manipulation	0.8	None	1	5
L4	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	18,578	826	Diet manipulation	0.8	None	1	6
L5	Bedded Pack - Dairy and Beef	2	15,103	478	Diet manipulation	0.8	None	1	2
L6	Bedded Pack - Dairy and Beef	2	17,378	379	Diet manipulation	0.8	None	1	3
1G									
1H									
1I									
1J									
1K									
1L									

2. Waste Storage

ID	Storage type	Generation number	Surface Area (FL ²)	Dist. to Nearest Neighbor (FL)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
W1	Liquid storage - Long term (pit and tank) Open anaerobic	13	56,189	1,000	None	1	None	1	73
2C					None		None		
2D									
2E									
2F									

3. Animal Lots

ID	Lot type	Generation number	Surface Area (FL ²)	Dist. to Nearest Neighbor (FL)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
Y1	Paved	4	5,953	455	Clean frequently (within 3 days)	0.4	None	1	1
					None		None		

4. Separation Distance

Weighted Distance to Neighbor	814
Direction of Nearest Neighbor	South
Adjusted Weighted Distance	977
Density (neighbors within 1,300 ft.)	High

5. Management

Basic Management Plans	Required
Advanced Odor Management Plan?	Yes

Total Predicted Odor

129

Separation Score

601

Basic Management Score

80

Advanced Management Score

20

Odor Score

572

1. Animal Housing

ID	Manure Management	Generation number	Occupied Area (FL ²)	Dist. to Nearest Neighbor (FL)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
L1	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	90,743	736	Diet manipulation	0.8	None	1	29
L2	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	31,758	376	Diet manipulation	0.8	None	1	10
L3	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	16,523	594	Diet manipulation	0.8	None	1	5
L4	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	18,578	465	Diet manipulation	0.8	None	1	6
L5	Bedded Pack - Dairy and Beef	2	15,103	567	Diet manipulation	0.8	None	1	2
L6	Bedded Pack - Dairy and Beef	2	17,378	594	Diet manipulation	0.8	None	1	3
1G									
1H									
1I									
1J									
1K									
1L									

2. Waste Storage

ID	Storage type	Generation number	Surface Area (FL ²)	Dist. to Nearest Neighbor (FL)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
W1	Liquid storage - Long term (pit and tank) Open anaerobic	13	56,189	1,116	None	1	None	1	73
2C					None		None		
2D									
2E									
2F									

3. Animal Lots

ID	Lot type	Generation number	Surface Area (FL ²)	Dist. to Nearest Neighbor (FL)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
Y1	Paved	4	5,953	664	Clean frequently (within 3 days)	0.4	None	1	1
					None		None		

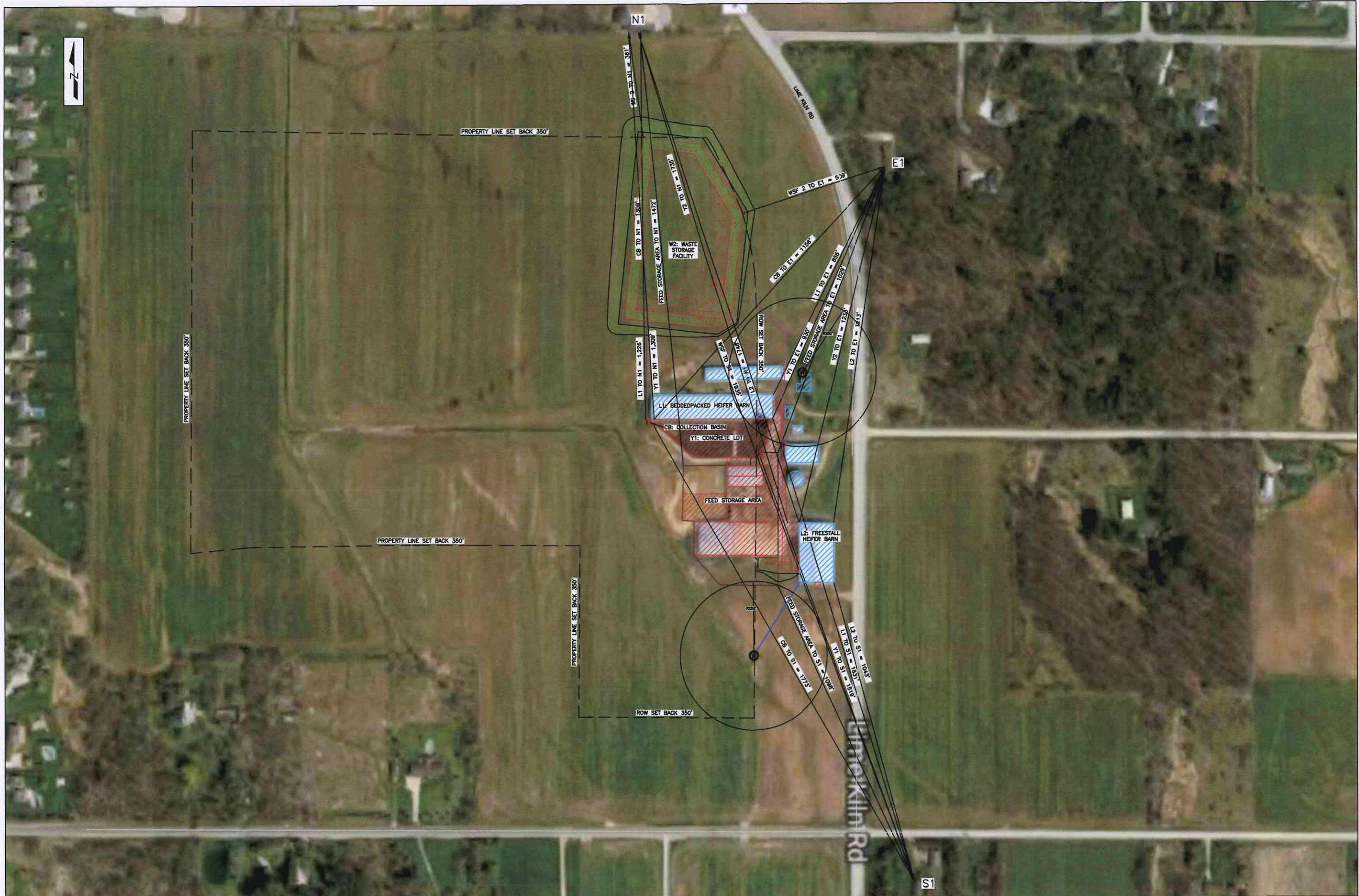
4. Separation Distance

Weighted Distance to Neighbor	899
Direction of Nearest Neighbor	West
Adjusted Weighted Distance	1,168
Density (neighbors within 1,300 ft.)	High

5. Management

Basic Management Plans	Required
Advanced Odor Management Plan?	Yes

Total Predicted Odor **129**
 Separation Score **637**
 Basic Management Score **80**
 Advanced Management Score **20**
Odor Score 608



Ledgeview Farm, LLC

Cluster B

Livestock Siting Distance to Neighbors

Livestock Structures	Nearest Neighbor		
	N1	E1	S1
	(feet)		
Collection Basin - CB	1,309	1,156	1,773
Waste Storage Facility - W2	361	509	1,935
Bedded Pack Barn - L1	1,226	855	1,631
Freestall Barn - L2	1,748	1,213	1,043
Concrete Yard - Y1	1,309	930	1,519
Concrete Yard - Y2	1,735	1,233	1,079
Feed Storage Area	1,472	1,029	1,098

1. Animal Housing

ID	Manure Management	Generation number	Occupied Area (ft ²)	Dist. to Nearest Neighbor (ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
L1	Bedded Pack - Dairy and Beef	2	34,279	1,226	Diet manipulation	0.8	None	1	5
L2	Freestall - Dairy - Soreps (incl. Beef and Heifers on forage ration)	4	81,532	1,748	Diet manipulation	0.8	None	1	26
1C									
1D									
1E									
1F									
1G									
1H									
1I									
1J									
1K									
1L									

2. Waste Storage

ID	Storage type	Generation number	Surface Area (ft ²)	Dist. to Nearest Neighbor (ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
W2	Liquid storage - Long term (pit and tank) Open anaerobic	13	194,475	361	Natural Crust	0.3	None	1	76
CB	Liquid storage - Short term (pit and tank) Open anaerobic	28	638	1,309	None	1	None	1	2
2C									
2D									
2E									
2F									

3. Animal Lots

ID	Lot type	Generation number	Surface Area (ft ²)	Dist. to Nearest Neighbor (ft.)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
Y1	Paved	4	42,660	1,309	Clean frequently (within 3 days)	0.4	Water Control (gutters & diversions)	0.8	5
Y2	Paved	4	4,494	1,735	Clean frequently (within 3 days)	0.4	None	1	1

4. Separation Distance

Weighted Distance to Neighbor	782
Direction of Nearest Neighbor	North
Adjusted Weighted Distance	782
Density (neighbors within 1,300 ft.)	High

5. Management

Basic Management Plans	Required
Advanced Odor Management Plan?	Yes

Total Predicted Odor **115**

Separation Score **569**

Basic Management Score **80**

Advanced Management Score **20**

Odor Score **554**

1. Animal Housing

ID	Manure Management	Generation number	Occupied Area (FL ²)	Dist. to Nearest Neighbor (FL)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
L1	Bedded Pack - Dairy and Beef	2	34,279	855	Diet manipulation	0.8	None	1	5
L2	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	81,532	1,213	Diet manipulation	0.8	None	1	28
1C									
1D									
1E									
1F									
1G									
1H									
1I									
1J									
1K									
1L									

2. Waste Storage

ID	Storage type	Generation number	Surface Area (FL ²)	Dist. to Nearest Neighbor (FL)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
W2	Liquid storage - Long term (pit and tank) Open anaerobic	13	194,475	509	Natural Crust	0.3	None	1	76
CB	Liquid storage - Short term (pit and tank) Open anaerobic	28	638	1,156	None	1	None	1	2
2C									
2D									
2E									
2F									

3. Animal Lots

ID	Lot type	Generation number	Surface Area (FL ²)	Dist. to Nearest Neighbor (FL)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
Y1	Paved	4	42,660	930	Clean frequently (within 3 days)	0.4	Water Control (gutters & diversions)	0.8	5
Y2	Paved	4	4,494	1,233	Clean frequently (within 3 days)	0.4	None	1	1

4. Separation Distance

Weighted Distance to Neighbor	719
Direction of Nearest Neighbor	East
Adjusted Weighted Distance	791
Density (neighbors within 1,300 ft.)	High

5. Management

Basic Management Plans	Required
Advanced Odor Management Plan?	Yes

Total Predicted Odor **115**

Separation Score **569**

Basic Management Score **80**

Advanced Management Score **20**

Odor Score **554**

1. Animal Housing

ID	Manure Management	Generation number	Occupied Area (FL ²)	Dist. to Nearest Neighbor (FL)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
L1	Bedded Pack - Dairy and Beef	2	34,279	1,631	Diet manipulation	0.8	None	1	5
L2	Freestall - Dairy - Scrape (incl. Beef and Heifers on forage ration)	4	81,532	1,043	Diet manipulation	0.8	None	1	26
1C									
1D									
1E									
1F									
1G									
1H									
1I									
1J									
1K									
1L									

2. Waste Storage

ID	Storage type	Generation number	Surface Area (FL ²)	Dist. to Nearest Neighbor (FL)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
W2	Liquid storage - Long term (oil and tank) Open anaerobic	13	194,475	1,935	Natural Crust	0.3	None	1	76
C-B	Liquid storage - Short term (oil and tank) Open anaerobic	28	638	1,773	None	1	None	1	2
2C									
2D									
2E									
2F									

3. Animal Lots

ID	Lot type	Generation number	Surface Area (FL ²)	Dist. to Nearest Neighbor (FL)	Control Practice	Reduction Factor	Control Practice	Reduction Factor	Predicted Odor
Y1	Paved	4	42,660	1,519	Clean frequently (within 3 days)	0.4	Water Control (gutters & diversions)	0.8	5
Y2	Paved	4	4,494	1,079	Clean frequently (within 3 days)	0.4	None	1	1

4. Separation Distance

Weighted Distance to Neighbor	1,692
Direction of Nearest Neighbor	South
Adjusted Weighted Distance	2,030
Density (neighbors within 1,300 ft.)	High

5. Management

Basic Management Plans	Required
Advanced Odor Management Plan?	Yes

Total Predicted Odor

115

Separation Score

845

Basic Management Score

80

Advanced Management Score

20

Odor Score

830

Ledgeview Farm, LLC Conditional Use Permit Attachment

Incorporated by Reference: Appendix A of the Ledgeview Farm, LLC Livestock Siting Application

Applicant Statement of Intended use

The intended use is to construct a concrete lined Waste Storage Facility to store livestock waste from dairy cattle, feed pad leachate and runoff from a Concrete Animal Yard. A Waste Transfer System will be installed from the Feed Storage Area and the Concrete Animal Yard, to facilitate the transfer of runoff to the proposed Waste Storage Facility. This is a permitted use for the agricultural property that is zoned A-1 Agriculture-Farmland Preservation District (AG-FP) and A-2 Agriculture District.

The proposed plans conform to the requirements found in Wis. Adm. Code ch. ATCP 51 Livestock Facility Siting. A Conditional Use Permit is required by the Town of Ledgeview.

Operational considerations related to hours of use

Under normal conditions the production side will receive limited traffic from 4:00 a.m. to 10:00 p.m. During these times feeding the livestock and manure deliveries to the proposed waste storage will occur. In addition, feed will be delivered to the site by local vendors. When the manure is removed from the Waste Storage Facility, primarily in the fall, manure tanker traffic will increase as manure is transported to crop fields. Some of the manure will be applied via drag house and injected directly into the soil.

Operational considerations relating to potential nuisance creation traffic and odor

Based upon the type of manure that will be added (straw laden heifer manure) to the Waste Storage Facility, a crust is expected to form over the top of the Waste Storage Facility. The crust will greatly reduce the odor and the amount of manure related gases that will be released. Most of the time, no odor is expected to be detectable off of the production site. See Appendix A, Worksheet 2 – Odor Management of the Ledgeview Farm, LLC Livestock Facility Siting Application.



CONDITIONAL USE PERMIT APPLICATION

Ledgeview Zoning & Planning Commission

Date Submitted:

This application form must be completed online at <https://townofledgeview.zoninghub.com/>
Hard copy applications will not be accepted.

Completed application must be submitted to the Town Clerk no less than fourteen (14) days prior to the first Monday of the month before 12:00pm (noon) to be included on that month's ZPC agenda Zoning and Planning Commission meets the second Wednesday after the first Monday of the month at 6:00 p.m. at the Ledgeview Municipal Building.
[Click here for the ZPC meeting calendar.](#)

A Conditional Use Permit application review fee of \$200.00 must be submitted with materials

1) Applicant Information

Name:

Business Name:

Street Address: City/State: Zip:

Telephone: Fax: Email:

Firm Preparing Plans: Contact:

Street Address: City/State: Zip:

Telephone: Fax: Email:

All correspondence on this application should be sent to: ☒ Property Owner, OR ☒ Agent

2) Property Owner Information *This section can be left blank if the same as above.*

Name:

Business Name:

Street Address: City/State: Zip:

Telephone: Fax: Email:

3) Information regarding requested Conditional Use Permit

Address/Location:

Town and Range:

Parcel ID Number:

Zoning District:

Size of parcel in acres:

Sewer: ☐ Municipal ☒ Septic/Mound

Water: ☐ Municipal ☐ Private Water Trust ☐ Private Well

Briefly describe the Proposed Site Use:

The construction of a Waste Storage Facility and Waste Transfer Systems.

Please provide a Legal Description below:

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 OF SW1/4 T23N R21E EX RDS

****Please see Sec 135 - 251 for additional information on Conditional Uses****

Notes

- Attendance by the applicant is strongly encouraged at both Zoning and Planning Commission and Town Board meetings where action/approval is to take place. It is the policy of the Zoning and Planning Commission to give applicants the opportunity to speak at such meetings. Contact the Town Clerk for the meeting schedule.
- The applicant/owner of the above parcel(s) hereby gives permission to the Town of Ledgeview, its staff/employees, agents and/or appointees to enter the property for the purpose of executing their duties associated with this request and following proper notification to applicant/owner.
- Upon approval of request, check with the Ledgeview Town Clerk for any necessary permits.

4) Applicant Declarations

- The signer attests that the application has been completed accurately and all required materials have been submitted.
- Please note that the application will NOT be accepted without the signature of the property owner.

I HEREBY CERTIFY THAT I HAVE READ AND FULLY UNDERSTAND THE CONDITIONAL USE PERMIT PROCEDURE AND FAILURE TO COMPLY WITH TOWN REQUIREMENTS WILL RESULT IN THIS APPLICATION BEING WITHHELD FROM CONSIDERATION.

Signature of the Property Owner (required):

Jason Pansier

Print Name:

Date:

Signature of the Applicant ("Agent" for the owner):

John Roach

Print Name:

Date:

5) Submittal Requirements

Each submittal shall consist of the following materials. Please note that ALL digital files MUST be in PDF format with a minimum 300dpi resolution.

- A detailed statement by the applicant describing the intended use and how the proposed conditional use will conform to standards set forth in the respective zone districts, as per Section 250 of the Zoning code
- One (1) full set of building plans
- 11 x 17 property site plan
- Completed Conditional Use Permit Application

6) Submittal Checklists (completion required for application)

A. Written Description of the intended use describing in reasonable detail the:

- ☒ Full name and contact information of the petitioner and / or agent, and property owner, if different;
- ☒ Full name and contact information of petitioner's engineers / surveyors / architects, and other design professionals used in conditional use permit application preparation;
- ☒ Existing zoning district(s) and proposed zoning district(s) if different; *Conditional Use Permit Attachment*
- ☒ Current land uses present on the subject property; *Conditional Use Permit Attachment*
- ☒ Proposed land uses for the subject property;
- ☒ Land use designation(s) as depicted on the adopted Comprehensive Plan; *Agricultural*
- ☐ Projected number of residents, employees, and / or daily customers; *N/A*
- ☒ Description of existing environmental features;
2017 Waste Storage Facility + Runoff Management System - Site Assessment

- ☐ Proposed amount of dwelling units, floor area, Open Space area, and landscape surface area, expressed in square feet and acreage to the nearest one-hundredth of an acre; **N/A**
- ☐ Resulting site density, Floor Area Ratio as calculated using the criteria established in Sec 135 – 8, Open Space Ratio, and Landscape Surface Area Ratio, as defined by Sec 135 – 8; **N/A**
- ☒ Operational considerations relating to hours of operation, projected normal and peak water usage, sanitary sewer or septic loadings; **Conditional Use Permit Attachment**
- ☒ Operational considerations relating to potential nuisance creation pertaining to the appropriate design of street access, traffic visibility, parking, loading, exterior storage, exterior lighting, vibration, noise, air pollution, odor, electromagnetic radiation, glare and heat, fire and explosion, toxic or noxious materials, waste materials, drainage, and hazardous materials;
Conditional Use Permit Attachment
- ☒ Traffic generation;
Conditional Use Permit Attachment
- ☐ Any other information pertinent to adequate understanding by the Plan Commission of the intended use and its relation to nearby properties; **N/A**
- ☒ Possible future expansion and related implications, and; **No expansion expected**
- ☐ Material Safety Data Sheets (MSDS) for all materials anticipated to be used or stored on site; Exterior building and fencing materials; **N/A**

B. Property Site Plan drawing which includes:

- ☒ A title block which provides all contact information for the petitioner and / or agent, and property owner if different;
2017 Waste Storage Facility + Runoff Management System and Construction Plans
- ☒ Full name and contact information of petitioner's engineers / surveyors / architects, and other design professionals used in conditional use application preparation;
2017 Waste Storage Facility + Runoff Management System and Construction Plans
- ☒ The date of the original plan and the latest date of revision to the plan;
2017 Waste Storage Facility + Runoff Management System and Construction Plans
- ☒ A north arrow and a graphic scale;
2017 Waste Storage Facility + Runoff Management System and Construction Plans
- ☒ All property lines and existing and proposed right-of-way lines with bearings and dimensions clearly labeled;
2017 Waste Storage Facility + Runoff Management System and Construction Plans
- ☐ All existing and proposed easement lines and dimensions with a key provided and explained on the margins of the plan as to ownership and purpose; **N/A**
- ☒ All required building setback and offset lines, including dimensions from structures to property lines;
2017 Waste Storage Facility + Runoff Management System and Construction Plans
- ☒ All existing and proposed buildings, accessory structures, and paved areas, including building entrances, walks, drives, decks, patios, fences, walls;
2017 Waste Storage Facility + Runoff Management System and Construction Plans
- ☒ All existing and proposed utility and drainage systems, connections, and fixtures;
2017 Waste Storage Facility + Runoff Management System and Construction Plans
- ☒ The location and dimension of all access points onto public streets including cross-section drawings of the entry throat;
2017 Waste Storage Facility + Runoff Management System and Construction Plans
- ☐ The location, type, height, size and lighting of all signage on the subject property; **N/A**
- ☐ The location of all outdoor storage and refuse disposal areas and the design of all screening devices; **N/A**

- ☐ The location and dimension of all loading and service areas on the subject property and labels indicating the dimension of such areas; *N/A*
- ☐ The location and dimension of all on-site parking (and off-site parking provisions if they are to be employed), including a summary of the number of parking stalls provided versus required by Sec 135 - 124; *N/A*
- ☐ The location, height, design/type, illumination power and orientation of all exterior lighting on the subject property - including the clear demonstration of compliance with a limit of 0.5 foot candles at all property lines; *N/A*
- ☐ The location and type of any permanently protected green space areas; *N/A*
- ☒ The location and delineation of all wetlands, escarpments, uplands, or other unique environmental features;
2017 Waste Storage Facility + Runoff Management System + Construction Plans
- ☒ The location of existing and proposed drainage facilities;
2017 Waste Storage Facility + Runoff Management System and Construction Plans
- ☐ In the legend, data for the subject property:
 - a) Lot Area measured in square feet and acres to the nearest one-hundredth of an acre;
 - b) Floor Area measured in square feet using the criteria in Sec 135 - 8; *N/A*
 - c) Open Space Area as defined in Section 8 and as calculated using the criteria of Sec 135 - 8; *N/A*
 - d) Building Height as defined and calculated using the Sec 135 - 8 of the *N/A* Zoning Code

Submit all documents to:
<https://townofledgeview.zoninghub.com/>

Questions:
 E: cnelson@ledgeviewwisconsin.com
 P: (920) 336 - 3360
 F: (920) 336 - 8517

For Office Use Only

Submittal Date: / /

Staff Signature: _____

Fees Paid: Y / N

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

February 2, 2018

Philip J Danen, Chairman
Town of Ledgeview
3700 Dickinson Road
DePere, WI 54115

RE: Response to the Town of Ledgeview incompleteness determination (1-19-18) of Ledgeview Farm, LLC
Chapter ATP – 51 Livestock Siting Application

Area and Site Maps
Maps #1 and #2

*Area Map and Site Map contour elevations as provided in Exhibit 1 are not clearly labeled.

Area Map and Site Map contour elevations have been updated in the Livestock Siting Application and are clearly labeled. The revised maps are attached.

*Area Map and Site Map not consistent with Plans for Heifer Site Structures – The Site Map shows, proposed Waste Transfer Channel while the Site Plans show a proposed detention basin and transfer pipe from the feed storage area and a waste transfer pipe from the collection basin from the animal lot.

The Area Map and Site Map for the Heifer site have been updated in the Livestock Siting Application and now agree with the site plan in the Heifer Site construction plans. The updated maps show the proposed Detention Basin and transfer pipe from the Feed Storage Area and the waste transfer pipe from the Animal Lot Collection Basin to the Waste Storage Facility.

*Appears to be existing Feed storage and Manure Storage (Pit1 & Pit 2) at Headquarters and an unconfined stacking area at the end of barn at the Heifer Site in the 2017 Waste Storage Facility & Runoff Management System Report. The structures are not labeled in the Siting Application Site Map for the Headquarters Site. Please clarify and label.

The 2017 Waste Storage Facility & Runoff Management System Specification air photo, for the Headquarters Site show, Pit 1 and Pit 2. These are existing Waste Storage Facilities that are not currently in use as waste storage and are used to store machinery. Ledgeview Farm, LLC has been in contact with the Brown County Land Conservation Department (BCLCD) and Pit 1 and Pit 2 will be abandoned according to the criteria found in Natural Resources Conservation Service (NRCS) Conservation Practice Standard (CPS) 360 Waste Facility Closure. The facilities will be repurposed for machinery and dry good storage. Pit 1 & 2 are labeled in updated Livestock Siting Maps and updated maps are attached.

Roach has attached a closure plan for Pits 1 & 2 (Attachment 1) that meets the requirements found in ATP 51.18(4).

The Feed Storage area, at the Headquarters Site is now labeled on the Siting Application Site Map and is attached.

The Unconfined Stacking Area at the Heifer site is no longer active. The Unconfined Stacking Area is better described as a Loadout Area where bedding laden manure was staged for short periods while manure was transported to cropland. The Loadout Area is greater than 1,000 feet from a navigable lake and greater than 300 feet from a navigable stream. Ledgeview Farm, LLC no longer utilizes these areas. Currently and going forward, bedding laden manure is loaded directly onto spreaders from the housing unit. The maps in the 2017 Waste Storage Facility & Runoff Management System specification book have been updated to remove the Unconfined Stacking Areas reference and are attached.

Map #3

****Provide statement proposed structures meet setbacks for animal housing and waste storage and show setbacks on Site Map.***

The proposed Waste Storage Facility meets the setback requirements found in ATCP 51.12(2). The setback is shown on the Livestock Siting Maps where appropriate and updated maps are attached.

After further consideration, the owners of Ledgeview Farm, LLC have decided not to construct the Heifer Barn expansion at the Heifer Site. The Heifer Barn expansion has been removed from the Siting Maps.

Worksheet 2 – Odor Management

#12

Headquarters Site Odor Score calculation

****Explain if a natural crust normally exists on W1 and provide bedding used and management plans for maintaining a natural crust.***

In lieu of a management plan for maintaining a natural crust on the W1 Waste Storage Facility, the Odor Score Worksheets have been amended for the W1 Waste Storage Facility and do not take credit for a crust. All of the Odor Score worksheets have been updated and have Odor Scores of greater than 500. The updated Odor Score Worksheets are attached.

****L2 is listed as a bed pack barn in the 2017 Waste Storage Facility & Runoff Management System Report but in the odor score it is listed as a free stall barn. Please clarify.***

The designation in the Odor Management Worksheets is correct. The L2 Barn is a Freestall Barn. The maps contained in the 2017 Waste Storage Facility & Runoff Management System Report have been changed to reflect the correct housing type and are attached.

Heifer site Odor Score calculation

****Explain if a natural crust would form from collection of runoff from the animal lot and Feed Storage Area. Provide management plans for maintaining a natural crust.***

The majority of the manure that will be added to the W2 waste storage will be organic bedding laden heifer manure. Heifer manure has higher solids content than lactating cow manure and contains higher fiber, which will promote the development of a crust. Based upon 1) the type of manure (heifer), and 2) the volume of heifer bedding laden manure prescribed in the Natural Crust Management Plan (below), a crust will form on the W2 Waste Storage Facility. The amount of runoff contributed from the Feed Storage Area and the Y1 Yard will have a positive effect on crust formation as the straw and other organic bedding will float to the top of the liquids promoting crust formation. Published research supports this conclusion and citations are attached.

Natural Crust Management Plan

- *The L1 Barn is a Bedded Pack Barn that has organic bedding (primarily straw) added weekly. The soiled bedded pack is removed weekly. Currently, the bedded pack is hauled to cropland. After the construction of the W2 Waste Storage Facility, the bedded pack manure will be transported to W2 for long-term storage. The straw and other organic bedding will promote the formation of a crust in the W2 Waste Storage Facility.*
- *The L2 Barn is a Freestall Barn that has organic bedding (primarily straw) added to the freestalls weekly. Bedding laden manure is removed every other day and fresh organic bedding applied to the freestalls weekly. Currently the bedding laden manure is hauled to cropland. After the construction of the W2 Waste Storage Facility, the bedding laded manure will be transported to W2 for long-term storage. The straw ad other organic bedding will promote the formation of a crust in the W2 Waste Storage Facility.*
- *The Headquarters Site L6 Calf Barn houses baby calves from birth to two months of age. The calves are housed in individual pens in deep straw beds. Soiled bedding is removed daily and replaced with fresh straw bedding. Currently the soiled bedding is hauled to cropland. After the construction of the W2 Waste Storage Facility, the soiled bedding will be transported to W2 for long-term storage. The straw bedding will promote the formation of a crust in the W2 Waste Storage Facility.*
- *The Headquarters Site L5 Heifer Bedded Pack Barn uses organic bedding (primarily straw) and bedding is added three times per week. The soiled bedded pack is removed three times per week. Currently the bedded pack is hauled to cropland. After the construction of the W2 Waste Storage Facility, the bedded pack manure will be transported to W2 for long-term storage. The straw and other organic bedding will promote the formation of a crust in the W2 Waste Storage Facility.*
- *All heifer diets are high in fiber to promote growth and limit caloric intake to prevent heifers from becoming fat. Nitrogen (protein) is fed at rates recommended by National Research Council and the University of Wisconsin. These diets will promote crust formation in the proposed W2 Waste Storage Facility.*

**Is the gutter control practice for the animal lot existing or proposed? If existing are they in working condition and have capacity to divert roof runoff? If proposed provide plans and calculations consistent with ATCP 50.85. Gutters exist and have been inspected by Roach and they are in good condition and working as designed. The gutters have the capacity to divert the roof water from the Animal Lot. The capacities have been verified by Roach and the BCLCD.*

**The detention basin for the feed area is not included in the odor score though it appears it will collect runoff from the proposed animal lot. Please clarify and provide management plan. The Detention Basin will collect runoff from a small portion of the Animal Lot as well as the runoff from the feed pad. The Detention Basin serves as part of a Waste Transfer System and functions as an equalization basin to collect the runoff from a 25 year 24 hour rain event. The basin will have 0 days storage and it will drain empty after all rain events within hours. The Detention Basin is not a Waste Storage Facility; it will generate no odor and has not been included in the odor score calculations.*

Worksheet 4
#25 and #26

*The existing manure storage Pit 1 and Pit 2 at the headquarters site are not identified in the Siting Application. The 2017 Waste Storage Facility & Runoff Management System Report explains these are not in use. If not in use, they are to be closed and closure plans are needed. If plans to use exist then Pit 1 and Pit 2 should be included in Odor Management (Work Sheet 2) and Waste Structures.

Pit 1 and Pit 2 are identified in the 2017 Waste Storage Facility & Runoff Management System Specification air photo for the Headquarters Site. Pit 1 and 2 are existing Waste Storage Facilities that are currently used to store machinery and are no longer in use to store waste. Ledgerview Farm, LLC has been in contact with the Brown County Land Conservation Department (BCLCD) and Pit 1 and Pit 2 will be abandoned according to the criteria found in Natural Resources Conservation Service (NRCS) Conservation Practice Standard (CPS) 360 Waste Facility Closure. A closure plan for Pits 1 & 2 (Attachment 1) that meets the requirements found in ATCP 51.18(4)

The Livestock Siting maps have been updated to show that Pits 1 & 2; are currently being used to store equipment.

Worksheet 5
#29

*No Runoff control plans and calculations for Y1 Animal Lot at Headquarters site and Y2 Animal Lot at Heifer site. Please provide plans and containment calculations as well as transfer methods proposed.

Y1 Animal Lot – Headquarters Site

Currently the runoff from the Y1 Lot is only partially contained. As part of the Wisconsin Pollution Discharge Elimination System (WPDES) permit requirements, the runoff from the Y1 Lot must contain runoff from a 25 yr. 24 hr. rain event. To contain the rain runoff a drivable curb will be installed along the east and west ends of the lot. A 12" feeding curb exists along the south edge of the lot. The concrete surface in the Lot has been inspected and is in good condition. Following a rain event, organic bedding from the barn will be mixed with liquid on the lot and loaded into a water-tight spreader and transported to the proposed W2 Waste Storage Facility. The construction plans for the modifications and computations including the containment calculations are found in Attachment 2.

The Y2 Animal Lot – Heifer Site

After further consideration, the owners of Ledgerview Farm, LLC have decided not to construct the Y2 Lot. The Lot has been removed from the maps.

#31

*No explanation of apparent feed storage at Headquarters and runoff controls.

The Feed Storage Area at the Headquarters Site is used to store feed with a moisture content of less than 70%. The Feed Storage Area is managed to prevent any significant discharge of leachate or polluted runoff from stored feed to waters of the state.

*The drainage patterns at the Feed Storage Area at the Heifer site are unclear. Will runoff leave the Feed Storage Area from the west? Please clarify?

All of the drainage from the Feed Storage Area is to the east to the apron. The apron drains to the south to the Detention Basin for collection and transfer to the proposed W2 Waste Storage Facility. Runoff will not leave the Feed Storage Area to the west. The Feed Storage Area at the Heifer site is used to store feed with

a moisture content of less than 70%. The Feed Storage Area is managed to prevent any significant discharge of leachate or polluted runoff from stored feed to waters of the state.

*No explanation of Unconfined Stacking Area on east end of L1 at Heifer Site.

The Unconfined Stacking Area is no longer active. The Unconfined Stacking Area is better described as a Loadout Area where bedding laden manure was staged for short periods, while manure was transported to cropland. Ledgeview Farm, LLC no longer utilizes this area. The Loadout Area is greater than 1,000 feet from a navigable lake and greater than 300 feet from a navigable stream. Currently and going forward, bedding laden manure is loaded directly onto spreaders from the housing unit. The maps in the 2017 Waste Storage Facility & Runoff Management System specification book have been updated to remove the Unconfined Stacking Areas reference and are attached.

Completeness considerations

#35 and #36

Other Information

*Please provide completed Nutrient Management Plan

Kevin Beckard the Nutrient Management Planer will provide a CD to the Town of Ledgeview that contains the Nutrient Management Plan

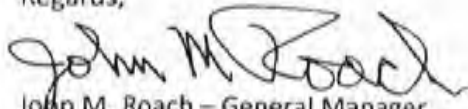
Please provide a completed Town of Ledgeview Conditional Use Permit Application

A completed Town of Ledgeview Conditional Use Permit Application is provided under separate cover.

Conclusion

It is the Town's determination that the Chapter ATP 51 – Livestock Siting Application is Incomplete and deficient for consideration of approval of a Conditional Use Permit application before the Town of Ledgeview. Please provide the information outlined in this correspondence to complete your application.

Regards,



John M. Roach – General Manager
Roach & Associates, LLC

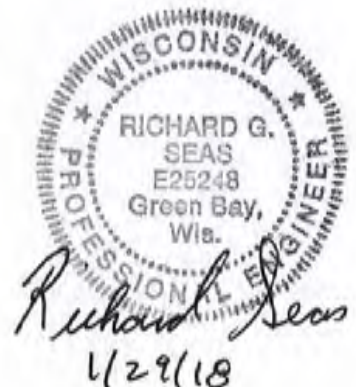
Attachment 1

Waste Storage Facility Closure Plan – Pits 1 & 2

for

**Ledgeview Farm, LLC
3875 Dickinson Road
DePere, WI 54115**

January 29, 2018



Prepared by

**Roach & Associates, LLC
856 N. Main Street
Seymour, WI 54165**

Ledgeview Farm, LLC

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Waste Storage Facility Closure Plan Narrative

Waste Storage Facility Closure Plan – Pits 1 and 2 Ledgeview Dairy

Introduction

Ledgeview Dairy is an existing dairy operation with the Headquarters Site located at 3875 Dickinson Road, De Pere, WI in the Town of Ledgeview, Brown County (**Exhibit 1**). Two vertical wall Waste Storage Facilities (Pits 1, 2) were constructed at the site in the 1990's. Both Waste Storage Facilities were constructed as water tight concrete structures in accordance with the contemporary standards. Neither facility is used for waste storage and the owner desires to convert both facilities to Machine Storage Areas.

Conversion of Pits 1 and 2 to Machine Storage Areas and/or dry goods will require that both facilities be abandoned and the facilities evaluated to verify that they meet the requirements of Natural Resources Conservation Service (NRCS), Field Office Technical Guide (FOTG), Section IV, Standard 561 Heavy Use Area Protection (10/17) (**Exhibit 2**). Closure of the facilities will be conducted according to NRCS, FOTG, Section IV, Standard 360 Closure of Waste Impoundments (12/02) (**Exhibit 3**). Details of the closure process are presented below.

Waste Storage Facility Closure

Both the Waste Storage Facilities were designed or reviewed by the Brown County Land and Water Department (BCLWCD). A minimum separation from bedrock of two (2) feet for each facility was documented. No groundwater was reported within two (2) feet of either facility.

All waste from both facilities has been previously removed. The facilities are sloped to the north and currently contain accumulated rain water.

The closure criteria include:

General Requirements

1. The contents of each facility will be removed and applied onto cropland according to the current 590 Nutrient Management Plan (NMP).
2. The concrete surface of each facility will be inspected.
3. Soils adjacent to any area where the concrete has deteriorated or failed will be examined for evidence of manure contamination.
4. Soils showing evidence of contamination by manure, based on color, consistency or odor will be removed.
5. All soil impacted by manure shall be applied onto cropland according to the current NMP.

Waste Impoundment Closure Process

The closure process is outlined below.

All local permits and approvals that are needed to carry out the proposed closure procedure will be obtained prior to the start of the work. Roach & Associates, LLC (R&A) will provide a qualified inspector to conduct or direct all of the inspections associated with this plan.

A Pre-Construction meeting will be held with the contractor and appropriate regulatory agencies, including the Brown County Land and Water Conservation Department (BCWCD)

and the Wisconsin Department of Natural Resources (WDNR) personnel to explain the plan and answer questions.

Closure Process

1. Remove the contents from each facility.
2. Identify and remove soils impacted by manure.
3. All waste shall be tested by an entity certified to perform manure analysis.
4. The waste and any waste-soil mixture shall be spread on cropland that has been approved. The application rate shall be in accordance with the NMP for each field.
5. The contractor and owner shall record the number and size of each load of waste that is hauled away and the field location to which each load was hauled for spreading.
6. Any waste that may fall off any truck onto a roadway shall be immediately contained and removed from the road.
7. An inspector from R&A shall be on site at the start and throughout the closure process to assure that the proper amount of soil is removed.
8. Pictures shall be taken throughout the closure process.
9. Each impoundment has a concrete liner.
10. Following completion of the closure process, install an outlet in each facility to drain any precipitation. The outlets shall allow each facility to be completely drained by gravity.
11. Install outlet protection (rip-rap) to allow rain water to flow from each facility in a non-erosive manner.
12. Runoff from the facilities will be directed toward the existing storm water conveyance system.

Erosion Protection

1. All areas disturbed during the closure process shall be seeded and mulched.
2. During the closure process, measures to control erosion shall be implemented. Measures to be used include silt fences and hay bale barriers.

Considerations

1. Neither WSF has been used for storage of manure for several years. Therefore, the current contents consist largely of collected precipitation and residual manure solids.
2. All material that is applied to cropland shall be applied according to the NMP.

Inspection Plan

R&A shall inspect this project in the following areas:

1. Removal of the contents, accumulated rain, from Pits 1 and 2.
2. Removal of the soil from the bottom and sides of the impoundment excavations.
3. Determine when enough soil has been excavated to remove manure contamination.
4. Installation of the interim Waste Transfer System.
5. Inspect the erosion control measures to insure that they are adequate.
6. The seeding and mulching.
7. The final project upon completion.

Conversion

Once the closures are completed, the owners will use each impoundment for storage of machinery. Each storage area will meet the requirements of NRCS, FOTG, Section IV, Standard 561 Heavy Use Area Protection (10/17), Table 1, Option H.

Exhibit 1

Ledgeview Farm, LLC Main Farm

Legend

- FSA: Feed Storage Area
- L1 & L3-L4: Freestall Barns
- L2 & L5: Heifers Bedded Pack Barn
- L6: Calf Barn
- SWP: Storm Water Pond
- T1: Piston Pump Station
- WSF1: Waste Storage Facility
- W: Wells



Exhibit 2

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD
HEAVY USE AREA PROTECTION

CODE 561
(SQ. FT.)

DEFINITION

Heavy use area protection is used to stabilize a ground surface that is frequently and intensively used by people, animals, or vehicles.

PURPOSE

Heavy use area protection is used:

- To provide a stable, non-eroding surface for areas frequently used by animals, people or vehicles.
- To protect or improve water quality.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to all land uses where a frequently or intensively used area requires treatment to address one or more resource concerns.

CRITERIA

General Criteria Applicable To All Purposes

Design Load. Base the design load on the type and frequency of traffic, (vehicular, animal, or human) anticipated on the heavy use area.

Foundation. Evaluate the site foundation to ensure that the presumptive bearing capacity of the soil meets the intended design load and frequency use.

When necessary, prepare the foundation by removal and disposal of materials that are not adequate to support the design loads.

Use a base course of gravel, crushed stone, other suitable material, geotextile, or a combination of materials on all sites that need increased load bearing strength, drainage, separation of material and soil reinforcement. Refer to Natural

Resources Conservation Service (NRCS), National Engineering Handbook (NEH), Part 642, Design Note 24, Guide for Use of Geotextiles; or NEH, Part 650, Engineering Field Handbook (EFH), Chapter 17, WI Supplement.

If there is the potential for ground water contamination from the heavy use area, select another site or provide an impervious barrier. Option G in Table 1, Surface Material Criteria and Separation Distances, shall be used if protection from groundwater contamination is the primary objective.

Separation From Subsurface Saturation or Bedrock. The separation is the closest distance from any point on the top surface of the heavy use area protection to the feature from which separation is required. Separation distances are listed in Table 1.

Subsurface saturation and bedrock are defined in WI NRCS Conservation Practice Standard (WI CPS), Waste Storage Facility (Code 313). The criteria for handling subsurface saturation and bedrock separation is also included in WI CPS 313.

Surface Treatment. Select a surface treatment that is stable and appropriate to the purpose of the heavy use area. Surfacing options are included in Table 1. Surface treatments must meet the following requirements according to the material used.

Concrete. Slabs-on-ground subject to cattle traffic or infrequent use by light agricultural equipment may utilize the surfacing options in Table 1.

Design slabs-on-ground subject to distributed stationary loads, light vehicular traffic, or infrequent use by heavy trucks or agricultural equipment in accordance with American Concrete Institute (ACI) Guide for the Design and Construction of Concrete Parking Lots (ACI 330R). Design slabs-on-ground subject to regular or frequent heavy truck or heavy agricultural equipment traffic in accordance with ACI Guide to Design of Slabs-on-Ground (ACI 360R). Design liquid-tight slabs in accordance with ACI Code Requirements for Environmental Concrete Structures, Slabs-on-Soil (ACI 350, Appendix H).

Design concrete structures in accordance with NRCS National Engineering Manual (NEM), Part 536, Structural Engineering.

Bituminous Concrete Pavement. Refer to AASHTO Guide for Design of Pavement Structures or the applicable State highway department's specification for design criteria for bituminous concrete paving.

In lieu of a site-specific design for areas that will be subject to light use, pave with a minimum of 4 inches of compacted bituminous concrete over a subgrade of at least 4 inches of well-compacted gravel. Use bituminous concrete mixtures commonly used for road paving in the area.

Aggregate. Design aggregate surfaces for expected wear and intended use. In lieu of a site-specific design for areas that will be subject to cattle traffic or infrequent use by light agricultural equipment, utilize the surfacing options in Table 1.

For other applications, use NRCS Agricultural Engineering Note 4, Earth and Aggregate Surfacing Design Guide, or other appropriate methodology to design aggregate thickness.

Mulches. Use a minimum layer thickness of 6 inches for materials such as limestone screenings, cinders, tanbark, bark mulch, brick chips, or shredded rubber. Mulches are not recommended for livestock or vehicular applications.

Vegetation. Select vegetation that can withstand the intended use. Establish the vegetation in accordance with the criteria in WI CPS, Critical Area Planting (Code 342).

Other. Other materials can be used if they will serve the intended purpose and design life.

Structures. When a roof is needed to address the resource concern, use WI CPS, Roofs and Covers (Code 367). For non-waste applications, design structures according to the accepted engineering practice.

Drainage and Erosion Control. Include provisions in the design for surface and subsurface drainage, as needed. Include provisions for disposal and runoff without causing erosion or water quality impairment. To the extent possible, prevent surface water from entering the heavy use area.

Stabilize all areas disturbed by construction as soon as possible after construction. Refer to the criteria in WI CPS, Critical Area Planting (Code 342), for establishment of vegetation. If vegetation is not appropriate for the site, use the criteria in WI CPS, Mulching (Code 484) to stabilize the disturbed area.

Additional Criteria for Livestock Heavy Use Areas

Other practices shall be utilized to collect, store, utilize, or treat manure and contaminated runoff where contaminated runoff will cause a resource concern.

Animal yards or lots shall be located a minimum of 50 feet from any well or sinkhole.

The animal yard area for various animal types and sizes; lot surfacing and feeding requirements shall be in accordance with the areas shown in the Wisconsin Supplement to Chapter 10 in the NRCS NEH Part 651, Agricultural Waste Management Field Handbook (AWMFH), or in livestock planning handbooks published by Midwest Plan Service.

Additional Criteria for Recreation Areas

The American Disabilities Act of 1990 (ADA) requires recreation areas that are used by the public to be accessible to people with disabilities. Address accessibility requirements for new construction and when existing facilities are being altered.

CONSIDERATIONS

Heavy use areas can have a significant impact on adjoining land uses. These impacts can be environmental, visual and cultural. Select a treatment that is compatible with adjoining areas.

Consider such things as proximity to neighbors and the land use where the stabilization will take place.

Vegetated heavy use areas may need additional materials such as geogrids or other reinforcing techniques, or planned periods of rest and recovery to ensure that vegetative stabilization will succeed.

Consider the safety of the users during the design. Avoid slippery surfaces, sharp corners, or surfaces and structures that might entrap users. For heavy use areas used by livestock, avoid the use of sharp aggregates that might injure livestock.

Paving or otherwise reducing the permeability of the heavily used area can reduce infiltration and increase surface runoff. Depending on the size of the heavy use area, this can have an impact on the water budget of the surrounding area. Consider the effects to ground and surface water.

Installation of heavy use area protection on muddy sites can improve animal health. Mud transmits bacterial and fungal diseases and provides a breeding ground for flies. Hoof suction makes it difficult for cattle to move around in muddy areas. In addition, mud negates the insulation value of hair coat and the

animals must use more energy to keep warm. As temperatures fall, animal bunching may occur, which can reduce or eliminate vegetative cover and lead to erosion and water quality concerns.

To reduce the negative water quality impact of heavy use areas, consider locating them as far as possible from waterbodies or water courses. In some cases, this may require relocating the heavily used area rather than just armoring an area that is already in use.

To reduce the potential for air quality problems from particulate matter associated with a heavy use area, consider the use of WI CPS, Windbreak/ Shelterbelt Establishment (Code 380), Herbaceous Wind Barriers (Code 603), Dust Control from Animal Activity on Open Lot Surfaces (Code 375), or Dust Control on Unpaved Roads and surfaces (Code 373) to control dust from heavy use areas.

Consider ways to reduce the size of the heavy use areas as much as possible. This may require changes in how the livestock are managed, but in the long run, may result in less maintenance and a more efficient operation.

For areas that will need to be cleaned frequently by scraping, loose aggregate or other non-cementitious materials may not be the best choice. Consider a more durable surface such as concrete.

PLANS AND SPECIFICATIONS

Prepare plans and specifications for heavy use area protection that describe the requirements for installing the practice according to this standard. As a minimum, the plans and specifications should include:

- A plan view showing the location and extent of the practice. Include the location and distances to adjacent features and known utilities.
- Typical section(s) showing the type and required thickness of paving or stabilization materials.
- A graded plan, as needed.
- Where appropriate, plans for required structural details.
- Method and materials used to stabilize areas disturbed by construction.
- Construction specifications with site specific installation requirements.

OPERATION AND MAINTENANCE

Prepare an Operation and Maintenance (O&M) plan and review with the operator prior to practice installation. The minimum requirements to be addressed in the O&M plan are:

- Periodic inspections – annually and immediately following significant rain fall events.
- Prompt repair or replacement of damaged components especially surfaces that are subjected to wear or erosion.
- For livestock heavy use areas, include requirements for the regular removal and management of manure, as needed.
- For vegetated heavy use areas, restrict use as needed to protect the stand and to allow vegetative recovery.

REFERENCES

American Concrete Institute (2006). Guide to Design of Slabs-on-Ground (ACI Standard 360R- 06). Farmington Hills, MI: American Concrete Institute.

American Concrete Institute. Guide for the Design and Construction of Concrete Parking Lots. (ACI 330R-08). Farmington Hills, MI.: American Concrete Institute.

American Concrete Institute. Requirements for Environmental Concrete Structures, Slabs on Soil (ACI 350, Appendix H). Farmington Hills, MI: American Concrete Institute.

USDA, NRCS. National Engineering Handbook, Part 650, Engineering Field Handbook, Chapter 10.

USDA, NRCS (2014). Agricultural Engineering Note 4, Earth and Aggregate Surfacing Design Guide, Washington, DC.

TABLE 1: SURFACE MATERIAL CRITERIA AND SEPARATION DISTANCES

Option	Foundation Condition	Cross Section Option	Separation to Bedrock or Subsurface Saturation (ft.)
A	Firm	Raised Earth	3
B	Firm	Minimum 6" crushed stone	3
C	Firm	Minimum 6" crushed stone over NRCS Wisconsin Construction Specification (WCS)-13, Geotextile, Class IV	3
D	Firm	Minimum 4" crushed stone over 6" base course of graded rock	3
E	Firm	5" non-reinforced concrete with maximum control joint spacing of 16' in both length and width, over 6" sand/gravel	2
F	Firm	5" reinforced concrete with designed control joint spacing over 6" sand/gravel	2
G	Firm	5" reinforced concrete with waterstop, over 6" sand/gravel	2
H	Firm	5" concrete reinforced with temperature and shrinkage steel only	2
I	Firm	Minimum 4" asphalt over 6" sand/gravel	3
J	Soft ¹	Minimum 4" crushed stone over 8" base course of graded rock over 6" of sand and fine gravel	3
K	Soft	Minimum 4" crushed stone over 8" base course of graded rock over NRCS WCS-13, Geotextile, Class IV	3
L	Soft	Minimum 4" crushed stone over 18" base course of graded rock	3
M	Soft	Minimum 4" crushed stone over 18" base course of graded rock over 6" sand and gravel	3
N	Soft	Minimum 8" crushed stone over geogrid over NRCS WCS-13, Geotextile, Class III	3

¹Guidance can be found in EFH Chapter 4 and Figure 4-14 for information regarding bearing capacity and foundation properties.

²Crushed Stone: 100% passing 3/4" sieve and 10% maximum passing the #200 sieve.

³Graded Rock: 100% passing the base course thickness dimension and a maximum of 10% passing the 3/4" sieve. All sizes between the limits shown on the drawings are to be represented.

⁴Reinforcing and control joint spacing according to Subgrade Drag Theory Design as found in ACI 360, Design of Slabs on Grade, or Engineering Field Handbook (EFH), Chapter 17.

⁵Option G is the only option that can be used where the potential for groundwater contamination is the resource concern.

- Option G requires deformed steel reinforcing bars and control joint spacing according to Subgrade Drag Theory Design.
- Option G requires the installation of embedded waterstops at all control, construction, and isolation joints.
- Waterstop to be in accordance with NRCS Wisconsin Construction Specification 4, Concrete.
- Maximum wheel load of 5000 pounds at spacing of 8 feet or to be designed using ACI 360, Design of Slabs on Grade.

Exhibit 3

CLOSURE OF WASTE IMPOUNDMENTS

(No.)
Code 360

Natural Resources Conservation Service
Conservation Practice Standard

I. Definition

The closure of waste impoundments, that are no longer used for their intended purpose, in an environmentally safe manner.

II. Purpose

This practice may be applied as part of a conservation management system to support one or more of the following purposes.

- To protect the quality of surface water and groundwater resources.
- To eliminate a safety hazard for humans and livestock.
- To safeguard the public health.

III. Conditions Where Practice Applies

This practice applies to agricultural waste impoundments that are no longer needed as a part of a waste management system and are to be permanently closed or converted.

Where these impoundments are to be converted to fresh water storage and the original impoundment was not constructed to NRCS standards, this practice will only apply where an investigation and evaluation shows structural integrity.

IV. Federal, State, and Local Laws

The closure of waste impoundments shall comply with all federal, state, and local laws, rules or regulations. The operator is responsible for securing required permits. This standard does not contain the text of the federal, state, or local laws governing closure of waste impoundments.

V. Criteria

- A. Waste impoundment closure will require a site-specific design and inspection during closure.

Additional procedures may be required for remediation. A local permit may be required for the closure operation. The minimum procedure for closure shall include:

1. Removal and proper disposal of accumulated wastes in the facility in accordance with NRCS, Field Office Technical Guide (FOTG), Section IV, Standard 590, Nutrient Management.
2. Soil that is mixed with waste shall be removed and uniformly spread on cropland.
3. An additional 6 inches to 24 inches of soil shall be removed from the sides and bottom of the facility. The amount of soil to be removed shall be determined by the color and consistency indicating permeation or saturation of waste in the soil. Removed soil shall be uniformly spread on cropland.
4. Concrete or synthetic liners may be buried in the existing facility if all listed requirements are met.
 - a. Liner is broken up or holes are made to allow movement of water through the profile after the facility is closed.
 - b. Soil borings are made below the liner to check for soil mixed with waste. If soil mixed with waste is present, the liner must be pulled back to allow for the removal of the soil as stated in 3 above.

The liner material may then be buried in the closed facility. If the liner is removed from the closed site, it must be properly disposed of according to Wisconsin Department of Natural Resources (WDNR) regulations.

5. The transfer system shall be removed or permanently plugged.
 6. The site shall be filled with clean mineral soil meeting the quality of materials contained in Wisconsin Construction Specification 3, Earthfill, and shaped to insure surface drainage away from the site after settlement. Brick, building stone, concrete, reinforced concrete, broken pavement, and unpainted or untreated wood may be used in the fill pursuant to Chapter NR 500.08 (Wisconsin Administrative Code); however, the upper 3 feet of the fill shall be clean mineral soil as defined previously. Backfill height shall exceed the planned finished grade by a minimum of 5 percent to allow for settlement.
 7. Concrete floors for above-ground facilities may be left in place if water is not impounded on the floor surface and the conditions listed in paragraph V.A.4.b. are satisfied.
- B. Conversion.** The waste storage impoundment may be converted to other uses if applicable groundwater standards are met. The converted impoundment shall meet the requirements as set forth in the NRCS, FOTG, Section IV, practice standard for the intended purpose.
- Safety.** Precautions (fencing and warning signs) shall be used to ensure that the pond is not used for incompatible purposes such as swimming and livestock watering until water quality is adequate for these purposes.
- C. Protection.**
1. All disturbed areas not returned to crop production shall be seeded and mulched in accordance with NRCS, FOTG, Section IV, Standard 342, Critical Area Planting, or other suitable measures used to control erosion and restore the esthetic value of the site.
 2. Measures shall be taken during construction to minimize site erosion and pollution of downstream water resources. This may include such items as silt fences, hay bale barriers, temporary vegetation, and mulching.

VI. Considerations

Additional recommendations relating to design which may enhance the use of or avoid problems with this practice, but are not required to ensure its basic conservation function, are as follows.

1. Reduce pumping effort to empty waste impoundments where the surface is covered by a dense mat of floating vegetation by first breaking up this surface crust.
2. Minimize the impact of odors associated with emptying and land-applying wastewater and sludge from a waste impoundment by using an incorporation application method at a time when the humidity is low, when winds are calm, and when wind direction is away from populated areas.

VII. Plans and Specifications

Plans and specifications shall be prepared in accordance with the criteria of this standard and shall describe the requirements for applying the practice to achieve its intended use. A construction plan and inspection plan are required.

VIII. Operation and Maintenance

The proper closure of a waste impoundment should require little or no operation and maintenance; however, if it is converted to another use, such as a fresh water pond, operation and maintenance shall be in accordance with the needs as set forth in the NRCS conservation practice standard for the intended purpose.

IX. References

United States Department of Agriculture, Natural Resources Conservation Service, Agriculture Waste Management Field Handbook, Part 651, 1992.

United States Department of Agriculture, Natural Resources Conservation Service, Wisconsin Field Office Technical Guide, Section IV.

Wisconsin Administrative Code, Chapter NR 500, General Solid Waste Management Requirements.

Attachment 2

Design Rational for the Headquarters Site Y1 Yard Runoff Control Measures

Introduction

Ledgeview Farm, LLC (LF) is an existing dairy that conducts operations at two sites in the Town of Ledgeview, Brown County. The Headquarters Farm is located at 3875 Dickinson Road, De Pere, WI 54115 and the Heifer Farm is located at 3688 Lime Kiln Road, Green Bay, WI 54311. The proposed modifications, located at the Headquarters Farm, include adding a curb along the east and west edge of the Y1 Yard to contain runoff. The runoff will be transferred to waste storage following all rain events.

Operating Objectives

The Y1 Yard currently does not contain the runoff from a 25-year 24-hour rain event. A curb will be installed along the east and west edge of the Y1 Yard. The south edge of the Y1 Yard has an existing 12" tall feeding curb that will contain runoff. The North edge of the Y1 Yard is bordered by the L 5 barn, which will serve as containment. Following all rain events, bedding from the L6 barn will be mixed with runoff and the mixture loaded onto watertight spreaders for transfer to waste storage.

Project Description

The primary components of the proposed modifications are identified below. More detailed descriptions are found on the attached construction drawings.

- Curb detail for the west curb
- Curb detail for the east curb

The surface of the Y1 yard is irregular as shown on the construction plans. As such, the volume of runoff storage on the Y1 Yard following the installation of the east and west curbs has been calculated in CAD and is found in the attached Cut/Fill Report. In addition, the volume of storage calculation assumes a uniform manure depth on the Y1 Yard of 3 inches.

Cut/Fill Report

Generated: 2018-01-26 17:07:06
By user: matt
Drawing: F:\Clients\Ledgeview Farms, LLC\CADD\F:\Clients\Ledgeview Farms, LLC\CADD\Ledgeview.dwg

Volume Summary							
Name	Type	Cut Factor	Fill Factor	2d Area (Sq. Ft.)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
Y1 Concrete Yard Volume	full	1.0000	1.0000	5825.17	0.0	125.4	125.4<Fill>

Totals				
	2d Area (Sq. Ft.)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
Total	5825.17	0.0	125.4	125.4<Fill>

* Value adjusted by cut or fill factor other than 1.0

$$\begin{aligned}
 \text{Storage Volume (Fill)} &= 125.4 \text{ yd}^3 \\
 &= 3,385.8 \text{ ft}^3 \\
 &= 25,326 \text{ gallons}
 \end{aligned}$$

$$\text{Runoff, 25yr, 24hr} = 15,843 \text{ gallons}$$

- Available storage exceeds 25yr, 24 hr rainfall runoff

Exhibit 8-12

TR 55 PEAK RUNOFF CALCULATION (GRAPHICAL METHOD)

ver 5-2008

CLIENT: Ledgerview Farm COUNTY: BROWN DATE: 5/24/2011
 DSN BY: Roach CHK BY: DATE:
 COMMENTS: Animal Lot Headquarters Farm

Drainage Area 0.14 Acres
 Runoff Curve Number 98.00

Time of Concentration 0.07 Hours

Frequency	yr		2	5	10	25	50	100
Rainfall, P (24 hour)	in	1.00	2.5	3.2	3.7	4.3	4.8	5.1
Initial Abstraction, Ia	in	0.00	0	0	0	0	0	0
Ia/P ratio		0.00	0.000	0.000	0.000	0.000	0.000	0.000
Unit Peak Discharge, qu	cfs/ac/in	1.72	1.720	1.720	1.720	1.720	1.720	1.720
Runoff	in	0.83	2.31	3.01	3.51	4.11	4.60	4.90
Peak Discharge, qp	ac-ft	0.01	0.03	0.03	0.04	0.05	0.05	0.06
	cfs	0.20	0.6	0.7	0.8	1.0	1.1	1.2

Total Runoff One Inch Rain = 0.01 ac-ft 419 cubic feet 3,132 gallons

Total Runoff 25 year Event = 0.05 ac-ft 2,070 cubic feet 15,483 gallons

Peak Flow = 1.0 cfs 440 gpm

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

I, Renee Peters, on behalf of the Town of Ledgeview, acknowledge that
I have received the following Ledgeview Farm, LLC Livestock Facility Siting Application and
processing fee:

- One (1) Livestock Facility Siting Application, with Original signatures
- Four (4) duplicate copies of the Livestock Facility Siting Application
- \$1,000.00 check for processing the Livestock Facility Siting Application

Renee Peters

Signature

12-6-17

Date

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Wisconsin Department of Agriculture, Trade & Consumer Protection
Division of Agricultural Resource Management
Bureau of Land and Water Resources
PO Box 8911, Madison WI 53708-8911, Phone: 608-224-4605

Nutrient Management Plan Checklist

Sec. 92.05(3)(k), Wis. Stats.
ATCP 50.04(3) Wis. Admin. Code

Use this form to check nutrient management (NM) plans for compliance with the WI NRCS 590 Standard (Sept. 2005).

County name: Brown Date Plan Submitted: 10-17 Growing season year NM plan is written for 2018-22 (from harvest to harvest)
Township (T. N) - (R. E) ☐ Initial Plan or ☒ Updated Plan (choose one)

Name of qualified nutrient management planner Kevin Beckard		Planner's business name, address, phone: AgSource Laboratories: 106 N Cecil Street Bonduel, WI 54107	
Circle the planner's qualification: 1. <input type="checkbox"/> NAICC-CPCC 2. <input checked="" type="checkbox"/> ASA-CCA 3. <input type="checkbox"/> ASA-Professional Agronomist 4. <input type="checkbox"/> SSSA-Soil Scientist 5. <input type="checkbox"/> DATCP approved training course 6. <input type="checkbox"/> Other credentials approved by DATCP	Cropland Acres (owned & rented) 2,759	Name of farm operator receiving nutrient management plan: Ledgeview Farms- Roy, Glen & Jason Pansier	
	Rented farm(s) landowner name(s) and acreage: See narrative		
Check relevant program requirement/regulation plan developed for: <input checked="" type="checkbox"/> Ordinance <input type="checkbox"/> USDA <input type="checkbox"/> DATCP <input type="checkbox"/> DNR <input checked="" type="checkbox"/> NR 243 - <input type="checkbox"/> NOD or <input checked="" type="checkbox"/> WPDES			

Yes No NA

1. Are the following field features identified on maps or aerial photos in the plan?			
a. Field location, soil survey map unit(s), field boundary, acres and field identification number	X		
b. Areas prohibited from receiving nutrient applications: Surface water, established concentrated flow channels with perennial cover, permanent non-harvested vegetative buffer, non-farmed wetlands, sinkholes, lands where established vegetation is not removed, nonmetallic mines, and fields eroding at a rate exceeding tolerable soil loss (T)	X		
c. Areas within 50 feet of a potable drinking water well where mechanically-applied manure is prohibited	X		
d. Areas prohibited from receiving winter nutrient applications: Slopes > 9% (12% if contour-cropped); Surface Water Quality Management Area (SWQMA) defined as land within 1,000 ft of lakes and ponds or within 300 ft of perennial streams draining to these waters, unless manure is deposited through winter gleaning/pasturing of plant residue and not exceeding the N and P requirements of this standard; Additional areas identified within a conservation plan as contributing runoff to surface or groundwater	X		
e. Areas where winter applications are restricted unless effectively incorporated within 72 hours: Land contributing runoff within 200 feet upslope of direct conduits to groundwater such as a well, sinkhole, fractured bedrock at the surface, tile inlet, or nonmetallic mine	X		
f. Sites vulnerable to N leaching: Areas within 1,000 feet of a municipal well, and soils listed in Appendix 1 of the Conservation Planning Technical Note WI-1	X		
2. Are erosion controls implemented so the crop rotation will not exceed T on fields that receive nutrients according to the conservation plan or WI P Index model?	X		
3. Were soil samples collected and analyzed within the last 4 years according to UW Publication A2100 recommendations?	X		
4. Using the field's predominant soil series and realistic yield goals, are planned nutrient application rates, timing, and methods of all forms of N, P, and K listed in the plan and consistent with UW Publication A 2809, Soil Test Recommendations for Field, Vegetable and Fruit Crops, and the 590 standard?	X		
5. Do manure production and collection estimates correspond to the acreage needed in the plan? Are manure application rates realistic for the calibrated equipment used?	X		
6. Is a single phosphorus (P) assessment of either the P Index or soil test P management strategy uniformly applied to all fields within a tract?	X		
7. Are areas of concentrated flow, resulting in reoccurring gullies, planned to be protected with perennial vegetative cover?			
8. Will nutrient applications on non-frozen soil within the SWQMA comply with the following?			
a. Unincorporated liquid manure on unsaturated soils will be applied according to Table 1 of the 590 standard to minimize runoff	X		
b. One or more of the following practices will be used: 1) Install/maintain permanent vegetative buffers, or 2) Maintain greater than 30% crop residue or vegetative coverage on the surface after nutrient application, or 3) Incorporate nutrients leaving adequate residue to meet tolerable soil loss, or 4) Establish fall cover crops promptly following application	X		

I certify that the nutrient management plan represented by this checklist complies with Wisconsin's NRCS 590 nutrient management standard.

Signature of qualified nutrient management planner

Kevin Beckard

Nutrient Management Plan

for

Ledgeview Farms

3870 Dickinson Road

DePere, WI 54115

Jason Pansier – (920) 655-3875

WPDES-Siting Permit Application 5yr NMP

2017

Plan Written By:

Kevin Beckard, CCA 29509

(920) 309-1948 (cell)

AgSource Laboratories

P. O. Box 7

Bonduel, WI 54107



May 24, 2017

Brown County
Approval

Jason Pansier
Ledgeview Farms LLC
3870 Dickinson Road
DePere, WI 54115

SUBJECT: Conditional Approval of Ledgeview Farms LLC Nutrient Management Plan, WPDES Permit No. 0065421-01-0

Dear Mr./Ms. Last Name:

After completing a review of Ledgeview Farms LLC 2017-2021 Nutrient Management Plan (NMP) the Wisconsin Department of Natural Resources (Department) is providing conditional approval that it is consistent with s. NR 243.14, Wis. Adm. Code. This part of your WPDES permit application is now ready for the public notice and comment process as required by Ch. 283 Stats.

Before applying manure onto approved fields each season, the Department recommends Ledgeview Farms LLC review the NMP with those individuals involved with manure applications to ensure all remain familiar with the approved manure spreading protocol, spreading maps, field and map verification, record keeping requirements, and all the conditions of this approval. Specifically, some fields in Ledgeview Farms LLC may have:

- Soils that may have bedrock or groundwater within 24 inches of surface,
- Multiple setback areas due to streams, conduits to streams, grassed waterways, wetlands or wells, and
- Evidence of possible soil erosion/flow channels. Note: road ditches or other man made channels may be considered flow channels or conduits to navigable water and may be subject to a SWQMA and setback.

Reviewing the NMP and checking fields for these features and soil conditions prior to manure applications will help Ledgeview Farms LLC maintain compliance with their WPDES permit and Ch. NR 243 requirements.

FINDINGS OF FACT

The Department confirms that:

1. A current dairy herd size of 1,568 animal units (550 milking & dry cows, 330 heifers, 375 calves and 425 steers). A planned herd size of 1,789 animal units (700 milking & dry cows, 425 heifers, 375 calves and 350 steers) by 2018.
2. Manure generation and spreading records indicate your herd will annually generate approximately 9,000,000 gallons of manure and process wastewater and 9,000 tons of solid manure in the first year of the permit term.
3. The use of application restriction options 1 and 5 within surface water quality management areas.
4. The use of phosphorus delivery method P Index.
5. That Ledgeview Farms LLC currently has 2,378 acres (700 owned and 1,678 controlled through contracts, rental agreements or leases, or under manure agreements) of which 2,301 are spreadable acres.

6. That some fields included in the NMP are directly adjacent to or have high potential to deliver nutrients and sediment to Bower Creek (listed 303(d) impaired water by total phosphorus and sediment/total suspended solids) and East River (listed 303(d) impaired water by total phosphorus and sediment/total suspended solids).
7. That no fields are directly adjacent to or have high potential to deliver nutrients and sediment to outstanding/exceptional waters.
8. That Ledgeview Farms LLC currently has at least 181 days of storage for liquid manure, process wastewater and rainfall and at least 59 days of storage for solid manure.

	<i>Total Volume</i>	<i>Maximum Operating Level (MOL) Volume</i>
Main Pit	5,720,644 gallons	4,460,399 gallons

9. That 3 fields are tiled:
 - 13G-2
 - 26C
 - Tower & W
10. That all fields will be checked for the following features prior to/during manure or process wastewater applications: soil areas with possible shallow groundwater (i.e., within 24 inches of surface) at the time of manure application; required setbacks associated with wells, navigable waters, conduits to navigable waters, grassed waterways, wetlands, possible soil erosion/flow channels.
11. That surface applications of manure will not be completed when precipitation capable of producing runoff is forecasted within 24 hours of the time of planned application.

CONDITIONAL NUTRIENT MANAGEMENT PLAN APPROVAL

The Department hereby approves the 2017-2021 Ledgeview Farms LLC Nutrient Management Plan subject to the following conditions and the applicable requirements of Ch. NR 243, Wis. Adm. Code:

FIELD AND MANURE MANAGEMENT

1. Fields not included in the NMP and new fields shall not receive manure or process wastewater applications until they have been properly soil sampled, entered into Snap Plus, evaluated for their nutrient needs, and approved by the Department.

2. The following fields are prohibited from receiving applications of manure or process wastewater:
 - Matzke Pasture (2 acres)

If Ledgeview Farms LLC wishes to use these fields for applications of manure or process wastewater all necessary information shall be submitted to the Department prior to application to demonstrate compliance with NR 243 and other applicable codes. Written Department approval amending this condition approval must be received prior to application.

3. If existing fields yield a soil test results greater than 200 ppm P, those fields would be prohibited from receiving manure or process wastewater applications, unless you obtain Department approval in accordance with NR 243.14(5)(b)2., Wis. Adm. Code.
4. If manure sample results have a dry matter (DM) content less than 2.0% and the percent ammonium (NH_4^+) is greater than 75% of the total N, Cranberry Creek Dairy LLC shall use the following equation to adjust the first year available nitrogen when applications are injected or incorporated within 1 hour:

$$\text{First-Year Available N} = \text{NH}_4\text{-N} + [0.25 \times (\text{Total N} - \text{NH}_4\text{-N})]$$

WINTER SPREADING

5. Liquid manure applications during winter conditions, as defined by NR 243.14(7), Wis. Adm. Code, are prohibited with the exception of emergency applications.
6. The following field(s) are approved for winter spreading solid manure, emergency applications of liquid manure and frozen liquid manure:
 - 11G4, 17.3 winter spreadable acres, maximum liquid manure application rate of 3,500 gallons/acre
 - 11J1&J2, 16.7 winter spreadable acres, maximum liquid manure application rate of 3,500 gallons/acre
 - 16B6&7, 18.6 winter spreadable acres, maximum liquid manure application rate of 7,000 gallons/acre
 - 11S2, 63.6 winter spreadable acres, maximum liquid manure application rate of 3,500 gallons/acre
 - Asche 1 North, 34.2 winter spreadable acres, maximum liquid manure application rate of 3,500 gallons/acre
7. The following field(s) are approved for winter spreading solid manure only:

<ul style="list-style-type: none"> • 11G1, 13.7 winter spreadable acres • 11G3, 17.7 winter spreadable acres • 11G3 East, 6.8 winter spreadable acres • 11L, 9.4 winter spreadable acres • 11L-East, 7.1 winter spreadable acres • 12A1, 16.7 winter spreadable acres • 13H-1, 12.8 winter spreadable acres • 13I, 10.9 winter spreadable acres • 16A1E&W, 10.7 winter spreadable acres 	<ul style="list-style-type: none"> • 16B2, 12.4 winter spreadable acres • 17A, 12.2 winter spreadable acres • 12A45&27, 9.6 winter spreadable acres • 12A2&27A2, 14.3 winter spreadable acres • Bower Creek, 15.2 winter spreadable acres • Matzke 1, 29.2 winter spreadable acres • Mat 20 & 21, 32.1 winter spreadable acres • 11S1, 27.3 winter spreadable acres
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8. The following field(s) are denied for winter spreading solid manure, emergency applications of liquid manure and frozen liquid manure:
 - 11G2
 - 11R1
9. Winter spreading of solid and liquid manure may not occur during the "high risk runoff period" pursuant to s. NR 243.14(6)(c) and NR 243.14(7)(c), respectively.
10. Winter applications of liquid manure shall only occur under emergency situations, after notifying the Department and receiving verbal approval.
11. Liquid applications shall be limited to 3,500 gallons per acre or 30 lbs. P per acre, whichever is less, on slopes 2-6% and 7,000 gallons per acre or 60 lbs. P per acre, whichever is less, on slopes 0-2%. Winter applications of solid manure shall be limited to 60 lbs. P per acre. Currently Ledgeview Farms LLC has 150.4 acres approved for applying liquid manure if an emergency situation arises. At the maximum approved winter spreading rates Ledgeview Farms LLC would be able to apply 591,500 gallons or 24 days of manure and process wastewater production.

HEADLAND STACKING

12. The following headland stacking sites are approved:

<ul style="list-style-type: none"> • 11L East • 11J1&2 • 11S1 • 11S2 	<ul style="list-style-type: none"> • 26A2 • 13I • Matzke 1 • Matzke 2&5
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SUBMITAL AND RECORDKEEPING REQUIREMENTS

13. Within 30 days of the approval date, Ledgeview Farms LLC shall submit non winter spreading PDF maps for all fields in the NMP.
14. A copy of this conditional approval shall be included in all future annual Nutrient Management Plan Updates in addition to the NR 243 and NRCS 590 checklists.

This conditional approval does not limit the Department's regulatory authority to require NMP revisions (based upon new information or manure irrigation research findings) or request additional information in order to confirm or ensure your farm operation remains in compliance with NR 243 and your WPDES permit conditions. If additional information, project changes or other circumstances indicate a possible need to modify this approval, the Department may ask you to provide further information relating to this activity.

Please keep in mind that approval by the Department of Natural Resources – Runoff Management Program does not relieve you of obligations to meet all other applicable federal, state or local permits, zoning and regulatory requirements.

If you have any questions regarding this approval I can be reached at (920) 662-5191 or Joseph.Baeten@Wisconsin.gov.

Sincerely,



Joe Baeten
Nutrient Management Program Coordinator
Wisconsin Department of Natural Resources

cc: Heidi Schmitt Marquez, WDNR Agricultural Runoff Specialist (Heidi.SchmittMarquez@Wisconsin.gov)
Rick Stoll, WDNR Watershed Field Supervisor (Richard.Stoll@Wisconsin.gov)
Mary Anne Lowndes, WDNR Runoff Management Section Chief (MaryAnne.Lowndes@Wisconsin.gov)
Aaron O'Rourke, WDNR Nutrient Management Plan Reviewer (Aaron.O'Rourke@Wisconsin.gov)
Clare Freix, WDNR Intake Specialist (Clare.Freix@Wisconsin.gov)
Jon Bechle, Brown County Assistant Conservationist (bechle_je@co.brown.wi.us)
Jerry Halverson, Manitowoc County Conservationist (jerryhalverson@co.manitowoc.wi.us)
Kevin Beckard, AgSource Laboratories (kbeckard@agsource.com)
File

Below is the information contained in each tab of this NMP:

Tab 1 – Contains the NMP permit application narrative along with the appropriate checklists. The final NMP for the permit application will contain a site map along with some other supporting information.

Tab 2 – Contains the field, soils, watershed and tile line maps for Ledgeview Farms. Wetlands are identified on the maps contained in Tab 4.

Tab 3 – Contains the manure spreading plan reports for the 2018 through 2022. Always refer to the spreading plan report before making manure applications.

Tab 4 – Contains the manure application spreading restriction maps for the fields operated by Ledgeview Farms. Restriction maps have been developed using SNAP Maps. These maps contain notes to highlight the additional restrictions contained in Wisconsin Administrative Code NR 243.

Tab 5 – Contains the manure application maps to be used when applying sold manure onto frozen or snow-covered soils. This tab contains tables 4 & 5 from NR 243.

Tab 6 – Contains the animal numbers and manure generation estimates for 2018 to 2022.

Tab 7 - Contains the manure test results for the manure as it is handled currently by Ledgeview Farms. This tab also contains information on how manure will be sampled as well as manure spreader calibration.

Tab 8 – Contains the SNAP-Plus soil test summary for all of the fields in this NMP. All samples were analyzed at AgSource Soil & Forage Laboratory which is certified by the Wisconsin Department of Ag, Trade and Consumer Protection.

Tab 9 – This tab contains the procedures to be used for emergency winter applications of liquid manure along with the fields that are to be used for emergency winter applications.

Tab 10 – This tab contains the information necessary to identify locations where headland stacking can be done during the February/March no spreading period.

Tab 11 – Contains emergency response information for Ledgeview Farms.

Tab 12 – Contains reports from the SNAP-Plus program. Reports include the 590 Assessment Report, compliance report and soil conservation report.

Tab 13 – Contains copies of Wisconsin Administrative Code NR 243, NRCS Practice Standard 590 and copies of the Brown County Animal Waste Management and Agricultural Shoreland Management Ordinances.

Tab 14 – This tab contains the soil reports for the “w” soils that are located in fields operated by Ledgeview Farms.

Tab 15 – Contains blank records to be used by Ledgeview Farms to track manure hauling and distribution activities.

Ledgeview Farms

Ledgeview Farms is a dairy and cropping enterprise located in the Town of Ledgeview in Brown County Wisconsin. Ledgeview Farms conducts all livestock operations at two locations: the Home Farm and at the Heifer Farm. The Home and Heifer Farms along with all of the cropland in this NMP is located in the East River Watershed. The cropland operated by Ledgeview Farms is almost all located in Brown County with the exception of 50 acres that is located in Manitowoc County. The Home Farm houses the milking and dry cows along with calves up to 6 months of age and all bred heifers. The heifer farm houses all the heifers from 6 to approximately 18 months of age along with beef steers. Ledgeview Farms owns approximately 735 acres and rents an additional 1,491 acres that are available for manure application and included in this NMP. In addition, Ledgeview Farms has worked out manure application agreements with some neighboring farms on an additional 533 acres. These manure agreement fields are included as part of this NMP. The primary crops grown by Ledgeview Farms are corn for silage and grain along with winter wheat and alfalfa. The cropland operated by Ledgeview Farms is located in both the East River and West Twin River Watersheds.

This nutrient management is based on field specific assessments of the potential for nitrogen and phosphorus transport from each field.

Expected numbers of animal units for first year of permit and remaining permit term (next 4 yrs):

The following table provides the current animal numbers on farm, and expected animal numbers on the farm over the permit term. Please be advised that future years are an estimate and actual animal numbers may vary from these values. Ledgeview Farms actual animal numbers will be described in the annual NMP updates and annual reports that will be provided to the department.

Year (crop year)	Total Herd Size					Total Animal Units
	Milking & Dry	Heifers -1000#	Heifers-750#	Heifers<400#	Steers-400-1000#	
2018	1084	360	216	390	642	2,765
2019	1084	360	216	390	642	2,765
2020	1355	450	270	820	550	3,243
2021	1355	450	270	820	550	3,243
2022	1355	450	270	820	550	3,243

Ledgeview Farms has recently constructed a new barn for the milking herd. This barn has the capacity to house approximately 1,500 milking and dry cows. The farm is unsure if it will grow the milking herd to this size at this time. Expansion of the milking herd will occur through internal growth. It needs to be noted that additional manure storage and additional cropland will be needed to accommodate future herd growth. The proposed animal numbers and manure production numbers for the next 5 years are contained in Tab 6 of this NMP. Not all animals housed by Ledgeview Farms are housed under roof. Heifers at the Heifer Site do have access to an outdoor concrete yard with runoff controls in place.

Expected amounts and types of manure and process wastewater produced on annual basis:

Please refer to Tab 6 of this NMP for manure generation calculation estimates along with current manure test analysis data. This nutrient management plan has been written to meet NR 243.12(2)(6) which requires the plan be based on the projected number of animals and manure generation estimates to be on the farm at the end of the first year of WPDES permit coverage, which is estimated to be 2018. Future animal number projections are estimations and are likely to change over time. Currently Ledgeview Farms handles about 75% of the manure it generates as a liquid manure and the rest is handled as a solid/semi-solid that is land applied throughout the year. For simplicity sake we have planned most all future manure applications as liquid manure to ease in manure tracking for this 5 year plan. Once the long-term manure storage facility for the Heifer Farm is constructed we will have a better idea of which sources will be liquid versus solid manure in the future.

Crop Year	Total Liquids	Total Solids
2018	17,596,942 gallons	4,400 tons
2019	17,596,942 gallons	4,400 tons
2020	24,783,000 gallons	300 tons
2021	24,783,000 gallons	300 tons
2022	24,783,000 gallons	300 tons

Amount of manure and process wastewater to be land applied

Please refer to Tab 3 of the NMP for land application schedules for specific fields.

Year	Total Liquids created	Total Liquids allocated	Total Solids created	Total Solids applied
2018	17,596,942 gallons	20,727,250 gallons	4,400 tons	10,712 tons
2019	17,596,942 gallons	26,311,750 gallons	4,400 tons	2,059 tons
2020	24,783,000 gallons	26,703,698 gallons	300 tons	1,871 tons
2021	24,783,000 gallons	25,170,000 gallons	300 tons	409 tons
2022	24,783,000 gallons	25,885,500 gallons	300 tons	693 tons

Note that more manure has been allocated than is anticipated to be produced. This has been done to show that Ledgeview Farms has adequate land base on which to apply the manure and process wastewater they will generate based on the animal numbers and manure generation estimates from the tables above. If Ledgeview Farms decides to go to 1,500 milking and dry cows then additional cropland and manure storage will be needed to meet the requirements contained in NR 243. It should also be noted that we feel the book values for manure generation estimates for manure are likely higher than what is generated and applied. Long term actual manure application records will help to better determine how much manure will be generated annually. Ledgeview Farms will continue to either rent or buy additional cropland or work on additional manure application agreements with neighboring

landowners to secure additional land for manure application. As additional acres are secured they will be added to this plan.

Other sources of nutrients to be land applied (NRCS 590 requirement)

Commercial fertilizer sources will be used to supplement crops needs when manure applications do not provide adequate nutrients. Please refer to Tab 3 of the NMP for commercial fertilizer application rates and schedules for specific fields. Efforts have been made to include commercial fertilizer sources but likely not all fields into the future have commercial fertilizer included. Annual updates will include anticipated commercial fertilizer use.

Anticipated frequency and method(s) of land application

Ledgeview Farms anticipates applying manure per the following schedule: Since Ledgeview Farms does generate daily scrape manure at the farm they will need to daily to weekly land apply manure year around onto cropland. During the February/March no spreading period Ledgeview Farms will either headland stack the manure or deposit it into the long-term storage facility. Ledgeview Farm does have a long-term manure storage facility that is emptied in the spring, summer and fall of the year. Spring and fall manure applications of the liquid manure will be planned to be incorporated into the soil immediately or shortly after application while summer applications on alfalfa fields will be surface applications that will take place shortly after cuttings. As mentioned earlier there is a need to surface apply bedded pack and semi solid manure from the heifer site and the calves. These applications will continue to be surface applications that are not immediately incorporated into the soil. It is also anticipated that there will be some bedded pack manure that will need to be applied onto frozen or snow covered soils. The maps contained in Tab 5 of this NMP include restriction maps to be used when applying solid manure on frozen or snow-covered soils. Only winter spreading maps have been included for fields where it is likely solid manure may be applied onto frozen or snow covered soils. If needed, headland stacking sites will be submitted with the information contained in Tab 10 of this NMP for solid manure to be stacked during the February/March no spreading period. Another option for Ledgeview Farms is to place any solid type manure into one of the long-term waste storage facilities during the winter months after they are constructed. Please refer to Tab 3 of the NMP for land application schedules for specific fields. Please also refer to Tab 15 of the NMP for map and field verification procedures that will be followed to verify areas of fields are not prohibited from manure spreading and NR 243 or NRCS 590 setback requirements are followed.

Ledgeview Farms anticipates using the following equipment to spread manure on fields in this NM plan: For liquid manure applications Ledgeview Farms will either hire out custom manure applicators to complete the applications or they will do the applications themselves with semi-tankers. Semi-Solid/Solid manure will continue to be land applied with a Knight 8141 (8 tons/load). Liquid manure applications taking place in the spring and fall will be incorporated shortly after application to meet all SWQMA requirements. All surface applications of liquid manure on alfalfa in the summer and solid/semi-solid manure will be done in accordance with all NR 243 and NRCS 590 guidelines.

Other methods of use, disposal, distribution or treatment of manure or process wastewater

Ledgeview Farms does not plan to use other methods of use, disposal, or distribution of manure or process wastewater.

Manure Transfers

At this time Ledgeview Farms does not plan to transfer any manure or process wastewater to another entity not covered under their permit. If Ledgeview Farms does transfer manure or process wastewater to another person approval from the DNR will be requested first and then if approval is granted Ledgeview Farms will record the transfers on the record form contained in Tab 15 of this NMP. The most recent copy of any manure analysis will be provided to the individual who receives and manure or process wastewater from Ledgeview Farms.

Total acreage available (by landowner) for land application owned, rented or in 'agreements'.
The table below summarizes this information. The farm has a total of approximately 2,671 spreadable acres under SWQMA option 1 contained in NR 243.

Total land application acres available – 2,759

Acres owned – 735; Acres Rented – 1,491; Acres in agreements – 533

Land Owner Name	Field Name	Acres	Rental or Agreement Length	Shared Land* Y/N	Additional Field Info
Ashenbrenner Trust	Ash 1,2,3	128	Long term verbal/ Written	N	
Koenig Trust	13E1-E3	86	Long term verbal/ Written	N	
Randy Kaster	14A&A11	27.5	Long term verbal/ Written	N	
Schlag Trust	16B5, 16C, 16B67, 16B2, 16A1, 16F, 16E	111	Long term verbal/ Written	N	
P. Mittelstaedt	11R1	29	Long term verbal/ Written	N	
Pat Martins	11Q1	14	Long term verbal/ Written	N	
James Dollar	11K1C	5	Long term verbal/ Written	N	
Tim Desotell	11K1A&B	11.5	Long term verbal/ Written	N	

NAFCOR	11T	6	Long term verbal/ Written	N	
SCF Properties	MM West	10	Long term verbal/ Written	N	
R. Nowak	MM East	5	Long term verbal/ Written	N	
S. Arendt	11L1 & 11L1- East	30.5	Long term verbal/ Written	N	
Marian Coates	11J1&2	26	Long term verbal/ Written	N	
Elroy Kaster	12A1	35	Long term verbal/ Written	N	
R Kaster	12A2,4,5&27	60	Long term verbal/ Written	N	
J Westphal	11H1	19	Long term verbal/ Written	N	
Dale Grohosky	11P	9	Long term verbal/ Written	N	
Tony & Ed Capelle	13D1&D2	28	Long term verbal/ Written	N	Ledgeview owns the other portions of these fields
Van Rens Trust	Van Rens Matzke 9	56.5	Long term verbal/ Written	N	
Dan Peters	13H1&H2	30	Long term verbal/ Written	N	
L. Peters	13I	20	Long term verbal/ Written	N	
Mark Matzke	Matzke Flds	126	Long term verbal/	N	

			Written		
C. Broze/Denis Trust	11B1 & 11C	25	Long term verbal/ Written	N	
Titulaer Trust	18A1,2,3,4&B1,2 Flds	61	Long term verbal/ Written	N	
Roger Maternoski	Mat 1- Mat 22	198	Long Term Verbal		
Harpere Inc	Mat 18	18	Written		
JCR Real Estate	17A	21	Long Term Written		
Van Straten Ptnership	11U1-11U9	122.5	Long term verbal/ Written	N	
Mike & Julie Van Deurzen	26B1E&E, South C	79	Long Term Written		
Riverbend Terrace	22	25	Long Term Written		
Dan Kaster	26A1,2,3,4 Flds	69.5	Long term verbal/ Written	N	
Dennis Lotto	DL-1	15	Verbal	N	
Moski Corp	DL-K2	48	Verbal	N	Land rented by Dennis Lotto agreed to receive manure from Ledgeview Farms.
Whispering Will Development	DL-1,2	19	Verbal	N	Land rented by Dennis Lotto agreed to receive manure from Ledgeview Farms.
Shillcox-Shamrock Lines, LLC	VO-10,11	195	Verbal	N	Land cropped by Mitch Van Oss. Agreed to receive manure from Ledgeview Farms.
Kenneth Baeten	KB Fields	276	Verbal	N	Land cropped by Ken Baeten. Agreed to receive manure from Ledgeview Farms.

Tillage and crop rotation information for all fields owned or rented or in 'agreements'

Please refer to Tab 3 and 12 of this NMP for tillage, crop rotation and land application schedules for specific fields.

Nutrient crediting requirements - NR 243.14(3)

When selecting manure and process wastewater application rates for all fields, Ledgeview Farms has taken into account:

1. soil nutrient levels prior to land spreading
2. known nutrient applications from other sources, including:
 - a. commercial fertilizers
 - b. bio-solids
 - c. **first and second year** manure and legume credits
 - d. other sources of nutrients that are expected to be applied or have already been applied to fields.

Adjustments will be made to assumed nutrient credits based upon actual crop yields and future manure testing results. The SNAP-Plus nutrient management planning software has been used for the development of this plan. Manure and process wastewater application rates have been determined by using University of Wisconsin recommendations. Typically manure application rates are determined based on the nitrogen need of the crop to be grown but on occasion higher soil test P levels may limit applications that are allowed. The reports in Tab 3 of this NMP reflect projected application rates.

SWQMA application restriction option for each field AND procedures- NR 243.14(4)

Ledgeview Farms primarily has cropland in both Brown County but does have one field located in Manitowoc County Wisconsin. Manitowoc County has a local ordinance that has specific manure application restrictions that are somewhat more restrictive than some of the options presented in NR 243. Depending on the method of application Ledgeview Farms has chosen the following SWQMA options from NR 243:

Cropland in Brown County

When manure will be injected or incorporated into the soil Ledgeview Farms will follow SWQMA option 1 but to meet the Brown County Ordinance there will be no application of manure or process wastewater within 35 feet of a navigable waterway or conduits to navigable water and there will be no manure applied within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

When manure will be surface applied Ledgeview Farms will follow SWQMA option 5 – No application of manure or process wastewater within 100 feet of navigable waters or conduits to navigable waters.

Cropland in Manitowoc County

When manure will be injected or incorporated into the soil Ledgeview Farms will follow SWQMA option 1 - no application of manure or process wastewater within 25 feet of a navigable water, conduits to navigable water or wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

When manure will be surface applied, Ledgeview Farms will follow the Manitowoc County Chapter 19 "Animal Waste Management Ordinance" which states that no manure may be mechanically applied to cropland that is within 300 feet of and that drains to a drainage tile surface inlet, intermittent stream, perennial stream, or pond unless it is incorporated into the soil within 48 hours of application.

Tab 4 of this NMP contains manure application restriction maps that reflect the setbacks required under NR 243.

Phosphorus delivery method (Soil Test P or P Index) and P management procedures for each field- NR 243.14(5)

Ledgeview Farms will use the P Index for all fields within the NMP. Please refer to Tab 12 of this NMP for this information.

Fields with soil test P greater than 200 ppm: Matzke Pasture Only

- P applications from manure and process wastewater prohibited, unless approved by DNR.
- The planned average WI P Index value for the crop rotation or for the next 4 year period, whichever time period is less, will be calculated.
- P drawdown by 50% cumulative crop removal over a maximum 4 year rotation will be implemented.

Field proximity to nutrient impaired or outstanding/ exceptional waters - NR 243.14(5)

Please refer to the Watershed maps contained in Tab 2 of this NMP for maps showing locations of fields in proximity to these types of waters. To complete these maps, Ledgeview Farms used the following tools:

DNR surface water map tool – used to ID impaired or outstanding or exceptional waters:
<http://dnrmaps.wisconsin.gov/imf/imf.jsp?site=SurfaceWaterViewer>).

Identification of sites for winter (frozen or snow covered ground) spreading – NR 243.14(8)

Ledgeview Farms will need to spread solid/semi-solid manure onto fields during winter (frozen or snow covered ground) conditions. Ledgeview Farms has plans to construct adequate manure storage so there should be no need to land apply liquid manure during the winter months. Ledgeview Farms has multiple fields that meet the requirements of the criteria contained Table 4 and 5 of NR 243 for manure applications on frozen or snow covered soils. Tab 9 contains some fields that meet the criteria for emergency winter spreading of liquid manure. Tab 5 of this NMP contains spreading restriction maps to use when applying bedded pack manure onto frozen or snow covered soils not during February/March no spreading timeframe. If the need arises, Ledgeview Farms will evaluate which fields are available for manure application if emergency winter spreading of manure becomes a necessity.

Below is a list of fields being proposed to be approved for winter spreading:

11G1	13I	11G3	11G3 East	11G4	11L	11L-East
12A1	13H-1	13I	16A1E&W	16B2	17A	
12A45&27	12A2&27A2	16B6&7	Bower Creek	Matzke 1	Mat 20 & 21	11S1

11S2	Asche 1 North	Matzke 2-5	13E-3	26A2	26A1	
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Manure Stacking – NR 243.141

Ledgeview Farms may need to look at identifying areas to headland stack bedded pack manure during the no manure spreading months of February and March. Tab 10 identifies the criteria that will need to be met by Ledgeview Farms for headland stacking bedded pack manure.

Below is a list of fields being proposed to be approved for headland stacking:

11L East	11 J1&2	11S1	11S2	26A2	13I	Matzke 1
Matzke 2&5						

Documentation of 180 days storage and methods for maintaining storage - NR 243.14(9) and NR 243.17(3)

Please refer to the table below for the manure storage facilities at Ledgeview Farms that will be used to store liquid manure. These waste storage facilities will be emptied in the spring and fall of each year and manure will be applied during the summer months on alfalfa to ensure no overtopping of these facilities occurs. Please refer to Tab 3 of this NMP for land application schedules for specific fields – this schedule demonstrates how Ledgeview Farms will maintain 180 days storage capacity over time.

Ledgeview Farms Waste Storage Facilities:

Pit Name	Volume
Main Farm	5,000,000
Total Current Storage	5,000,000

Tab 6 of the this NMP has the 180-day storage calculations put together by Roach & Associates, LLC for when the farm constructs additional manure storage.

General Manure and process wastewater application requirements – NR 243.14(2)(b)(1-13)&(c-f)

Ledgeview Farms will take several actions to ensure all manure and process wastewater is land applied in compliance following general land spreading requirements of NR 243.14:

- No ponding on application site
- During dry weather, no runoff from the application site, nor discharge to waters of the state through subsurface drains
- No causing fecal contamination of water in a well

- Unless rain event is greater than 25 yr/24 hr event and farm complies with NMP and WPDES permit, no runoff from the application site, nor discharge to waters of the state through subsurface drains due to precipitation or snowmelt
- No application on saturated soils
- Maximize use of available nutrients, prevent delivery of manure and process wastewater to waters of the state, and minimize the loss of nutrients and other contaminants to waters of the state to prevent exceedances of groundwater and surface water quality standards and to prevent impairment of wetland functional values
- Retain nutrients in the soil with minimal movement
- No application within 100 feet of direct conduits to groundwater
- No applications within 100 feet of private well and 1000 feet of commercial well
- No application on fields with soils that are 60 inches thick or less over fractured bedrock when ground is frozen or where snow is present.
- No application when snow is actively melting such that water is flowing off a field.

Please refer to Tabs 4 and 5 of this NMP for spreading maps that visually describe how the farm will meet many of these general spreading requirements.

To demonstrate compliance with the NR 243.14 general land application requirements above, Ledgeview Farms will complete, on an ongoing basis, map and field verification procedures (listed below) to ensure spreading maps are accurate (including soil types, slopes and slope lengths), SWQMA or well setback distances are followed and prohibited conditions/features on fields are identified and avoided when spreading manure or process wastewater to NMP fields. The procedures demonstrate how land application activities will be in compliance with NR 243.14 or NRCS 590 restrictions throughout the permit term.

The prohibited conditions/features that Ledgeview Farms will evaluate for on each field include: ephemeral erosion or concentrated flow channels, saturated soils, intermittent and perennial streams, grassed waterways, wetlands, lakes, drinking wells, areas of field with bedrock or groundwater within 24 inches of field surface, wells and other direct conduits to groundwater - NR 243.14(2)(b)(3),(5),(6), (7-12). These areas have been inventoried and marked on the restriction maps contained in tabs 4 and 5 of this NMP.

Ledgeview Farms will maintain written and/or visual records of ongoing field and map verification actions to demonstrate compliance with NR 243.14 requirements. Please refer to Tab 15 of this NMP for this information.

Field and Map Verification Procedures

Prior to spreading manure onto fields, Ledgeview Farms will complete the following map and field verification procedures to ensure all manure spreading will be in compliance with NR 243 and 590 criteria:

- Spreading maps will be reviewed by the manure applicators to identify all restricted or prohibited features and setback distances on field
- Fields will be inspected for restricted or prohibited features; any new conditions/features will be identified.
- Once identified, prohibited field features will be avoided and setback distances (as depicted on spreading maps or in NR 243 or NRCS 590) will be measured and followed during manure spreading.
- Spreading maps will be updated with any new prohibited/restricted field features or conditions.
- A log will be kept with the NMP to track the map and field verification procedures listed above. The log will track:
 - (a) date(s) review took place
 - (b) person(s) involved.
 - (c) fields verified
 - (d) any new field features or conditions identified on fields
 - (e) photos or other documentation of field features or conditions reviewed

Avoiding manure or process wastewater field runoff or ponding— NR 243.14(2)(b)(1), (2)&(6). Please refer to field and map verification procedures and NRCS 590 requirements for runoff and ponding.

Surface applications & precipitation forecast for runoff within 24 hours – NR 243.14(2) (b) (13) For this NMP, *surface* applications of manure will not be completed when rain events above 1.5 inches are forecasted within 24 hours of the time of planned applications. Surface application means manure that is applied and left on the surface of the field. Surface application does not mean manure that is surface applied and then incorporated into the soil.

Prior to manure applications to fields, www.accuweather.com or local news weather forecasts will be used to track weather forecast data. This information will be used determine the risk for forecasted precipitation to cause run-off from fields. Weather forecast data will be printed or saved to disc and kept with the NMP. All weather forecast data will be submitted with annual reports as an attachment.

Drain tile fields & tile discharges to surface waters -NR 243.14(2)(b)(2),(4)&(6) and NRCS 590 (V.A.1.k)

Ledgeview Farms has minimal tile drainage in the fields they crop. Efforts have been made to identify the locations of tile lines in fields that are known to be tile drained. There are likely some additional tile lines located in fields that have not yet been identified. Maps are contained in Tab 2 of this NMP that identify the estimated location of tile lines in some of the fields contained in this NMP.

Drain tile discharges from fields to surface waters are not allowed under NR 243. Such discharges will be prevented or responded to by Ledgeview Farms via the following procedures:

Prior to spreading manure onto fields with drain tiles:

- UW extension Guidelines for Preferential Flow of Manure in Tile Drainage will be reviewed, http://www.extension.org/pages/Preferential_Flow_of_Manure_in_Tile_Drainage

- The following UW Discovery Farm Drain Tiles documents will be reviewed.

Understanding and Locating Drain Tiles

<http://www.uwdiscoveryfarms.org/pdf/pubsnewsres/DF-TD1.pdf>

Tile Talk with Discovery Farms, Third Edition, Pages 4-5

<http://www.uwdiscoveryfarms.org/pdf/pubsnewsres/newsltr1006.pdf>

- Spreading maps will be reviewed to identify known drain tile locations
- Fields will be inspected for drain tile presence or outlets; any new tile outlets/subsurface drainage systems will be identified
- All tile outlets will be visually checked for flow and water conditions (e.g., clear, colored, foam, odor, etc).
- Results of all visual tile monitoring will be tracked – using form in Tab 15 of this NMP - and kept with NMP
- Planned manure spreading (rates and locations) on fields will be evaluated and then limited or adjusted, as necessary, according to the following criteria:
 1. Available water holding capacity of the soil
 2. Depth of injection
 3. Clay soil considerations
 4. Concentration of Application from spreading equipment type used
 5. Are known tile drains flowing?
 6. Shallow tillage (3 to 5 inch depth) used or not used prior to application to disrupt the continuity of worm holes, macropores and root channels (preferential pathways) to reduce the risk of manure reaching drain lines.
 7. Perennial Crop and No Till precautions

During and after manure spreading on fields with drain tiles, best management practices will be followed:

- Visual inspection of tile outlets for flow and water conditions (e.g., clear, colored, foam, odor, etc.)
- Containing manure or process wastewater tile discharges from release into waterway(s)
- Notifying DNR of any spills/discharges to waterways from tiles
- Reducing application rates or delaying application(s) to tiled fields
- Setbacks from tiled areas
- Immediate tillage/ incorporation of applied manure
- Use of other manure application equipment (e.g., sweeps)

- Update NMP spreading maps or narrative
- Results of visual inspections of tiles will be tracked – using form in Tab 15 of this NMP and kept with NMP.

Please also refer to NRCS 590 requirements for field runoff, ponding and drainage to subsurface tiles.

Manure applications to areas of fields with shallow groundwater or bedrock – NR 243.14(2)(b)(7).
At this time Ledgeview Farms does have fields with areas of shallow bedrock and also has fields that contain “w” soils.

Field 11P consists of Summerville type soils which have a shallow depth to bedrock. No manure may be applied to this field. Other fields do not have any bedrock close to the surface based on conversations with Ledgeview Farms. Further field verification will occur to verify this.

NR 243 prohibits manure applications on areas of fields that have groundwater or bedrock within 24 inches of the field surface at time of application. Ledgeview Farms will demonstrate compliance with this prohibition by:

- Implementing DNR guidance, dated March 2009. Based on grower knowledge and tile line installations it is known that most tile lines in this area are at a minimum of 3 to 4 feet below the soil surface. This exceeds the 24” prohibition zone and if the tiles are working properly the groundwater level should be maintained at the depth of the tile lines. In fields that are known to be tiled the tile lines will be checked to ensure they are working properly before manure applications are made.
- In fields where there are “W” soils and it is not known if there are tile lines or we are not sure where the tile lines are located Ledgeview Farms will dig test holes to verify depth to groundwater. Ledgeview Farms proposes to dig 2 test holes per field in the lowest elevation area of the field where it is most likely that if there is groundwater present it would be found in these areas. If groundwater is found in these initial test holes then further test holes may be dug to determine the extent of the level of groundwater in the field or the decision may be made to avoid applying manure in the “W” soil area of the field. These decisions will be determined at the time of the investigations. Field size and the size of the “W” soil area in the field will be factors in the decision making process. Documentation of these test holes and subsequent findings will be submitted with the annual reports.

Daily Spreading Log and Annual Reports for DNR – NR 243.19

Ledgeview Farms will maintain daily spreading log for all manure or process wastewater applications to NMP fields for compliance with NR 243.19. The daily spreading log will also be used to complete required annual reports for DNR. Ledgeview Farms recognizes the daily spreading log and annual reports are essential to document actual management practices used by Ledgeview Farms and the resulting soil erosion and water quality impacts on specific fields. Ledgeview Farms will use the forms contained in Tab 15 of this NMP to meet all of the record keeping requirements contained in NR 243 and the 590 standard.

To develop the annual spreading report summarizing manure and other process wastewater land application activities Ledgeview Farms will use SnapPlus DNR CAFO Annual Spreading Report, SnapPlus Field Data and 590 Assessment Plan Report, SnapPlus Soil Test Report, and Log of Actual Crop Yields from Previous Crop Year.

Manure spreading equipment calibration and Manure concentration testing – NR 243.19

Ledgeview Farms will conduct or require periodic inspections and ongoing calibration of land spreading equipment to detect leaks and ensure accurate application rates for manure and process wastewater. Initial calibrations shall be followed by additional calibration after any equipment modification or after changes in manure or process wastewater consistency and/or source. At a minimum, calibration of all manure spreading equipment used by Ledgeview Farms and any contract haulers need to be completed at least annually. Manure spreader calibration information and procedures is contained in Tab 7 of this NMP.

Ledgeview Farms will analyze manure and process wastewater applied to fields in accordance with WPDES permit conditions. Sampling shall be completed for all sources of manure and process wastewater. All sources of manure and process wastewater shall be analyzed on at least an annual basis for Nitrogen, Phosphorus, and percent solids in years where manure and process wastewater is applied. Samples collected shall be representative of the manure or process wastewater applied to fields. Ledgeview Farms will follow sampling methods found in Tab 7 of this NMP.

Wisconsin NRCS 590 Requirements

Dominant Critical Soil

Each field in this NMP is managed to meet NRCS dominant critical soil criteria:

<http://www.datcp.state.wi.us/arm/agriculture/land-water/conservation/nutrient-mngmt/pdf/ChoosingCriticalSoilType.pdf>

The dominant critical soil is the most erosive soil that covers at least 10% of the field area. Efforts have been made so that the dominant critical soil type was selected for all fields listed in the NMP to ensure corresponding rotational T – tolerable soil loss - values for each field are accurate for compliance with NRCS 590 requirements. Please refer to Tab 12 of this NMP for additional information on slope determinations for some fields.

T – Tolerable soil loss

Each field in this NMP is managed to meet T – tolerable soil loss - over the crop rotation. T values were calculated using NRCS RUSLE 2 soil loss assessment in the SNAP-Plus program. No nutrient applications (manure, fertilizer) are allowed on fields that fail to meet T. Erosion controls shall be implemented so that tolerable soil loss (T) over crop rotation will not be exceeded on fields that receive nutrients. Please refer to Tab 12 of this NMP for information showing each field's tolerable and actual soil loss.

Soil Testing

Each field in the NMP is managed for compliance with NRCS A2100 soil testing criteria:

<http://www.datcp.state.wi.us/arm/agriculture/land-water/conservation/nutrient-mngmt/pdf/uwex-a2100.pdf>.

Accordingly, all fields in this NMP meet A2100 criteria except for fields DL-1 and DL-1,2 which do not have current soil test information, so they have been defaulted to 101ppm soil test P for planning purposes. Please refer to Tab 8 of this NMP for this information.

Application and budgeting of nutrients – consistent with NRCS 590 standard and soil fertility recommendations found in A2809.

Each field in the NMP is managed to address the source, rate, timing, form and method of application and budgeting *of all* nutrient sources (i.e., including soil reserves, commercial fertilizer, manure, organic byproducts –animal mortality and composting materials - legume crops and crop residues) generated or accepted by the farm and applied to fields. Please refer to Tab 3 and Tab 12 of this NMP for this information.

Other sources of nutrients to be land applied (NRCS 590 requirement)

Please refer to Tab 3 of this NMP for supplemental commercial fertilizer applications rates for specific fields land application amounts and schedules (e.g., spring, summer or fall).

Crop Yield Goals

Brown and Manitowoc County average yields from the National Agricultural Statistics Service have been used to set yield goals in this NMP. In the future on farm yield goals will be used to help determine crop yield goals.

Records of soil and manure testing results

Ledgeview Farms has completed and retained records showing recent soil testing and manure testing results. Please refer to Tabs 7 and 8 of this NMP for this information. Ledgeview Farms will continue to soil sample fields according to the criteria contained in UWEX publication A2100.

Fields with concentrated flow channels resulting in reoccurring gullies or ephemeral erosion

Ledgeview Farms will evaluate fields on an ongoing basis each year for presence or flow channels or other types of ephemeral soil erosion. If fields show evidence of concentrated flow channels resulting in re-occurring gullies or ephemeral erosion, the following actions will be taken by the farm:

- Spreading maps will be updated to reflect areas with concentrated flow channels;
- Manure will not be spread on fields with concentrated flow channels, until perennial vegetative cover is established in all areas of concentrated flow;
- A schedule for establishing perennial vegetative cover in all areas of concentrated flow as well as implementation dates will be recorded and kept with this NMP.
- One or more NRCS 590 runoff reducing practices for crop fields with ephemeral erosion will be selected and implemented. Practices selected, and implementation dates will be recorded and kept with this NMP.

Once vegetated flow channels/grassed waterways established within fields, such areas will be maintained to perform their intended function and manure will not be applied within these areas.

Fields with high potential for N leaching to groundwater - soil temperature, application rate and timing restrictions

Many fields in this NMP contain soils that have a high potential for N leaching to groundwater. Fields in this NMP have been evaluated for soils with high potential for N leaching to groundwater for compliance with NRCS 590 requirements. Please refer to Tab 12 of this NMP for this information. When manure is applied fields with soils classified as having a high potential for N leaching to groundwater and the soils are > 50 degrees F, the potential exists for rapid N mineralization. The risk for N mineralization and loss (via leaching to groundwater) is a concern the farm will manage for. As such, Ledgeview Farms will measure soil temperatures prior to field applications in late summer or fall. Soil temperature logs will be kept with manure spreading records/reports and maintained over time for compliance recordkeeping requirements. The farm will follow the following procedures for compliance with NRCS 590 soil temperature, application rate and timing restrictions:

- If any fields are found to be > 50 degrees F, Ledgeview Farms will strictly follow section V, B, 2 of NRCS 590 standard.
- If any fields are found to be < 50 degrees F, Ledgeview Farms will strictly follow section V, B, 3 of NRCS 590 standard.

Field Inspection and Response Procedures for manure ponding, runoff from fields or drainage to subsurface tiles.

Ledgeview Farms will evaluate field and weather conditions prior to and during mechanical applications of manures, organic byproducts and fertilizer to ensure that applied material(s) do not cause ponding, runoff, or drainage to subsurface tiles.

The following response procedures will be followed by Ledgeview Farms if/when ponding, runoff or drainage to subsurface tiles occurs during and/or after applications to fields:

1. Stop application immediately (if field application not finished)
2. Containment measures (e.g., earth berms, pumps, temporary pits, tillage, incorporation) will be implemented immediately to prevent off-site movement from field.
3. Changes in application rate, method, depth of injection or timing to the field shall be implemented during any future application to eliminate ponding, runoff or drainage to subsurface tiles.
4. Farm shall notify DNR of any spills or accidental release to comply with Ag Spill Law (289.11) or term of WPDES permit.

Annual Updates

This NMP will be updated annually. Each NMP annual update for Ledgeview Farms will include records/documentation of all soil or manure analyses as well as crops, tillage, nutrient application rates, and methods implemented on each field that receives nutrients. Annual updates are essential to document actual management practices and resulting soil erosion and water quality impacts on specific fields.

Production Site Management

Mortality Management

Ledgeview Farms currently does and will continue to contract with Sandy Bay Mink Ranch or Circle R Mink Ranch for the disposal of all dead animals from the farm. Typically, dead animals are picked up within 24 hours of a death event. Mortalities will be handled in a way to prevent the discharge of pollutants to surface waters.

Operations and Maintenance

Final operations and maintenance plans for Ledgeview Farms will be developed after the construction of the new waste storage facility at the farm and will be included as part of the final WPDES permit issued by the W-DNR. Included in these procedures will be the criteria for the periodic removal of accumulated solids from and storage structures.

Outdoor Housing

All livestock are fenced out of sensitive areas and therefore cannot come into contact with waters of the United States or waters of the State of Wisconsin.

Solid and Chemical Waste Management

Agriculture chemicals and pesticides are handled but not disposed on site. Typically crop production chemicals are stored in season only and excess is returned to the supplier. Garbage is stored onsite in dumpsters and refuse cans.

Production Site Improvements

Ledgeview Farms is currently working with Roach and Associates, LLC to complete engineering designs for a silage leachate collection system and vegetated treatment for the feed storage area at the Heifer Site. Design of a long term waste storage facility is also part of the design package.

Production Site Inspections and Record Keeping

Record keeping at the Production Site will include regular inspections of the following items: water line leakage in the production facility, storm water diversions on the farm, feed storage area, manure transfer system, concrete waste storage tank, in-place earth waste storage pond and the outdoor pasture lots when in use. Records will be maintained on the WDNR CAFO Compliance Calendar and the WDNR Quarterly Monitoring Form.

Ashenbrenner



Date: 10/19/2017
Farm: Ashenbrenner
Grower: Ledgerview Farms



One in = 994 feet
0 333 667 1000 1334 1667



Ashenbrenner

Bower Creek Rd



Date: 10/19/2017

Farm: Bower Creek Rd

Grower: Ledgeview Farms



One in = 732 feet
0 245 491 736 981 1227



Bower Creek Rd

D Lotto Farm Map

Farm Name: Ledgerview Farms
Is this a CAFO: True



Map generated on: 12/15/2017 SnapMap Version: 16.0, Crop year: 2017

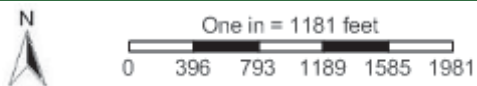


- Counties
- Township/Range
- Roads
- Fields

Dairy Area & Van Rens



Date: 10/19/2017
Farm: Dairy Area & Van Rens
Grower: Ledgeview Farms

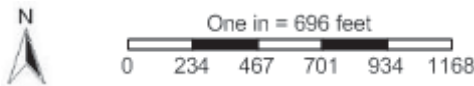


■ Dairy Area & Van Rens

Heifer Site



Date: 10/19/2017
Farm: Heifer Site
Grower: Ledgeview Farms



Heifer Site

Herold Road



Date: 10/19/2017
Farm: Herold Road
Grower: Ledgeview Farms



One in = 473 feet
0 159 317 476 635 794

■ Herold Road

Koenichs & Kaster



Date: 10/19/2017

Farm: Koenichs & Kaster

Grower: Ledgeview Farms



One in = 756 feet
0 254 507 761 1014 1268



Koenichs & Kaster

Kolanchek



Date: 10/19/2017

Farm: Kolanchek

Grower: Ledgeview Farms



One in = 542 feet
0 182 364 545 727 909



Kolanchek

Matzke



Date: 10/19/2017

Farm: Matzke

Grower: Ledgeview Farms



One in = 767 feet
0 257 514 771 1028 1286

■ Matzke

Pine Grove Rd



Date: 10/19/2017

Farm: Pine Grove Rd

Grower: Ledgeview Farms



One in = 973 feet
0 326 653 979 1306 1632

■ Pine Grove Rd

Scray Hill Park



Date: 10/19/2017

Farm: Scray Hill Park

Grower: Ledgeview Farms



One in = 517 feet
0 173 347 520 693 866

■ Scray Hill Park

Silver Lane



Date: 10/19/2017
Farm: Silver Lane
Grower: Ledgerview Farms



One in = 726 feet
0 243 487 730 974 1217

■ Silver Lane

Stein



Date: 10/19/2017

Farm: Stein

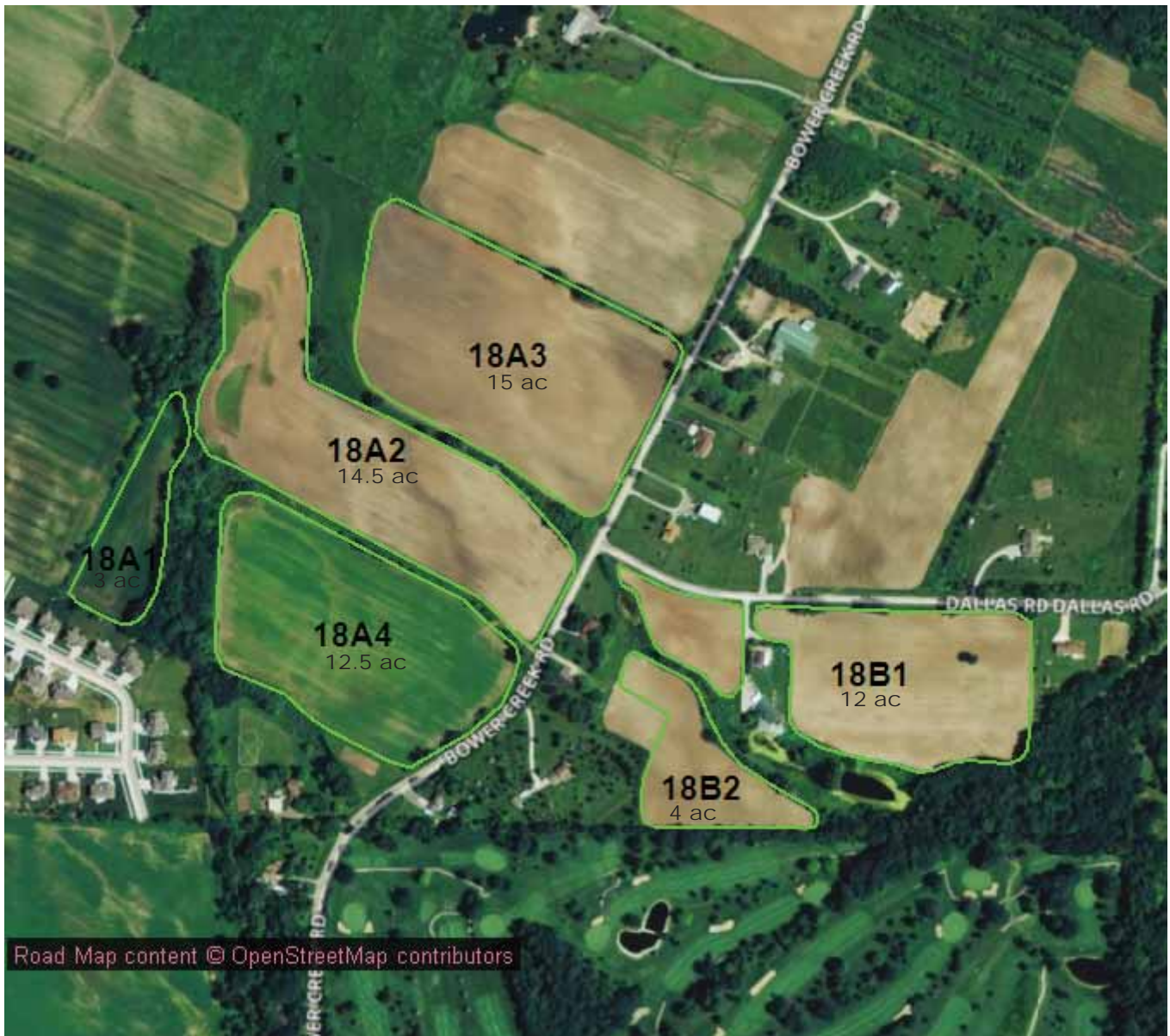
Grower: Ledgeview Farms



One in = 632 feet
0 212 424 636 847 1059

■ Stein

Titulaer



Date: 10/19/2017

Farm: Titulaer

Grower: Ledgeview Farms



One in = 546 feet
0 183 366 550 733 916

■ Titulaer

Tower & W



Date: 10/19/2017
Farm: Tower & W
Grower: Ledgerview Farms



One in = 369 feet
0 124 247 371 495 619

■ Tower & W

Van Straten



Date: 10/19/2017

Farm: Van Straten

Grower: Ledgeview Farms



One in = 661 feet
0 222 444 665 887 1109

■ Van Straten

11P Soils Map

Farm Name: Ledgeview Farms
Is this a CAFO: True



Map generated on: 12/15/2017 SnapMap Version: 16.0, Crop year: 2017



- Counties
- Township/Range
- Roads
- Soils
- Fields

22 Soils Map

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 12/15/2017 SnapMap Version: 16.0, Crop year: 2017



- Counties
- Roads
- Soils
- Fields

Bower Creek Soils Map

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 12/15/2017 SnapMap Version: 16.0, Crop year: 2017



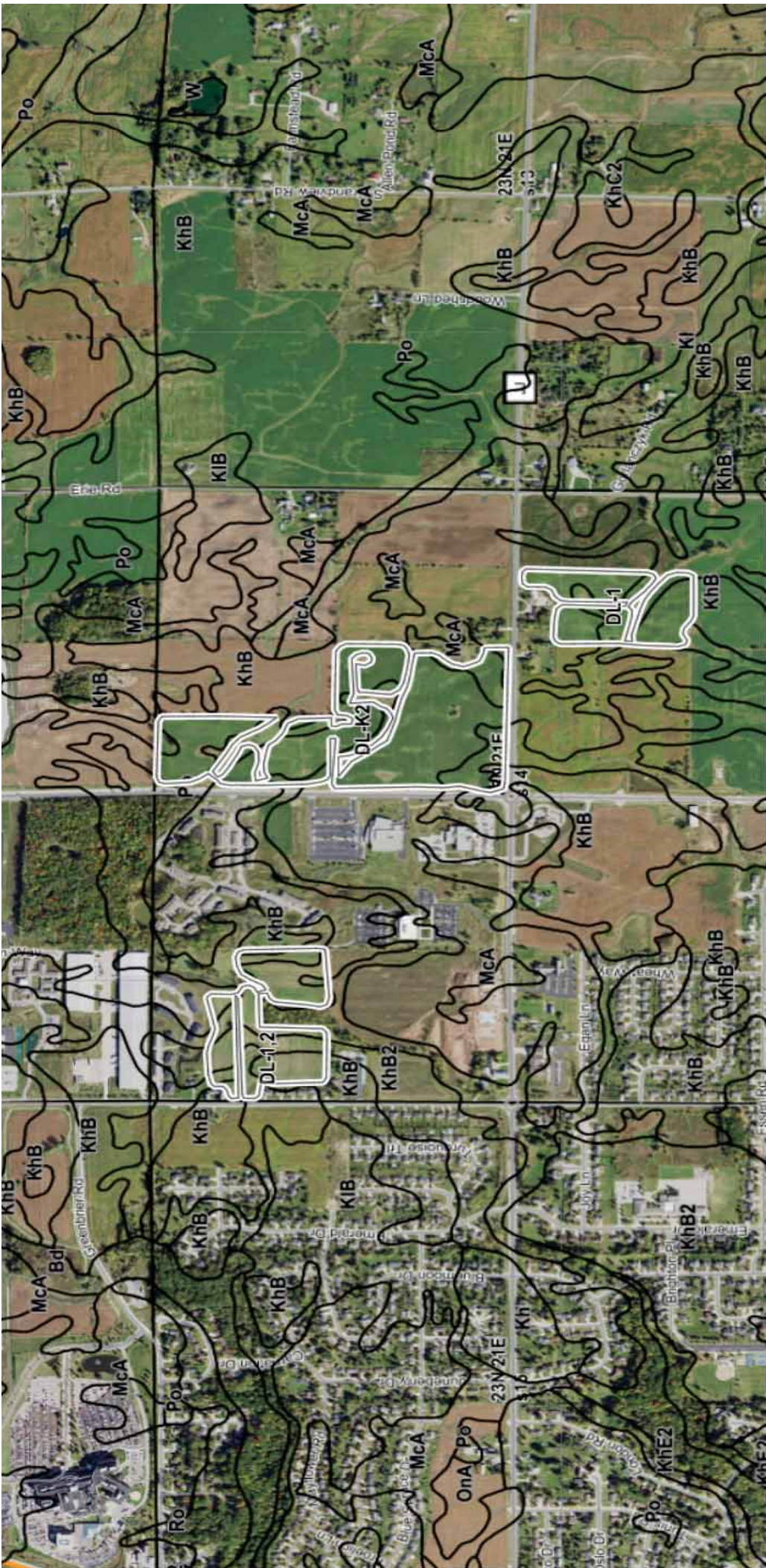
- Counties
- Township/Range
- Roads
- Soils
- Fields

D Lotto Soils

Farm Name: Ledgeview Farms
Is this a CAFO: True



Map generated on: 12/15/2017 SnapMap Version: 16.0, Crop year: 2017



- Counties
- Township/Range
- Roads
- Soils
- Fields

Dairy Area Soils Map

Farm Name: Ledgerview Farms
Is this a CAFO: True

Map generated on: 12/15/2017 SnapMap Version: 16.0, Crop year: 2017

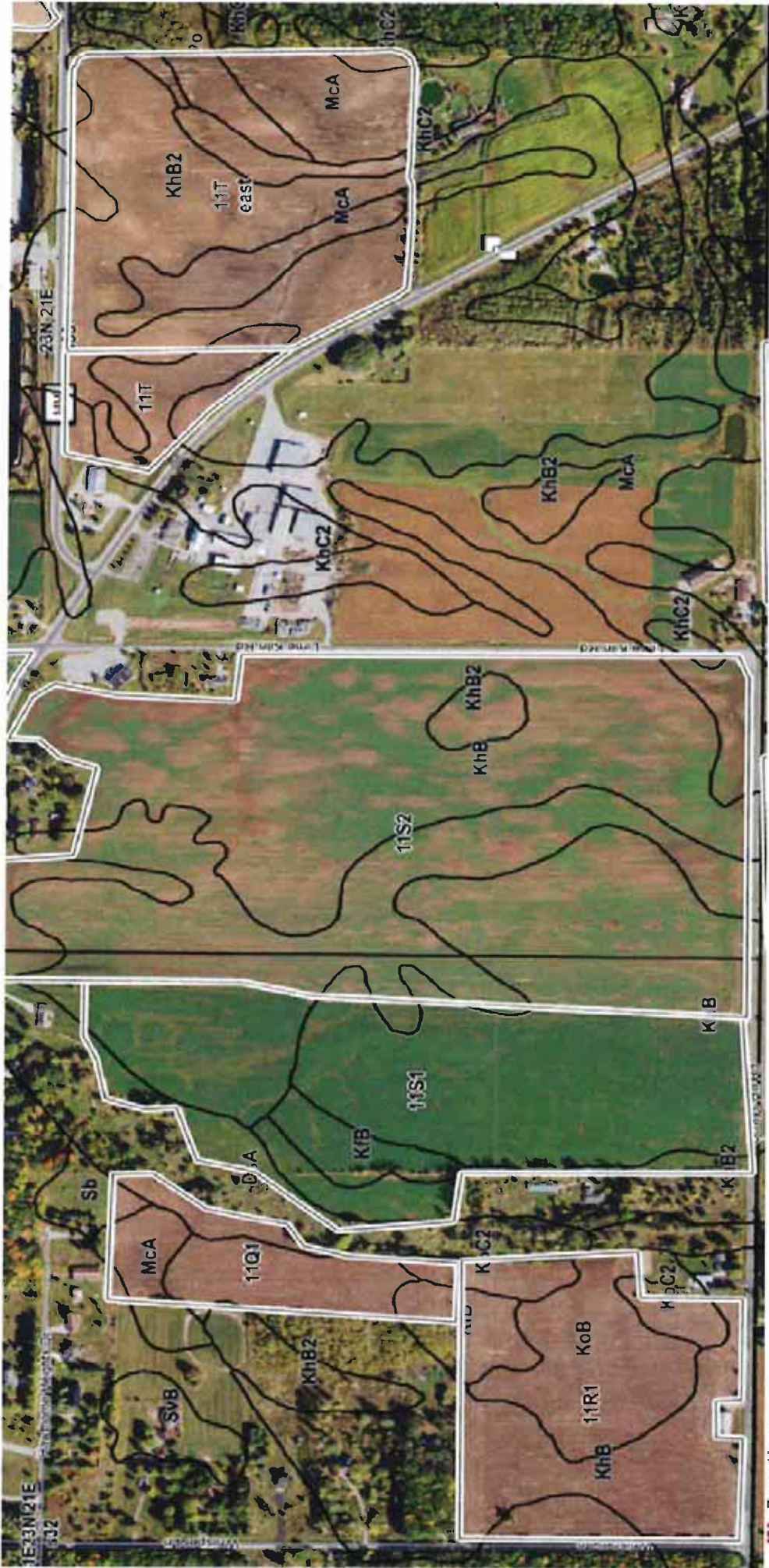


- Counties
- Township/Range
- Roads
- Soils
- Fields

11T, 11R1, 11Q1, 11S1, S2 Soils Map

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 12/15/2017 SnapMap Version: 16.0, Crop year: 2017



- Counties
- Township/Range
- Roads
- Soils
- Fields

13F1, 14B, 14A, Mat 21, etc Soils Map

Farm Name: Ledgerview Farms
Is this a CAFO: True

Map generated on: 12/15/2017 SnapMap Version: 16.0, Crop year: 2017



- Counties
- Township/Range
- Roads
- Soils
- Fields

Heifer Site Soils Map

Farm Name: Ledgerview Farms

Is this a CAFO: True

Map generated on: 12/15/2017 SnapMap Version: 16.0, Crop year: 2017



- Counties
- Township/Range
- Roads
- Soils
- Fields

Herold Road Soils Map

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/15/2017 SnapMap Version: 16.0, Crop year: 2017



- Counties
- Township/Range
- Roads
- Soils
- Fields

K Baeten Soils Map

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 12/15/2017 SnapMap Version: 16.0, Crop year: 2017



- Counties
- Township/Range
- Roads
- Soils
- Fields

K Baeten Soils Map

Farm Name: Ledgerview Farms
Is this a CAFO: True

Map generated on: 12/15/2017 SnapMap Version: 16.0, Crop year: 2017



- Counties
- Township/Range
- Roads
- Soils
- Fields

Kaster Soils Map

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 12/15/2017 SnapMap Version: 16.0, Crop year: 2017



- Counties
- Township/Range
- Roads
- Soils
- Fields

Matzke Soils Map

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 12/15/2017 SnapMap Version: 16.0, Crop year: 2017



- Counties
- Township/Range
- Roads
- Soils
- Fields

Farm Name: Ledgeview Farms

Is this a CAFO: True



Silver Lane Soils Map

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/15/2017 SnapMap Version: 16.0, Crop year: 2017



- Counties
- Township/Range
- Roads
- Soils
- Fields

Stein Soils Map

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 12/15/2017 SnapMap Version: 16.0, Crop year: 2017



- Counties
- Roads
- Soils
- Fields

Farm Name: Ledgeview Farms
Is this a CAFO: True

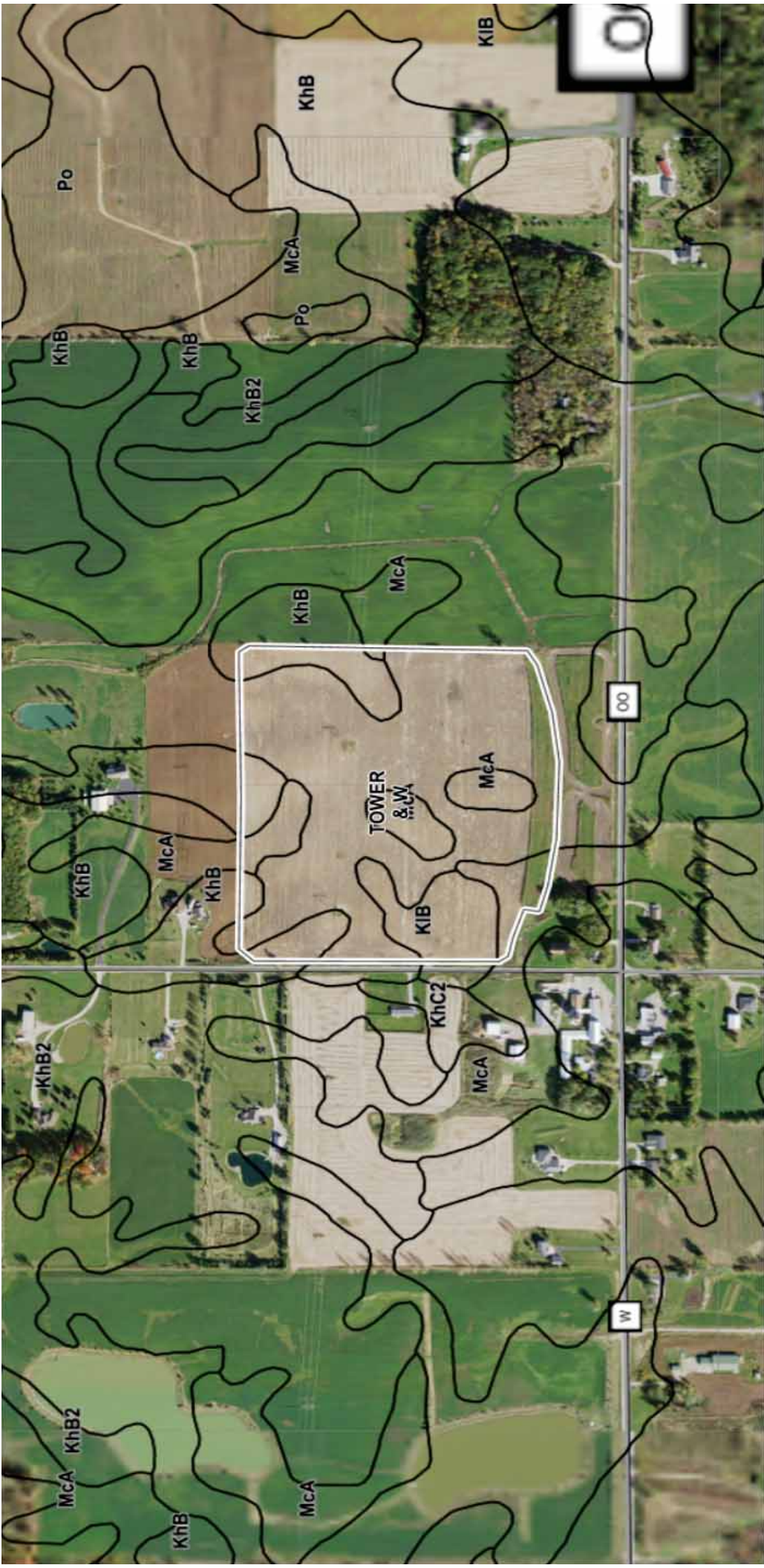


Tower & W Soils Map

Farm Name: Ledgeview Farms
Is this a CAFO: True



Map generated on: 12/15/2017 SnapMap Version: 16.0, Crop year: 2017



- Counties
- Township/Range
- Roads
- Soils
- Fields

Van Oss Soils Map

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 12/15/2017 SnapMap Version: 16.0, Crop year: 2017



- Counties
- Township/Range
- Roads
- Soils
- Fields

Van Straten Soils Map

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 12/15/2017 SnapMap Version: 16.0, Crop year: 2017



- Counties
- Township/Range
- Roads
- Soils
- Fields

Wisconsin 590 Nutrient Management Application Restrictions



Map Generated On: 6/10/2014

County: Brown

Legend*

*Markup is not included in the Legend

Sources:

- Soil Map Units, Fall Restrictions, Winter Restrictions - Based on USDA NRCS SSURGO (updated 7/1/2012)
- Surface Water - WI DNR 24K Hydro (acquired 1/9/2012)
- SWQMAs - buffers around WI DNR 24K Hydro (based on 1/9/2012 Hydro)
- 2010 NAIP Imagery - USDA FS
- Transportation - WI DOT (acquired 5/22/2012)

Notes

Town of Bellevue



This map has been developed utilizing the nutrient application restrictions from the September 2005 Wisconsin NRCS 590 Nutrient Management Practice Standard. This map is an initial inventory of nutrient spreading risks which must be field verified to identify other risk areas such as concentrated flow channels, wetlands, and conduits to groundwater. See the "Considerations" section of the 590 practice standard for additional planning suggestions. <http://efotg.nrcs.usda.gov/references/public/WI/590.pdf>

0 0.1 Miles

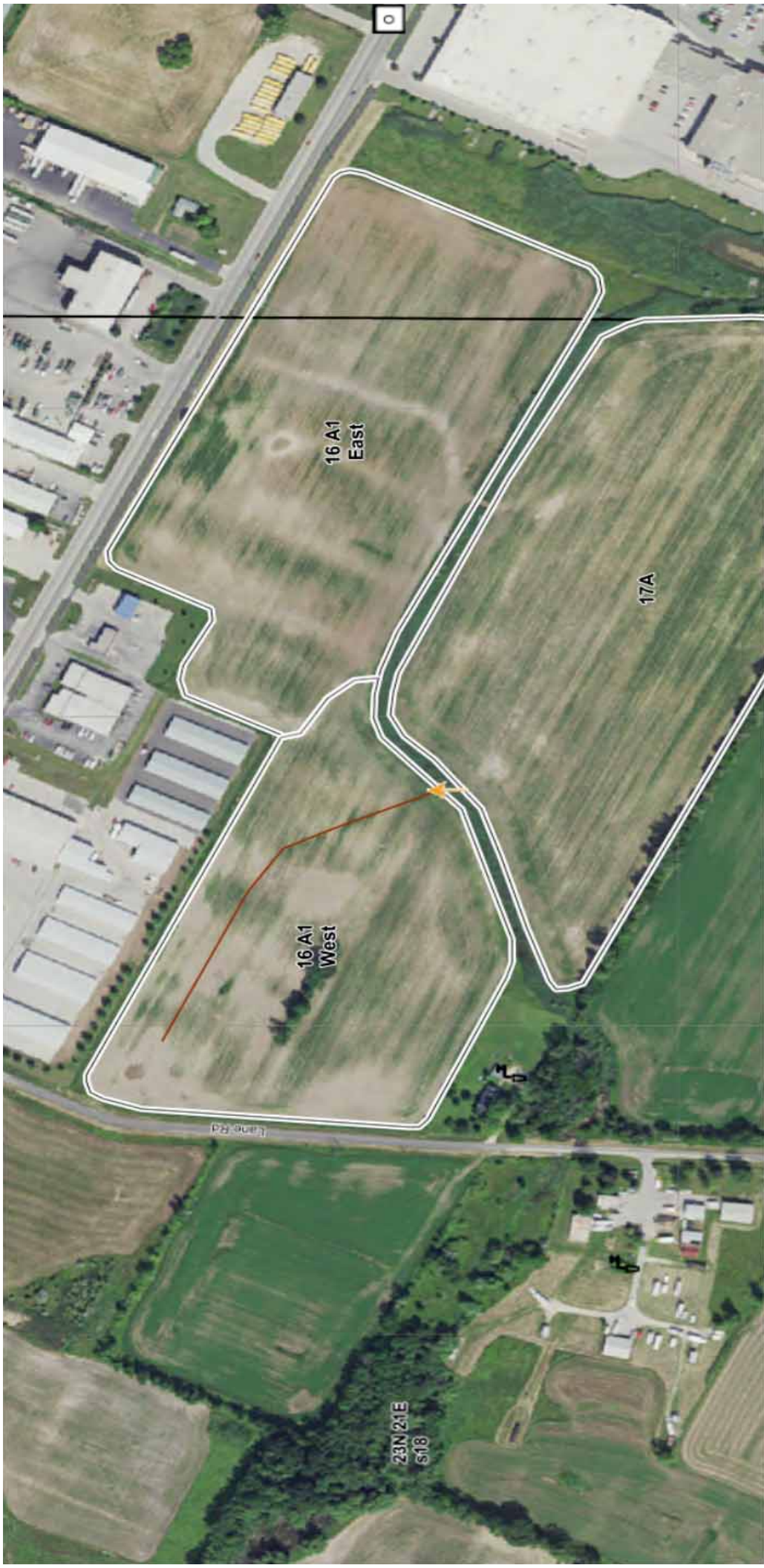
Scale 1 : 5,387

26A1 Tile Features

Farm Name: Ledgerview Farms
Is this a CAFO: True



Map generated on: 6/26/2017 SnapMap Version: 16.0, Crop year: 2017

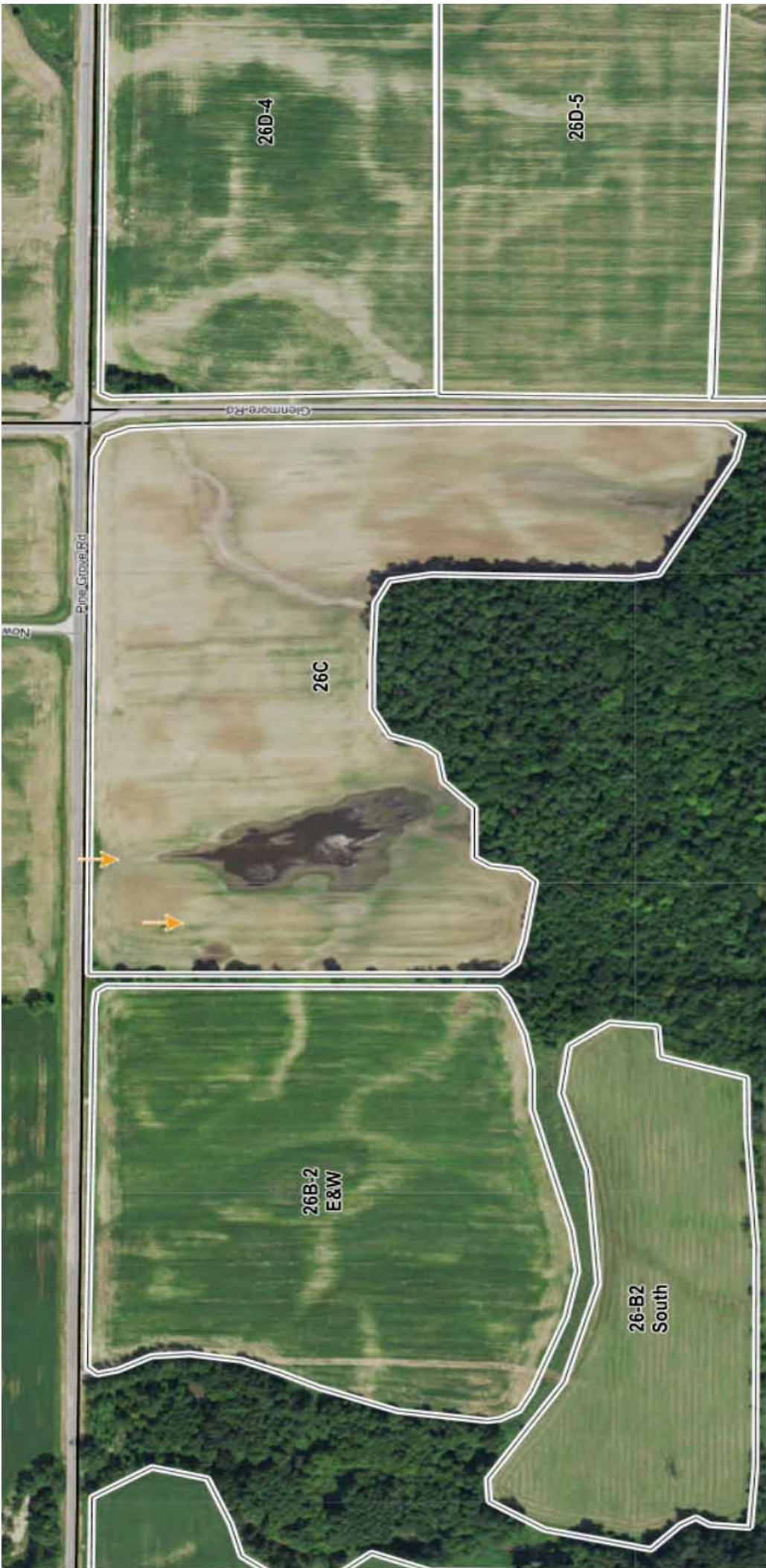


- Counties
- Township/Range
- Roads
- Fields
- Tile lines
- Drinking Well
- Well
- Irrigation Well
- Sinkhole
- Non-metallic mine
- Fractured bedrock at surface
- Other direct conduit
- Tile outlet
- Tile inlet

26C Tile Features

Farm Name: Ledgerview Farms
Is this a CAFO: True

Map generated on: 6/26/2017 SnapMap Version: 16.0, Crop year: 2017



- Counties
- Township/Range
- Roads
- Fields
- Tile lines
- Drinking Well
- Well
- Irrigation Well
- Sinkhole
- Non-metallic mine
- Fractured bedrock at surface
- Other direct conduit
- Tile outlet
- Tile inlet

Stein Tile Features

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 6/26/2017 SnapMap Version: 16.0, Crop year: 2017



- Counties
- Township/Range
- Roads
- Fields
- Tile lines
- Drinking Well
- Well
- Irrigation Well
- Sinkhole
- Non-metallic mine
- Fractured bedrock at surface
- Other direct conduit
- Tile outlet
- Tile inlet

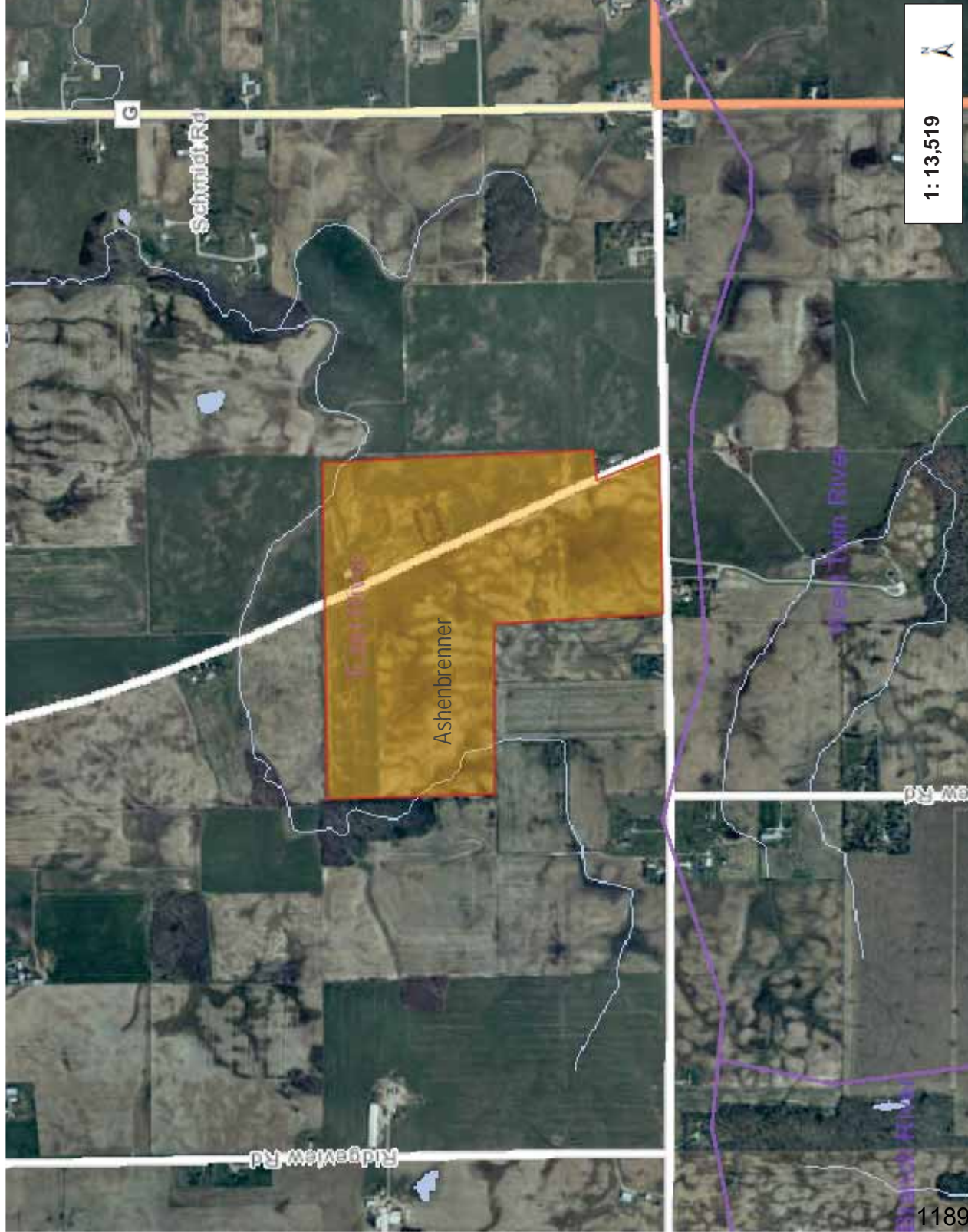


Ledgeview Farms - Watershed Map



- Legend**
- Impaired Rivers and Streams
 - Impaired Lakes
 - Outstanding and Exceptional S
 - Exceptional
 - Outstanding
 - Locational Information (line)
 - COMPLETE
 - CONFLICT
 - Outstanding and Exceptional L
 - Exceptional
 - Outstanding
 - Locational Information (area)
 - COMPLETE
 - CONFLICT
 - Watersheds
 - Rivers and Streams
 - Open Water
 - 2010 Air Photos (WROC)

Notes



1:13,519

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0.4 Miles

0.21

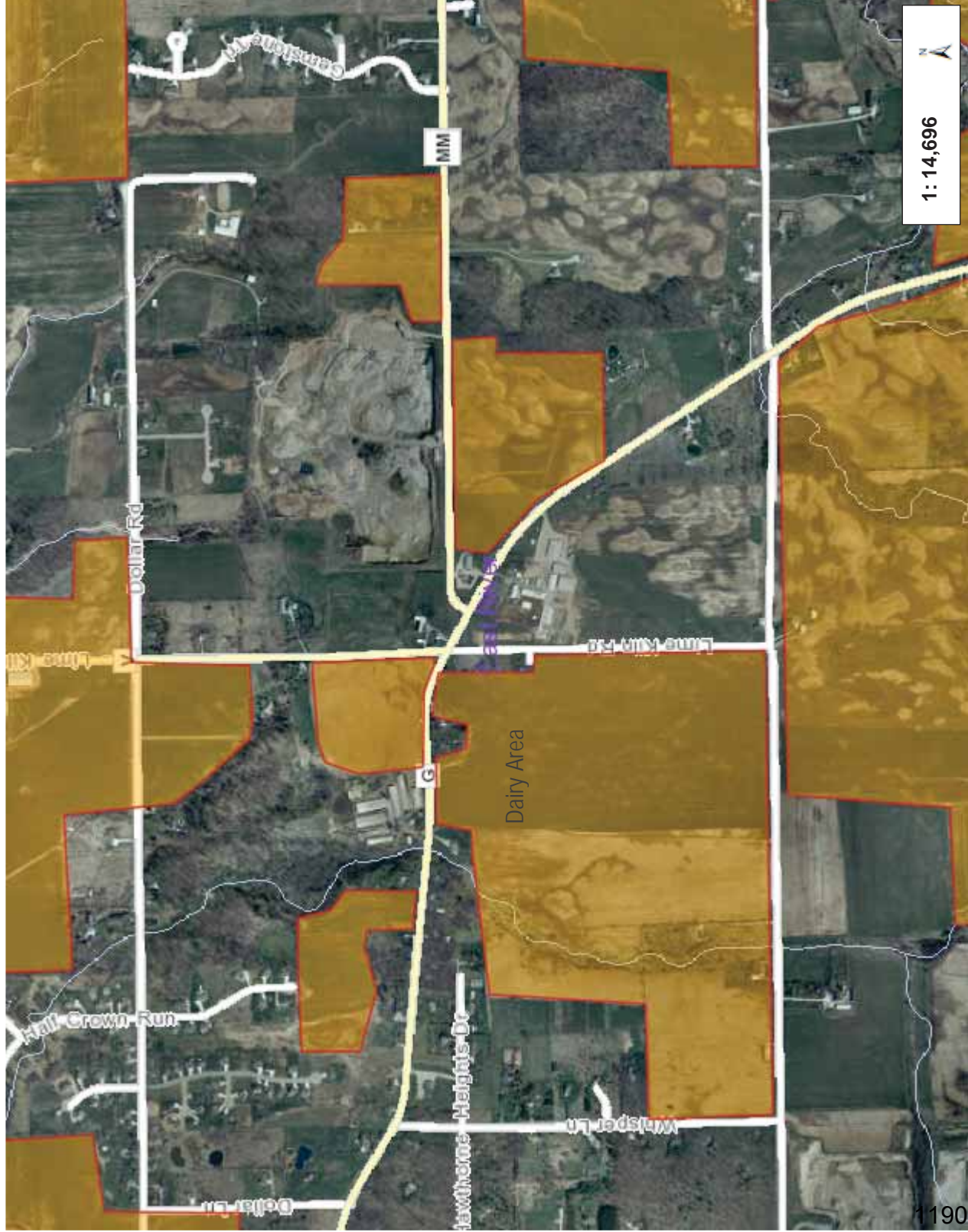
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0.4

NAD_1983_HARN_Wisconsin_TM
© Latitude Geographics Group Ltd.



Ledgeview Farms - Watershed Map



1190

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0.5 Miles

0.23

0

NAD_1983_HARN_Wisconsin_TM
© Latitude Geographics Group Ltd.



Legend

- Impaired Rivers and Streams
- Impaired Lakes
- Outstanding and Exceptional S
- Exceptional
- Outstanding
- Locational Information (line)
- COMPLETE
- CONFLICT
- Outstanding and Exceptional L
- Exceptional
- Outstanding
- Locational Information (area)
- COMPLETE
- CONFLICT
- Watersheds
- Rivers and Streams
- Open Water
- 2010 Air Photos (WROC)

Notes



Ledgeview Farms - Watershed Map



1191

1: 6,782

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0.2 Miles

0.11

0

0.2

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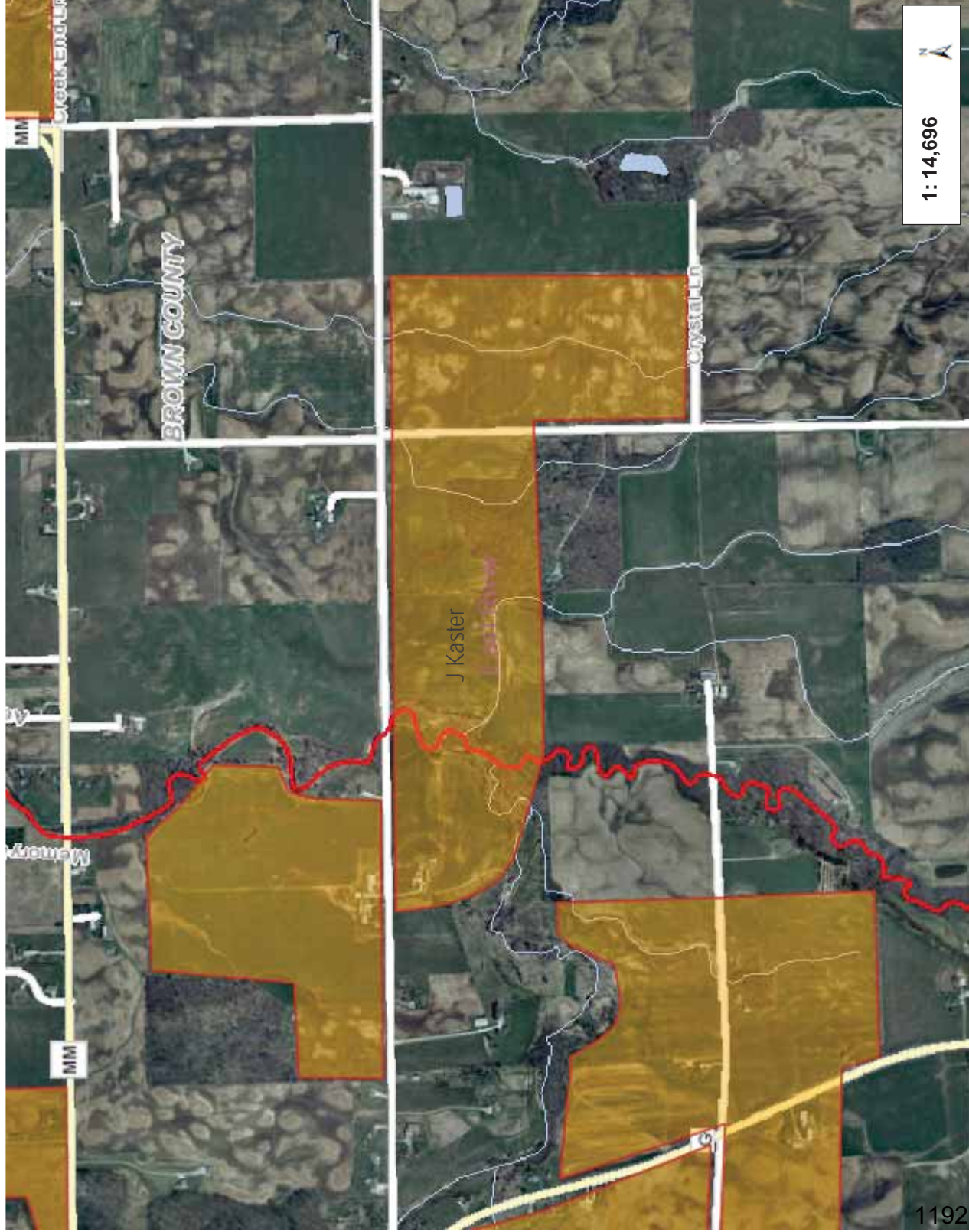
Legend

- Impaired Rivers and Streams
- Impaired Lakes
- Outstanding and Exceptional S
- Exceptional
- Outstanding
- Locational Information (line)
- COMPLETE
- CONFLICT
- Outstanding and Exceptional L
- Exceptional
- Outstanding
- Locational Information (area)
- COMPLETE
- CONFLICT
- Watersheds
- Rivers and Streams
- Open Water
- 2010 Air Photos (WROC)

Notes



Ledgeview Farms - Watershed Map



1: 14,696



0.5 Miles

0.23

0

0.5

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Legend

- Impaired Rivers and Streams
- Impaired Lakes
- Outstanding and Exceptional S
- Exceptional
- Outstanding
- Locational Information (line)
- COMPLETE
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- Outstanding
- Locational Information (area)
- COMPLETE
- CONFLICT
- Watersheds
- Rivers and Streams
- Open Water
- 2010 Air Photos (WROC)

Notes

SnapPlus Spreading and Nutrient Management Sorted By Crop Report

Crop Year 2018

Reported For Ledgerview Farms

Prepared for: Ledgerview Farms
attn: Roy, Glenn & Jason Pansier
3875 DICKINSON RD
DE PERE, WI 54115

Printed 2018-02-02

Plan Completion/Update Date 2001-01-01

SnapPlus Version 16.3 built on 2016-10-31

C:\Users\Kevin Backard\OneDrive - Cooperative Resources International
1\GISource Data Backups\Clients\175-CV Greenleaf\Ledgeview Farms
ISMAP 2 Database\SMAP 16\Ledgeview Farms Snap 16 Main.snapdb

Alfalfa Fields				Crop Removal				Soil Test		Adjusted Recs		Planned Applications and Credits		Over(+) Under(-) Adj. UNW Recs. lb/ac		Applications					
Name	Ac.	Slp % Symbol (pred) & N Rec	Soil Map Prior Crop	2018 Crop	Yield Goal	P205	K20	Tillage	Avg P ppm	Avg K	N	P205	K20	N	P205	K20	Product Name and Analysis	Appl Rate and Method	N-P205-K20 credit	Total Amt	
11G1	30	4	MAA	Winter Rye (forage) to Carriage w/ Alfalfa Seeding Spring	Alfalfa	3.6-4.5	50	240	None	86	181	0	0	0	89	35	105	Dairy Liquid Avg 6-6-18	6000 gal/Summer Unincorp	35-35-105	180000 gal
Summer 2017 seeded alfalfa. Manure applied before seeding.																					
11G3	36	4	MCA	Alfalfa Seeding Fall	Alfalfa	3.6-4.5	50	240	None	69	113	0	0	240	70	35	227	Potash 0-0-61	200 lb/Summer Unincorp	0-0-122	7200 lb
11H1	19	4	KNB	Winter Rye (forage) to Carriage w/ Alfalfa Seeding Spring	Alfalfa	3.6-4.5	50	240	None	155	354	0	0	0	31	0	0	Dairy Liquid Avg 6-6-18	6000 gal/Summer Unincorp	35-35-105	216000 gal
Summer 2017 seeded alfalfa. Manure applied before seeding																					
11L7	20.5	4	KNB	Alfalfa	Alfalfa	3.6-4.5	50	240	None	67	146	0	0	120	35	35	227	Potash 0-0-61	200 lb/Summer Unincorp	0-0-122	4100 lb

SnapPlus Spreading and Nutrient Management Sorted By Crop Report

02/02/2018

Alfalfa Fields				Crop Removal				Soil Test			Adjusted Recs		Planned Applications and Credits		Over(+)/Under(-)		Applications							
Name	Ac.	Sip %	Soil Map Symbol & N Recs	Prior Crop	2018 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205-K20 credit	Total Amt			
11L1	20.5	4	K0B W	Alfalfa	Alfalfa	3.6-4.5	50	240	None	67	146	0	0	120	35	35	227	35	35	107	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	123000 gal
11M1	10	4	K0B2	Alfalfa (grassy, yr 3+)	Alfalfa	3.6-4.5	50	240	None	27	77	0	25	295	67	70	80	67	45	-215	Cow Avg 3-4-4	5 ton Winter Unincorp	15-18-20	50 ton
11N3	5	9	K0B	Winter Rye (forage) to Alfalfa Seeding Spring	Alfalfa	3.6-4.5	50	240	None	136	269	0	0	0	35	0	0	35	0	0	Cow Avg 3-4-4	15 ton Summer Unincorp	44-53-60	150 ton
11N4	13	8	K0B	Winter Rye (forage) to Alfalfa Seeding Spring	Alfalfa	3.6-4.5	50	240	None	81	131	0	0	240	35	0	0	35	0	-240	Summer 2017 seeded. Manure applied before seeding			
11P	9	4	S0B R	Alfalfa	Alfalfa	3.6-4.5	50	240	None	20	64	0	50	295	0	0	122	0	-50	-173	Potash 0-0-61	200 lb Summer Unincorp	0-0-122	1800 lb
11ST	42	4	K0B	Alfalfa	Alfalfa	4.6-5.5	65	300	None	48	35	0	0	355	73	63	137	73	63	-218	Possible corn in 2018			
				Cow Avg 3-4-4	8 ton Summer Unincorp	23-28-32	336 ton																	
				Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	252000 gal																	

SnapPlus Spreading and Nutrient Management Sorted By Crop Report

Alfalfa Fields				Crop Removal				Soil Test		Adjusted Recs		Planned Applications and Credits		Over(+) Under(-) Adj. UW Recs		Applications								
Name	Ac.	Slp %	Soil Map Symbol & N Rec	Prior Crop	2018 Crop	Yield Goal	P205	K2O	Tillage	Avg P ppm	Avg K	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205-K2O credit	Total Amt			
11S2	95	4	KNB	Winter Rye (forage) to Late-Direct Seeded Legume Forage	Alfalfa	4.6-5.5	65	300	None	65	98	0	0	340	47	35	105	47	35	-235	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	570000 gal
Seeded summer 2017. Manure applied before seeding																								
11U 2B	20	18	KME2	Alfalfa	Alfalfa	3.6-4.5	50	240	None	5	53	0	90	295	35	35	105	35	-55	-190	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	120000 gal
12A1	35	4	KNB	Alfalfa Seeding Fall	Alfalfa	3.6-4.5	50	240	None	40	118	0	0	240	57	35	227	57	35	-13	Potash 0-0-61	200 lb Summer Unincorp	0-0-122	7000 lb
Seeded summer 2017. Manure applied before seeding																								
13F-1	38	9	KNC2	Winter Rye (forage) to Oatlage w/ Alfalfa Seeding Spring	Alfalfa	3.6-4.5	50	240	None	12	66	0	80	295	70	35	105	70	-45	-190	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	228000 gal
Summer 2017 seeded. Manure applied before seeding.																								
14A	22	16	KNB2	Alfalfa	Alfalfa	3.6-4.5	50	240	None	15	85	0	80	295	35	35	105	35	-45	-190	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	132000 gal
16 A1 East	15	2	MCA	Alfalfa Seeding Fall	Alfalfa	4.6-5.5	65	300	None	49	109	0	0	340	48	35	105	48	35	-235	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	80000 gal
16B-5	10	1	ONa	Alfalfa Seeding Fall	Alfalfa	3.6-4.5	50	240	None	15	79	0	80	295	9	0	122	9	-80	-173	Potash 0-0-61	200 lb Summer Unincorp	0-0-122	2000 lb
16B-6&7	35	1	ONa	Alfalfa Seeding Fall	Alfalfa	3.6-4.5	50	240	None	45	193	0	0	80	33	0	122	33	0	62	Potash 0-0-61	200 lb Summer Unincorp	0-0-122	7000 lb
16F	8	4	SNB	Alfalfa	Alfalfa	4.6-5.5	65	300	None	70	156	0	0	150	0	0	0	0	0	-150				

SnapPlus Spreading and Nutrient Management Sorted By Crop Report

02/02/2018

Alfalfa Fields				Crop Removal				Soil Test			Adjusted Recs			Planned Applications and Credits			Over(-) Under(+)			Applications				
Name	Ac.	Slp %	Soil Map Symbol (green) & H Res	Prior Crop	2018 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205-K2O credit	Total Amt
16F	3.5	4	MIB	Alfalfa	Alfalfa	4.6-5.5	65	300	None	42	38	0	35	355	0	0	0	0	-35	-355	Potash 0-0-61	200 lb Summer Unincorp	0-0-122	4200 lb
17A	21	1.5	OnA	Alfalfa Seeding Fall	Alfalfa	3.6-4.5	50	240	None	22	123	0	50	240	20	0	122	20	-50	-118	Potash 0-0-61	200 lb Summer Unincorp	0-0-122	4200 lb
18A-3	15	4	MCA W	Alfalfa Seeding Fall	Alfalfa	3.6-4.5	50	240	None	16	95	0	80	280	58	35	105	58	-45	-175	Dairy Liquid Avg 6-6-18	8000 gal Summer Unincorp	35-35-105	90000 gal
18B-1	12	4	KIB2	Alfalfa Seeding Fall	Alfalfa	4.6-5.5	65	300	None	12	62	0	95	355	29	0	0	29	-95	-355				
18B-2	4	4	KIB	Alfalfa	Alfalfa	3.6-4.5	50	240	None	13	66	0	80	224	0	0	122	0	-80	-102	Potash 0-0-61	200 lb Summer Unincorp	0-0-122	800 lb
26A-1	15	4	KIB	Alfalfa	Alfalfa	3.6-4.5	50	240	None	15	59	0	80	295	35	35	227	35	-45	-68	Potash 0-0-61	200 lb Summer Unincorp	0-0-122	3000 lb
26A-2	30.5	4	KIB	Alfalfa	Alfalfa	3.6-4.5	50	240	None	12	64	0	80	295	0	0	122	0	-80	-173	Dairy Liquid Avg 6-6-18	8000 gal Summer Unincorp	35-35-105	90000 gal
26A-3	22	9	KIB2	Alfalfa	Alfalfa	3.6-4.5	50	240	None	39	72	0	0	295	35	35	105	35	35	-190	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	132000 gal
26A-4	10	4	MCA	Alfalfa	Alfalfa	3.6-4.5	50	240	None	42	89	0	0	295	0	0	122	0	0	-173	Potash 0-0-61	200 lb Summer Unincorp	0-0-122	2000 lb
26B-2 E&W	19.5	8	MCA	Winter Rye (forage) to Late-Direct Seeded Legume Forage	Alfalfa	4.6-5.5	65	300	None	50	97	0	0	340	30	0	0	30	0	-340				
DL-1	15	4	KIB	Oats w/ Alfalfa Seeding Spring	Alfalfa	4.6-5.5	65	300	None	101	201	0	0	75	0	0	0	0	0	-75				

SnapPlus Spreading and Nutrient Management Sorted By Crop Report

Alfalfa Fields				Crop Removal				Soil Test		Adjusted Recs		Planned Applications and Credits		Over(+) Under(-) Adj. UW Recs		Applications						
Name	Ac.	Slp % Symbol (pred) & N Recs	Soil Map	Prior Crop	2018 Crop	Yield Goal	P205	K20	Tillage	Avg P ppm	Avg K	N	P205	K20	N	P205	K20	Product Name and Analysis	Appl Rate and Method	N-P205-K20 credit	Total Amt	
DL-1,2	19	4	KNB	Oats w/ Alfalfa Seeding Spring	Alfalfa	4.6-5.5	65	300	None	101	201	0	0	75	0	0	0	-75				
DL-K2	48	4	KNB W	Oats w/ Alfalfa Seeding Spring	Alfalfa	4.6-5.5	65	300	None	8	69	0	105	355	35	35	105	35	Dairy Liquid Avg 6-6-18	6000 gal Summer Umicorp	35-35-105	288000 gal
KB10	20	9	KNC2	Alfalfa	Alfalfa	4.6-5.5	65	300	None	13	71	0	95	355	47	35	105	47	Dairy Liquid Avg 6-6-18	6000 gal Summer Umicorp	35-35-105	120000 gal
KB11-13	50	9	KNC2	Alfalfa	Alfalfa	4.6-5.5	65	300	None	10	72	0	105	355	47	35	105	47	Dairy Liquid Avg 6-6-18	6000 gal Summer Umicorp	35-35-105	300000 gal
KB1-4	57	4	KNB2	Alfalfa	Alfalfa	4.6-5.5	65	300	None	9	66	0	105	355	47	35	105	47	Dairy Liquid Avg 6-6-18	6000 gal Summer Umicorp	35-35-105	342000 gal
KB19-21	23	25	KNC2	Alfalfa	Alfalfa	4.6-5.5	65	300	None	5	57	0	105	355	47	35	105	47	Dairy Liquid Avg 6-6-18	6000 gal Summer Umicorp	35-35-105	138000 gal
KB6	20	4	KNB2	Alfalfa	Alfalfa	4.6-5.5	65	300	None	10	72	0	105	355	47	35	105	47	Dairy Liquid Avg 6-6-18	6000 gal Summer Umicorp	35-35-105	120000 gal
KB7-8	30	4	KNB W	Alfalfa	Alfalfa	4.6-5.5	65	300	None	7	76	0	105	355	47	35	105	47	Dairy Liquid Avg 6-6-18	6000 gal Summer Umicorp	35-35-105	180000 gal
KB9	21	9	KNC2	Alfalfa	Alfalfa	4.6-5.5	65	300	None	16	90	0	95	340	47	35	105	47	Dairy Liquid Avg 6-6-18	6000 gal Summer Umicorp	35-35-105	126000 gal
Mat 18	18	4	KNB2	Winter Rye (for 90%) to Oatlage w/ Alfalfa Seeding Spring	Alfalfa	4.6-5.5	65	300	None	22	119	0	0	268	49	0	0	49				
Alfalfa seeded summer 2017. Manure applied before seeding.																						

Alfalfa seeded summer 2017. Manure applied before seeding.

SnapPlus Spreading and Nutrient Management Sorted By Crop Report

02/02/2018

Alfalfa Fields				Crop Removal				Soil Test		Adjusted Recs		Planned Applications and Credits		Over(+) Under(-) Adj. UW Recs		Applications							
Name	Ac.	Slp % (pred) & N Rec	Soil Map Symbol	Prior Crop	2018 Crop	Yield Goal	P205	K2O	Tillage	Avg P ppm	Avg K	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205-K2O credit	Total Amt		
Mat 21	24	4	KNB2	Winter Rye (forage) to Oatlage w/ Alfalfa Seeding Spring	Alfalfa	3.5-4.5	50	240	None	44	154	0	0	120	49	0	49	0	-120				
Summer 2017 alfalfa seeding. Manure applied before seeding.																							
Mat 7	8.5	4	KNB2	Alfalfa	Alfalfa	4.5-5.5	65	300	None	28	93	0	35	315	35	35	105	35	0	-210	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105 51000 gal
Mat 7A	3	4	KNB2	Oatlage w/ Alfalfa Seeding Spring	Alfalfa	3.5-4.5	50	240	None	58	99	0	0	280	0	0	0	0	-280				
Mat B	16	4	KNB	Winter Rye (forage) to Oatlage w/ Alfalfa Seeding Spring	Alfalfa	4.5-5.5	65	300	None	36	117	0	0	300	0	0	0	0	-300				
Summer seeded in 2017. Manure applied before seeding																							

987.5 planned Alfalfa acres

536 planned 1st Cow Avg

4,098,000 planned gal Dairy Liquid Avg

45,200 planned lb Potash

Altalfa Seeding Fields				Crop Removal			Soil Test			Adjusted Recs			Planned Applications and Credits			Over(+) Under(-) Adj. UN Recs			Applications		
Name	Ac.	Sip %	Soil Map Symbol & N Res	Prior Crop	2018 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205-K2O credit	Total Amt
11U1A	9	22.5	KME2	Winter wheat (grain +straw)	Altalfa Seeding Fall	2.6-3.5	40	180	FCND	6	67	0	80	235	117	89	263	Dairy Liquid Avg 8-6-18	15000 gal Fall	117-89-263	135000 gal
11U1T	14.5	9	KHC2	Winter wheat (grain +straw)	Altalfa Seeding Fall	2.6-3.5	40	180	FCND	23	75	30	40	235	117	89	263	Dairy Liquid Avg 8-6-18	15000 gal Fall	117-89-263	217500 gal
11U2	15	9	KHB2	Winter wheat (grain +straw)	Altalfa Seeding Fall	2.6-3.5	40	180	FCND	18	69	0	40	235	117	89	263	Dairy Liquid Avg 8-6-18	15000 gal Fall	117-89-263	225000 gal
11U3	13	9	KHC2	Winter wheat (grain +straw)	Altalfa Seeding Fall	2.6-3.5	40	180	FCND	8	79	0	80	235	117	89	263	Dairy Liquid Avg 8-6-18	15000 gal Fall	117-89-263	195000 gal
26-B1 North	10	16	KHB	Com grain	Date w/ Altalfa Seeding Spring	61-90	65	215	SCND	74	175	20	0	55	87	105	120	Cow Avg 3-4-4	30 ton Fall	87-105-120	300 ton
26-B1 South	15	8	Bc	Com silage	Date w/ Altalfa Seeding Spring	61-90	65	215	FCND	38	112	20	0	215	114	105	120	Cow Avg 4-4-4	30 ton Fall	114-105-120	450 ton

76.5 planned Altalfa Seeding acres

750 planned Ion Cow Avg

772,500 planned gal Dairy Liquid Avg

Corn on Corn Fields				Crop Removal		Soil Test		Adjusted Recs		Planned		Over(+)/Under(-)		Applications	
	Soil Map Symbol (pred) & N	Prior Crop	2018 Crop	Yield	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O
Name	Ac.	Stp% Res		Goal											
11Q1	14	4	KIB W	Corn silage	15.1-20	65	145	FCD	41	88	190	0	200	168	109

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Corn on Corn Fields				Crop Removal		Soil Test		Adjusted Recs		Planned Applications and Credits		Over(+)-Under(-) Adj. UW Recs		Applications									
Name	Ac.	Soil Map Symbol & N	Prior Crop	2018 Crop	Yield	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205-K2O credit	Total Amt			
13E-2	15.5	4 KnB2 W	Corn silage	Corn silage	20.1-25	80	185	FCND	39	142	190	0	95	180	136	307	-10	136	212	Dairy Liquid Avg 8-6-18	12500 gal Spring	98-74-219	193750 gal
13E-3	22.5	4 KnB2	Corn silage	Corn silage	20.1-25	80	185	FCD	25	85	190	80	240	173	122	291	-17	42	51	12-10-20 Starter 8-6-18	200 lb Spring	24-20-40	4500 lb
13G-1	20	4 MCA	Corn grain	Corn grain	151-170	60	45	FCD	40	123	190	0	45	164	108	303	-26	109	258	Cow Avg 3-4-4	8 ton Fall	23-28-32	160 ton
14B	45	4 KnB2	Corn silage	Corn silage	20.1-25	80	185	FCND	21	77	190	80	240	149	114	320	-41	34	80	Dairy Liquid Avg 8-6-18	15000 gal Spring	117-89-263	300000 gal
16 A1 West	13	1.5 O&A	Corn silage	Corn silage	20.1-25	80	185	FCND	11	75	190	120	240	37	20	40	-153	-100	-200	12-10-20 Starter 8-6-18	200 lb Spring	24-20-40	2600 lb
16B-2	17.5	2 MCA	Corn silage	Corn grain	151-170	60	45	FCND	19	91	190	60	75	154	109	303	-36	49	228	12-10-20 Starter 8-6-18	200 lb Spring	24-20-40	3500 lb
																				Dairy Liquid Avg 8-6-18	15000 gal Spring	117-89-263	262500 gal

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Corn on Corn Fields						Crop Removal		Soil Test ppm		Adjusted Recs lb/ac		Planned Applications and Credits lb/ac		Over(+)/Under(-) Adj. U/V Recs lb/ac		Applications																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Name	Ac.	Slp%	Res 2 N	Prior Crop	2018 Crop	Yield Goal	Soil Map Symbol (prev)										Product Name and Analysis	Appln Rate and Method	N-P205- K2O credit	Total Amt																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
							W	OnB	Corn silage	Corn silage	P205	K2O	Tillage	Avg P	Avg K	N					P205	K2O	N	P205	K2O																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
16C	8.5	4	W	Corn silage	Corn silage	20.1- 25																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												

Corn on Corn Fields					Crop Removal			Soil Test ppm		Adjusted Recs lb/ac		Planned Applications and Credits lb/ac			Over(-) Under(+) Adj. UW Recs lb/ac			Applications						
Name	Ac.	Slip%	Soil Map Symbol (pred) & N	Prior Crop	2018 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205-K2O credit	Total Amt			
Asch 2	27	4	KNB	Alfalfa (1st cut) to Corn silage	Corn silage	20.1-25	80	185	FCD	14	57	190	110	240	149	114	320	-41	4	80	12-10-20 Starter 12-10-20	200 lb Spring Subsurface	24-20-40	5400 lb
Herald Rd	50	9	WOC2 W	Corn silage	Corn grain	151-170	60	45	FCND	6	44	190	100	90	141	109	303	-49	9	213	Dairy Liquid Avg 8-6-18 12-10-20 Starter 12-10-20	16000 gal Spring Incorp 200 lb Spring Subsurface	125-94-280	432000 gal
Matt 20	22	4	KNB2	Corn silage	Corn grain	151-170	60	45	FCND	22	94	190	42	31	142	94	259	-48	52	228	Dairy Liquid Avg 8-6-18 12-10-20 Starter 12-10-20	15000 gal Fall Incorp 200 lb Spring Subsurface	117-89-263	750000 gal
Matt 20 - 5	16.5	4	KNB	Corn silage	Corn grain	151-170	60	45	FCD	40	79	190	0	90	146	94	259	-44	94	169	Dairy Liquid Avg 8-6-18 12-10-20 Starter 12-10-20	12500 gal Fall Incorp 200 lb Spring Subsurface	98-74-219	275000 gal
Matt 20 4se	8	4	MCA	Corn silage	Corn grain	151-170	60	45	FCND	11	59	190	100	0	142	108	140	-48	8	140	Dairy Liquid Avg 8-6-18 12-10-20 Starter 12-10-20	12500 gal Fall Incorp 200 lb Spring Subsurface	98-74-219	206250 gal
Matt 20 Pasture	2	4	MCA	Alfalfa (1st cut) to Corn silage	Corn silage	20.1-25	80	185	FCND	274	255	190	0	0	178	20	40	-12	20	40	Cow Avg 4-4-4 12-10-20 Starter 12-10-20	25 ton Spring Incorp 200 lb Spring Subsurface	95-88-100	200 ton

Corn on Corn Fields					Crop Removal		Soil Test ppm		Adjusted Recs lb/ac		Planned Applications and Credits lb/ac		Over(+) Under(-) Adj. UW Recs lb/ac		Applications						
Name	Ac.	Slip% Res	Map Symbol (1 (prod) & N	Prior Crop	2018 Crop	Yield Gai	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205- K20 credit	Total Amt
Maple Pasture	2	4	McA	Alfalfa (1st cut) to Corn silage	Corn silage	20.1- 25	80	185	FCND	274	255	190	0	0	178	20	40	Urea 46-0-0	225 lb Spring incorp	104-0-0	450 lb
																		legume		50-0-0	
MM-East	5	8	KH6	Corn grain	Corn silage	15.1- 20	65	145	FCO	10	53	190	105	200	140	160	200	12-10-20 Starter	200 lb Spring Subsurface ^e	24-20-40	1000 lb
																		Cow Avg 3-4-4	15 ton Fall Ureincorp	44-53-60	75 ton
																		Cow Avg 3-4-4	25 ton Spring Ureincorp	73-88-100	125 ton
MM-West	10	8	KHC2	Corn grain	Corn silage	15.1- 20	65	145	FCO	61	181	190	0	35	111	125	160	12-10-20 Starter	200 lb Spring Subsurface ^e	24-20-40	2000 lb
																		Cow Avg 3-4-4	30 ton Spring Ureincorp	87-105- 120	300 ton
TOWER & W	35	4	Po W	Corn silage	Corn silage	20.1- 25	80	185	FCND	46	92	145	0	225	168	91	250	12-10-20 Starter	200 lb Spring Subsurface ^e	24-20-40	7000 lb
																		Daily Liquid Avg 8-6-18	12000 gal Fall incorp	94-71-210	420000 gal
																		legume		50-0-0	

623 planned Corn on Corn acres

124,600 planned lb 12-10-20 Starter

2,406 planned ton Cow Avg

7,612,750 planned gal Dairy Liquid Avg

1,225 planned ton Heifer Avg

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450 planned lb Urea

First Year Corn Grain Fields										Crop Removal			Soil Test ppm		Adjusted Recs lb/ac		Planned Applications and Credits lb/ac		Over(+) Under(-) Adj. UW Recs lb/ac		Applications			
Soil Map Symbol (prev)					Yield	P205		K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205- K2O credit	Total Amt			
Name					Ac.	Sip & N Res	Prior Crop	2018 Crop	Goal															
14A-11					5.5	16	KHB	Alfalfa	Corn grain	151-170	60	45	SCD	13	89	190	90	90	187	108	140	-3	18	50
												</												

First Year Corn Grain Fields										Crop Removal		Soil Test		Adjusted Recs		Planned Applications and Credits		Over(+) Under(-) Adj. UIV Recs		Applications			
Soil Map Symbol (pred)												ppm		lb/ac		Credits lb/ac		lb/ac					
Name	Ac.	SIP %	Rea	Prior Crop	2018 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205-K2O credit	Total Amt		
Matzke 1	40	4	KHB	Alfalfa	Corn grain	151-170	60	45	SCD	7	87	190	100	90	204	116	148	14	15	58	Cow Avg 3-4-6 Unincorp	35-42-48	480 ton
Part of Brown Cty WSP																							
Matzke 3	5	9	KHB	Alfalfa	Corn grain	151-170	60	45	FCD	7	39	190	100	90	209	108	140	19	8	50	legume 12-10-20 Starter 12-10-20 Cow Avg 4-4-6 incorp	200 lb Spring incorp 25 ton Spring incorp	24-20-40 1000 lb 95-88-100 125 ton
VO10	95	3	MCA R 7-10 inch TOW	Soybeans	Corn grain	151-170	60	45	FFC	10	87	140	100	90	133	30	107	-7	-70	17	9-15-23-95 9-15-23 Potash 0-0-61 Urea 46-0-0 incorp	200 lb Spring incorp 100 lb Spring incorp 250 lb Spring incorp	16-30-46 19000 lb 0-0-61 8500 lb 115-0-0 23750 lb

205.5 planned First Year Corn Grain acres

22,100 planned lb 12-10-20 Starter

19,000 planned lb 9-15-23-95

1,342 planned ton Cow Avg

537,000 planned gal Dairy Liquid Avg

9,500 planned lb Potash

23,750 planned lb Urea

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First Year Corn Silage Fields										Crop Removal		Soil Test		Adjusted Recs lb/ac		Planned Applications and Credits lb/ac		Over(+)/ Under(-) Adj. UIV Recs lb/ac		Applications				
Name	Ac.	Slp % (pred) & N Res	Map Symbol & Crop	Prior Crop	2018 Crop Goal	Yield	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205- K2O credit	Total Amt
Mat 11A	1.5	4	KHB2	Alfalfa	Alfalfa (1st cut) to Corn silage	20.1-25	105	290	SCD	23	68	190	80	240	195	68	90	5	-12	-150	12-10-20 Starter 12-10-20	150 lb Spring Subsurfa ce	18-15-30	225 lb
																					Cow Avg 4-4-4	15 ton Spring Incorp	57-53-60	22 ton
																					legume		120-0-0	
Mat 2	17	9	KHC2	Alfalfa	Corn silage	20.1-25	80	185	SCND	25	97	190	80	225	202	76	104	12	-4	-121	12-10-20 Starter 12-10-20	200 lb Spring Subsurfa ce	24-20-40	3400 lb
																					Cow Avg 3-4-4	8 ton Winter Unincorp	23-28-32	136 ton
																					Cow Avg 3-4-4	8 ton Spring Unincorp	23-28-32	136 ton
																					legume		120-0-0	
Mat 3	25	9	KHC2	Alfalfa	Alfalfa (1st cut) to Corn silage	20.1-25	105	290	SCD	13	78	190	110	240	204	79	215	14	-31	-25	12-10-20 Starter 12-10-20	200 lb Spring Subsurfa ce	24-20-40	5000 lb
																					Dairy Liquid Avg 8-6-18	10000 gal Spring Incorp	78-59-175	250000 gal
																					legume		90-0-0	
Mat 5	10	9	KHC2	Alfalfa	Corn silage	20.1-25	80	185	FCND	17	100	190	110	225	200	86	186	10	-24	-39	12-10-20 Starter 12-10-20	200 lb Spring Subsurfa ce	24-20-40	2000 lb
																					Cow Avg 3-4-4	8 ton Fall Unincorp	23-28-32	80 ton

First Year Corn Silage Fields										Crop Removal		Soil Test		Adjusted Recs lb/ac		Planned Applications and Credits lb/ac		Over(+) Under(-) Adj. UW Recs lb/ac		Applications				
Name	Ac.	Map Symbol (prec) & N Rec	Prior Crop	2018 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205- K2O credit	Total Amt gal	
Mat 5	10	9	KHC2	Alfalfa	Corn silage	20.1-25	80	185	FCMD	17	100	190	110	225	200	86	186	10	-24	-39	Dairy Liquid Avg 8-6-18	6500 gal Fall Incorp	51-38-114	65000 gal
																				legume		90-0-0		
Mat 8A	3	4	KHB	Alfalfa	Corn silage	20.1-25	90	185	SCMD	36	71	190	0	230	200	62	170	10	62	-60	12-10-20 Starter 12-10-20	150 lb Spring Subsurtic cr	18-15-30	450 lb
																				Dairy Liquid Avg 8-6-18	8000 gal Spring Incorp	62-47-140	24000 gal	
																				legume		120-0-0		

142 planned First Year Corn Silage acres 28,175 planned lb 12-10-20 Starter
 702 planned ton Cow Avg
 978,000 planned gal Dairy Liquid Avg

Soybean Fields										Crop Removal		Soil Test		Adjusted Recs lb/ac		Planned Applications and Credits lb/ac		Over(+) Under(-) Adj. UW Recs lb/ac		Applications					
Name	Ac.	15	25	Soil Map	Prior Crop	2018 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205- K2O credit	Total Amt
KB14					Alfalfa	Soybeans 7 -10 inch row	46-55	40	70	FCND	40	66	0	0	115	132	0	0	132	0	-115	legume			
KB5	20	16		KHB	Alfalfa	Soybeans 7 -10 inch row	46-55	40	70	FCND	10	75	0	80	115	132	0	0	132	-80	-115	legume			
VO11	100	4		KHB2 R	Corn grain	Soybeans 7 -10 inch row	46-55	40	70	FCND	11	78	0	70	0	29	0	92	29	-70	92	Potash 0-0-61	150 lb Spring incorp.	0-0-92	15000 lb

135 planned Soybean acres

15,000 planned lb Potash

Other Crops Fields				Crop Removal				Soil Test				Adjusted Recs lb/ac				Planned Applications and Credits lb/ac				Over(+)/ Under(-) Adj. U/W Recs lb/ac				Applications			
Name	Ac.	Map Symbol (pred) & N Res	Prior Crop	2018 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205- K2O credit	Total Amt				
11G2	7.5	9	KnB	Corn silage	2.0- (range) to 3.5/15.1 -20	115	365	F/C/C: P	48	146	250	0	185	196	172	300	-54	172	115	12-10-20 Starter 12-10-20 Subsurfs	200 lb Spring Subsurfs	24-20-40	1500 lb				
11G-3 East	20	2	Ma4 W	Winter Rye (range) to Corn silage, 30 inch row	2.0- (range) to 3.5/15.1 -20	115	365	F/C/C: P	14	62	250	175	465	187	136	328	-63	-39	-137	12-10-20 Starter 12-10-20 Subsurfs	200 lb Spring Subsurfs	24-20-40	4000 lb				
																				Dairy Liquid Avg 8-6-18	12000	94-71-210	240000	gal			
																				Heiler Avg 3-4-7	12 ton Winter Unincorp	38-46-78	240 ton				
11G4	33	4	KnB W	Winter Rye (range) to Corn silage, 30 inch row	2.0- (range) to 3.5/15.1 -20	115	365	F/C/C: P	19	84	250	0	399	205	136	328	-45	136	-71	12-10-20 Starter 12-10-20 Subsurfs	200 lb Spring Subsurfs	24-20-40	6600 lb				
Part of Brown Cty WSP																											
Dairy Liquid Avg 8-6-18																								12000	94-71-210	395000	gal
Heiler Avg 3-4-7																								12 ton Winter Unincorp	38-46-78	396 ton	

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Other Crops Fields				Crop Removal				Soil Test				Adjusted Recs				Planned Applications and Credits				Over(+) Under(-) Adj. UW Recs				Applications			
Name	Ac.	Map Symbol (pred) & N Res	Prior Crop	2018 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205-K20 credit	Total Amt				
Part of Brown County WSP																											
11J1&2	26	4	KnB	Corn silage	Winter Rye (forage) to Corn silage, 30 inch row	2.0-3.5/20.1	130	405	FFC/C P	87	271	250	0	0	198	139	337	-51	139	337	12-10-20 Starter 12-10-20	200 lb Spring Subsurfs	24-20-40	5200 lb			
11K1A	9	4	KnB2	Winter Rye (forage) to Corn silage, 30 inch row	Winter wheat (grain +straw)	81-100	55	90	Fc&E	70	174	75	0	25	24	0	0	-51	0	25	Dairy Liquid Avg 8-6-18	12500 gal Spring Incorp	96-74-218	325000 gal			
11K1B	2.5	2	MaA	Winter Rye (forage) to Corn silage, 30 inch row	Winter wheat (grain)	81-100	45	30	Fc&E	4	51	75	85	85	29	0	122	-46	-85	37	Potash 0-0-61	200 lb Summer Unincorp	0-0-122	500 lb			
11K1C	5	9	KoC2	Winter Rye (forage) to Corn silage, 30 inch row	Winter wheat (grain +straw)	81-100	55	90	Fc&E	56	168	75	0	45	32	0	0	-43	0	-45							
11I-East	10	4	KnB	Corn silage	Winter Rye (forage) to Corn silage, 30 inch row	2.0-3.5/15.1	115	365	FFC/C P	74	220	250	0	90	188	136	328	-62	136	238	12-10-20 Starter 12-10-20	200 lb Spring Subsurfs	24-20-40	2000 lb			
Dairy Liquid Avg 8-6-18																											
12000 gal Summer Incorp																											
94-71-210 120000 gal																											

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Other Crops Fields										Crop Removal			Soil Test		Adjusted Recs lb/ac		Planned Applications and Credits lb/ac		Over(+) Under(-) Adj. UNW Recs lb/ac		Applications	
Name	Ac.	Soil Map Symbol (pred) & N Res	Prior Crop	2018 Crop	Yield Goal	P205	K20	Tillage FF/C P	Avg P	Avg K	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205- K20 credit	Total Amt		
11L-East	10	4 KN8	Com silage	Winter Rye (forage) to Corn silage, 30 inch row	2.0- 3.5/15.1 -20	115	365		7.4	220	250	0	90	188	136	328	-62	136	238	Heifer Avg 3-4-7 12 ton Winter Unincorp	38-46-78 K20 credit	120 ton
Part of Brown Cty WSP																						
11T	5	4 MCA	Com silage	Winter Rye (forage) to Late-Direct Seeded Legume Forage	2.0-3.5	50	220		68	199	60	0	0	123	85	130	63	85	130	Cow Avg 3-4-4 8 ton Winter Unincorp	23-28-32 K20 credit	40 ton
11T-east	38	8 KN82 W	Com silage	Winter Rye (forage) to Late-Direct Seeded Legume Forage	2.0-3.5	50	220		95	235	60	0	55	129	94	215	69	94	160	Heifer Avg 4-4-7 15 ton Summer Incorp	65-57-98 K20 credit	75 ton
13E-1	48	8 KNJ2 W	Com silage	Winter wheat (grain +straw) to Late-Direct Seeded Legume Forage	81-100	55	90		18	65	75	55	145	154	97	289	79	42	144	Dairy Liquid Avg 8-6-18 10000 gal Summer Incorp	78-59-175 K20 credit	380000 gal
13H-1	21	4 KJB	Com silage	Winter Rye (forage) to Late-Direct Seeded Legume Forage	2.0-3.5	50	220		63	138	60	0	220	123	106	250	63	106	30	Cow Avg 3-4-4 10 ton Summer Unincorp	29-35-40 K20 credit	210 ton
Potential fall seed alfalfa. Apply manure before seeding.																						
Part of Brown county WSP if needed																						

SnapPlus Spreading and Nutrient Management Sorted By Crop Report

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Other Crops Fields				Crop Removal			Soil Test			Adjusted Recs Ib/ac		Planned Applications and Credits Ib/ac		Over(+) Under(-) Adj. UW Recs Ib/ac		Applications							
Name	Ac.	Map Symbol (green) & % N Res	Prior Crop	2018 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205- K20 credit	Total Amt			
13H-2 N	10	4 K182	Com silage	Winter Rye (forage) to Late-Direct Seeded Legume Forage	2.0-3.5	50	220	Fault	41	158	60	0	110	117	89	263	57	89	153	Dairy Liquid Avg 8-6-18	15000 gal Summer Incorp	117-89- 263	150000 gal
Part of Brown county WSP if needed																							
26C	24.5	4 MCA W	Com silage	Winter Rye (forage) to Late-Direct Seeded Legume Forage	2.0-3.5	50	220	Fault	17	69	60	80	265	118	123	140	58	43	-125	Cow Avg 3-4-4	35 ton Summer Unincorp	102-123- 140	858 ton
26D-4	19.5	4 MCA	Com silage	Winter wheat (grain +straw) to Late-Direct Seeded Legume Forage	81-100	55	90	Fault	19	72	75	55	145	117	89	263	42	34	118	Dairy Liquid Avg 8-6-18	15000 gal Summer Incorp	117-89- 263	282500 gal
26D5-7	57	4 MCA	Com silage	Winter wheat (grain +straw) to Late-Direct Seeded Legume Forage	61-80	45	80	Fault	12	62	75	75	135	117	89	263	42	14	128	Dairy Liquid Avg 8-6-18	15000 gal Summer Incorp	117-89- 263	855000 gal
Asch 3	18.5	4 K182 W	Com silage	Winter Rye (forage) to Late-Direct Seeded Legume Forage	2.0-3.5	50	220	Fault	47	84	60	0	265	125	94	280	65	94	15	Dairy Liquid Avg 8-6-18	16000 gal Summer Incorp	125-94- 280	286000 gal
Bowser Creek	50	2 Fa WP	Winter wheat (grain +straw)	Winter Rye (forage) to 3.5/15.1 -20	2.0-	115	365	Fault	14	65	190	175	465	144	117	280	-46	-58	-185	12-10-20 Starter 12-10-20	200 lb Spring Incorp	24-20-40	10000 lb
																				Dairy Liquid Avg 8-6-18	10000 gal Summer Incorp	78-59-175	500000 gal

Other Crops Fields										Crop Removal				Soil Test				Adjusted Recs lb/ac		Planned Applications and Credits lb/ac		Over(+) Under(-) Adj. UNR Recs lb/ac		Applications	
Name	Ac.	Shp % N Res	Map Symbol (pred) & Fa WP	Prior Crop	2018 Crop	Yield Goal	P2O5	K2O	Tillage	Avg P	Avg K	N	P2O5	K2O	N	P2O5	K2O	N	P2O5	K2O	Product Name and Analysis	Appln Rate and Method	N-P2O5- K2O credit	Total Amt	
Bower Creek	50	2	Fa WP	Winter wheat (forage) to Corn silage. +straw)	Winter Rye (forage) to Corn silage. 30 inch row	2.0- 3.5/15.1 -20	115	365	Fault	14	65	190	175	465	144	117	280	-46	-58	-185	Heiler Avg 3-4-7	10 ton Fall	32-38-65	500 ton	
Mat 1	20	9	KNC2	Corn silage	Winter wheat (grain +silage)	81-100	55	90	Fault	24	119	75	55	90	45	0	61	-30	-55	-29	AMS 21-0-0	50 lb Spring	11-0-0	1000 lb	
																					Unincorp				
																					Potash 0-0-61	100 lb Spring	0-0-61	2000 lb	
																					Unincorp				
																					Urea 45-0-0	75 lb Spring	35-0-0	1500 lb	
																					Unincorp				
Potential summer seed to alfalfa in 2018. Apply manure before seeding.																									
Mat 11	31	4	KNB2	Corn silage	Winter Rye (forage) to Corn silage. 30 inch row	2.0- 3.5/20.1 -25	130	405	Fault	47	113	250	0	405	116	89	249	-134	89	-156	12-10-20 Starter	150 lb Spring	18-15-30	4650 lb	
																					Subsurtia				
																					Dairy Liquid Avg 8-6-18	12500 gal Summer incorp	98-74-219	387500 gal	
Mat 11A	1.5	4	KNB2	Alfalfa	Alfalfa (1st cut) to Corn silage	20.1-25	105	290	SCD	23	68	190	80	240	195	68	90	5	-12	-150	12-10-20 Starter	150 lb Spring	18-15-30	225 lb	
																					Subsurtia				
																					Cow Avg 4-4-4	15 ton Spring incorp	57-53-60	22 ton	
																					legume		120-0-0		
Mat 3	25	9	KNC2	Alfalfa	Alfalfa (1st cut) to Corn silage	20.1-25	105	290	SCD	13	78	190	110	240	204	79	215	14	-31	-25	12-10-20 Starter	200 lb Spring	24-20-40	5000 lb	
																					Subsurtia				
																					Dairy Liquid Avg 8-6-18	10000 gal Spring incorp	78-59-175	250000 gal	

SnapPlus Spreading and Nutrient Management Sorted By Crop Report

Other Crops Fields				Crop Removal				Soil Test				Adjusted Recs lb/ac				Planned Applications and Credits lb/ac				Over(+) Under(-) Adj. UW Recs lb/ac				Applications	
Name	Ac.	Slp % N Res	Map Symbol & Crop	Prior Crop	2018 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205- K20 credit	Total Amt	
Mat 3																					legume		90-0-0		
Mat 4	25	9	KnC2	Corn silage	Winter wheat (grain) to Late-Direct Seeded Legume Forage	81-100	45	30	Fall	21	82	75	45	85	117	89	263	42	44	178	Dairy Liquid Avg 8-6-18	15000 gal Summer Incorp	117-89- 263	375000 gal	
Summer seed alfalfa after wheat. Apply manure before seeding																									
Matzke 4	16	9	KnB	Corn silage	Winter Rye (forage) to Late-Direct Seeded Legume Forage	2.0-3.5	50	220	Fall	39	71	60	0	265	123	71	210	63	71	-55	Dairy Liquid Avg 8-6-18	12000 gal Summer Incorp	94-71-210	192000 gal	
Matzke 6-7	16.5	9	KnC2	Corn silage	Winter Rye (forage) to Late-Direct Seeded Legume Forage	2.0-3.5	50	220	Fall	43	82	60	0	265	94	71	210	34	71	-55	Dairy Liquid Avg 8-6-18	12000 gal Summer Incorp	94-71-210	198000 gal	
Matzke 8	20	15	KnC2	Corn silage	Winter wheat (grain) to Late-Direct Seeded Legume Forage	81-100	45	30	Fall	25	81	75	45	85	117	89	263	42	44	178	Dairy Liquid Avg 8-6-18	15000 gal Summer Incorp	117-89- 263	300000 gal	
Matzke 9	16.5	16	KnC2	Corn grain	Winter Rye (forage) to Late-Direct Seeded Legume Forage	2.0-3.5	50	220	Fall	25	67	60	50	265	94	71	210	34	21	-55	Dairy Liquid Avg 8-6-18	12000 gal Summer Incorp	94-71-210	198000 gal	

Other Crops Fields										Applications																			
Soil Map					Crop Removal					Soil Test					Adjusted Recs					Planned Applications and Credits lb/ac					Over(-) Under(-) Adj, UW Recs lb/ac				
Name	Ac.	Sip %	Symbol (ored) & N Rec	Prior Crop	2018 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205-K20 credit	Total Amt					
Van Rens	40	9	KNC2	Corn grain	Winter Rye (forage) to Late-Direct Seeded Legume Forage	2.0-3.5	50	220	Fault	20	68	60	50	265	124	99	242	64	49	-23	Cow Avg A-4.4	8 ton Summer	30-28-32	320 ton					

589.5 planned Other Crops acres

39,175 planned lb 12-10-20 Starter
 1,000 planned lb AMS
 1,830 planned ton Cow Avg
 6,979,000 planned gal Dairy Liquid Avg
 1,943 planned ton Heifer Avg
 2,500 planned lb Polash
 1,500 planned lb Urea

2,759 total planned acres

Total Planned to be Applied

Total Manure Volume	Manure App Plan	Remaining Manure
0 tons	10,712	-10,712
0 gals	20,727,250	-20,727,250

208,825 planned lb 12-10-20 Starter
 19,000 planned lb 9-15-23-9s
 1,000 planned lb AMS
 7,544 planned ton Cow Avg
 20,727,250 planned gal Dairy Liquid Avg
 3,168 planned ton Heifer Avg
 72,200 planned lb Polash

25,700 planned lb Urea

List of fields that need new soil tests before plan year 2019

11G1	11G4
11G-3 East	11N4
11T	11U7 N
11U7	12A2 & 27A2
12A 45 & 27	13F-1
18B-2	DL-K2

Tillage Abbreviations

Abbreviation	Tillage
CP	Chisel Plow, disked
CPND	Chisel Plow, no disk
FCD	Fall Chisel, disked
FCND	Fall Chisel, no disk
Fcult	Field Cultivation
FFC	Fall Cultivation
FFC/CP	crop 1: Fall Cult., crop 2: Chisel plow, no disk
None	None
SCD	Spring Chisel, disked
SCND	Spring Chisel, no disk
SFC	Spring Cultivation

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Crop Year 2019
Reported For Ledgerview Farms
Printed 2018-02-02
Plan Completion/Update Date 2001-01-01
SnapPlus Version 16.3 built on 2016-10-31

C:\Users\Kevin Beckard\OneDrive - Cooperative Resources International
 \AgSource Data Backups\Clients\175-CV Greenleaf\Ledgerview Farms
 ISMAP 2 Database\SNAP 16\Ledgerview Farms Snap 16 Main.snapDb

Prepared for:
 Ledgerview Farms
 attn:Roy, Glenn & Jason Pansier
 3875 DICKINSON RD
 DE PERE, 54115

Altafa Fields				Crop Removal				Soil Test				Adjusted Recs				Planned Applications and Credits				Over(+) Under(-) Adj. UNW Recs				Applications	
Name	Ac.	Sip % (pred) & N Recs	Soil Map	Prior Crop	2019 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205-K20 credit	Total Amt				
11G1	30	4	Mea	Altafa	Altafa	3.6-4.5	50	240	None	86	181	0	0	0	47	35	105	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	180000 gal				
11G3	36	4	McA W	Altafa	Altafa	3.6-4.5	50	240	None	59	113	0	0	240	47	35	227	Potash 0-0-61	200 lb Summer Unincorp	0-0-122	7200 lb				
11G-3 East	20	2	Mea W	Winter Rye (forage) to Corn silage, 30 inch row	Altafa	4.6-5.5	65	300	None	14	62	0	95	355	74	35	105	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	120000 gal				
11H1	19	4	KNB	Altafa	Altafa	4.6-5.5	65	300	None	155	354	0	0	0	0	0	122	Potash 0-0-61	200 lb Summer Unincorp	0-0-122	3800 lb				
11L1	20.5	4	KNB W	Altafa	Altafa	3.6-4.5	50	240	None	67	146	0	0	13	47	35	227	Potash 0-0-61	200 lb Summer Unincorp	0-0-122	4100 lb				
11M3	5	9	KNB	Altafa	Altafa	3.6-4.5	50	240	None	136	269	0	0	0	0	0	0	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	123000 gal				

SnapPlus Spreading and Nutrient Management Sorted By Crop Report

Alfalfa Fields				Crop Removal				Soil Test			Adjusted Recs			Planned Applications and Credits			Over(+)/Under(-) Adj. U/W Recs			Applications				
Name	Ac.	Slp %	Soil Map Symbol (pred) & N Recs	Prior Crop	2018 Crop	Yield Goal	P205	K20	Tillage	Avg P ppm	Avg K	N	P205	K20	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205-K20 credit	Total Amt
11N4	13	8	KNB	Alfalfa	Alfalfa	3.6-4.5	50	240	None	81	131	0	0	240	35	35	105	35	35	-135	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	78000 gal
11P	9	4	SvB R	Alfalfa	Alfalfa	3.6-4.5	50	240	None	20	64	0	50	295	0	0	122	0	-50	-173	Potash 0-0-61	200 lb Summer Unincorp	0-0-122	1800 lb
11S2	95	4	KNB	Alfalfa	Alfalfa	3.6-4.5	50	240	None	65	98	0	0	280	83	71	210	83	71	-70	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	570000 gal
11T	5	4	MCA	Winter Rye (forage) to Late-Direct Seeded Legume Forage	Alfalfa	3.6-4.5	50	240	None	68	199	0	0	0	66	35	227	66	35	227	Potash 0-0-61	200 lb Summer Unincorp	0-0-122	1000 lb
11T east	38	8	KNB2 W	Winter Rye (forage) to Late-Direct Seeded Legume Forage	Alfalfa	4.6-5.5	85	300	None	95	235	0	0	0	66	35	105	66	35	105	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	228000 gal
11U 1A	9	22.5	KMB2	Alfalfa Seeding Fall	Alfalfa	3.6-4.5	50	240	None	6	67	0	81	267	64	35	227	64	-46	-40	Potash 0-0-61	200 lb Summer Unincorp	0-0-122	1800 lb
11U 2B	20	18	KMB2	Alfalfa	Alfalfa	4.6-5.5	65	300	None	5	53	0	105	355	47	35	227	47	-70	-128	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	54000 gal
11U 7	14.5	9	KNC2	Alfalfa Seeding Fall	Alfalfa	3.6-4.5	50	240	None	23	75	0	1	267	100	71	210	100	70	-57	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	87000 gal

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Altalia Fields				Crop Removal				Soil Test				Over/Under (+) Adj. UNW Recs				Applications				
Name	Ac.	Sip Soil Map % Symbol (pred) & N Recs	Prior Crop	2018 Crop	Yield Goal	P205	K20	Tillage	Avg P ppm	Avg K	N	P205	K20	N	P205	K20	Product Name and Analysis	Appl Rate and Method	N-P205-K20 credit	Total Amt
11U1	14.5	9 KNC2	Altalia Seeding Fall	Altalia	3.6-4.5	50	240	None	23	75	0	1	267	100	71	210	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	87000 gal
11U2	15	9 KNC2	Altalia Seeding Fall	Altalia	4.6-5.5	65	300	None	18	69	0	16	327	100	71	210	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	90000 gal
11U3	13	9 KNC2	Altalia Seeding Fall	Altalia	3.6-4.5	50	240	None	8	79	0	81	267	64	35	105	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	78000 gal
12A1	35	4 KNC2	Altalia	Altalia	3.6-4.5	50	240	None	40	118	0	0	240	47	35	227	Potash 0-0-61	200 lb Summer Unincorp	0-0-122	70000 lb
13E-1	48	8 KNC2 W	Winter wheat (grain +straw) to Late-Direct Seeded Legume Forage	Altalia	4.6-5.5	65	300	None	18	65	0	23	211	73	41	123	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	41-41-123	336000 gal
13F-1	38	9 KNC2	Altalia	Altalia	3.6-4.5	50	240	None	12	66	0	80	295	33	71	210	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	228000 gal
13H-1	21	4 KNC2	Winter Rye (forage) to Late-Direct Seeded Legume Forage	Altalia	4.6-5.5	65	300	None	63	138	0	0	270	70	35	105	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	126000 gal

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Alitalia Fields				Crop Removal				Soil Test			Adjusted Recs			Planned Applications and Credits			Over(+) Under(-) Adj. UW Recs			Applications				
Name	Ac.	Slp %	Soil Map Symbol (pred) & N Recs	Prior Crop	2019 Crop	Yield Goal	P205	K2O	Tillage	Avg P ppm	Avg K	N	P205 lb/ac	K2O	N	P205 lb/ac	K2O	N	P205 lb/ac	K2O	Product Name and Analysis	Appln Rate and Method	N-P205-K2O credit	Total Amt
13H-2 N	10	4	Kh82	Winter Rye (forage) to Late-Direct Seeded Legume Forage	Alitalia	4.6-5.5	65	300	None	41	158	0	0	0	64	35	105	64	35	105	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	60000 gal
14A	22	16	Kh82	Alitalia	Alitalia	4.6-5.5	65	300	None	15	85	0	95	355	47	35	105	47	-60	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	132000 gal
16 A1 East	15	2	MCA	Alitalia	Alitalia	4.6-5.5	65	300	None	49	109	0	0	340	47	35	105	47	35	-235	Dairy Liquid Avg 6-6-18	8000 gal Summer Unincorp	35-35-105	90000 gal
16B-5	10	1	OnA	Alitalia	Alitalia	3.6-4.5	50	240	None	15	79	0	80	295	0	0	122	0	-80	-173	Potash 0-0-61	200 lb Summer Unincorp	0-0-122	2000 lb
16B-6&7	35	1	OnA	Alitalia	Alitalia	3.6-4.5	50	240	None	45	193	0	0	0	35	35	105	35	35	105	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	210000 gal
16F	3.5	4	MFB	Alitalia	Alitalia	4.6-5.5	65	300	None	42	38	0	35	355	0	0	0	0	-35	-355				
17A	21	1.5	OnA	Alitalia	Alitalia	3.6-4.5	50	240	None	22	123	0	50	240	35	35	227	35	-15	-13	Potash 0-0-61	200 lb Summer Unincorp	0-0-122	4200 lb
18B-1	12	4	KhB2	Alitalia	Alitalia	4.6-5.5	65	300	None	12	62	0	95	355	35	35	105	35	-60	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	126000 gal
26A-3	22	9	KhC2	Alitalia	Alitalia	3.6-4.5	50	240	None	39	72	0	0	295	65	53	158	65	53	-137	Dairy Liquid Avg 6-6-18	9000 gal Summer Unincorp	53-53-158	198000 gal
26-B1 North	10	16	KhB	Cats w/ Alitalia Seeding Spring	Alitalia	4.6-5.5	65	300	None	74	175	0	0	10	35	0	35	0	-10					

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Altafia Fields				Crop Removal				Soil Test		Adjusted Recs		Planned Applications and Credits		Over/Under (+) Adj. UN Recs		Applications						
Name	Ac.	Slp Soil Map % (pred) & N Recs	Prior Crop	2019 Crop	Yield Goal	P205	K20	Tillage	Avg P ppm	Avg K	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205-K20 credit	Total Amt		
26-B-1 South	15	8	Bc	Dats w/ Altafia Seeding Spring	Altafia	4.6-5.5	65	300	None	38	112	0	0	300	38	0	0	38	0	-300		
26B-2 E&W	19.5	8	MCA	Altafia	Altafia	4.6-5.5	65	300	None	50	97	0	0	340	35	35	105	35	35	-235	Dairy Liquid Avg 6-6-18 6000 gal Summer Unincorp	35-35-105 117000 gal
26C	24.5	4	MCA W	Winter Rye (forage) to Late-Direct Seeded Legume Forage	Altafia	4.6-5.5	65	300	None	17	69	0	52	355	41	0	0	41	-52	-355		
26D-4	19.5	4	MCA	Winter wheat (grain +straw) to Late-Direct Seeded Legume Forage	Altafia	4.6-5.5	65	300	None	19	72	0	31	237	64	35	105	64	4	-132	Dairy Liquid Avg 6-6-18 6000 gal Summer Unincorp	35-35-105 117000 gal
26D5-7	57	4	MCA	Winter wheat (grain +straw) to Late-Direct Seeded Legume Forage	Altafia	4.6-5.5	65	300	None	12	62	0	81	227	29	0	0	29	-81	-227		
Asch 3	18.5	4	KNB2 W	Winter Rye (forage) to Late-Direct Seeded Legume Forage	Altafia	4.6-5.5	65	300	None	47	84	0	0	340	66	35	105	66	35	-235	Dairy Liquid Avg 6-6-18 6000 gal Summer Unincorp	35-35-105 117000 gal
DL-1	15	4	KNB	Altafia	Altafia	4.6-5.5	65	300	None	101	201	0	0	75	30	30	88	30	30	13	Dairy Liquid Avg 6-6-18 5000 gal Summer Unincorp	30-30-88 75000 gal
DL-1,2	19	4	KNB	Altafia	Altafia	4.6-5.5	65	300	None	101	201	0	0	75	30	30	88	30	30	13	Dairy Liquid Avg 6-6-18 5000 gal Summer Unincorp	30-30-88 95000 gal

SnapPlus Spreading and Nutrient Management Sorted By Crop Report

02/02/2018

Alfalfa Fields				Crop Removal				Soil Test				Planned Applications and Credits				Over (+) Under (-) Adj. UW Recs				Applications				
Name	Ac.	SIP %	Soil Map Symbol (pred) & N Recs	Prior Crop	2019 Crop	Yield Goal	P205	K20	Tillage	Avg P ppm	Avg K	N	P205	K20	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205-K20 credit	Total Amt
DL-K2	48	4	KNB W	Alfalfa	Alfalfa	4.6-5.5	65	300	None	8	69	0	105	355	47	35	105	47	-70	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	288000 gal
KB10	20	9	KNC2	Alfalfa	Alfalfa	4.6-5.5	65	300	None	13	71	0	95	355	47	35	105	47	-60	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	120000 gal
KB11-13	50	9	KNC2	Alfalfa	Alfalfa	4.6-5.5	65	300	None	10	72	0	105	355	47	35	105	47	-70	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	300000 gal
KB1-4	57	4	KNB2	Alfalfa	Alfalfa	4.6-5.5	65	300	None	9	66	0	105	355	47	35	105	47	-70	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	342000 gal
KB16-21	23	25	KNC2	Alfalfa	Alfalfa	4.6-5.5	65	300	None	5	57	0	105	355	47	35	105	47	-70	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	138000 gal
KB6	20	4	KNB2	Alfalfa	Alfalfa	4.6-5.5	65	300	None	10	72	0	105	355	47	35	105	47	-70	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	120000 gal
KB7-8	30	4	KNB W	Alfalfa	Alfalfa	4.6-5.5	65	300	None	7	76	0	105	355	47	35	105	47	-70	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	180000 gal
KB9	21	9	KNC2	Alfalfa	Alfalfa	4.6-5.5	65	300	None	16	90	0	95	340	47	35	105	47	-60	-235	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	126000 gal
Mat 16	16	4	KNB2	Alfalfa	Alfalfa	4.6-5.5	65	300	None	22	119	0	60	300	35	35	105	35	-25	-195	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	108000 gal
Mat 21	24	4	KNB2	Alfalfa	Alfalfa	4.6-5.5	65	300	None	44	164	0	0	150	35	35	105	35	35	-45	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	144000 gal
Mat 4	25	9	KNC2	Winter wheat	Alfalfa	3.6-4.5	50	240	None	21	82	0	6	117	64	35	105	64	29	-12	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	150000 gal
Mat 7A	3	4	KNB2	(Grain) to Late-Direct Seeded Legume Forage	Alfalfa	3.6-4.5	50	240	None	58	99	0	0	280	0	0	0	0	0	-280				

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Alfalfa Fields				Crop Removal				Soil Test		Adjusted Recs		Planned Applications and Credits		Over(+) Under(-) Adj. UW Recs		Applications								
Name	Ac.	Shp Soil Map % Symbol (prev) & N Recs	Prior Crop	2019 Crop	Yield Goal	P205	K20	Tillage	Avg P ppm	Avg K	N	P205 lb/ac	K20	N	P205 lb/ac	K20	Product Name and Analysis	Appln Rate and Method	N-P205-K20 credit	Total Amt				
Matt 6	16	4	KNC2	Alfalfa	3.6-4.5	50	240	None	36	117	0	0	240	35	35	105	35	35	-135	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp.	35-35-105	96000 gal	
Matt 4	16	9	KNC2	Winter Rye (forage) to Late-Direct Seeded Legume Forage	Alfalfa	4.6-5.5	65	300	None	39	71	0	0	355	23	0	0	23	0	-355				
Matt 6-7	16.5	9	KNC2	Winter Rye (forage) to Late-Direct Seeded Legume Forage	Alfalfa	4.6-5.5	65	300	None	43	82	0	0	355	23	0	0	23	0	-355				
Matt 8	20	15	KNC2	Winter wheat (grain) to Late-Direct Seeded Legume Forage	Alfalfa	4.6-5.5	65	300	None	25	81	0	21	177	64	35	105	64	14	-72	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	120000 gal
Matt 9	16.5	16	KNC2	Winter Rye (forage) to Late-Direct Seeded Legume Forage	Alfalfa	5.6-6.5	80	360	None	25	67	0	59	415	23	0	122	23	-59	-293	Potash 0-0-61	200 lb Summer Unincorp	0-0-122	3300 lb
Van Rens	40	9	KNC2	Winter Rye (forage) to Late-Direct Seeded Legume Forage	Alfalfa	3.6-4.5	50	240	None	20	68	0	1	295	69	35	105	69	34	-190	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	240000 gal

1316.5 planned Alfalfa acres

7,724,000 planned gal Dairy Liquid Avg

40,200 planned lb Potash

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Alfalfa Seeding Fields										Crop Removal			Soil Test			Adjusted Recs			Planned Applications and Credits			Over (+) Under (-) Adj. UW Recs			Applications	
Name	Ac.	Sip %	Symbol	Prior Crop	2019 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205-K20 credit	Total Amt		
11G4	33	4	KHB W	Winter Rye (to graze) to Corn silage, 30 inch row	Cats w/ Alfalfa Seeding Spring	61-90	65	215	FCND	19	84	20	0	315	133	77	210	113	71	-105	Dairy Liquid Avg 8-6-18	12000 gal Fall Incorp	94-71-210	396000 gal		
11K1B	2.5	2	Maa	Winter wheat (grain)	Alfalfa Seeding Fall	2-6-3.5	40	180	FCND	4	51	0	80	198	117	89	263	117	9	65	Dairy Liquid Avg 8-6-18	15000 gal Summer Incorp	117-89-263	37500 gal		
11K1C	5	9	KoC2	Winter wheat (grain +straw)	Alfalfa Seeding Fall	2-6-3.5	40	180	FCND	56	168	0	0	90	114	105	120	114	105	30	Cow Avg 4-4-4	30 ton Fall Incorp	114-105-120	150 ton		
11O1	14	4	KHB W	Corn silage	Cats w/ Alfalfa Seeding Spring	61-90	65	215	FCD	41	88	20	0	212	146	89	263	126	89	51	Dairy Liquid Avg 8-6-18	15000 gal Fall Incorp	117-89-263	210000 gal		
11R1	29	9	KoB	Corn grain	Cats w/ Alfalfa Seeding Spring	91-120	75	220	FCD	96	109	20	0	115	140	89	263	120	89	148	Dairy Liquid Avg 8-6-18	15000 gal Spring Incorp	117-89-263	435000 gal		
Mat 1	20	9	KHC2	Winter wheat (grain +straw)	Alfalfa Seeding Fall	2-6-3.5	40	180	FCND	24	119	0	40	180	117	89	263	117	49	83	Dairy Liquid Avg 8-6-18	15000 gal Fall Incorp	117-89-263	300000 gal		
Matzke 3	5	9	KHB	Corn grain	Cats w/ Alfalfa Seeding Spring	91-120	75	220	FCND	7	39	20	147	270	189	143	180	169	-4	-90	12-10-20 Starter 12-10-20	200 lb Spring	24-20-40	1000 lb		
Matzke 4se	8	4	MCA	Corn grain	Cats w/ Alfalfa Seeding Spring	61-90	65	215	FCND	11	59	20	137	112	149	89	263	129	-48	161	Cow Avg 4-4-4	35 ton Fall Incorp	133-123-140	175 ton		
Matzke Pasture	2	4	MCA	Corn silage	Cats w/ Alfalfa Seeding Spring	61-90	65	215	FCND	274	255	20	0	0	0	0	122	-20	0	122	Polish 200 lb Summer	0-0-61	0-0-122	400 lb		

Ledgview Farms

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118.5 planned Alfalfa Seeding acres

1,000 planned lb 12-10-20 Starter

325 planned ton Cow Avg

1,498,500 planned gal Dairy Liquid Avg

400 planned lb Polish

Corn on Corn Fields				Crop Removal		Soil Test		Adjusted Recs		Planned Applications and Credits		Over(+) Under(-) Adj. Utr Recs		Applications							
		Soil Map Symb (green) & N				ppm	lb/ac	lb/ac	Credits	lb/ac											
Name	Ac.	Slip% Res	Prior Crop	2019 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205-K2O credit	Total Amt	
11UG2	7.5	9	KNB	Winter Rye (forage) to Corn silage, 30 inch row	20.1-25	80	185	FCND	48	146	190	0	0	0	181	148	258	12-10-20 Starter 12-10-20 Subsurface	150 lb Spring Subsurface	18-15-30	1125 lb
																		e	112-133-262 ton		
																		35 ton Fall	228		
																		Unincorp			
11U1&2	26	4	KNB	Winter Rye (forage) to Corn silage, 30 inch row	151-170	60	45	FCND	87	271	190	0	0	0	181	109	303	12-10-20 Starter 12-10-20 Subsurface	200 lb Spring Subsurface	24-20-40	5200 lb
																		e	117-89-263 gal	390000	
																		Unincorp			
11U7	16	18	KNB2	Corn grain	151-170	60	45	FCND	14	69	190	71	0	0	193	137	335	12-10-20 Starter 12-10-20 Subsurface	200 lb Spring Subsurface	24-20-40	3200 lb
																		e			
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Corn on Corn Fields										Crop Removal			Soil Test			Adjusted Recs		Planned Applications and Credits		Over(-) Under(-) Adj. UW Recs		Applications		
Soil Map Symbol (green) & N						Yield					ppm		lb/ac		Credits lb/ac		lb/ac							
Name	Ac.	Slip%	Res	Prior Crop	2018 Crop	Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205-K2O credit	Total Amt
12A-45 & 27	30	4	KNB	Corn silage	Corn grain	151-170	60	45	FCD	44	103	190	0	0	185	109	303	-5	109	303	12-10-20 Starter 200 lb Spring Subsurface	24-20-40 6000 lb		
12A2 & 27A2	29	4	KNB	Corn silage	Corn grain	151-170	60	45	FCD	54	85	190	0	0	187	109	303	-3	109	303	Dairy Liquid Avg 15000 gal Fall Incorp 8-6-18	117-89-263	450000 gal	
																					12-10-20 Starter 200 lb Spring Subsurface	24-20-40 5800 lb		
13D-1,2	67	9	KNB	Corn grain	Corn grain	151-170	60	45	SCMD	62	124	190	0	0	186	109	303	-2	109	303	Dairy Liquid Avg 15000 gal Fall Incorp 8-6-18	117-89-263	435000 gal	
																					12-10-20 Starter 200 lb Spring Subsurface	24-20-40 13400 lb		
13E-2	15.5	4	KNB2 W	Corn silage	Corn silage	15.1-20	65	145	FCD	39	142	190	0	0	173	104	293	-17	104	293	Dairy Liquid Avg 15000 gal Spring Incorp 8-6-18	117-89-263	100500 gal	
																					12-10-20 Starter 150 lb Spring Subsurface	18-15-30 2325 lb		
13E-3	22.5	4	KNB2	Corn silage	Corn silage	20.1-25	80	185	FCD	25	85	190	38	189	192	121	345	2	83	156	Dairy Liquid Avg 15000 gal Fall Incorp 8-6-18	117-89-263	232500 gal	
																					12-10-20 Starter 150 lb Spring Subsurface	18-15-30 3375 lb		
13G-1	20	4	McA	Corn grain	Corn silage	20.1-25	80	185	FCD	40	123	190	0	0	172	109	310	-18	109	310	Dairy Liquid Avg 18000 gal Spring Incorp 8-6-18	140-106-315	405000 gal	
																					12-10-20 Starter 150 lb Spring Subsurface	18-15-30 3000 lb		

Corn on Corn Fields				Crop Removal		Soil Test		Adjusted Recs		Planned Applications and Credits		Over/(-) Under/(-) Adj. UW Recs		Applications									
		Soil Map Symbol (pred) & N				ppm		lb/ac			lb/ac												
Name	Ac.	Slip% Res	Prior Crop	2019 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	Product Name and Analysis	Appl Rate and Method	N-P205- K20 credit	Total Amt			
13G-1	20	4	McA	Corn grain	20.1-25	80	185	FCD	40	123	190	0	0	172	109	310	Dairy Liquid Avg 8-6-18	16000 gal Fall	125-94-280	320000 gal			
13G-2	51	4	KnB	Corn silage	20.1-25	80	185	FCD	11	82	190	120	240	181	109	310	12-10-20 Spring Subsurface	150 lb Spring	18-15-30	7650 lb			
13-1	20	4	KnB	Corn silage	151-170	60	45	FCD	18	72	190	60	90	159	109	303	-31	49	213	Dairy Liquid Avg 8-6-18	16000 gal Fall	125-94-280	816000 gal
14B	45	4	KnB2	Corn silage	151-170	60	45	FCND	21	77	190	26	10	180	114	320	-10	88	310	Dairy Liquid Avg 8-6-18	15000 gal Fall	117-89-263	300000 gal
16 A1 West	13	1.5	OSA	Corn silage	151-170	60	45	FCND	11	75	190	100	90	0	0	122	-190	-100	32	Potash 0-0-61	200 lb Summer	0-0-122	2600 lb
16B-2	17.5	2	McA	Corn grain	151-170	60	45	FCND	19	91	190	11	0	181	172	300	-9	161	300	12-10-20 Spring Subsurface	200 lb Spring	24-20-40	3500 lb
16C	8.5	4	OnB W	Corn silage	20.1-25	80	185	FCND	73	192	190	0	0	127	77	138	-63	77	138	Heiler Avg 3-4-7	40 ton Spring	128-152-260	700 ton
																				12-10-20 Spring Subsurface	200 lb Spring	24-20-40	1700 lb

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Corn on Corn Fields						Crop Removal				Soil Test			Adjusted Recs			Planned Applications and Credits			Over(-) Under(+)			Applications	
		Soil Map & N Symbol (green)								ppm		lb/ac		Applications and Credits		Adj. UW Recs							
Name	Ac.	Slip, Res	Prior Crop	2019 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	Total	
16C	8.5	4 OnB W	Corn silage	Corn silage	20.1-25	80	185	FCND	73	192	190	0	0	127	77	138	-63	77	138	Heiler Avg 3-4-7	15 ton Fall	48-57-98 126 ton	
18A-1	3.5	2 MCA W	Corn silage	Corn silage	15.1-20	65	145	FCD	10	62	190	105	200	171	122	220	-19	17	20	12-10-20 Starter 12-10-20	200 lb Spring Subsurface	24-20-40 700 lb	
18A-2	14.5	1.5 ADA W	Corn gran	Corn silage	20.1-25	80	185	FCD	18	71	140	91	111	151	94	259	11	3	148	12-10-20 Starter 12-10-20	200 lb Spring Subsurface	24-20-40 2900 lb	
22	25	1 OnA W	Corn gran	Corn silage	15.1-20	65	145	FCD	20	114	190	16	0	170	109	303	-20	93	303	Dairy Liquid Avg 8-6-18	12500 gal Fall Incorp	98-74-219 181250 gal	
26-62 South	11	8 KnC2	Corn silage	Corn silage	20.1-25	80	185	FCD	8	73	190	117	240	173	109	303	-17	-8	63	Dairy Liquid Avg 8-6-18	15000 gal Fall Incorp	117-89-263 375000 gal	
Asch 1 North	57	4 KnB	Corn gran	Corn silage	20.1-25	80	185	SCD	18	81	190	67	132	182	126	355	-8	59	223	Dairy Liquid Avg 8-6-18	15000 gal Fall Incorp	117-89-263 165000 gal	
																				12-10-20 Starter 12-10-20	200 lb Spring Subsurface	24-20-40 11400 lb	

Corn on Corn Fields					Crop Removal				Soil Test		Adjusted Recs		Planned Applications and Credits		Over(+)/Under(-) Adj. UNR Recs		Applications							
Name	Ac.	Slip%	Map Symbol & N Res	Prior Crop	2019 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	M-P205-K20 credit	Total Amt			
Asch 1 North	57	4	KN8	Corn grain	Corn silage	20.1-25	80	185	SCD	18	81	190	67	132	182	126	355	-8	59	223	Dairy Liquid Avg 8-6-18	18000 gal Fall	140-106-315	102600 gal
Asch 1 South	24.5	4	KN82 W	Corn grain	Corn silage	15.1-20	65	145	FCD	9	62	190	96	0	170	109	303	-20	13	303	12-10-20 Starter 12-10-20	200 lb Spring Subsurface	24-20-40	4800 lb
Asch 2	27	4	KN8	Corn silage	Corn grain	15.1-170	60	45	FCND	14	57	190	86	10	195	126	355	5	40	345	Daily Liquid Avg 8-6-18	15000 gal Fall	117-89-263	367500 gal
Bower Creek	50	2	Fa WP (forage) to Corn silage, 30 inch row	Corn silage	Corn grain	25.1-30	100	230	FCND	14	65	145	130	285	126	71	210	-19	.59	-75	Daily Liquid Avg 8-6-18	18000 gal Fall	140-106-315	486000 gal
Harold Rd	50	9	WOC2 W	Corn grain	Corn grain	15.1-170	60	45	SCD	6	44	190	91	0	178	114	320	-12	23	320	12-10-20 Starter 12-10-20	200 lb Spring Subsurface	24-20-40	10000 lb
Mat 11A	1.5	4	KN82 Alfalfa 1st cut to Corn silage	Corn grain	15.1-170	60	45	FCD	23	68	190	60	90	185	89	249	-5	29	159	Dairy Liquid Avg 8-6-18	12500 gal Fall	98-74-219	18750 gal	
																					Dairy Liquid Avg 8-6-18	12500 gal Fall	98-74-219	18750 gal
																					legume	50-0-0		

Corn on Corn Fields				Crop Removal		Soil Test		Adjusted Recs		Planned Applications and Credits		Over(+) Under(-)		Applications										
		Soil Map Symbols (p, red) & N					ppm		lb/ac		Credits lb/ac		Adj. lb/ac											
Name	Ac.	Slip% Res	Prior Crop	2019 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appl Rate and Method	N-P205-K2O credit	Total Amt				
Mat 2	17	9	KnC2	Corn silage	Corn grain	151-170	60	45	SCD	25	97	190	60	75	187	91	250	-3	31	175	12-10-20 Starter 12-10-20	200 lb Spring Subsurface ^e	24-20-40	3400 lb
																		Dairy Liquid Avg 8-6-18	12000 gal Spring Incorp	94-71-210	204000 gal			
																		legume			50-0-0			
Mat 20	22	4	KnB2	Corn grain	Corn grain	151-170	60	45	FCD	22	94	190	8	0	159	104	293	-31	96	293	12-10-20 Starter 12-10-20	150 lb Spring Subsurface ^e	18-15-30	3300 lb
																		Dairy Liquid Avg 8-6-18	15000 gal Fall Incorp	117-89-263	330000 gal			
																		12-10-20 Starter 12-10-20	150 lb Spring Subsurface ^e	18-15-30	450 lb			
Mat 22	3	4	KnB	Corn grain	Corn grain	151-170	60	45	FCD	20	70	190	53	0	182	89	249	-8	36	249	12-10-20 Starter 12-10-20	12500 gal Spring Subsurface ^e	98-74-219	37500 gal
																		Dairy Liquid Avg 8-6-18	12500 gal Fall Incorp			37500 gal		
																		legume			50-0-0			
Mat 3	25	9	KnC2	Alfalfa (1st cut) to Corn silage	Corn grain	151-170	60	45	FCD	13	78	190	90	90	184	126	355	-6	36	265	12-10-20 Starter 12-10-20	200 lb Spring Subsurface ^e	24-20-40	5000 lb
																		Dairy Liquid Avg 8-6-18	18000 gal Spring Incorp	140-106-315	450000 gal			
																		12-10-20 Starter 12-10-20	150 lb Spring Subsurface ^e	18-15-30	450 lb			
Mat BA	3	4	KnB	Corn silage	Corn grain	151-170	60	45	FCD	36	71	190	0	90	182	89	249	-8	89	159	Dairy Liquid Avg 8-6-18	12500 gal Fall Incorp	98-74-219	37500 gal

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First Year Corn Grain Fields										Crop Removal		Soil Test		Adjusted Recs		Planned Applications and Credits		Over(+) Under(-)		Applications																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Soil Map Symbol (prec)				Prior Crop	2019 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	N	P205		K2O																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
Name	Ac.	Slp %	Res																		Product Name and Analysis	Appln Rate and Method	N-P205-K2O credit	Total Amt																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
11K1A	9	4	KHB2	Winter wheat (grain +straw)	Com grain	151-170	60	45	FCND	70	174	140	0	10	141	109	303	1	109	293	12-10-20 Starter	200 lb Spring	24-20-40	1800 lb																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
11S1	42	4	KHB	Alfalfa	Com grain	151-170	60	45	FCD	48	35	190	0	90	205	73	196	15	73	108	Dairy Liquid Avg	15000 gal Fall	117-89-263	135000 gal																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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18A-3	15	4	MCA W	Alfalfa	Com grain	151-170	60	45	FCND	16	95	190	90	75	214	86	240	24	-4	165	Dairy Liquid Avg	12000 gal Fall	94-71-210	180000 gal																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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18B-2	4	4	KIB	Alfalfa	Com grain	151-170	60	45	SCND	13	66	190	90	90	190	90	120	0	0	30	12-10-20 Starter	200 lb Spring	24-20-40	800 lb																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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First Year Corn Grain Fields										Crop Removal				Soil Test		Adjusted Recs		Planned Applications and Credits		Over(+)/Under(-) Adj. U/W Recs		Applications				
Soil Map Symbol										Crop Removal		Soil Test		Adjusted Recs		Planned Applications and Credits		Over(+)/Under(-) Adj. U/W Recs		Applications						
Name	Ac.	Slp %	Ras	Prior Crop	2019 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Applin Rate and Method	N-P-205-K2O credit	Total Amt		
26A-4	10	4	MCA	Alliata	Corn grain	151-170	60	45	FCD	42	89	190	0	90	208	91	250	18	91	160	12-10-20 Starter 12-10-20	200 lb Spring	24-20-40	2000 lb		
																							Dairy Liquid Avg 8-6-18	12000 gal	94-71-210	120000 gal
																							legume			
																							Dairy Liquid Avg 8-6-18	15000 gal	117-86-263	1500000 gal
VO11	100	4	KHB2 R 7-10 inch row	Soybeans	Corn grain	151-170	60	45	FCND	11	78	140	90	0	117	89	263	-23	-1	263						

First Year Corn Silage Fields										Crop Removal		Soil Test		Adjusted Recs lb/ac		Planned Applications and Credits lb/ac		Over(+)/ Under(-) Adj. UW Recs lb/ac		Applications			
Name	Ac.	Map Symbol & N Res	Prior Crop	2019 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205- K20 credit	Total Amt
16E	8	4 SHB	Alfalfa	Corn silage	15.1-20	65	145	FCND	70	156	190	0	75	184	73	198	-6	73	123	Dairy Liquid Avg 8-6-18	9000 gal Spring Incorp	70-53-158	72000 gal
26A-1	15	4 KHB	Alfalfa	Corn silage	20.1-25	80	185	SCD	15	59	190	110	240	196	73	198	6	-37	-42	Dairy Liquid Avg 8-6-18	9000 gal Spring Incorp	70-53-158	135000 gal
																				legume			
																				legume			
																				legume			
26A-2	30.5	4 KHB	Alfalfa	Corn silage	20.1-25	80	185	SCD	12	64	190	110	240	208	91	260	18	-19	10	Dairy Liquid Avg 8-6-18	12000 gal Spring Incorp	94-71-210	366000 gal
																				legume			
																				legume			
																				legume			
Mat 7	8.5	4 KHB2	Alfalfa	Corn silage	20.1-25	80	185	FCND	28	93	190	40	225	228	74	205	38	34	-20	Dairy Liquid Avg 8-6-18	10000 gal Fall Incorp	78-59-175	85000 gal
																				legume			
																				legume			
																				legume			

Ledgeview Farms

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72 planned First Year Corn Silage acres

13,975 planned lb 12-10-20 Starter

748,000 planned gal Dairy Liquid Avg

Soybean Fields		Crop Removal		Soil Test		Adjusted Recs		Planned Applications and Credits		Over (+) Under (-) Adj. UNV Recs		Applications								
		Soil Map Symbol	Prior Crop	2019 Crop	Yield Goal	P205	K20	Tillage Avg P	Avg K	N	P205	K20	N	P205	K20	Product Name and Analysis	Appl Rate and Method	N-P205-K20 credit	Total Amt	
VO10	95	3 Mc4 R	Corn green	Soybeans 7 -10 inch row	46-55	40	70	SFC	10	87	0	80	98	70	53	158	70	-27	60	
																	Dairy Liquid Avg 8-6-16	9000 gal Spring Incorp	70-53-158	855000 gal

95 planned Soybean acres

855,000 planned gal Dairy Liquid Avg

Other Crops Fields				Crop Removal		Soil Test		Adjusted Recs lb/ac		Planned Applications and Credits lb/ac		Over(-) Under(-) Adj. UNV Recs lb/ac		Applications							
Name	Ac.	Soil Map Symbol & N Res	Prior Crop	2019 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205- K20 credit	Total Amt	
11U-East	10	4	KNB	Winter Rye (forage) to Corn Late-Direct Silage, 30 inch row Legume Forage	Winter wheat (grain +straw) to Corn	61-80	45	80	Fault	74	220	75	0	0	133	71	210	Dairy Liquid Avg 8-6-18	12000 gal Summer incorp	94-71-210	120000 gal
11U7 N	15	8	KNC2	Corn grain	Winter wheat (grain +straw)	81-100	55	90	Fault	5	54	105	95	145	35	42	46	Cow Avg 3-4-4	12 ton Fall Unincorp	35-42-46	180 ton
11U9	19	9	KNC2	Corn silage	Winter wheat (grain +straw)	81-100	55	90	Fault	10	85	75	95	0	98	44	131	Dairy Liquid Avg 8-6-18	7500 gal Fall incorp	59-44-131	142500 gal
14A-11	5.5	16	KNB	Corn grain	Winter wheat (grain +straw)	81-100	55	90	Fault	13	89	75	67	95	67	46	78	Heiler Avg 3-4-7	12 ton Fall Unincorp	38-46-78	56 ton
18A-4	12.5	4	KNB W	Corn silage	Winter wheat (grain +straw)	81-100	55	90	Fault	7	40	105	91	42	88	44	131	Dairy Liquid Avg 8-6-18	7500 gal Fall incorp	59-44-131	93750 gal
K814	15	25	KNB2	Soybeans 7-10 inch row	Winter wheat (grain +straw)	81-100	55	90	Fault	40	66	55	0	145	62	47	140	Dairy Liquid Avg 8-6-18	8000 gal Fall incorp	62-47-140	120000 gal

Other Crops Fields			Crop Removal			Soil Test			Adjusted Recs			Planned Applications and Credits			Over(+) Under(-) Adj. UW Recs			Applications						
	Soil Map Symbol & N Rat	Prior Crop	2019 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205-K20 credit	Total Amt		
Name	Ac.	% N Rat	Crop																					
KB5	20	16	KB8	Soybeans 7-10 inch row	Winter wheat (grain +straw)	81-100	55	90	Fcult	10	75	55	95	145	47	47	140	-8	-48	-5	Dairy Liquid Avg 6-6-18	8000 gal Fall Umicorp	47-47-140	150000 gal
Mat 11	31	4	KB2	Winter Rye (forage) to Corn silage, 30 inch row	Winter wheat (grain +straw) to Late-Direct Seeded Legume Forage	61-80	45	80	Fcult	47	113	75	0	80	141	89	263	66	89	183	Dairy Liquid Avg 8-6-18	15000 gal Summer Incorp	117-89-263	455000 gal
Mat 5	10	9	KB2	Corn silage	Winter Rye (forage) to Corn grain	2.0-3.5/151-170	110	265	Fcult	17	100	250	170	325	138	89	249	-112	-81	-76	12-10-20 Starter 12-10-20	150 lb Spring Substar CE	16-15-30	1500 lb
MM-East	5	8	KB8	Corn silage	Winter wheat (grain +straw)	61-80	45	80	Fcult	10	53	75	30	135	46	0	0	-29	-30	-135	Dairy Liquid Avg 8-6-18	12500 gal Fall Incorp	98-74-219	125000 gal
MM-West	10	8	KB2	Corn silage	Winter wheat (grain +straw)	61-80	45	80	Fcult	61	181	75	0	0	73	46	78	-2	46	78	Heifer Avg 3-4-7	12 ton Fall Umicorp	38-46-78	120 ton

153 planned Other Crops acres

1,500 planned lb 12-10-20 Starter

180 planned ton Cow Avg

1,226,250 planned gal Dairy Liquid Avg

186 planned ton Heifer Avg

2,759 total planned acres

Total Planned to be Applied

176,625 planned lb 12-10-20 Starter

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Total Manure Volume	Manure App Plan	Remaining Manure
500 tons	2,059	-1,559
24783392 gals	26,311,750	-1,528,358

70 planned ton Calf Avg

713 planned ton Cow Avg

26,311,750 planned gal Dairy Liquid Avg

1,276 planned ton Heifer Avg

43,200 planned lb Potash

List of fields that need new soil tests before plan year 2020

11G1	11G4
11G-3 East	11H1
11N4	11T
11U7 N	11U7
12A2 & 27A2	12A 45 & 27
13F-1	18B-2
DL-K2	Mat 2
Mat 3	Mat 4
Mat 5	Mat 8A
Mat 18	Mat 22

Tillage Abbreviations

Abbreviation	Tillage
FCD	Fall Chisel, disked
FCND	Fall Chisel, no disk
Fcdll	Field Cultivation
FFC	Fall Cultivation
FFC/CP	crop 1: Fall Cull., crop 2: Chisel plow, no disk
None	None
SCD	Spring Chisel, disked

SCND	Spring Chisel, no disk
SFC	Spring Cultivation

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Crop Year	2020	Prepared for:
Reported For	Ledgeview Farms	Ledgeview Farms
Printed	2018-02-02	attn: Roy, Glenn & Jason Pansier
Plan Completion/Update Date	2001-01-01	3875 DICKINSON RD
		DE PERE, 54115
SnapPlus Version	16.3 built on 2016-10-31	

C:\Users\Kevin Beckard\OneDrive - Cooperative Resources International
 \AgSource Data Backups\Clients\175-CV Greenleaf\Ledgeview Farms
 \SNAP 2 Database\SNAP 16\Ledgeview Farms Snap 16 Main.snapDb

Alfalfa Fields			Crop Removal					Soil Test		Adjusted Recs		Planned Applications and Credits		Over (+) Under (-)		Applications					
Name	Ac.	Slp % Soil Map (prev) A N Res	Prior Crop	2020 Crop	Yield Goal	P205	K20	Tillage	Avg P ppm	Avg K	N	P205 lb/ac	K20	N	P205 lb/ac	K20	Product Name and Analysis	Appl Rate and Method	N-P205-K20 credit	Total Amt	
11G1	30	4	M4A	Alfalfa	Alfalfa	3.6-4.5	50	240	None	86	181	0	0	0	47	35	105	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	180000 gal
11G3	36	4	M4A	Alfalfa	Alfalfa	3.6-4.5	50	240	None	59	113	0	0	240	53	41	123	Dairy Liquid Avg 6-6-18	7000 gal Summer Unincorp	41-41-123	252000 gal
11G-3 East	20	2	M4A	Alfalfa	Alfalfa	4.6-5.5	65	300	None	14	62	0	95	355	47	35	105	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	120000 gal
11G4	33	4	K1B	Oats w/ Alfalfa Seeding Spring	Alfalfa	4.6-5.5	65	300	None	19	84	0	0	355	58	35	105	Dairy Liquid Avg 6-6-18	8000 gal Summer Unincorp	35-35-105	198000 gal
11H1	19	4	K1B	Alfalfa	Alfalfa	3.6-4.5	50	240	None	155	354	0	0	0	0	0	0				0
11K1B	2.5	2	M4A	Alfalfa Seeding Fall	Alfalfa	3.6-4.5	50	240	None	4	51	0	81	230	29	0	29			-81	-230
11K1C	5	9	K6C2	Alfalfa Seeding Fall	Alfalfa	3.6-4.5	50	240	None	56	168	0	0	90	38	0	38			0	-90

SnapPlus Spreading and Nutrient Management Sorted By Crop Report

Alfalfa Fields				Crop Removal				Soil Test				Adjusted Recs				Planned Applications and Credits				Over(+) Under(-) Adj. UW Recs				Applications			
Name	Ac.	Slip % Symbol (prec) & N Rec	Soil Map	Prior Crop	2020 Crop	Yield Goal	P205	K20	Tillage	Avg P ppm	Avg K	N	P205	K20	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205-K20 credit	Total Amt			
11L- East	10	4	KNB	Winter wheat (grain +straw) to Late-Direct Seeded Legume Forage	Alfalfa	4.6-5.5	65	300	None	74	220	0	0	0	58	35	105	58	35	105	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	60000 gal			
11N3	5	9	KNB	Alfalfa	Alfalfa	3.6-4.5	50	240	None	136	269	0	0	0	0	0	0	0	0	0							
11N4	13	8	KNB	Alfalfa	Alfalfa	4.6-5.5	65	300	None	81	131	0	0	300	47	35	105	47	35	105	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	78000 gal			
11P	9	4	S&R R	Alfalfa	Alfalfa	3.6-4.5	50	240	None	20	64	0	50	295	0	0	0	0	-50	-295							
11Q1	14	4	KNB W	Cost w/ Alfalfa Seeding Spring	Alfalfa	4.6-5.5	65	300	None	41	88	0	0	304	64	35	105	64	35	105	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	84000 gal			
11R1	29	9	KOB	Cost w/ Alfalfa Seeding Spring	Alfalfa	4.6-5.5	65	300	None	96	109	0	0	192	64	35	105	64	35	105	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	174000 gal			
11S2	95	4	KNB	Alfalfa	Alfalfa	3.6-4.5	50	240	None	65	98	0	0	280	95	71	210	95	71	210	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	570000 gal			
11T	5	4	MCA	Alfalfa	Alfalfa	4.6-5.5	65	300	None	68	199	0	0	0	47	35	105	47	35	105	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	30000 gal			
11T east	38	8	KNB2 W	Alfalfa	Alfalfa	3.6-4.5	50	240	None	95	235	0	0	0	47	35	105	47	35	105	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	228000 gal			
11U 1A	9	22.5	KNE2	Alfalfa	Alfalfa	3.6-4.5	50	240	None	6	67	0	90	295	47	35	105	47	-55	-190	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	54000 gal			

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Alfalfa Fields				Crop Removal				Soil Test		Adjusted Recs		Planned Applications and Credits		Over(+) Under(-) Adj. UW Recs		Applications					
Name	Ac.	Soil Map % (good) & N Recs	Prior Crop	2020 Crop	Yield Goal	P205	K20	Tillage	Avg P ppm	Avg K	N	P205 lb/ac	K20	N	P205 lb/ac	K20	Product Name and Analysis	Appl. Rate and Method	N-P205-K20 credit	Total Amt	
11U1	14.5	9 KNC2	Alfalfa	Alfalfa	4.6-5.5	65	300	None	23	75	0	0	355	95	71	210	95	71	-145	Dairy Liquid Avg 6-6-18 6000 gal Summer Unincorp	35-35-105 87000 gal
11U2	15	9 KNC2	Alfalfa	Alfalfa	3.6-4.5	50	240	None	18	69	0	0	295	95	71	210	95	71	-85	Dairy Liquid Avg 6-6-18 6000 gal Summer Unincorp	35-35-105 90000 gal
11U3	13	9 KNC2	Alfalfa	Alfalfa	3.6-4.5	50	240	None	8	79	0	90	295	47	35	105	47	-55	-190	Dairy Liquid Avg 6-6-18 6000 gal Summer Unincorp	35-35-105 78000 gal
13E-1	48	8 KNC2 W	Alfalfa	Alfalfa	4.6-5.5	65	300	None	18	65	0	47	355	55	41	123	55	-6	-232	Dairy Liquid Avg 6-6-18 7000 gal Summer Unincorp	41-41-123 336000 gal
13F-1	38	9 KNC2	Alfalfa	Alfalfa	3.6-4.5	50	240	None	12	66	0	80	295	95	71	210	95	-9	-85	Dairy Liquid Avg 6-6-18 6000 gal Summer Unincorp	35-35-105 228000 gal
13H-1	21	4 KIB	Alfalfa	Alfalfa	4.6-5.5	65	300	None	63	138	0	0	300	83	71	210	83	71	-90	Dairy Liquid Avg 6-6-18 6000 gal Summer Unincorp	35-35-105 126000 gal
13H-2 N	10	4 KNC2	Alfalfa	Alfalfa	3.6-4.5	50	240	None	41	158	0	0	12	47	35	105	47	35	93	Dairy Liquid Avg 6-6-18 6000 gal Summer Unincorp	35-35-105 60000 gal
14A	22	16 KNC2	Alfalfa	Alfalfa	4.6-5.5	65	300	None	15	85	0	95	355	47	35	105	47	-60	-250	Dairy Liquid Avg 6-6-18 6000 gal Summer Unincorp	35-35-105 132000 gal
16 A1 East	15	2 MCA	Alfalfa	Alfalfa	4.6-5.5	65	300	None	49	109	0	0	340	47	35	105	47	35	-235	Dairy Liquid Avg 6-6-18 6000 gal Summer Unincorp	35-35-105 90000 gal

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Alfalfa Fields			Crop Removal				Soil Test			Adjusted Recs			Planned Applications and Credits			Over(+) Under(-) Adj. UW Recs			Applications				
Name	Ac.	Sip Soil Map Symbol (green) & N Rec	Prior Crop	2020 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205-K20 credit	Total Amt
16B-5	10	1	OnA	Alfalfa	3.6-4.5	50	240	None	15	79	0	80	295	48	57	98	48	-23	-197	Heiler Avg 3-4-7	15 ton Summer Unincorp	48-57-98	150 ton
16B-6&7	35	1	OnA	Alfalfa	4.6-5.5	65	300	None	45	193	0	0	0	53	41	123	53	41	123	Dairy Liquid Avg 6-6-18	7000 gal Summer Unincorp	41-41-123	245000 gal
16F	3.5	4	MRE	Alfalfa	3.6-4.5	50	240	None	42	38	0	25	295	0	0	0	0	-25	-295				
17A	21	1.5	OnA	Alfalfa	3.6-4.5	50	240	None	22	123	0	50	240	47	35	105	47	-15	-135	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	126000 gal
26-B1 North	10	16	KnB	Alfalfa	3.6-4.5	50	240	None	74	175	0	0	60	0	0	0	0	0	-60				
26-B1 South	15	8	Bc	Alfalfa	3.6-4.5	50	240	None	38	112	0	0	240	0	0	0	0	0	-240				
26B-2 E&W	19.5	8	MCA	Alfalfa	3.6-4.5	50	240	None	50	97	0	0	280	47	35	105	47	35	-175	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	117000 gal
26C	24.5	4	MCA W	Alfalfa	4.6-5.5	65	300	None	17	69	0	95	355	0	0	0	0	-95	-355				
26D-4	19.5	4	MCA	Alfalfa	4.6-5.5	65	300	None	19	72	0	61	355	47	35	105	47	-26	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	117000 gal
26DS-7	57	4	MCA	Alfalfa	4.6-5.5	65	300	None	12	62	0	95	355	35	35	105	35	-60	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	342000 gal
Asch 3	18.5	4	KnB2 W	Alfalfa	4.6-5.5	65	300	None	47	84	0	0	355	47	35	105	47	35	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	111000 gal
DL-1	15	4	KnB	Alfalfa	4.6-5.5	65	300	None	101	201	0	0	62	40	30	88	40	30	26	Dairy Liquid Avg 6-6-18	5000 gal Summer Unincorp	30-30-88	75000 gal
DL-1.2	19	4	KnB	Alfalfa	4.6-5.5	65	300	None	101	201	0	0	62	40	30	88	40	30	26	Dairy Liquid Avg 6-6-18	5000 gal Summer Unincorp	30-30-88	95000 gal
DL-K2	48	4	KnB W	Alfalfa	4.6-5.5	65	300	None	8	69	0	105	355	47	35	105	47	-70	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	288000 gal

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Altaffa Fields				Crop Removal				Soil Test		Adjusted Recs		Planned Applications and Credits		Over(+)/Under(-) Adj. UW Recs		Applications								
Name	Ac.	Shp % Symbol (pred) & N Recs	Prior Crop	2020 Crop	Yield Goal	P205	K20	Tillage	Avg P ppm	Avg K	N	P205 lb/ac	K20	N	P205 lb/ac	K20	Product Name and Analysis	Appl Rate and Method	N-P205-K20 credit	Total Amt				
KB10	20	9	KNC2	Altaffa	Altaffa	4.6-5.5	65	300	None	13	71	0	95	355	47	35	105	47	-60	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	120000 gal
KB11-13	50	9	KNC2	Altaffa	Altaffa	4.6-5.5	65	300	None	10	72	0	105	355	47	35	105	47	-70	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	300000 gal
KB1-4	57	4	KNB2	Altaffa	Altaffa	4.6-5.5	65	300	None	9	66	0	105	355	47	35	105	47	-70	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	342000 gal
KB19-21	23	25	KNC2	Altaffa	Altaffa	4.6-5.5	65	300	None	5	57	0	105	355	47	35	105	47	-70	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	138000 gal
KB6	20	4	KNB2	Altaffa	Altaffa	4.6-5.5	65	300	None	10	72	0	105	355	47	35	105	47	-70	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	120000 gal
KB7-8	30	4	KNB W	Altaffa	Altaffa	4.6-5.5	65	300	None	7	76	0	105	355	47	35	105	47	-70	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	180000 gal
KB9	21	9	KNC2	Altaffa	Altaffa	4.6-5.5	65	300	None	16	90	0	95	340	47	35	105	47	-60	-235	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	126000 gal
Mat 1	20	9	KNC2	Altaffa Seeding Fall	Altaffa	3.6-4.5	50	240	None	24	119	0	1	157	29	0	0	29	-1	-157				
Mat 11	31	4	KNB2	Winter wheat (gran +straw) to Late-Direct Seeded Leisure Forage	Altaffa	4.6-5.5	65	300	None	47	113	0	0	117	64	35	105	64	35	-12	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	186000 gal
Mat 18	18	4	KNB2	Altaffa	Altaffa	3.6-4.5	50	240	None	22	119	0	50	240	47	42	48	47	-8	-192	Cow Avg 3-4-4	12 ton Summer Unincorp	35-42-48	216 ton
Mat 21	24	4	KNB2	Altaffa	Altaffa	3.6-4.5	50	240	None	44	154	0	0	120	47	35	105	47	35	-15	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	144000 gal
Mat 4	25	9	KNC2	Altaffa	Altaffa	3.6-4.5	50	240	None	21	82	0	21	295	47	35	105	47	14	-190	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	150000 gal

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Alfalfa Fields				Crop Removal				Soil Test			Adjusted Recs		Planned Applications and Credits		Over (+) Under (-)		Applications				
Name	Ac.	Shp %	Soil Map Symbol (pred) & N Rec	Prior Crop	2020 Crop	Yield Goal	P205	K20	Tillage	Avg P ppm	Avg K	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205-K20 credit	Total Amt
Mat 7A	3	4	KnB2	Alfalfa	Alfalfa	3.6-4.5	50	240	None	58	99	0	0	280	0	0	0	-280			
Mat 8	16	4	KnB	Alfalfa	Alfalfa	3.6-4.5	50	240	None	36	117	0	0	240	47	35	105	47	35	-135	Dairy Liquid Avg 6-6-18 Unincorp 6000 gal Summer 35-35-105 96000 gal
Matzke 3	5	9	KnB	Oats w/ Alfalfa Seeding Spring	Alfalfa	3.6-4.5	50	240	None	7	39	0	90	295	44	0	0	44	-90	-295	
Matzke 4	16	9	KnB	Alfalfa	Alfalfa	3.6-4.5	50	240	None	39	71	0	0	295	0	0	0	0	0	-295	
Matzke 4se	8	4	MCA	Oats w/ Alfalfa Seeding Spring	Alfalfa	3.6-4.5	50	240	None	11	59	0	90	144	29	0	0	29	-90	-144	
Matzke 6-7	16.5	9	KnC2	Alfalfa	Alfalfa	3.6-4.5	50	240	None	43	82	0	0	295	0	0	0	0	0	-295	
Matzke 8	20	15	KnC2	Alfalfa	Alfalfa	3.6-4.5	50	240	None	25	81	0	36	295	47	35	105	47	-1	-190	Dairy Liquid Avg 6-6-18 Unincorp 6000 gal Summer 35-35-105 120000 gal
Matzke 9	16.5	16	KnC2	Alfalfa	Alfalfa	5.6-6.5	80	360	None	25	67	0	80	415	0	0	0	0	-80	-415	
Matzke Pasture	2	4	MCA	Oats w/ Alfalfa Seeding Spring	Alfalfa	3.6-4.5	50	240	None	274	255	0	0	0	0	0	0	0	0	0	
Van Rens	40	9	KnC2	Alfalfa	Alfalfa	3.6-4.5	50	240	None	20	68	0	16	295	47	35	105	47	19	-190	Dairy Liquid Avg 6-6-18 Unincorp 6000 gal Summer 35-35-105 240000 gal

1366.5 planned Alfalfa acres

216 planned ton Cow Avg

8,134,000 planned gal Dairy Liquid Avg

150 planned ton Heifer Avg

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Alfalfa Seeding Fields																								
		Soil Map Symbol (pre) & N Res	Crop Removal				Soil Test ppm		Adjusted Recs lb/ac		Planned Applications and Credits lb/ac		Over(+) Under(-) Adj. UW Recs lb/ac		Applications									
Name	Ac.	Sip % N Res	Prior Crop	2020 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205- K2O credit	Total Amt	
MM-East	5	8	K1B	Winter wheat (grain +straw)	Alfalfa Seeding Fall	2.6-3.5	40	180	FCND	10	53	0	80	235	48	57	98	48	-23	-137	Heifer Avg 3-4-7	15 ton Fall Ureincorp	48-57-98	75 ton
MM-West	10	8	K1C2	Winter wheat (grain +straw)	Alfalfa Seeding Fall	2.6-3.5	40	180	FCO	61	181	0	0	0	79	76	130	79	76	130	Heifer Avg 3-4-7	20 ton Fall Ureincorp	64-76-130	200 ton

150 planned Alfalfa Seeding acres

350 planned Ion Cow Avg

1,581,500 planned gal Dairy Liquid Avg

500 planned Ion Heiler Avg

Corn on Corn Fields										Crop Removal			Soil Test			Adjusted Recs			Planned Applications and Credits			Over(+) Under(-) Adj. UW Recs			Applications					
			Soil Map Symbol (pre) & N Res	Prior Crop	2020 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	N	P205	K2O	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205-K2O credit	Total Amt
Name	Ac.	Sip%	Res																											
11J1&2	26	4	K1B	Corn grain	Corn silage	20.1-25	80	185	FCO	87	271	190	0	0	170	109	303	-20	109	303	-20	109	303	-20	109	303	12-10-20 Starter 12-10-20	200 lb Spring Subsurface	24-20-40	5200 lb
11K1A	9	4	K1B2	Corn grain	Corn grain	151-170	60	45	FCND	70	174	190	0	0	170	109	303	-20	109	303	-20	109	303	-20	109	303	Dairy Liquid Avg 8-6-18 12-10-20 Starter 12-10-20	15000 gal Fall Spring Subsurface	117-89-263	135000 gal

Corn on Corn Fields				Crop Removal		Soil Test ppm		Adjusted Recs lb/ac		Planned Applications and Credits lb/ac		Over(+) Under(-) Adj. Upl/ Recs lb/ac		Applications										
Name	Ac.	Slip% Res & N	Soil Map Symbol (pred) & N	Prior Crop	2020 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	Product Name and Analysis	Apply Rate and Method	N-P205- K20 credit	Total Amt			
11M1	10	4	KnB2	Corn silage	Corn silage	20.1- 25	80	185	FCD	27	77	190	0	240	157	114	320	-23	114	80	12-10-20 Starter 12-10-20 Subsurface	200 lb Spring	24-20-40	2000 lb
11S1	42	4	KnB	Corn grain	Corn grain	151- 170	60	45	FCD	48	35	190	0	0	167	114	320	-23	114	320	Dairy Liquid Avg 8-6-18	16000 gal Fall Incorp	125-94- 280	160000 gal
																					12-10-20 Starter	200 lb Spring	24-20-40	8400 lb
																					12-10-20 Subsurface			
12A-45 & 27	30	4	KnB	Corn grain	Corn silage	20.1- 25	80	185	FCD	44	103	190	0	0	178	114	320	-12	114	320	Dairy Liquid Avg 8-6-18	16000 gal Fall Incorp	125-94- 280	672000 gal
																					12-10-20 Starter	200 lb Spring	24-20-40	6000 lb
																					12-10-20 Subsurface			
12A2 & 27A2	29	4	KnB	Corn grain	Corn silage	20.1- 25	80	185	FCND	54	85	190	0	0	178	114	320	-12	114	320	Dairy Liquid Avg 8-6-18	16000 gal Fall Incorp	125-94- 280	480000 gal
																					12-10-20 Starter	200 lb Spring	24-20-40	5800 lb
																					12-10-20 Subsurface			
13G-1	20	4	MCA	Corn silage	Corn grain	151- 170	60	45	FCND	40	123	190	0	0	174	109	310	-16	109	310	Dairy Liquid Avg 8-6-18	16000 gal Fall Incorp	125-94- 280	464000 gal
																					12-10-20 Starter	150 lb Spring	18-15-30	3000 lb
																					12-10-20 Subsurface			
13G-2	51	4	KnB	Corn silage	Corn silage	20.1- 25	80	185	SCD	11	82	190	120	170	174	109	310	-16	-11	140	Dairy Liquid Avg 8-6-18	16000 gal Fall Incorp	125-94- 280	320000 gal
																					12-10-20 Starter	150 lb Spring	18-15-30	7650 lb
																					12-10-20 Subsurface			

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Corn on Corn Fields				Crop Removal		Soil Test ppm		Adjusted Recs lb/ac		Planned Applications and Credits lb/ac		Over(-) Under(-) Adj. Upl Recs lb/ac		Applications							
Name	Ac.	Soil Map & N Symb (prod)	Prior Crop	2020 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205-K2O credit	Total Amt	
13C-2	51	4	KNB	Corn silage	20.1-25	80	185	SCD	11	82	190	120	170	174	109	310	-16	-11	140	Dairy Liquid Avg 16000 gal Spring 125-94-280	816000 gal
13-1	20	4	KNB	Corn grain	151-170	60	45	FCD	18	72	190	11	0	178	114	320	-12	103	320	12-10-20 Starter 200 lb Spring 24-20-40	4000 lb
14B	45	4	KNB2	Corn grain	20.1-25	80	185	SCD	21	77	190	0	0	180	114	320	-10	114	320	Dairy Liquid Avg 16000 gal Fall 125-94-280	320000 gal
16 A1 West	13	1.5	OEA	Corn grain	20.1-25	80	185	FCND	11	75	190	120	208	35	35	105	-155	-85	-103	12-10-20 Starter 200 lb Spring 24-20-40	3500 lb
16B-2	17.5	2	MCA	Corn grain	151-170	60	45	SCND	19	91	190	0	0	192	109	303	2	109	303	Dairy Liquid Avg 15000 gal Spring 117-89-263	262500 gal
16E	8	4	SHB	Corn silage	15.1-20	65	145	FCND	70	156	190	0	0	159	109	303	-31	109	303	12-10-20 Starter 200 lb Spring 24-20-40	1600 lb
18A-1	3.5	2	MCA W	Corn silage	15.1-20	65	145	FCD	10	62	190	88	180	176	173	310	-14	85	130	Dairy Liquid Avg 15000 gal Fall 117-89-263	120000 gal

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Corn on Corn Fields										Crop Removal		Soil Test ppm		Adjusted Recs lb/ac		Planned Applications and Credits lb/ac		Over(+)/Under(-) Adj. UW Recs lb/ac		Applications				
Name	Ac.	Spr% Res	Map Symbol (ton)	Prior Crop	2020 Crop	Yield Gall	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205- K2O credit	Total
18A-1	3.5	2	MCA W	Corn silage	Corn silage	15.1- 20	65	145	FCD	10	62	190	88	180	176	173	310	-14	85	130	Calf Avg 4-5-9	30 ton Spring Unincorp	120-153- 270	105 ton
18A-3	15	4	MCA W	Corn grain	Corn grain	151- 170	60	45	FCND	16	95	190	90	0	164	109	303	-26	19	303	12-10-20 Starter 12-10-20	200 lb Spring Subsurface ^e	24-20-40	3000 lb
18B-2	4	4	KIB	Corn grain	Corn grain	151- 170	60	45	SCND	13	66	190	90	60	107	90	120	-83	0	60	Dairy Liquid Avg 8-6-18	15000 gal Fall Incorp	117-89- 263	225000 gal
22	25	1	Osa W	Corn silage	Corn silage	15.1- 20	65	145	FCD	20	114	190	0	0	170	109	303	-20	109	303	12-10-20 Starter 12-10-20	200 lb Spring Subsurface ^e	24-20-40	5000 lb
26A-1	15	4	KIB	Corn silage	Corn grain	151- 170	60	45	FCD	15	59	190	90	90	167	114	320	-23	24	230	Dairy Liquid Avg 8-6-18	15000 gal Fall Incorp	117-89- 263	375000 gal
26A-2	30.5	4	KIB	Corn silage	Corn grain	151- 170	60	45	FCD	12	64	190	90	80	164	109	303	-26	19	223	12-10-20 Starter 12-10-20	200 lb Spring Subsurface ^e	24-20-40	3000 lb
																					Dairy Liquid Avg 8-6-18	15000 gal Fall Incorp	117-89- 263	457500 gal

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Corn on Corn Fields					Crop Removal			Soil Test		Adjusted Recs		Planned Applications and Credits		Over(+)/Under(-)		Applications					
Name	Ac.	Soil Map Symbol (grid) & N	Prior Crop	2020 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205-K2O credit	Total Amt	
Herold Rd	50	9 W	WKC2	Corn grain	Corn grain	151-170	60	45	FCD	6	44	190	77	0	180	114	320	Dairy Liquid Avg 8-6-18	16000 gal Spring	125-94-280	800000 gal
Mat 11A	1.5	4	KHB2	Corn grain	Corn silage	15.1-20	65	145	FCD	23	68	190	36	41	140	89	249	Dairy Liquid Avg 8-6-18	150 lb Spring	18-15-30	225 lb
Mat 2	17	9	KHC2	Corn grain	Corn grain	151-170	60	45	FCD	25	97	190	29	0	164	109	303	Dairy Liquid Avg 8-6-18	12500 gal Fall	98-74-219	18750 gal
Mat 20	22	4	KHB2	Corn grain	Corn silage	15.1-20	65	145	FCD	22	94	190	0	0	164	104	293	Dairy Liquid Avg 8-6-18	15000 gal Fall	117-89-263	255000 gal
Mat 22	3	4	KHB	Corn grain	Corn silage	15.1-20	65	145	FCD	20	70	190	29	0	194	155	190	Dairy Liquid Avg 8-6-18	15000 gal Fall	117-89-263	330000 gal
Mat 5	10	9	KHC2	Winter Rye (forage) to Corn grain	Corn silage	15.1-20	65	145	FCD	17	100	190	95	185	193	148	258	Dairy Liquid Avg 8-6-18	150 lb Spring	18-15-30	1500 lb
																		Heifer Avg 4-4-7	35 ton Fall	151-133-228	350 ton

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Corn on Corn Fields									
Soil Map Symbol (pre)		Crop Removal		Soil Test ppm		Adjusted Recs lb/ac		Planned Applications and Credits lb/ac	
Name		Yield		P205 K20		Tillage Avg P Avg K		N P205 K20	
Ac. Slip % Res		Prior Crop 2020 Crop		Goal		FCD		142 91 250	
TOWER & W		151- 170		60 45		46 92 145		0 0	
Po Corn grain		Corn grain		142 91 250		-3 91 250		N P205 K20	
W		170		250		250		N P205 K20	
Product Name and Analysis		Appl Rate and Method		N-P205-K20 credit		Total Amt			
Dairy Liquid Avg 8-6-18		12000 gal Fall Incorp		94-71-210		420000 gal			

788.5 planned Corn on Corn acres

149,150 planned lb 12-10-20 Starter

105 planned ton Calf Avg

200 planned ton Cow Avg

11,830,948 planned gal Dairy Liquid Avg

350 planned ton Heifer Avg

First Year Corn Grain Fields																					
Soil Map Symbol			Crop Removal		Soil Test ppm		Adjusted Recs lb/ac		Planned Applications and Credits lb/ac	Over(+)/Under(-) Adj. UW Recs lb/ac											
Name	Ac.	Slip % Res	Prior Crop	2020 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	Product Name and Analysis	Appl Rate and Method	N-P205-K20 credit	Total Amt	
11U 2B	20	18	KME 2	Alfalfa	Corn grain	151-170	60	45	FCND	5	53	190	100	90	196	73	198	5	-27	108	
18B-1	12	4	KHB2	Alfalfa	Corn grain	151-170	60	45	SCND	12	62	190	90	90	196	73	198	6	-17	108	
																		Dairy Liquid Avg 8-6-18	8000 gal Spring Incorp	70-53-158	180000 gal
																		legume		90-0-0	
																		12-10-20 Starter 12-10-20	200 lb Spring Subsurfs	24-20-40	2400 lb
																		Dairy Liquid Avg 8-6-18	9000 gal Spring Incorp	70-53-158	108000 gal

First Year Corn Grain Fields										Crop Removal		Soil Test ppm		Adjusted Recs lb/ac		Planned Applications and Credits lb/ac		Over(+) Under(-) Adj. UW Recs lb/ac		Applications	
Name	Ac.	Sip %	Map Symbol (pred) & N Res	Prior Crop	2020 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205-K2O credit	Total Amt
18B-1																		legume		90-0-0	
26A-3	22	9	KHC2	Alfalfa	Corn grain	151-170	60	45	FCD	39	72	190	0	90	210	79	215	20	79	125	
																		Dairy Liquid Avg 8-6-18	10000 gal Fall Incorp	78-59-175	220000 gal
																		legume		90-0-0	
V010	95	3	MCA R	Soybeans 7-10 inch row	Corn grain	151-170	60	45	FFC	10	87	140	100	30	135	89	263	-5	-11	233	
																		Dairy Liquid Avg 8-6-18	15000 gal Fall Incorp	117-89-263	142500 gal

149 planned First Year Corn Grain acres 10,800 planned lb 12-10-20 Starter

1,933,000 planned gal Dairy Liquid Avg

First Year Corn Silage Fields										Crop Removal		Soil Test		Adjusted Recs lb/ac		Planned Applications and Credits lb/ac		Over(+)/Under(-) Adj. UW Recs lb/ac		Applications	
Name	Ac.	Sip % (pred) & N Res	Map Symbol N Res	Prior Crop	2020 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205- K2O credit	Total Amt
11L1	20.5	4	KHB W	Alfalfa	Corn silage	20.1-25	80	185	SCD	67	146	190	0	0	196	73	198	6	73	198	
																		Dairy Liquid Avg 8-6-18	9000 gal Spring Incorp.	70-53-158	184500 gal
																		legume		90-0-0	

SnapPlus Spreading and Nutrient Management Sorted By Crop Report

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First Year Corn Silage Fields										Crop Removal		Soil Test			Adjusted Recs		Planned Applications and Credits		Over(+)/Under(-) Adj. UW Recs		Applications																							
Name	Ac.	Sip % (pred) & N Res	Symbol Map	Prior Crop	2020 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205-K20 credit	Total Amt																				
12A1	35	4	KHB	Alfalfa	Corn silage	20.1-25	80	185	SCD	40	118	190	0	185	186	73	198	6	73	13	12-10-20 Starter 12-10-20	200 lb Spring Subsurface ce	24-20-40	7000 lb																				
																							Dairy Liquid Avg 8-6-18 legume	9000 gal Fall Incorp	70-53-158	315000 gal																		

55.5 planned First Year Corn Silage acres

11,100 planned lb 12-10-20 Starter

499,500 planned gal Dairy Liquid Avg

Soybean Fields										Crop Removal		Soil Test		Planned Adjusted Recs lb/ac				Over(+) Under(-) Adj. UW Recs lb/ac				Applications															
		Soil Map Symbol		Prior Crop		2020 Crop		Yield Goal		P205		K20		Tillage Avg P		Avg K		N		P205		K20		N		P205		K20		Product Name and Analysis		Appln Rate and Method		N-P205- K20 credit		Total Amt	
Name	Ac.	Sip %	N Res	Prior Crop	2020 Crop	Yield Goal	P205	K20	Tillage Avg P	Avg K	N	P205	K20	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205- K20 credit	Total Amt														
VO11	100	4	KHB2	Corn grain	Soybeans 7 -10 inch row	46-55	40	70	FCND	11	78	0	70	0	99	53	158	99	-17	158	Dairy Liquid Avg	9000 gal Fall	70-53-158	900000 gal													
																				8-6-18 Incorp																	

100 planned Soybean acres

900,000 planned gal Dairy Liquid Avg

Other Crops Fields				Crop Removal			Soil Test		Adjusted Recs lb/ac		Planned Applications and Credits lb/ac		Over(+)/ Under(-) Adj. UW Recs lb/ac		Applications						
Name	Ac.	Sip % N Res	Map Symbol Prior Crop	2020 Crop	Yield Goal	P205	K20	Tillage CP	Avg P	Avg K	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205- K20 credit	Total Amt	
13D-1.2	67	9	KHB	Corn grain	Winter Rye (forage) to Corn grain	2.0- 3.5/151-	110	265	CP	62	124	250	0	0	183	126	355	12-10-20 Starter 12-10-20	200 lb Spring Subsurfa CE	24-20-40	13400 lb

Other Crops Fields										Crop Removal			Soil Test			Adjusted Recs			Planned Applications and Credits lb/ac			Over(+) Under(-) Adj. U/W Recs			Applications		
Name	Ac.	Map Symbol (pre) & N Rec	Prior Crop	2020 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205-K20 credit	Total Amt				
13D-1,2	67	9 K0B	Corn grain	Winter Rye (forage) to Corn grain	2.0-3.5/151-170	110	265	CP	62	124	250	0	0	193	126	355	-57	126	355	Dairy Liquid Avg 8-6-18	18000 gal Spring Incorp	140-106-315	1206000 gal				
13E-2	15.5	4 K0B2 W	Corn silage	Winter wheat (grain +straw)	81-100	55	90	Fault	39	142	75	0	0	88	44	131	13	44	131	Dairy Liquid Avg 8-6-18	7500 gal Fall Incorp	59-44-131	116250 gal				
13E-3	22.5	4 K0B2	Corn silage	Winter wheat (grain +straw)	81-100	55	90	Fault	25	85	75	0	0	94	44	131	19	44	131	Dairy Liquid Avg 8-6-18	7500 gal Fall Incorp	59-44-131	168750 gal				
16C	8.5	4 O0B W	Corn silage	Winter wheat (grain +straw)	81-100	55	90	Fault	73	192	75	0	0	78	44	131	3	44	131	Dairy Liquid Avg 8-6-18	7500 gal Fall Incorp	59-44-131	63750 gal				
26-B2 South	11	8 K0C2	Corn silage	Winter wheat (grain +straw)	81-100	55	90	Fault	8	73	75	95	82	88	44	131	13	-57	49	Dairy Liquid Avg 8-6-18	7500 gal Fall Incorp	59-44-131	82500 gal				
Mal 3	25	9 K0C2	Corn grain	Winter wheat (grain +straw)	81-100	55	90	Fault	13	78	75	49	0	94	44	131	19	-5	131	Dairy Liquid Avg 8-6-18	7500 gal Fall Incorp	59-44-131	187500 gal				

149.5 planned Other Crops acres

13,400 planned lb 12-10-20 Starter

1,824,750 planned gal Dairy Liquid Avg

2,759 total planned acres

Total Planned to be Applied

Total Manure Volume	Manure App Plan	Remaining Manure
0 tons	1,871	-1,871
24783392 gals	26,703,698	-1,920,306

184,450 planned lb 12-10-20 Starter

105 planned ton Calf Avg

766 planned ton Cow Avg

26,703,698 planned gal Dairy Liquid Avg

1,000 planned ton Heifer Avg

List of fields that need new soil tests before plan year 2021

Ledgeview Farms

SnapPlus Spreading and Nutrient Management Sorted By Crop Report

02/02/2018

11G1	11G4
11G-3 East	11H1
11N4	11T
11U7 N	11U7
11U9	12A2 & 27A2
12A 45 & 27	13F-1
18B-2	Asch 3
DL-K2	Mat 1
Mat 2	Mat 3
Mat 4	Mat 5
Mat 7	Mat 8A
Mat 8	Mat 11
Mat 18	Mat 20
Mat 22	Matzke 4se

Tillage Abbreviations

Abbreviation	Tillage
CP	Chisel Plow, disked
FCD	Fall Chisel, disked
FCND	Fall Chisel, no disk
Fcult	Field Cultivation
FFC	Fall Cultivation
None	None
SCD	Spring Chisel, disked
SCND	Spring Chisel, no disk
SFC	Spring Cultivation

SnapPlus Spreading and Nutrient Management Sorted By Crop Report

Crop Year 2021
Reported For Ledgerview Farms
Printed 2018-02-02
Plan Completion/Update Date 2001-01-01
SnapPlus Version 16.3 built on 2018-10-31

Prepared for:
 Ledgerview Farms
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 \AgSource Data Backup\Clients\1775-CV Greenleaf\Ledgeview Farms
 \SNAP 2 Database\SNAP 16\Ledgeview Farms Snap 16 Main.snapDb

Alfalfa Fields			Crop Removal				Soil Test		Adjusted Recs			Planned Applications and Credits			Over(+) Under(-) Adj UY/ Recs			Applications					
Name	Ac.	Soil Map Symbol (pred) & N Res	Prior Crop	2021 Crop	Yield Goal	P205	K20	Tillage	Avg P ppm	Avg K	N	P205	K20	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205-K20 credit	Total Amt
T1G2	7.5	9 KNB	Dist w/ Alfalfa Seeding Spring	Alfalfa	3.6-4.5	50	240	None	48	146	0	0	0	43	0	0	43	0	0				
T1G-3 East	20	2 MAW	Alfalfa	Alfalfa	4.6-5.5	65	300	None	14	62	0	95	355	47	35	105	47	-60	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	120000 gal
T1G4	33	4 KNB W	Alfalfa	Alfalfa	4.6-5.5	65	300	None	19	84	0	0	355	47	35	105	47	35	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	198000 gal
T1H1	19	4 KNB	Alfalfa	Alfalfa	3.6-4.5	50	240	None	155	354	0	0	0	0	0	0	0	0	0				
T1K1B	2.5	2 MAW	Alfalfa	Alfalfa	3.6-4.5	50	240	None	4	51	0	90	295	0	0	0	0	-90	-295				
T1K1C	5	9 KOCC	Alfalfa	Alfalfa	3.6-4.5	50	240	None	56	168	0	0	120	0	0	0	0	0	-120				
T1L-East	10	4 KNB	Alfalfa	Alfalfa	4.6-5.5	65	300	None	74	220	0	0	0	47	35	105	47	35	105	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	60000 gal
T1N3	5	9 KNB	Alfalfa	Alfalfa	4.6-5.5	65	300	None	136	269	0	0	0	0	0	0	0	0	0				
T1N4	13	8 KNB	Alfalfa	Alfalfa	4.6-5.5	65	300	None	81	131	0	0	300	47	35	105	47	35	-195	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	78000 gal

SnapPlus Spreading and Nutrient Management Sorted By Crop Report

Alfalfa Fields				Crop Removal				Soil Test		Adjusted Recs		Planned Applications and Credits		Over(+) Under(-) Adj UW Recs		Applications						
Name	Ac.	Slp % (green) & N Rec	Soil Map Symbol	Prior Crop	2021 Crop	Yield Goal	P205	K2O	Tillage	Avg P ppm	Avg K	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205- K2O credit	Total Amt	
11P	9	4	S/B R	Alfalfa	Alfalfa	3.6-4.5	50	240	None	20	64	0	50	295	0	0	0	-50	-295			
11Q1	14	4	K/B W	Alfalfa	Alfalfa	4.6-5.5	65	300	None	41	88	0	0	355	47	35	105	47	35	-250	Dairy Liquid Avg 6-6-18 Unincorp	6000 gal 35-35-105 84000 gal
11R1	29	9	K/B	Alfalfa	Alfalfa	3.6-4.5	50	240	None	96	109	0	0	280	47	35	105	47	35	-175	Dairy Liquid Avg 6-6-18 Unincorp	6000 gal 35-35-105 174000 gal
11T	5	4	M/A	Alfalfa	Alfalfa	4.6-5.5	65	300	None	68	199	0	0	0	47	35	105	47	35	105	Dairy Liquid Avg 6-6-18 Unincorp	6000 gal 35-35-105 30000 gal
11T east	38	8	K/B2 W	Alfalfa	Alfalfa	3.6-4.5	50	240	None	95	235	0	0	0	47	35	105	47	35	105	Dairy Liquid Avg 6-6-18 Unincorp	6000 gal 35-35-105 228000 gal
11U1A	9	22.5	K/B2	Alfalfa	Alfalfa	3.6-4.5	50	240	None	5	67	0	90	295	47	35	105	47	-55	-190	Dairy Liquid Avg 6-6-18 Unincorp	6000 gal 35-35-105 54000 gal
11U1	14.5	8	K/B2	Alfalfa	Alfalfa	4.6-5.5	65	300	None	23	75	0	0	355	59	35	105	59	35	-250	Dairy Liquid Avg 6-6-18 Unincorp	6000 gal 35-35-105 87000 gal
11U2	15	9	K/B2	Alfalfa	Alfalfa	3.6-4.5	50	240	None	18	69	0	0	295	59	35	105	59	35	-190	Dairy Liquid Avg 6-6-18 Unincorp	6000 gal 35-35-105 90000 gal
11U3	13	9	K/B2	Alfalfa	Alfalfa	3.6-4.5	50	240	None	8	79	0	90	295	47	35	105	47	-55	-190	Dairy Liquid Avg 6-6-18 Unincorp	6000 gal 35-35-105 78000 gal
11U7	16	18	K/B2	Oats w/ Alfalfa Seeding Spring	Alfalfa	3.6-4.5	50	240	None	14	69	0	60	0	29	0	0	29	-60	0		
11U7 N	15	8	K/B2	Alfalfa Seeding Fall	Alfalfa	4.6-5.5	65	300	None	5	54	0	96	327	29	0	0	29	-96	-327		
11U9	19	9	K/B2	Alfalfa Seeding Fall	Alfalfa	4.6-5.5	65	300	None	10	85	0	105	210	25	0	0	25	-105	-210		
11U9 N	10	9	K/B2	Oats w/ Alfalfa Seeding Spring	Alfalfa	3.6-4.5	50	240	None	7	69	0	90	257	44	0	0	44	-90	-257		

SnapPlus Spreading and Nutrient Management Sorted By Crop Report

Altafia Fields			Crop Removal				Soil Test		Adjusted Recs		Planned Applications and Credits		Over/(-) Under/(-) Adj. Utr Recs		Applications								
Name	Ac.	Soil Map Symbol & N Recs	Prior Crop	2021 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	Product Name and Analysis	Appl Rate and Method	N-P205-K20 credit	Total Amt			
13E-1	48	8 KNC2 W	Altafia	Altafia	4.6-5.5	65	300	None	18	65	0	65	355	55	41	123	55	-24	-232	Dairy Liquid Avg 6-6-18	7000 gal Summer Unincorp	41-41-123	336000 gal
13F-1	38	9 KNC2	Altafia	Altafia	3.6-4.5	50	240	None	12	66	0	80	295	95	71	210	95	-9	-85	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	228000 gal
13H-1	21	4 KIB	Altafia	Altafia	4.6-5.5	65	300	None	63	138	0	0	300	95	71	210	95	71	-80	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	126000 gal
13H-2 N	10	4 KIB2	Altafia	Altafia	3.6-4.5	50	240	None	41	158	0	0	27	47	35	105	47	35	78	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	60000 gal
14A-11	5.5	16 KIB	Dats w/ Altafia Seeding Spring	Altafia	4.6-5.5	65	300	None	13	89	0	95	355	31	0	0	31	-95	-355				
16F	3.5	4 MIB	Altafia	Altafia	3.6-4.5	50	240	None	42	38	0	25	295	0	0	0	0	-25	-295				
18A-2	14.5	1.5 ADA W	Dats w/ Altafia Seeding Spring	Altafia	3.6-4.5	50	240	None	18	71	0	80	280	23	0	0	23	-80	-280				
18A-4	12.5	4 KIB W	Altafia Seeding Fall	Altafia	4.6-5.5	65	300	None	7	40	0	96	238	64	35	105	64	-61	-133	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	75000 gal
26-B1 North	10	16 KIB	Altafia	Altafia	3.6-4.5	50	240	None	74	175	0	0	60	0	0	0	0	0	-60				
26-B1 South	15	8 Bc	Altafia	Altafia	3.6-4.5	50	240	None	38	112	0	0	240	0	0	0	0	0	-240				
26B-2 E&W	19.5	8 MCA	Altafia	Altafia	3.6-4.5	50	240	None	50	97	0	0	280	47	35	105	47	35	-175	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	117000 gal

SnapPlus Spreading and Nutrient Management Sorted By Crop Report

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Alfalfa Fields				Crop Removal				Soil Test			Adjusted Recs			Planned Applications and Credits			Over(+) Under(-) Adj. U/W Recs			Applications			
Name	Ac.	Sip Soil Map % (green) & N Recs	Prior Crop	2021 Crop	Yield Goal	P205	K20	Tillage	Avg P ppm	Avg K	N	P205	K20	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205-K20 credit	Total Amt
26C	24.5	4	McA W	Alfalfa	Alfalfa	4.6-5.5	65	300	None	17	69	0	95	355	35	35	105	35	-60	-250	Dairy Liquid Avg 6-6-18 Summer Unincorp	6000 gal 35-35-105	147000 gal
26D-4	19.5	4	McA	Alfalfa	Alfalfa	4.6-5.5	65	300	None	19	72	0	65	355	47	35	105	47	-30	-250	Dairy Liquid Avg 6-6-18 Summer Unincorp	6000 gal 35-35-105	117000 gal
26D5-7	57	4	McA	Alfalfa	Alfalfa	4.6-5.5	65	300	None	12	62	0	95	355	47	35	105	47	-60	-250	Dairy Liquid Avg 6-6-18 Summer Unincorp	6000 gal 35-35-105	342000 gal
Asch 3	18.5	4	KnB2 W	Alfalfa	Alfalfa	4.6-5.5	65	300	None	47	84	0	0	355	47	35	105	47	35	-250	Dairy Liquid Avg 6-6-18 Summer Unincorp	6000 gal 35-35-105	111000 gal
DL-1	15	4	KnB	Alfalfa	Alfalfa	4.6-5.5	65	300	None	101	201	0	0	49	40	30	88	40	30	39	Dairy Liquid Avg 6-6-18 Summer Unincorp	5000 gal 30-30-88	75000 gal
DL-1.2	19	4	KnB	Alfalfa	Alfalfa	4.6-5.5	65	300	None	101	201	0	0	49	40	30	88	40	30	39	Dairy Liquid Avg 6-6-18 Summer Unincorp	5000 gal 30-30-88	95000 gal
DL-K2	48	4	KnB W	Alfalfa	Alfalfa	4.6-5.5	65	300	None	8	69	0	105	355	47	35	105	47	-70	-250	Dairy Liquid Avg 6-6-18 Summer Unincorp	6000 gal 35-35-105	288000 gal
K810	20	9	KnC2	Alfalfa	Alfalfa	4.6-5.5	65	300	None	13	71	0	95	355	47	35	105	47	-60	-250	Dairy Liquid Avg 6-6-18 Summer Unincorp	6000 gal 35-35-105	120000 gal
K811-13	50	9	KnC2	Alfalfa	Alfalfa	4.6-5.5	65	300	None	10	72	0	105	355	47	35	105	47	-70	-250	Dairy Liquid Avg 6-6-18 Summer Unincorp	6000 gal 35-35-105	300000 gal
K814	15	25	KnB2	Ons w/ Alfalfa Seedling Spring	Alfalfa	4.6-5.5	65	300	None	40	66	0	0	355	58	35	105	58	35	-250	Dairy Liquid Avg 6-6-18 Summer Unincorp	6000 gal 35-35-105	90000 gal
K81-4	57	4	KnB2	Alfalfa	Alfalfa	4.6-5.5	65	300	None	9	66	0	105	355	47	35	105	47	-70	-250	Dairy Liquid Avg 6-6-18 Summer Unincorp	6000 gal 35-35-105	342000 gal
K819-21	23	25	KnC2	Alfalfa	Alfalfa	4.6-5.5	65	300	None	5	57	0	105	355	47	35	105	47	-70	-250	Dairy Liquid Avg 6-6-18 Summer Unincorp	6000 gal 35-35-105	138000 gal

SnapPlus Spreading and Nutrient Management Sorted By Crop Report

Alfalfa Fields				Crop Removal					Soil Test			Adjusted Recs			Planned Applications and Credits			Over(+) Under(-) Adj. UN Recs			Applications			
Name	Ac.	Slp Soil Map % (pred) & N Rec	Prior Crop	2021 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205-K20 credit	Total Amt	
KB5	20	16	KNB	Oats w/ Alfalfa Seeding Spring	Alfalfa	4.6-5.5	65	300	None	10	75	0	105	355	58	35	105	58	-70	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	120000 gal
KB6	20	4	KNB2	Alfalfa	Alfalfa	4.6-5.5	65	300	None	10	72	0	105	355	47	35	105	47	-70	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	120000 gal
KB7-8	30	4	KNB W	Alfalfa	Alfalfa	4.6-5.5	65	300	None	7	76	0	105	355	47	35	105	47	-70	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	180000 gal
KB9	21	9	KNC2	Alfalfa	Alfalfa	4.6-5.5	65	300	None	16	90	0	95	340	47	35	105	47	-60	-235	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	126000 gal
Mat 1	20	9	KNC2	Alfalfa	Alfalfa	3.6-4.5	50	240	None	24	119	0	50	240	35	35	105	35	-15	-135	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	120000 gal
Mat 11	31	4	KNB2	Alfalfa	Alfalfa	3.6-4.5	50	240	None	47	113	0	0	240	47	35	105	47	35	-135	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	186000 gal
Mat 18	18	4	KNB2	Alfalfa	Alfalfa	3.6-4.5	50	240	None	22	119	0	50	240	49	35	105	49	-15	-135	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	108000 gal
Mat 21	24	4	KNB2	Alfalfa	Alfalfa	3.6-4.5	50	240	None	44	154	0	0	120	47	35	105	47	35	-15	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	144000 gal
Mat 4	25	9	KNC2	Alfalfa	Alfalfa	3.6-4.5	50	240	None	21	82	0	36	295	47	35	105	47	-1	-190	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	150000 gal
Mat 8	16	4	KNB	Alfalfa	Alfalfa	3.6-4.5	50	240	None	36	117	0	0	240	47	35	105	47	35	-135	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	96000 gal
Matzke 3	5	9	KNB	Alfalfa	Alfalfa	3.6-4.5	50	240	None	7	39	0	90	295	0	0	0	0	-90	-295				
Matzke 4	16	9	KNB	Alfalfa	Alfalfa	3.6-4.5	50	240	None	39	71	0	0	295	0	0	0	0	0	-295				
Matzke 4se	8	4	MCA	Alfalfa	Alfalfa	3.6-4.5	50	240	None	11	59	0	90	295	0	0	0	0	-90	-295				

Alfalfa Fields				Crop Removal				Soil Test				Adjusted Recs				Planned Applications and Credits				Over(+) Under(-) Adj. UW Recs				Applications			
Name	Ac.	Sip %	Soil Map Symbol (prev) & N Res	Prior Crop	2021 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205-K20 credit	Total Amt			
Matzke 6-7	16.5	9	KNC2	Alfalfa	Alfalfa	3.6-4.5	50	240	None	43	82	0	0	295	0	0	0	0	0	-295	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	120000 gal			
Matzke 8	20	15	KNC2	Alfalfa	Alfalfa	3.6-4.5	50	240	None	25	81	0	50	295	47	35	105	47	-15	-190							
Matzke 9	16.5	16	KNC2	Alfalfa	Alfalfa	3.6-4.5	50	240	None	25	67	0	50	295	0	0	0	0	-50	-295							
Matzke Pasture	2	4	MCA	Alfalfa	Alfalfa	3.6-4.5	50	240	None	274	255	0	0	0	0	0	0	0	0								
MM-East	5	8	KNC	Alfalfa Seeding Fall	Alfalfa	4.6-5.5	65	300	None	10	53	0	105	355	19	0	0	19	-105	-355							
MM-West	10	8	KNC2	Alfalfa Seeding Fall	Alfalfa	4.6-5.5	65	300	None	61	181	0	0	0	26	0	0	26	0	0							
Van Riens	40	9	KNC2	Alfalfa	Alfalfa	3.6-4.5	50	240	None	20	68	0	31	295	47	35	105	47	4	-190	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	240000 gal			

6,452,000 planned gal Dairy Liquid Avg

Alfalfa Seeding Fields																				
Soil Map					Crop Removal			Soil Test			Planned Applications and Credits			Over(+) Under(-) Adj. UW Recs			Applications			
Name	Ac.	Soil Symbol & N Res	Prior Crop	2021 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205-K20 credit	Total Amt
11K1A	9	4 KMB2	Corn grain	Corn w/ Alfalfa Seeding Spring	61-90	65	215	FCND	70	174	20	0	0	146	89	263	Dairy Liquid Avg 8-6-18	15000 gal Fall Incorp	117-89-263	135000 gal
13E-2	15.5	4 KMB2 W	Winter wheat (grain +straw)	Alfalfa Seeding Fall	2.6-3.5	40	180	FCD	39	142	0	0	0	132	89	263	Dairy Liquid Avg 8-6-18	15000 gal Fall Incorp	117-89-263	232500 gal

Alfalfa Seeding Fields																					
Soil Map				Crop Removal				Soil Test				Planned Applications and Credits				Over(+)/Under(-) Adj. UW Recs				Applications	
Name	Ac.	Sip %	Symbol	Prior Crop	2021 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205-K2O credit	Total Amt
13E-3	22.5	4	KNB2	Winter wheat (grain +straw)	Alfalfa Seeding Fall	2.6-3.5	40	180	FCD	25	85	0	0	93	140	94	280	Dairy Liquid Avg 8-6-18	16000 gal Fall	125-94-280	360000 gal
13G-1	20	4	MCA	Corn grain	Alfalfa Seeding Fall	2.6-3.5	40	180	FCND	40	123	0	0	0	156	94	280	Dairy Liquid Avg 8-6-18	16000 gal Fall	125-94-280	320000 gal
16C	8.5	4	ONB W	Winter wheat (grain +straw)	Alfalfa Seeding Fall	2.6-3.5	40	180	FCND	73	192	0	0	0	113	74	219	Dairy Liquid Avg 8-6-18	12500 gal Fall	98-74-219	106250 gal
26-B2 South	11	8	KNC2	Winter wheat (grain +straw)	Alfalfa Seeding Fall	2.6-3.5	40	180	FCND	8	73	0	80	186	132	89	263	Dairy Liquid Avg 8-6-18	15000 gal Fall	117-89-263	165000 gal
Mat 3	25	9	KNC2	Winter wheat (grain +straw)	Alfalfa Seeding Fall	2.6-3.5	40	180	FCND	13	78	0	70	0	132	89	324	Polash U-0-61	100 lb Spring	0-0-61	2500 lb

111.5 planned Alfalfa Seeding acres

1,693,750 planned gal Dairy Liquid Avg

2,500 planned lb Potash

Corn on Corn Fields																				
Crop Removal				Soil Test		Adjusted Recs		Planned		Over(-) Under(+)		Applications								
				ppm		Ib/ac		Applications and Credits Ib/ac		Adj. UW Recs Ib/ac										
Soil Map Symbol (Irradi)				Yield		Product Name and Analysis		Appln Rate												
Name	Ac.	Sip%	& N Res	Prior Crop	2021 Crop	Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	Total		
11L1	20.5	4	KnB W	Corn silage	Corn silage	20.1-25	80	185	SCD	67	146	190	0	0	167	114	320	-23	114	320

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Corn on Corn Fields										Crop Removal			Soil Test		Adjusted Recs		Planned Applications and Credits		Over(-) Under(-) Adj. UW Recs		Applications			
Name	Ac.	Slp%	Res	Prior Crop	2021 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205-K2O credit	Total Amt
11L1	20.5	4	KHB W	Corn silage	Corn silage	20.1-25	80	185	SCD	57	146	190	0	0	167	114	320	-23	114	320	Dairy Liquid Avg 8-6-18	16000 gal Spring	125-94-280	328000 gal
11M1	10	4	KHB2	Corn silage	Corn silage	20.1-25	80	185	FCD	27	77	190	0	160	172	109	303	-18	109	143	Dairy Liquid Avg 8-6-18	200 lb Spring	24-20-40	2000 lb
11S1	42	4	KHB	Corn grain	Corn silage	20.1-25	80	185	FCD	48	35	190	0	0	180	114	320	-10	114	320	Dairy Liquid Avg 8-6-18	15000 gal Fall	117-89-263	150000 gal
11U2B	20	18	KHB2	Corn grain	Corn grain	151-170	60	45	FCND	5	53	190	100	0	167	114	320	-23	14	320	Dairy Liquid Avg 8-6-18	16000 gal Fall	125-94-280	672000 gal
12A1	35	4	KHB	Corn silage	Corn silage	20.1-25	80	185	SCD	40	118	190	0	172	167	114	320	-23	114	148	Dairy Liquid Avg 8-6-18	200 lb Spring	24-20-40	7000 lb
13-1	20	4	KHB	Corn grain	Corn grain	151-170	60	45	FCD	18	72	190	0	0	180	114	320	-10	114	320	Dairy Liquid Avg 8-6-18	16000 gal Spring	125-94-280	560000 gal
																					Dairy Liquid Avg 8-6-18	200 lb Spring	24-20-40	4000 lb
																					Dairy Liquid Avg 8-6-18	200 lb Spring	24-20-40	4000 lb
																					Dairy Liquid Avg 8-6-18	200 lb Spring	24-20-40	4000 lb
																					Dairy Liquid Avg 8-6-18	200 lb Spring	24-20-40	4000 lb
																					Dairy Liquid Avg 8-6-18	200 lb Spring	24-20-40	4000 lb
																					Dairy Liquid Avg 8-6-18	200 lb Spring	24-20-40	4000 lb
																					Dairy Liquid Avg 8-6-18	200 lb Spring	24-20-40	4000 lb
																					Dairy Liquid Avg 8-6-18	200 lb Spring	24-20-40	4000 lb
																					Dairy Liquid Avg 8-6-18	200 lb Spring	24-20-40	4000 lb
																					Dairy Liquid Avg 8-6-18	200 lb Spring	24-20-40	4000 lb
																					Dairy Liquid Avg 8-6-18	200 lb Spring	24-20-40	4000 lb
																					Dairy Liquid Avg 8-6-18	200 lb Spring	24-20-40	4000 lb
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																					Dairy Liquid Avg 8-6-18	200 lb Spring	24-20-40	4000 lb
																					Dairy Liquid Avg 8-6-18	200 lb Spring	24-20-40	4000 lb
																					Dairy Liquid Avg 8-6-18	200 lb Spring	24-20-40	4000 lb
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																					Dairy Liquid Avg 8-6-18	200 lb Spring	24-20-40	4000 lb
																					Dairy Liquid Avg 8-6-18	200 lb Spring	24-20-40	4000 lb
																					Dairy Liquid Avg 8-6-18	200 lb Spring	24-20-40	4000 lb
																					Dairy Liquid Avg 8-6-18	200 lb Spring	24-20-40	4000 lb
																					Dairy Liquid Avg 8-6-18	200 lb Spring		

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Corn on Corn Fields										Crop Removal			Soil Test			Adjusted Recs			Planned Applications and Credits			Over(+)/Under(-) Adj. UNR Recs			Applications	
Name	Ac.	Stp% Res	Map Symbol (pred) & N	Prior Crop	2021 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205-K2O credit	Total Amt		
14B	45	4	KNB2	Corn silage	Corn grain	151-170	60	45	FCND	21	77	190	0	0	180	114	320	-10	114	320	12-10-20 Starter	200 lb Spring	24-20-40	9000 lb		
																					12-10-20 Subsurface					
16 A1 West	13	1.5	OSA	Corn silage	Corn grain	151-170	60	45	SCND	11	75	190	100	90	106	73	198	-84	-27	108	Dairy Liquid Avg	18000 gal Fall	125-94-280	720000 gal		
																					8-6-18 Incorp	200 lb Spring	24-20-40	2600 lb		
																					12-10-20 Starter	200 lb Spring				
																					12-10-20 Subsurface					
16B-2	17.5	2	MOA	Corn grain	Corn grain	151-170	60	45	SCND	19	91	190	0	0	170	109	303	-20	109	303	Dairy Liquid Avg	9000 gal Fall	70-53-158	117000 gal		
																					8-6-18 Incorp	200 lb Spring	24-20-40	3500 lb		
																					12-10-20 Starter	200 lb Spring				
																					12-10-20 Subsurface					
16C	8	4	SNB	Corn silage	Corn grain	151-170	60	45	FCND	70	156	190	0	0	170	108	303	-20	109	303	Dairy Liquid Avg	15000 gal Spring	117-89-263	262500 gal		
																					8-6-18 Incorp	200 lb Spring	24-20-40	1600 lb		
																					12-10-20 Starter	200 lb Spring				
																					12-10-20 Subsurface					
18A-1	3.5	2	MOA W	Corn silage	Corn silage	151-20	65	145	FCND	10	62	190	20	70	172	147	265	-18	127	195	Dairy Liquid Avg	15000 gal Fall	117-89-263	120000 gal		
																					8-6-18 Incorp	200 lb Spring	24-20-40	700 lb		
																					12-10-20 Starter	200 lb Spring				
																					12-10-20 Subsurface					
18A-3	15	4	MOA W	Corn grain	Corn grain	151-170	60	45	FCND	16	95	190	71	0	170	108	303	-20	38	303	Calf Avg	25 ton Spring	100-128-225	88 ton		
																					4-5-8 Unincorp	200 lb Spring	24-20-40	3000 lb		
																					12-10-20 Starter	200 lb Spring				
																					12-10-20 Subsurface					

Corn on Corn Fields										Crop Removal				Soil Test		Adjusted Recs		Planned Applications and Credits		Over(-) Under(+)		Applications		
Soil Map & N (ton)										Crop Removal		Soil Test ppm		Adjusted Recs lb/ac		Planned Applications and Credits lb/ac		Over(-) Under(+)		Applications				
Name	Ac.	Slip	Res	Prior Crop	2021 Crop	Yield	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205-K2O credit	Total Amt
18A-3	15	4	MCA W	Corn grain	Corn grain	151-170	60	45	FCND	16	95	190	71	0	170	109	303	-20	38	303	Dairy Liquid Avg	15000 gal Spring	117-89-263	225000 gal
18B-1	12	4	KHBL	Corn grain	Corn grain	151-170	60	45	SCND	12	62	190	90	0	159	109	303	-31	19	303	Dairy Liquid Avg	15000 gal Spring	117-89-263	240000 gal
18B-2	4	4	KIB	Corn grain	Corn grain	151-170	60	45	SCND	13	66	190	90	30	105	90	120	-85	0	90	Dairy Liquid Avg	15000 gal Fall	117-89-263	180000 gal
22	25	1	OSA W	Corn silage	Corn silage	15.1-20	65	145	FCO	20	114	190	0	0	170	109	303	-20	109	303	Cow Avg	20 ton Spring	58-70-80	80 ton
25A-1	15	4	KIB	Corn grain	Corn grain	151-170	60	45	FCO	15	59	190	66	0	172	109	303	-18	43	303	Dairy Liquid Avg	15000 gal Fall	117-89-263	375000 gal
26A-2	30.5	4	KIB	Corn grain	Corn grain	151-170	60	45	FCO	12	64	190	71	0	170	109	303	-20	38	303	Dairy Liquid Avg	15000 gal Fall	117-89-263	457500 gal

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Corn on Corn Fields				Crop Removal				Soil Test				Adjusted Recs				Planned Applications and Credits				Over(+)/Under(-)				Applications			
Soil Map Symbol (prec) & N				Crop Removal				Soil Test ppm				Adjusted Recs lb/ac				Planned Applications and Credits lb/ac				Over(+)/Under(-) lb/ac				Applications			
Name	Ac.	Slp%	Res	Prior Crop	2021 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205-K20 credit	Total Amt
26A-3	22	9	KNC2	Corn grain	Corn grain	151-170	60	45	FCD	39	72	190	0	0	161	109	303	-29	109	303			12-10-20 Starter	200 lb Spring	24-20-40	4400 lb	
																							12-10-20 Subsurface	200 lb Spring	24-20-40	4400 lb	
26A-4	10	4	MCA	Corn grain	Corn grain	151-170	60	45	FCD	42	89	190	0	0	172	109	303	-18	109	303			12-10-20 Starter	200 lb Spring	24-20-40	2000 lb	
																							12-10-20 Subsurface	200 lb Spring	24-20-40	2000 lb	
Asch 1 North	57	4	KNB	Corn silage	Corn silage	20.1-25	80	185	FCD	18	81	190	0	0	199	126	355	9	126	355			12-10-20 Starter	200 lb Spring	24-20-40	11400 lb	
																							12-10-20 Subsurface	200 lb Spring	24-20-40	11400 lb	
Bower Creek	50	2	Fa WP	Corn silage	Corn silage	20.1-25	80	185	FCND	14	65	145	110	240	141	91	250	-4	-19	10			12-10-20 Starter	200 lb Spring	24-20-40	10000 lb	
																							12-10-20 Subsurface	200 lb Spring	24-20-40	10000 lb	
Harold Rd	50	9	WOC2 W	Corn grain	Corn grain	151-170	60	45	FCD	6	44	190	63	0	172	109	303	-18	46	303			12-10-20 Starter	200 lb Spring	24-20-40	10000 lb	
																							12-10-20 Subsurface	200 lb Spring	24-20-40	10000 lb	
Met 2	17	9	KNC2	Corn grain	Corn silage	15.1-20	65	145	FCD	25	97	190	0	0	164	104	293	-26	104	293			12-10-20 Starter	150 lb Spring	18-15-30	2550 lb	
																							12-10-20 Subsurface	150 lb Spring	18-15-30	2550 lb	

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Corn on Corn Fields				Crop Removal		Soil Test		Adjusted Recs		Planned Applications and Credits		Over(+) Under(-)		Applications										
Soil Map Symbol (prior)						ppm		lb/ac		lb/ac		lb/ac												
Name	Ac.	Slp% Res	Prior Crop	2021 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205-K2O credit	Total Amt				
Mat 2	17	9	KNC2	Corn grain	15.1-20	65	145	FCD	25	97	190	0	0	164	104	293	-26	104	293	Dairy Liquid Avg	15000 gal	117-89-263	255000 gal	
																		incorp						
Matzke 1	40	4	KNB	Corn silage	Corn grain	151-170	60	45	FCD	7	87	190	53	0	199	126	355	9	73	355	12-10-20 Starter	200 lb	24-20-40	8000 lb
																		incorp						
	</																							

617 planned Corn on Corn acres

122,550 planned lb 12-10-20 Starter

88 planned ton Calf Avg

80 planned ton Cow Avg

9,353,000 planned gal Dairy Liquid Avg

First Year Corn Grain Fields			Crop Removal		Soil Test ppm		Adjusted Recs lb/ac		Planned Applications and Credits lb/ac		Over(+) Under(-) Adj. UW Recs lb/ac		Applications								
Name	Ac.	Slp & N Res	Prior Crop	2021 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205- K2O credit	Total Amt	
14A	22	16	KHB2	Alfalfa	151- 170	60	45	SCUD	15	85	190	90	90	196	73	198	6	-17	108	12-10-20 Starter Spring Subsurtia CB	200 lb 24-20-40 4400 lb

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First Year Corn Grain Fields										Crop Removal		Soil Test ppm		Adjusted Recs lb/ac		Planned Applications and Credits lb/ac		Over(+) Under(-) Adj. UN Recs lb/ac		Applications					
		Soil Map Symbol (prev)																							
Name	Ac.	Slp & N Res	Prior Crop	2021 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205-K2O credit	Total Amt		
14A	22	16	KHB2	Alfalfa	Corn grain	151-170	60	45	SCND	15	85	190	90	90	196	73	198	6	-17	108	Dairy Liquid Avg 8-6-18	9000 gal Spring Incorp	70-53-158	198000 gal	
																				legume		90-0-0			
16A1 East	15	2	MCA	Alfalfa	Corn grain	131-150	55	40	FCD	49	109	190	0	70	196	73	198	6	73	128	12-10-20 Starter 12-10-20	200 lb Spring Subsurface	24-20-40	3000 lb	
																				Dairy Liquid Avg 8-6-18		9000 gal Spring Incorp		70-53-158 135000 gal	
																				legume		90-0-0			
16B-5	10	1	OnA	Alfalfa	Corn grain	151-170	60	45	SCND	15	79	190	90	90	203	73	198	13	-17	108	12-10-20 Starter 12-10-20	200 lb Spring Subsurface	24-20-40	2000 lb	
																				Dairy Liquid Avg 8-6-18		9000 gal Spring Incorp		70-53-158 90000 gal	
																				legume		90-0-0			
Met 7A	3	4	KHB2	Alfalfa	Corn grain	151-170	60	45	SCND	58	99	190	0	75	208	68	186	18	68	113	12-10-20 Starter 12-10-20	150 lb Spring Subsurface	18-15-30	450 lb	
																				Dairy Liquid Avg 8-6-18		9000 gal Spring Incorp		70-53-158 27000 gal	
																				legume		120-0-0			
WOT1	100	4	KHB2	Soybeans 7-10 inch row	Corn grain	151-170	60	45	FCND	11	78	140	90	0	135	89	263	-5	-1	263	Dairy Liquid Avg 8-6-18	15000 gal Fall Incorp	117-89-263	150000 gal	

150 planned First Year Corn Grain acres

9,850 planned lb 12-10-20 Starter

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First Year Corn Silage Fields																Applications				
		Soil Map		Crop Removal			Soil Test			Adjusted Recs lb/ac		Planned Applications and Credits lb/ac		Over(+)/ Under(-) Adj. UW Recs lb/ac						
Name	Ac.	Slip Symbol (pred) % N Res	Prior Crop	2021 Crop	Yield Goal	P205	K2O	Tillage Avg P	Avg K	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205- K2O credit	Total Amt	
17A	21	1.5	DNA	Alfalfa	Corn silage	20.1-25	80	185	SCND	22	123	190	90	185	196	73	198	6	-7	13
																12-10-20 Starter 12-10-20	200 lb Spring Subsista	24-20-40	4200 lb	
																Dairy Liquid Avg 8-6-18	9000 gal Spring Incorp	70-53-158	189000 gal	
																legume		90-0-0		

217 planned First Year Corn Silage acres 39,800 planned lb 12-10-20 Starter

1,953,000 planned gal Dairy Liquid Avg

Soybean Fields																						
Soil				Crop Removal		Soil Test		Adjusted Recs		Planned Applications and Credits		Over(+)/Under(-)		Applications								
Map								lb/ac		lb/ac		lb/ac										
Name	Ac.	Slip %	Symbol	Prior Crop	2021 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appl Rate and Method	N-P205-K2O credit	Total Amt	
VO10	95	3	MCA	Com grain	Soybeans 7	46-55	40	70	FCND	10	87	0	80	0	99	53	158		Dairy Liquid	9000 gal	70-53-158	855000
			R		-10 inch low														Avg	8-6-18	incorp	gal

85 planned Soybean acres 855,000 planned gal Dairy Liquid Avg

Other Crops Fields																							
		Soil Map		Crop Removal		Soil Test		Adjusted Recs lb/ac		Planned Applications and Credits lb/ac		Over(+/-) Under(-) Adj. UW Recs lb/ac		Applications									
Name	Ac.	Slip (pred) % N Res	Prior Crop	2021 Crop	Yield Goal	P205	K2O	Tillage Avg P	Avg K	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appl Rate and Method	N-P205-K2O credit	Total Amt				
11J1&2	26	4	KHB	Corn silage	Winter wheat (grain +straw)	81-100	55	90	Fall	87	271	75	0	0	88	44	131	13	44	131			
Dairy Liquid Avg 8-6-18																	7500 gal	59-44-121	195000 gal				
																	incorp						

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Other Crops Fields										Crop Removal			Soil Test			Adjusted Recs			Planned Applications and Credits			Over(+) Under(-) Adj. U/W Recs			Applications	
		Soil Map Symbol (pre) & N Rec		Prior Crop	2021 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205-K20 credit	Total Amt		
Name		Ac.	%	N Rec	Corn	81-100	55	90	Fault	44	103	75	0	0	90	44	131	15	44	131	Dairy Liquid Avg	7500 gal Fall	59-44-131	225000 gal		
12A 45 & 27		30	4	K0B	silage																					
12A2 & 27A2		29	4	K0B	Corn silage	81-100	55	90	Fault	54	85	75	0	0	90	44	131	15	44	131	Dairy Liquid Avg	7500 gal Fall	59-44-131	275000 gal		
13D-1,2		67	9	K0B	Winter Rye (forage) to Corn silage, 30 inch row	2.0-3.5/20.1	130	405	FFC/C P	62	124	250	0	0	199	126	355	-51	126	355	12-10-20 Starter 12-10-20	200 lb Spring	24-20-40	13400 lb		
13G-2		51	4	K0B	Corn silage	81-100	55	90	Fault	11	82	75	95	5	90	44	131	15	-51	126	Dairy Liquid Avg	7500 gal Fall	59-44-131	382500 gal		
Asch 1 South		24.5	4	K0B2 W	Corn silage	81-100	55	90	Fault	9	62	75	78	0	91	47	140	16	-31	140	Dairy Liquid Avg	8000 gal Fall	62-47-140	196000 gal		
Asch 2		27	4	K0B	Corn silage	81-100	55	90	Fault	14	57	75	29	0	94	44	131	19	15	131	Dairy Liquid Avg	7500 gal Fall	59-44-131	202500 gal		
Met 11A		1.5	4	K0B2	Corn silage	81-100	55	90	Fault	23	68	75	2	0	69	0	61	-6	-2	61	AMS Spring	50 lb	11-0-0	75 lb		
Met 20		22	4	K0B2	Corn silage	81-100	55	90	Fault	22	94	75	0	0	88	44	131	13	44	131	Dairy Liquid Avg	7500 gal Fall	59-44-131	165000 gal		
Met 22		3	4	K0B	Corn silage	81-100	55	90	Fault	20	70	75	0	0	89	46	78	14	46	78	Heifer Avg 3-4-7	12 ton Fall	38-46-78	36 ton		

Other Crops Fields										Crop Removal			Soil Test			Adjusted Recs lb/ac		Planned Applications and Credits lb/ac		Over(+)/Under(-) Adj. UW Recs lb/ac		Applications																																	
Soil Map Symbol & N Res										Prior Crop		Yield Goal		P205		K2O		Tillage Avg P		Avg K		N		P205		K2O		Product Name and Analysis		Appln Rate and Method		N-P205- K2O credit		Total Amt																					
Mat 5										Corn silage		81-100		55		90		Fall		17		100		75		32		57		99		46		139		24		14		82		AMS 21-0-0 Spring Umincorp		50 lb 11-0-0		500 lb									
																																								AMS 21-0-0 Spring Umincorp		50 lb 11-0-0		500 lb											
																																								Potash 0-0-61 Umincorp		100 lb 0-0-61		1000 lb											
										Heifer Avg 3-4-7																														12 ton Fall		38-46-78		120 ton											
Mat 7										8.5		4		KNB2		Corn silage		81-100		55		90		Fall		28		93		75		0		22		69		35		101		-6		35		79		AMS 21-0-0 Spring Umincorp		50 lb 11-0-0		425 lb			
																																										Potash 0-0-61 Umincorp		100 lb 0-0-61		850 lb									
																																										Cow Avg 3-4-4		10 ton Fall		29-35-40		85 ton							
Mat 8A										3		4		KNB		Corn silage		81-100		55		90		Fall		36		71		75		0		0		69		0		61		-6		0		61		AMS 21-0-0 Spring Umincorp		50 lb 11-0-0		150 lb			
																																														Potash 0-0-61 Umincorp		100 lb 0-0-61		300 lb					
																																														Urea 75 lb Spring Umincorp		35-0-0		225 lb					
Mat 2 - 5										16.5		4		KNB		Corn silage		81-100		55		90		Fall		40		79		75		0		0		88		44		131		13		44		131		Daily Liquid Avg 8-6-16		7500 gal Fall		59-44-131		123750 gal	

319 planned Other Crops acres

13,400 planned lb 12-10-20 Starter

1,150 planned lb AMS

85 planned ton Cow Avg

2,913,250 planned gal Dairy Liquid Avg

156 planned ton Heifer Avg

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2,300 planned lb Polash
338 planned lb Urea

2,759 total planned acres

Total Manure Volume	Manure App Plan	Remaining Manure
0 tons	409	-409
24783392 gals	25,170,000	-386,608

Total Planned to be Applied

185,600 planned lb 12-10-20 Starter
1,150 planned lb AMS
88 planned ton Calf Avg
165 planned ton Cow Avg
25,170,000 planned gal Dairy Liquid Avg
156 planned ton Heifer Avg
4,800 planned lb Polash
338 planned lb Urea

List of fields that need new soil tests before plan year 2022

11G1	11G2
11G3	11G4
11G-3 East	11H1
11J1&2	11K1A
11K1B	11K1C
11L1	11L-East
11M1	11N3
11N4	11P
11O1	11R1
11S1	11S2
11T east	11T
11U1	11U2

Ledgeview Farms

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11U3	11U7 N
11U7	11U9 N
11U9	11U 1A
11U 2B	12A1
12A2 & 27A2	12A 45 & 27
13-I	13D-1,2
13E-1	13E-2
13E-3	13F-1
13G-1	13G-2
13H-1	13H-2 N
14A-11	14A
14B	16 A1 East
15 A1 West	16B-2
16B-5	16B-5&7
16C	16E
16F	17A
18A-1	18A-2
18A-3	18A-4
18B-1	18B-2
22	26-B1 North
26-B1 South	26-B2 South
26A-1	26A-2
26A-3	26A-4
26B-2 E&W	26C
26D5-7	26D-4
Asch 1 North	Asch 1 South

Asch 2	Asch 3
Bower Creek	DL-1
DL-1,2	DL-K2
Herold Rd	KB1-4
KB5	KB6
KB7-8	KB9
KB10	KB11-13
KB14	KB19-21
Mat 1	Mat 2
Mat 3	Mat 4
Mat 5	Mat 7A
Mat 7	Mat 8A
Mat 8	Mat 11A
Mat 11	Mat 18
Mat 20	Mat 21
Mat 22	Matzke 1
Matzke 2 - 5	Matzke 3
Matzke 4se	Matzke 4
Matzke 6-7	Matzke 8
Matzke 9	Matzke Pasture
MM-East	MM-West
TOWER & W	Van Rens
VO10	VO11

Tillage Abbreviations

Abbreviation	Tillage
CP	Chisel Plow, disked

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Ledgeview Farms

FCD	Fall Chisel, disbed
FCND	Fall Chisel, no disk
Fcult	Field Cultivation
FFC	Fall Cultivation
FFC/CP	crop 1: Fall Cult., crop 2: Chisel plow, no disk
None	None
SCD	Spring Chisel, disbed
SCND	Spring Chisel, no disk

SnapPlus Spreading and Nutrient Management Sorted By Crop Report

Crop Year 2022
Reported For Ledgerview Farms
Printed 2018-02-02
Plan Completion/Update Date 2001-01-01
SnapPlus Version 16.3 built on 2016-10-31

Prepared for:
 Ledgerview Farms
 aith:Roy, Glenn & Jason Pansier
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 \SNAP 2 Database\SNAP 16\Ledgeview Farms Snap 16 Main.snapDb

Alfalfa Fields			Crop Removal				Soil Test		Adjusted Recs		Planned Applications and Credits		Over(+)/ Under(-) Adj. UNV Recs.		Applications					
Name	Ac.	Sip Soil Map % Symbol (pred) & N Rec	Prior Crop	2022 Crop	Yield Goal	P205	K20	Tillage	Avg P ppm	Avg K	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205-K20 credit	Total Amt
11G2	7.5	9 KNB	Alfalfa	Alfalfa	3.6-4.5	50	240	None	48	146	0	0	0	0	0	0	Daily Liquid Avg 6-6-18 6000 gal Summer Unincorp	35-35-105	54000 gal	
11K1A	9	4 KNB2	Ons w/ Alfalfa Seeding Spring	Alfalfa	4.6-5.5	65	300	None	70	174	0	0	0	64	35	105				
11K1B	2.5	2 MAA	Alfalfa	Alfalfa	3.6-4.5	50	240	None	4	51	0	90	295	0	0	0				
11K1C	5	9 KOC2	Alfalfa	Alfalfa	3.6-4.5	50	240	None	56	168	0	0	120	0	0	0				
11N3	5	9 KNB	Alfalfa	Alfalfa	4.6-5.5	65	300	None	136	269	0	0	0	0	0	0	Daily Liquid Avg 6-6-18 6000 gal Summer Unincorp	35-35-105	84000 gal	
11P	9	4 SYB R	Alfalfa	Alfalfa	3.6-4.5	50	240	None	20	64	0	50	295	0	0	0				
11O1	14	4 KNB W	Alfalfa	Alfalfa	4.6-5.5	65	300	None	41	88	0	0	355	47	35	105				
11R1	29	9 KOB	Alfalfa	Alfalfa	4.6-5.5	65	300	None	96	109	0	0	340	47	35	105				
11T	5	4 MCA	Alfalfa	Alfalfa	4.6-5.5	65	300	None	68	199	0	0	0	47	35	105	Daily Liquid Avg 6-6-18 6000 gal Summer Unincorp	35-35-105	30000 gal	

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Altavilla Fields				Crop Removal				Soil Test				Planned Applications and Credits				Over(+) Under(-) Adj. UW Recs				Applications			
Name	Ac.	Shp %	Soil Map Symbol (prod & N Res)	Prior Crop	2022 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205-K2O credit	Total Amt		
11T east	38	8	KMB2 W	Altavilla	Altavilla	3.6-4.5	50	240	None	95	235	0	0	0	47	35	105	47	35	105	Dairy Liquid Avg 6-6-18 6000 gal Summer Unincorp	35-35-105 228000 gal	
11U 1A	9	22.5	KME2	Altavilla	Altavilla	3.6-4.5	50	240	None	6	67	0	90	295	47	35	105	47	-55	-190	Dairy Liquid Avg 6-6-18 6000 gal Summer Unincorp	35-35-105 54000 gal	
11U1	14.5	9	KNC2	Altavilla	Altavilla	4.6-5.5	65	300	None	23	75	0	19	355	47	35	105	47	16	-250	Dairy Liquid Avg 6-6-18 6000 gal Summer Unincorp	35-35-105 87000 gal	
11U2	15	9	KMB2	Altavilla	Altavilla	3.6-4.5	50	240	None	18	69	0	0	295	47	35	105	47	35	-190	Dairy Liquid Avg 6-6-18 6000 gal Summer Unincorp	35-35-105 90000 gal	
11U3	13	9	KNC2	Altavilla	Altavilla	3.6-4.5	50	240	None	8	79	0	90	295	47	35	105	47	-55	-190	Dairy Liquid Avg 6-6-18 6000 gal Summer Unincorp	35-35-105 78000 gal	
11U7	16	18	KME2	Altavilla	Altavilla	4.6-5.5	65	300	None	14	69	0	95	249	0	0	0	0	-95	-249			
11U7 N	15	8	KNC2	Altavilla	Altavilla	4.6-5.5	65	300	None	5	54	0	105	355	0	0	0	0	-105	-355			
11U9	19	9	KNC2	Altavilla	Altavilla	4.6-5.5	65	300	None	10	85	0	105	355	0	0	0	0	-105	-355			
11U9 N	10	9	KNC2	Altavilla	Altavilla	3.6-4.5	50	240	None	7	69	0	90	295	0	0	0	0	-90	-295			
13E-2	15.5	4	KMB2 W	Altavilla Seeding Fall	Altavilla	4.6-5.5	65	300	None	39	142	0	0	0	70	41	123	70	41	123	Dairy Liquid Avg 6-6-18 7000 gal Summer Unincorp	41-41-123 108600 gal	
13E-3	22.5	4	KMB2	Altavilla Seeding Fall	Altavilla	4.6-5.5	65	300	None	25	85	0	0	168	72	41	123	72	41	-45	Dairy Liquid Avg 6-6-18 7000 gal Summer Unincorp	41-41-123 157500 gal	
13G-1	20	4	MCA	Altavilla Seeding Fall	Altavilla	3.6-4.5	50	240	None	40	123	0	0	0	66	35	105	66	35	105	Dairy Liquid Avg 6-6-18 6000 gal Summer Unincorp	35-35-105 120000 gal	
13H-1	21	4	KIB	Altavilla	Altavilla	4.6-5.5	65	300	None	63	138	0	0	300	95	71	210	95	71	-90	Dairy Liquid Avg 6-6-18 6000 gal Summer Unincorp	35-35-105 126000 gal	

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Alfalfa Fields			Crop Removal					Soil Test		Adjusted Recs		Planned Applications and Credits		Over/(-) Under/(-) Adj. UW Recs		Applications								
Name	Ac.	Slp Soil Map % Symbol (pred) & N Recs	Prior Crop	2022 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205-K2O credit	Total Amt				
13H-2-N	10	4	KNB2	Alfalfa	Alfalfa	4.6-5.5	65	300	None	41	158	0	0	72	47	35	105	47	35	33	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	60000 gal
14A-11	5.5	16	KNB	Alfalfa	Alfalfa	4.6-5.5	65	300	None	13	89	0	95	355	0	0	0	0	-95	-355				
16C	8.5	4	DNB W	Alfalfa Seeding Fall	Alfalfa	3.6-4.5	50	240	None	73	192	0	0	0	24	0	0	24	0	0				
16F	3.5	4	MRB	Alfalfa	Alfalfa	3.6-4.5	50	240	None	42	38	0	25	295	0	0	0	0	-25	-295				
18A-2	14.5	1.5	ADA W	Alfalfa	Alfalfa	3.6-4.5	50	240	None	18	71	0	80	280	0	0	0	0	-80	-280				
18A-4	12.5	4	KNB W	Alfalfa	Alfalfa	4.6-5.5	65	300	None	7	40	0	105	355	47	35	105	47	-70	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	75000 gal
26-B1 North	10	16	KNB	Alfalfa	Alfalfa	3.6-4.5	50	240	None	74	175	0	0	60	0	0	0	0	0	-60				
26-B1 South	15	8	Bc	Alfalfa	Alfalfa	3.6-4.5	50	240	None	38	112	0	0	240	0	0	0	0	0	-240				
26B-2 E&W	19.5	8	MoA	Alfalfa	Alfalfa	4.6-5.5	65	300	None	50	97	0	0	340	47	35	105	47	35	-235	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	117000 gal
26-B2 South	11	8	KNC2	Alfalfa Seeding Fall	Alfalfa	3.6-4.5	50	240	None	8	73	0	81	218	29	0	0	29	-81	-218				
DL-1	15	4	KNB	Alfalfa	Alfalfa	4.6-5.5	65	300	None	101	201	0	0	36	40	30	88	40	30	52	Dairy Liquid Avg 6-6-18	5000 gal Summer Unincorp	30-30-88	75000 gal
DL-1.2	19	4	KNB	Alfalfa	Alfalfa	4.6-5.5	65	300	None	101	201	0	0	36	40	30	88	40	30	52	Dairy Liquid Avg 6-6-18	5000 gal Summer Unincorp	30-30-88	95000 gal
DL-K2	48	4	KNB W	Alfalfa	Alfalfa	4.6-5.5	65	300	None	8	69	0	105	355	47	35	105	47	-70	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	288000 gal
K810	20	9	KNC2	Alfalfa	Alfalfa	4.6-5.5	65	300	None	13	71	0	95	355	47	35	105	47	-60	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	120000 gal
K811-13	50	9	KNC2	Alfalfa	Alfalfa	4.6-5.5	65	300	None	10	72	0	105	355	47	35	105	47	-70	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	300000 gal

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Altalia Fields				Crop Removal				Soil Test				Planned Applications and Credits				Over (+) Under (-) Adj. UW Recs				Applications			
Name	Ac.	Soil Map % (pred) & N Recs	Prior Crop	2022 Crop	Yield Goal	P2O5	K2O	Tillage	Avg P ppm	Avg K	N	P2O5	K2O	N	P2O5	K2O	N	P2O5	K2O	Product Name and Analysis	Appln Rate and Method	N-P2O5-K2O credit	Total Amt
KB14	15	25	KnB2	Altalia	4.6-5.5	65	300	None	40	66	0	0	355	47	35	105	47	35	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	90000 gal
KB1-4	57	4	KnB2	Altalia	4.6-5.5	65	300	None	9	66	0	105	355	47	35	105	47	-70	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	342000 gal
KB19-21	23	25	KnC2	Altalia	4.6-5.5	65	300	None	5	57	0	105	355	47	35	105	47	-70	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	138000 gal
KB5	20	16	KnB	Altalia	4.6-5.5	65	300	None	10	75	0	105	355	47	35	105	47	-70	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	120000 gal
KB6	20	4	KnB2	Altalia	4.6-5.5	65	300	None	10	72	0	105	355	47	35	105	47	-70	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	120000 gal
KB7-8	30	4	KnB W	Altalia	4.6-5.5	65	300	None	7	76	0	105	355	47	35	105	47	-70	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	180000 gal
KB9	21	9	KnC2	Altalia	4.6-5.5	65	300	None	16	90	0	95	340	47	35	105	47	-60	-235	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	126000 gal
Mal 1	20	9	KnC2	Altalia	3.6-4.5	50	240	None	24	119	0	50	240	12	0	0	12	-50	-240				
Mal 21	24	4	KnB2	Altalia	3.6-4.5	50	240	None	44	154	0	0	120	47	35	105	47	35	-15	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	144000 gal
Mal 3	25	9	KnC2	Altalia Seeding Fall	4.6-5.5	65	300	None	13	78	0	76	15	29	0	0	29	-76	-15				
Mal 4	25	9	KnC2	Altalia (grassy, yr 3+)	4.6-5.5	65	300	None	21	82	0	65	355	47	35	105	47	-30	-250	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	150000 gal
Mal 8	16	4	KnB	Altalia	3.6-4.5	50	240	None	36	117	0	0	240	12	0	0	12	0	-240				
Matzke 3	5	9	KnB	Altalia	3.6-4.5	50	240	None	7	39	0	90	295	0	0	0	0	-90	-295				
Matzke 4	16	9	KnB	Altalia (grassy, yr 3+)	4.6-5.5	65	300	None	39	71	0	0	355	0	0	0	0	0	-355				

Alfalfa Fields				Crop Removal				Soil Test		Adjusted Recs		Planned Applications and Credits		Over(+) Under(-) Adj. UW Recs		Applications					
Name	Ac.	Sip %	Soil Map Symbol (pred) & N Res	Prior Crop	2022 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205-K20 credit	Total Amt
Matzke 4se	8	4	MCA	Alfalfa	Alfalfa	3.6-4.5	50	240	None	11	59	0	90	295	0	0	0				
Matzke 6-7	16.5	9	KNC2	Alfalfa	Alfalfa (grassy, yr 3+)	4.5-5.5	65	300	None	43	82	0	0	355	0	0	0				
Matzke 8	20	15	KNC2	Alfalfa	Alfalfa	3.6-4.5	50	240	None	25	81	0	50	295	47	35	105	Dairy Liquid Avg 5-6-18	6000 gal Summer Unincorp	35-35-105	120000 gal
Matzke 9	16.5	16	KNC2	Alfalfa	Alfalfa (grassy, yr 3+)	4.6-5.5	65	300	None	25	67	0	65	355	0	0	0				
Matzke Pasture	2	4	MCA	Alfalfa	Alfalfa	3.6-4.5	50	240	None	274	255	0	0	0	0	0	0				
MM-East	5	8	KNB	Alfalfa	Alfalfa	4.6-5.5	65	300	None	10	53	0	105	355	0	0	0				
MM-West	10	8	KNC2	Alfalfa	Alfalfa	4.6-5.5	65	300	None	61	181	0	0	0	0	0	0				
Van Rens	40	9	KNC2	Alfalfa	Alfalfa	3.6-4.5	50	240	None	20	68	0	46	295	47	35	105	Dairy Liquid Avg 6-6-18	6000 gal Summer Unincorp	35-35-105	240000 gal
1011.5 planned Alfalfa acres																					
4,417,000 planned gal Dairy Liquid Avg																					
Alfalfa Seeding Fields				Crop Removal				Soil Test		Adjusted Recs		Planned Applications and Credits		Over(+) Under(-) Adj. UW Recs		Applications					
Name	Ac.	Sip %	Soil Map Symbol (pred) & N Res	Prior Crop	2022 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205-K20 credit	Total Amt
11J182	26	4	KNB	Winter wheat (grain + straw)	Alfalfa Seeding Fall	2.6-3.5	40	180	FCND	87	271	0	0	0	132	89	263	Dairy Liquid Avg 8-6-18	15000 gal Fall Incorp	117-89-263	390000 gal

Alliote Seeding Fields				Crop Removal				Soil Test				Adjusted Recs				Planned Applications and Credits				Over/(-) Under/(-) Adj. UW Recs				Applications			
Name	Ac.	Soil Map Symbol Sip (prec) & N Res	Prior Crop	2022 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205- K2O credit	Total Amt				
11MT	10	4	KBH2	Corn silage	Alfalfa Seeding Fall	2.6-3.5	40	180	FCND	27	77	0	0	92	146	89	263	146	89	Dairy Liquid Avg 8-6-18	15000 gal Fall Incorp	117-89- 263	150000 gal				
12A 45 & 27	30	4	KBH	Winter wheat Seeding Fall	2.6-3.5	40	180	FCND	44	103	0	0	0	132	89	263	132	89	Dairy Liquid Avg 8-6-18	15000 gal Fall Incorp	117-89- 263	450000 gal					
12A2 & 27A2	29	4	KBH	Winter wheat Seeding Fall	2.6-3.5	40	180	FCND	54	85	0	0	0	132	89	263	132	89	Dairy Liquid Avg 8-6-18	15000 gal Fall Incorp	117-89- 263	435000 gal					
13G-2	51	4	KBH	Winter wheat Seeding Fall	2.6-3.5	40	180	FCND	11	82	0	80	109	140	94	280	140	14	Dairy Liquid Avg 8-6-18	16000 gal Fall Incorp	125-94- 280	816000 gal					
14B	45	4	KBH2	Corn grain	Oats w/ Alfalfa Seeding Spring	61-90	65	215	FCND	21	77	20	0	0	156	94	280	136	94	Dairy Liquid Avg 8-6-18	16000 gal Fall Incorp	125-94- 280	720000 gal				
Asch 1 South	24.5	4	KBH2 W	Winter wheat Seeding Fall	2.6-3.5	40	180	FCND	9	62	0	80	0	133	89	263	133	9	Dairy Liquid Avg 8-6-18	15000 gal Fall Incorp	117-89- 263	367500 gal					
Asch 2	27	4	KBH	Winter wheat Seeding Fall	2.6-3.5	40	180	FCND	14	57	0	55	0	132	89	263	132	34	Dairy Liquid Avg 8-6-18	15000 gal Fall Incorp	117-89- 263	405000 gal					
Met 11A	1.5	4	KBH2	Winter wheat Seeding Spring	61-90	65	215	FCND	23	68	20	65	191	98	74	219	78	9	Dairy Liquid Avg 8-6-18	12500 gal Fall Incorp	98-74-219	18750 gal					
Met 20	22	4	KBH2	Winter wheat Seeding Spring	61-90	65	215	FCND	22	94	20	0	0	132	89	263	112	89	Dairy Liquid Avg 8-6-18	15000 gal Fall Incorp	117-89- 263	330000 gal					
Met 22	3	4	KBH	Winter wheat Seeding Spring	61-90	65	215	FCND	20	70	20	0	133	113	74	219	93	74	Dairy Liquid Avg 8-6-18	12500 gal Fall Incorp	98-74-219	37500 gal					

Allalfa Seeding Fields														Planned Applications and Credits										Over(+) Under(-) Adj. UW Recs										Applications			
				Crop Removal				Soil Test ppm				Adjusted Recs lb/ac				Applications and Credits lb/ac				Over(+) Under(-) Adj. UW Recs lb/ac				Applications													
Name		Soil Map Symbol (pred) & N Rec		Prior Crop	2022 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205-K20 credit	Total Amt													
Mat 5		10	9	KhC2	Winter wheat (grain +straw)	Oats w/ Alalfa Seeding Spring	61-90	65	215	FCND	17	100	20	111	203	113	74	219	93	.37	16	Dairy Liquid Avg 8-6-18	12500 gal Fall Incorp	98-74-219	125000 gal												
Mat 7		8.5	4	KhB2	Winter wheat (grain +straw)	Oats w/ Alalfa Seeding Spring	61-90	65	215	FCD	28	93	20	0	206	110	74	219	90	74	13	Dairy Liquid Avg 8-6-18	12500 gal Fall Incorp	98-74-219	106250 gal												
Mat 8A		3	4	KhB	Winter wheat (grain +straw)	Oats w/ Alalfa Seeding Spring	61-90	65	215	FCD	36	71	20	0	191	98	74	219	78	74	28	Dairy Liquid Avg 8-6-18	12500 gal Fall Incorp	98-74-219	37500 gal												
Matke 2-5		16.5	4	KhB	Winter wheat (grain +straw)	Alalfa Seeding Fall	2.6-3.5	40	180	FCD	40	79	0	0	0	132	89	263	132	89	263	Dairy Liquid Avg 8-6-18	15000 gal Fall Incorp	117-89-263	247500 gal												

307 planned Allalfa Seeding acres

4,636,000 planned gal Dairy Liquid Avg

Corn on Corn Fields										Crop Removal			Soil Test			Adjusted Recs			Planned Applications and Credits			Over(+)/Under(-) Adj. UW Recs			Applications	
Name	Soil Map Symbol (pred) & N				Prior Crop	2022 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205-K20 credit	Total Amt	
	Ac.	Sip%	Rea	Map																						
11G1	30	4	MaA	Corn silage	Corn silage	20.1-25	80	185	FCND	86	181	190	0	0	167	114	320	-23	114	320	12-10-20 Starter/12-10-20 Subsurface ^e	200 lb Spring	24-20-40	6000 lb		
11G3	36	4	MaA W	Corn silage	Corn silage	20.1-25	80	185	FCD	59	113	190	0	185	159	109	303	-31	109	118	Dairy Liquid Avg 8-6-18	200 lb Spring	24-20-40	7200 lb		

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Corn on Corn Fields						Crop Removal			Soil Test ppm		Adjusted Recs lb/ac			Planned Applications and Credits lb/ac			Overt(-) Under(+) lb/ac			Applications	
Name	Ac.	Slop %	Map Symbology & N	Prior Crop	2022 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate Method	M-P205-K2O credit	Total Amt
11G3	36	4	MCA W	Com stage	Com silage	20.1-25	80	185	FCD	59	113	190	0	185	159	109	303	Dairy Liquid Avg	15000 gal Fall Incorp	177-89-263	540000 gal
11L7	20.5	4	KMB W	Com stage	Com silage	20.1-25	80	185	SCD	67	146	190	0	0	180	114	320	12-10-20 Starter Spring Subsurface ^e	200 lb Spring	24-20-40	4100 lb
11S1	42	4	KMB	Com stage	Com grain	151-170	60	45	FCD	48	35	190	0	0	180	114	320	Dairy Liquid Avg 8-6-18 Incorp	16000 gal Spring	125-94-280	328000 gal
11S2	95	4	KMB	Com stage	Com stage	20.1-25	80	185	FCND	65	98	190	0	225	167	114	320	12-10-20 Starter Spring Subsurface ^e	200 lb Spring	24-20-40	19000 lb
11U2B	20	18	KME2	Com grain	Com grain	151-170	60	45	FCND	5	53	190	86	0	180	114	320	Dairy Liquid Avg 8-6-18 Incorp	16000 gal Fall	125-94-280	1520000 gal
12A1	35	4	KMB	Com silage	Com silage	20.1-25	80	185	SCD	40	118	190	0	37	180	114	320	12-10-20 Starter Spring Subsurface ^e	200 lb Spring	24-20-40	7000 lb
																		Dairy Liquid Avg 8-6-18 Incorp	16000 gal Spring	125-94-280	560000 gal

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Corn on Corn Fields						Crop Removal			Soil Test			Adjusted Recs			Planned Applications and Credits			Over(+) Under(-) Adj. UW Recs			Applications			
	Soil Map	Symbol	Prior Crop	2022 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	N	P205	K20	Product Name and Analysis	Appl Rate and Method	N-P205-K20 credit	Total Amt	
Name	Ac.	Slip, Res	KNB	Corn grain	Corn grain	151-170	60	45	FCD	18	72	190	0	0	180	114	320	-10	114	320	12-10-20 Starter 12-10-20	200 lb Spring Subsurface	24-20-40	4000 lb
13-1	20	4	KNB	Corn grain	Corn grain	151-170	60	45	FCD	18	72	190	0	0	180	114	320	-10	114	320	Dairy Liquid Avg 8-6-18	16000 gal Fall Incorp	125-94-280	320000 gal
14A	22	16	KNB2	Corn grain	Corn grain	151-170	60	45	SCHD	15	85	190	90	0	167	114	320	-23	24	320	12-10-20 Starter 12-10-20	200 lb Spring Subsurface	24-20-40	4400 lb
16 A1 East	15	2	McA	Corn grain	Corn grain	131-150	55	40	FCD	49	109	190	0	0	167	114	320	-23	114	320	Dairy Liquid Avg 8-6-18	16000 gal Fall Incorp	125-94-280	352000 gal
16 A1 West	13	1.5	OSA	Corn grain	Corn grain	151-170	60	45	FCD	11	75	190	100	0	167	114	320	-23	14	320	12-10-20 Starter 12-10-20	200 lb Spring Subsurface	24-20-40	2600 lb
16B-2	17.5	2	McA	Corn grain	Corn grain	151-170	60	45	SCHD	19	91	190	0	0	182	134	235	-8	134	235	Dairy Liquid Avg 8-6-18	16000 gal Fall Incorp	125-94-280	208000 gal
16B-5	10	1	OnA	Corn grain	Corn grain	151-170	60	45	FCND	15	79	190	90	0	159	109	303	-31	19	303	12-10-20 Starter 12-10-20	200 lb Spring Subsurface	24-20-40	2000 lb
																				Heifer Avg 4-4-7	30 ton Fall Incorp	129-114-195	525 ton	

Corn on Corn Fields				Crop Removal			Soil Test ppm			Adjusted Recs lb/ac			Planned Applications and Credits lb/ac			Over(-) Under(+) Adj. UW Recs lb/ac			Applications					
Soil Map Symbol (green) & N																								
Name	Ac.	Sign	Res	Prior Crop	2022 Crop	Yield Gai	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Apply Rate and Method	N-P205- K2O credit	Total Amt			
16B-5	10	1	OnA	Com grain	Com grain	151- 170	60	45	FCND	15	79	190	90	0	159	109	303	-31	19	303	Dairy Liquid Avg	15000 gal Fall	117-89- 263	150000 gal
16B-6&7	35	1	OnA	Com silage	Com silage	20.1- 25	80	185	FCD	45	193	190	0	0	159	109	303	-31	109	303	12-10-20 Starter 12-10-20	200 lb Spring Subsurface	24-20-40	7000 lb
16E	8	4	SHB	Com grain	Com silage	15.1- 20	65	145	FCND	70	156	190	0	0	170	109	303	-20	109	303	Dairy Liquid Avg	15000 gal Fall	117-89- 263	525000 gal
17A	21	1.5	OnA	Com silage	Com silage	20.1- 25	80	185	FCND	22	123	190	80	172	159	109	303	-31	29	131	12-10-20 Starter 12-10-20	200 lb Spring Subsurface	24-20-40	4200 lb
18A-1	3.5	2	McA W	Com silage	Com silage	15.1- 20	65	145	FCD	10	62	190	0	5	164	147	265	-26	147	260	Dairy Liquid Avg	15000 gal Fall	117-89- 263	315000 gal
18A-3	15	4	McA W	Com grain	Com grain	151- 170	60	45	SCND	16	95	190	52	0	170	109	303	-20	57	303	Calf Avg 4-5-9 12-10-20 Starter 12-10-20	25 ton Spring Unincorp 225	100-128- 88 ton	88 ton
																					Dairy Liquid Avg	15000 gal Spring	117-89- 263	225000 gal

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Corn on Corn Fields					Crop Removal		Soil Test		Adjusted Recs		Planned Applications and Credits		Over(+)/Under(-) Adj. U/W Recs		Applications	
		Soil Map Symbol (prec)						ppm		lb/ac						
Name	Ac.	Sp%, Res	Prior Crop	2022 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20
188-1	12	4	KNB2	Corn grain	Corn grain	151-170	60	45	SCND	12	62	190	71	0	170	109 303
188-2	4	4	KIB	Corn grain	Corn silage	15.1-20	65	145	FCD	13	66	190	95	110	105 90 120	-85 -5 10
22	25	1	Qea W	Corn stage	Corn silage	15.1-20	65	145	FCD	20	114	190	0	0	170 109 303	-20 109 303
26A-1	15	4	KNB	Corn grain	Corn grain	151-170	60	45	FCD	15	59	190	47	0	170 108 303	-20 62 303
26A-2	30.5	4	KNB	Corn grain	Corn grain	151-170	60	45	FCD	12	64	190	52	0	178 114 320	-12 62 320
26A-3	22	9	KNB2	Corn grain	Corn grain	151-170	60	45	FCD	39	72	190	0	0	170 109 303	-20 109 303

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Corn on Corn Fields						Crop Removal				Soil Test		Adjusted Recs		Planned Applications and Credits		Over(+)/Under(-)		Applications						
		Soil Map Symbol (prod)								ppm		lb/ac		lb/ac		lb/ac								
Name	Ac.	Slip% Res	Prior Crop	2022 Crop	Yield Gcal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Apply Rate and Method	N-P205- K2O credit	Total Amt	
26A-3	22	9	KHC2	Com grain	Com grain	151-170	60	45	FCD	39	72	190	0	0	170	109	303	-20	109	303	Dairy Liquid Avg	15000 gal Fall	117-89-263	330000 gal
26A-4	10	4	MCA	Com grain	Com grain	151-170	60	45	FCD	42	89	190	0	0	170	109	303	-20	109	303	8-6-18 Incorp	200 lb Spring	24-20-40	2000 lb
Bower Creek	50	2	Fa WP	Com silage	Com silage	20.1-25	80	185	SCD	14	65	145	110	230	141	91	250	-4	-19	20	Dairy Liquid Avg	12000 gal Fall	94-71-210	600000 gal
Herold Rd	50	9	WCC2 W	Com grain	Com grain	151-170	60	45	FCD	6	44	190	54	0	170	109	303	-20	55	303	Dairy Liquid Avg	15000 gal Fall	117-89-263	750000 gal
Mat 7A	3	4	KHB2	Com grain	Com silage	20.1-25	80	185	FCND	58	99	190	0	112	203	104	293	13	104	181	8-6-18 Incorp	150 lb Spring	18-15-30	450 lb
Mat 7C	40	4	KHB	Com grain	Com grain	151-170	60	45	FCD	7	87	190	27	0	199	126	355	9	99	355	Dairy Liquid Avg	15000 gal Fall	117-89-263	45000 gal
																					logume	50-0-0		
																	</							

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Corn on Corn Fields			Crop Removal		Soil Test ppm		Adjusted Recs lb/ac		Planned Applications and Credits lb/ac		Over(+)/Under(-) Adj. UW Recs lb/ac		Applications					
Name	Ac.	Soil Map Symbol (pred) & N	Slip% Res	Prior Crop	2022 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205-K20 credit	Total Amt
Matzke 1	40	4	KH6	Corn grain	Corn grain	151-170	60	45	FCD	7	87	190	27	0	Dairy Liquid Avg	18000 gal Fall	140-106-315	720000 gal
TOWER K. W	35	4	Po W	Corn grain	Corn grain	151-170	60	45	FCD	46	92	145	0	0	Dairy Liquid Avg	14000 gal Fall	109-83-245	490000 gal

755 planned Corn on Corn acres

150,850 planned lb 12-10-20 Starter

88 planned ton Calf Avg

80 planned ton Cow Avg

11,228,000 planned gal Dairy Liquid Avg

525 planned ton Hefter Avg

First Year Corn Grain Fields										Crop Removal		Soil Test		Adjusted Recs		Planned Applications and Credits		Over(+) Under(-) Adj. UW Recs		Applications	
Name	Ac.	Soil Map Symbol (pred)	Sip & N Res	Prior Crop	2022 Crop	Yield Goal	Crop Removal		Soil Test		Adjusted Recs		Planned Applications and Credits		Over(+) Under(-) Adj. UW Recs		Product Name and Analysis	Appln Rate and Method	N-P205-K20 credit	Total Amt	
							P205	K20	Avg P	Avg K	N	P205	K20	N	P205	K20					N
11M4	13	8	KH6	Alfalfa	Corn grain	151-170	60	45	SCD	81	131	190	0	45	196	73	198	6	73	153	

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First Year Corn Grain Fields										Crop Removal		Soil Test		Adjusted Recs		Planned Applications and Credits		Over(+) Under(-) Adj. UW Recs		Applications				
		Soil Map Symbol (pred) & N Res	Prior Crop	2022 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205-K2O credit	Total Amt	
Name	Ac.	%	Res																					
13E-1	48	8	KhC2 W	Alfalfa	Com grain	151-170	60	45	SCND	18	65	190	60	90	198	73	198	8	13	108	12-10-20 Starter 12-10-20	200 lb Spring Subsurfa	24-20-40	9600 lb
																				Dairy Liquid Avg 8-6-18	9000 gal Spring Incorp	70-53-158	432000 gal	
																				legume		90-0-0		
13F-1	38	9	KhC2	Alfalfa	Com grain	151-170	60	45	SCND	12	66	190	90	90	208	73	198	18	-17	108	12-10-20 Starter 12-10-20	200 lb Spring Subsurfa	24-20-40	7600 lb
																				Dairy Liquid Avg 8-6-18	9000 gal Spring Incorp	70-53-158	342000 gal	
																				legume		90-0-0		
Asch 3	18.5	4	KhB2 W	Alfalfa	Com grain	151-170	60	45	FCD	47	84	190	0	90	204	79	215	14	79	125	12-10-20 Starter 12-10-20	200 lb Spring Subsurfa	24-20-40	3700 lb
																				Dairy Liquid Avg 8-6-18	10000 gal Fall Incorp	78-59-175	185000 gal	
																				legume		90-0-0		
Moel 11	31	4	KhB2	Alfalfa	Com grain	151-170	60	45	SCND	47	113	190	0	45	198	74	205	8	74	160	12-10-20 Starter 12-10-20	150 lb Spring Subsurfa	18-15-30	4650 lb
																				Dairy Liquid Avg 8-6-18	10000 gal Spring Incorp	78-59-175	310000 gal	
																				legume		90-0-0		

Ledgeview Farms

SnapPlus Spreading and Nutrient Management Sorted By Crop Report

02/02/2018

148.5 planned First Year Corn Grain acres

28,150 planned lb 12-10-20 Starter

1,386,000 planned gal Dairy Liquid Avg

First Year Corn Silage Fields										Planned Applications and Over(+) Under(-)				Applications										
Name	Ac.	Slp %	Symbol & Map	Prior Crop	2022 Crop	Yield Goal	Crop Removal			Soil Test			Adjusted Recs lb/ac		Applications Credits lb/ac		Over(+) Under(-) Adj. UNR Recs lb/ac		Product Name and Analysis	Appln Rate and Method	N-P205-K20 credit	Total Amt		
							P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	N					P205	K20
11G-3 East	20	2	Maa W	Alfalfa	Corn silage	20.1-25	80	185	FCND	14	62	190	110	240	196	73	198	5	-37	-42	12-10-20 Starter 12-10-20	200 lb Spring Subsurfa	24-20-40	4000 lb
11G4	33	4	KNB W	Alfalfa	Corn silage	20.1-25	80	185	FCND	19	84	190	0	240	196	73	198	6	73	-42	12-10-20 Starter 12-10-20	200 lb Spring Subsurfa	24-20-40	6600 lb
11H1	19	4	KNB	Alfalfa	Corn silage	20.1-25	80	185	SCND	155	354	190	0	0	184	73	198	-6	73	198	12-10-20 Starter 12-10-20	200 lb Spring Subsurfa	24-20-40	3800 lb
11L-East	10	4	KNB	Alfalfa	Corn silage	20.1-25	80	185	SCND	74	220	190	0	0	196	73	198	6	73	198	12-10-20 Starter 12-10-20	200 lb Spring Subsurfa	24-20-40	2000 lb

SnapPlus Spreading and Nutrient Management Sorted By Crop Report

02/02/2018

First Year Corn Silage Fields										Crop Removal		Soil Test		Adjusted Recs		Planned Applications and Credits		Over(+)/Under(-) Adj. UW Recs		Applications			
Name	Ac.	Soil Map Symbol & N Res	Prior Crop	2022 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205-K2O credit	Total Amt			
11L - East																	legume		90-0-0				
26C	24.5	4 MCA W	Alfalfa	Corn silage	20.1-25	80	185	SCND	17	69	190	110	240	204	79	215	14	-31	-25	12-10-20 Starter 12-10-20	200 lb Spring Subsurfa CE	24-20-40	4900 lb
																	Dairy Liquid Avg 8-6-18	10000 gal Spring Incorp	78-59-175	245000 gal			
																	legume		90-0-0				
26D-4	19.5	4 MCA	Alfalfa	Corn silage	20.1-25	80	185	SCND	19	72	190	80	240	196	73	198	6	-7	-42	12-10-20 Starter 12-10-20	200 lb Spring Subsurfa CE	24-20-40	3900 lb
																	Dairy Liquid Avg 8-6-18	9000 gal Spring Incorp	70-53-158	175500 gal			
																	legume		90-0-0				
26D-5-7	57	4 MCA	Alfalfa	Corn silage	20.1-25	80	185	SCND	12	62	190	110	240	196	73	198	6	-37	-42	12-10-20 Starter 12-10-20	200 lb Spring Subsurfa CE	24-20-40	11400 lb
																	Dairy Liquid Avg 8-6-18	9000 gal Spring Incorp	70-53-158	513000 gal			
																	legume		90-0-0				
Mat 18	18	4 KHBZ	Alfalfa	Corn silage	20.1-25	80	185	SCND	22	119	190	80	185	220	68	188	30	-12	3	12-10-20 Starter 12-10-20	150 lb Spring Subsurfa CE	18-15-30	2700 lb
																	Dairy Liquid Avg 8-6-18	9000 gal Spring Incorp	70-53-158	162000 gal			

SnapPlus Spreading and Nutrient Management Sorted By Crop Report

02/02/2018

First Year Corn Silage Fields																		
Soil Map					Crop Removal	Soil Test		Adjusted Recs lb/ac		Planned Applications and Credits lb/ac		Over(+) Under(-) Adj. U/W Recs lb/ac			Applications			
Name	Ac.	Sip % N Res	Prior Crop	2022 Crop	Yield Goal	P205	K2O	Tillage Avg P	Avg K	N	P205	K2O	N	P205	K2O	Product Name Rate and Analysis Method	Appln N-P205- K2O credit	Total Amt
Mar 18																legume	120-0-0	

201 planned First Year Corn Silage acres

39,300 planned lb 12-10-20 Starter

1,833,500 planned gal Dairy Liquid Avg

Soybean Fields																									
Soil				Crop Removal				Soil Test				Adjusted Recs		Planned Applications and Credits lb/ac		Over(+) Under(-) Adj. U/W Recs lb/ac		Applications							
Name		Soil Map Symbol		Prior Crop	2022 Crop	Yield Goal	P205	K2O	Tillage Avg P	Avg K	N	P205	K2O	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205-K2O credit	Total Amt		
VO11		100	4	K0B2	Corn grain	Soybeans 7 -10 inch row	46-55	40	70	FCND	11	78	0	70	0	99	53	158	99	-17	158	Dairy Liquid Avg	9000 gal	70-53-158	900000 gal
																					B-6-18	incorp			

100 planned Soybean acres

900,000 planned gal Dairy Liquid Avg

Other Crops Fields																								
Soil Map		Crop Removal			Soil Test			Adjusted Recs		Planned Applications and Credits		Over(+)-Under(-) Adj. U/W Recs		Applications										
Name	Ac.	Slp % N Res	Prior Crop	2022 Crop	Yield Goal	P205	K2O	Tillage	Avg P	Avg K	N	P205	K2O	N	P205	K2O	Product Name and Analysis	Appln Rate and Method	N-P205-K2O credit	Total Amt				
13D-1,2	67	9	K0B	Winter Rye (forage to silage, 30) inch row	51-80	45	80	Foall	62	124	75	0	0	94	44	131	19	44	131	Dairy Liquid Avg 8-6-18	7500 gal	59-44-131	502500	gal

SnapPlus Spreading and Nutrient Management Sorted By Crop Report

Other Crops Fields				Crop Removal			Soil Test			Adjusted Recs lb/ac		Planned Applications and Credits lb/ac		Over(+) Under(-) Adj. UIV Recs lb/ac		Applications				
Name	Ac.	Soil Map Symbol & N Res	Prior Crop	2022 Crop	Yield Goal	P205	K20	Tillage	Avg P	Avg K	N	P205	K20	N	P205	K20	Product Name and Analysis	Appln Rate and Method	N-P205- K20 credit	Total Amt
Asch 1 North	57	4	Kn8	Corn silage	81-100	55	90	Fault	18	81	75	0	0	152	89	263	Dairy Liquid Avg 8-6-18	15000 gal Summer Incorp	117-89- 263	855000 gal
Mat 2	17	9	KnC2	Corn silage	81-100	55	90	Fault	25	97	75	0	0	99	44	192	AMS 21-0-0	50 lb Spring Unincorp	11-0-0	850 lb
				Winter wheat (gran +straw)													Potash 0-0-61	100 lb Spring Unincorp	0-0-61	1700 lb
VO10	95	3	MCA R	Soybeans 7-10 inch row	61-80	35	25	NT	10	87	55	75	0	18	0	0	Dairy Liquid Avg 8-6-18	7500 gal Fall Incorp	59-44-131	127500 gal

236 planned Other Crops acres

850 planned lb AMS
1,485,000 planned gal Dairy Liquid Avg
1,700 planned lb Potash

2,759 total planned acres

Total Planned to be Applied

Total Manure Volume	Manure App Plan	Remaining Manure
0 tons	693	-693
24783392 gals	25,885,500	-1,102,108

218,300 planned lb 12-10-20 Starter
850 planned lb AMS
88 planned ton Calf Avg
80 planned ton Cow Avg
25,885,500 planned gal Dairy Liquid Avg

525 planned lb N Heifer Avg

1,700 planned lb Potash

List of fields that need new soil tests before plan year 2023

11G1	11G2
11G3	11G4
11G-3 East	11H1
11J1&2	11K1A
11K1B	11K1C
11L1	11L- East
11M1	11N3
11N4	11P
11Q1	11R1
11S1	11S2
11T east	11T
11U1	11U2
11U3	11U7 N
11U7	11U9 N
11U9	11U 1A
11U 2B	12A1
12A2 & 27A2	12A 45 & 27
13-I	13D-1,2
13E-1	13E-2
13E-3	13F-1
13G-1	13G-2
13H-1	13H-2 N
14A-11	14A

Ledgeview Farms

14B	16 A1 East
16 A1 West	16B-2
16B-5	16B-6&7
16C	16E
16F	17A
18A-1	18A-2
18A-3	18A-4
18B-1	18B-2
22	26-B1 North
26-B1 South	26-B2 South
26A-1	26A-2
26A-3	26A-4
26B-2 E&W	26C
26D5-7	26D-4
Asch 1 North	Asch 1 South
Asch 2	Asch 3
Bower Creek	DL-1
DL-1,2	DL-K2
Herold Rd	KB1-4
KB5	KB6
KB7-8	KB9
KB10	KB11-13
KB14	KB19-21
Mat 1	Mat 2
Mat 3	Mat 4
Mat 5	Mat 7A

SnapPlus Spreading and Nutrient Management Sorted By Crop Report

02/02/2019

Mat 7	Mat 8A
Mat 8	Mat 11A
Mat 11	Mat 18
Mat 20	Mat 21
Mat 22	Matzke 1
Matzke 2 - 5	Matzke 3
Matzke 4se	Matzke 4
Matzke 6-7	Matzke 8
Matzke 9	Matzke Pasture
MM-East	MM-West
TOWER & W	Van Rens
VO10	VO11

Tillage Abbreviations

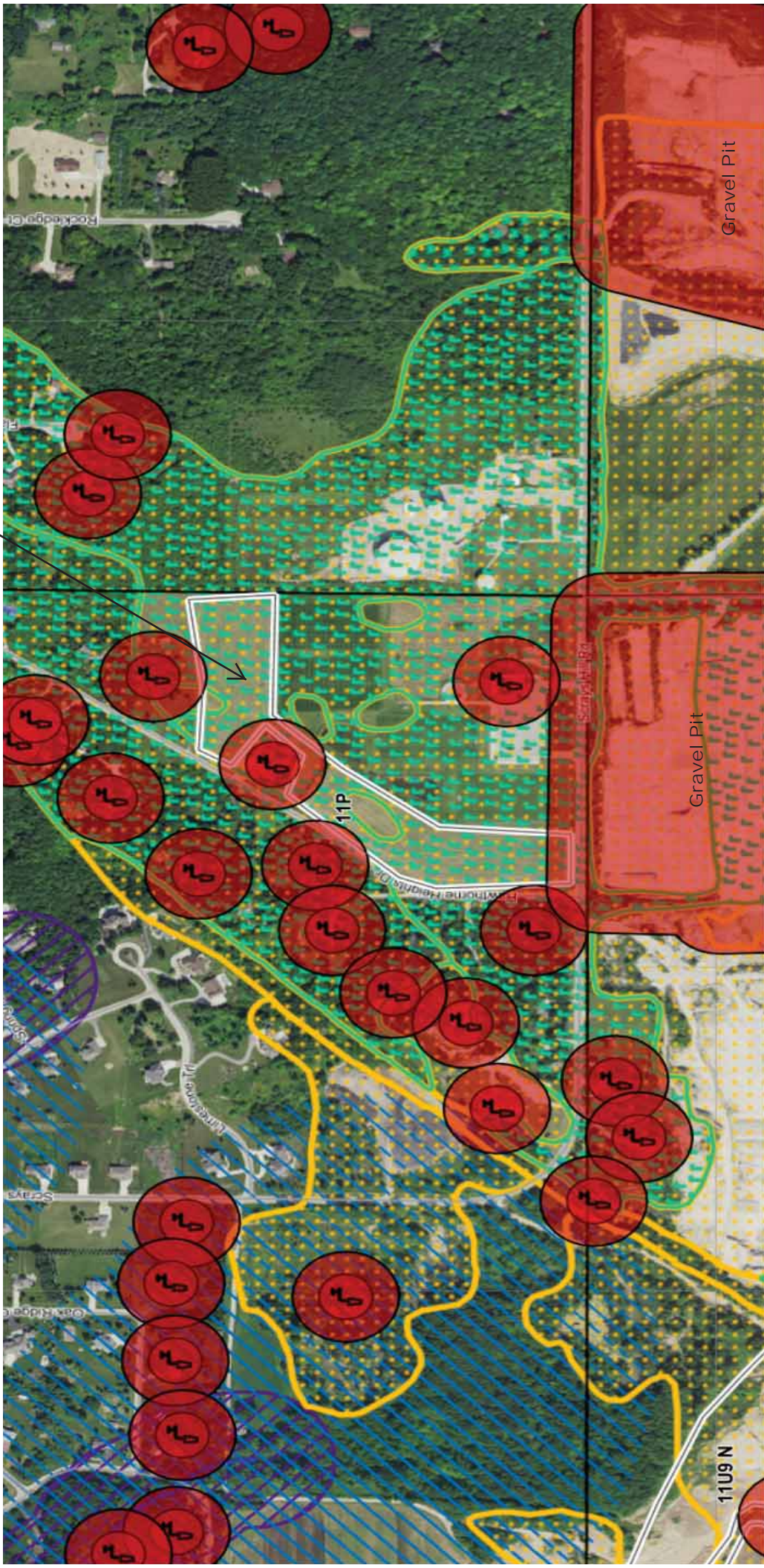
Abbreviation	Tillage
FCD	Fall Chisel, disked
FCND	Fall Chisel, no disk
Fcult	Field Cultivation
FFC/CP	crop 1: Fall Cult., crop 2: Chisel plow, no disk
None	None
NT	No Till
SCD	Spring Chisel, disked
SCND	Spring Chisel, no disk

11P Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017

No Manure can be applied to this field unless verified >24" to bedrock.



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

The Information on this map is not guaranteed to be 100% accurate. It has been developed with the use of SNAP-Maps information, aerial imagery analysis, field knowledge and producer information. Field verification of restrictive features should be completed before applications. As new restrictive features are identified these maps will be updated.

Wells No Apps Within 100' (200' setback if ungrazed)

Wetland: No Apps Within 25'

Fall N Restriction

CAFO SWQMA-300' Incorporation Zone

CAFO SWQMA-1000' Incorporation Zone

W Soils-Verify Depth To Water B4 Apps

Bedrock-No Apps Unless Verified No Bedrock

Tile Inlet: 25' setback Incorporation 100' setback Surface

Tile Outlet

Intermittent Stream

Perennial Stream Incorporation 25' Setback Surface 100' Setback

Concentrated Flow-No Apps

22 Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017

Municipal water in this area



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

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Asch 3 Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True



Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

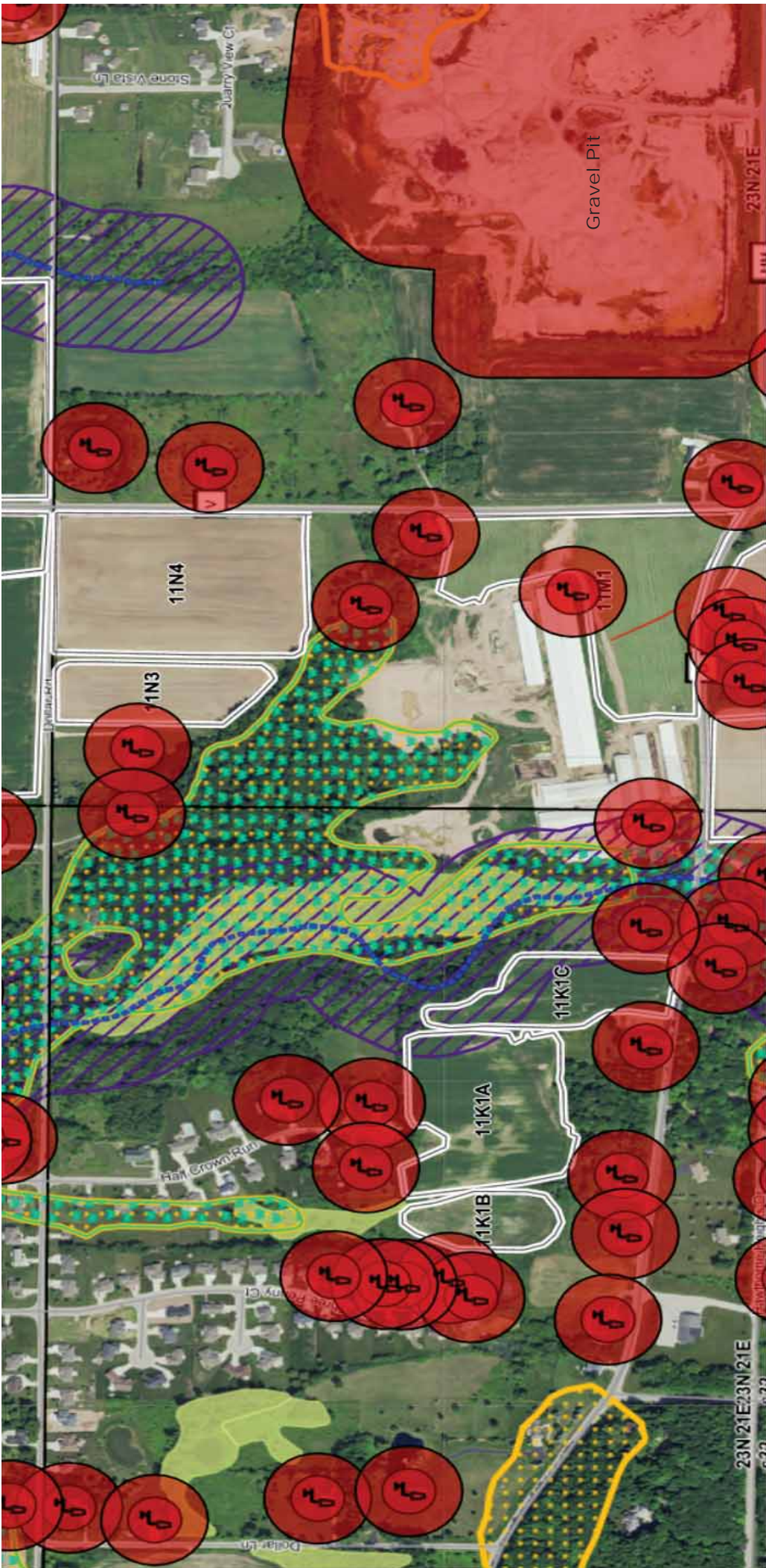
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Dairy Restrictions

Farm Name: Ledgerview Farms
Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

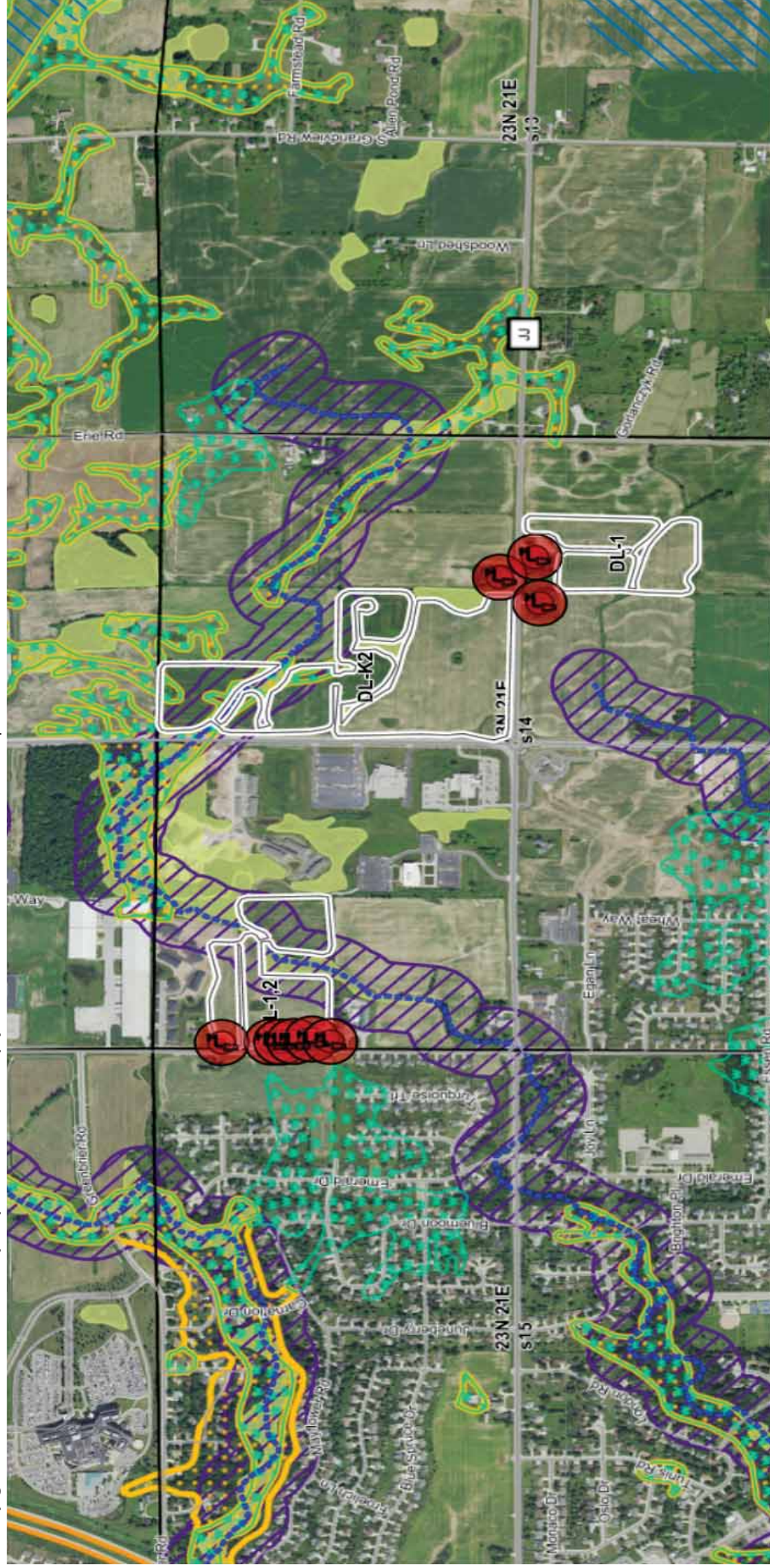
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Farm Name: Ledgeview Farms

Is this a CAFO: True

Municipal water in this area



1309

NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

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Herold Rd Restrictions

Farm Name: Ledgerview Farms
Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

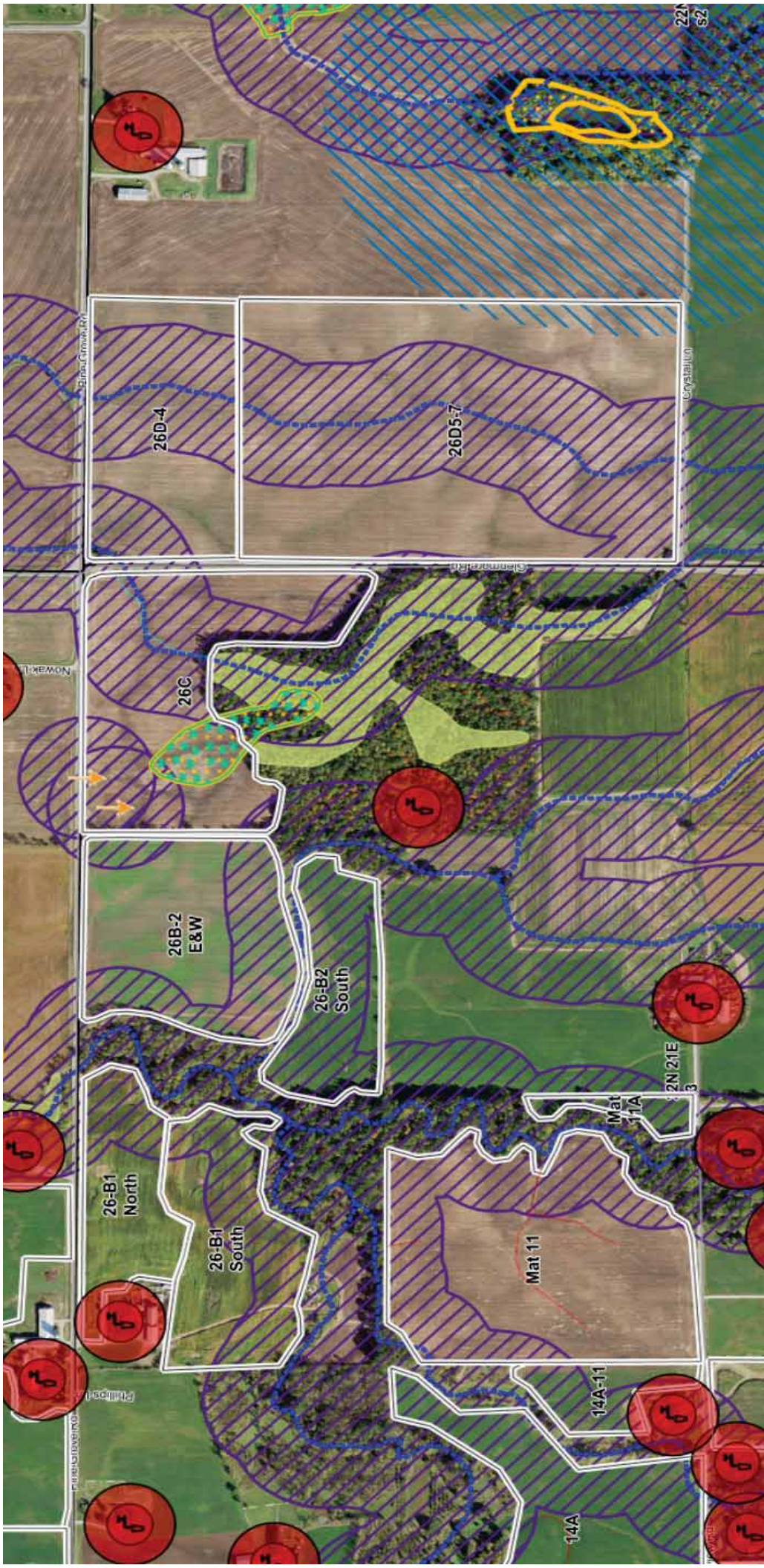
NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

J Kaster Restrictiions

Farm Name: Ledgerview Farms
Is this a CAFO: True



Map generated on: 2/2/2018 SnapMap Version: 16.0, Crop year: n/a



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

Wetlands No Apps Within 100' (100' setback if wetlands)

Wetlands No Apps Within 25'

Fall N Restriction

CAFO SWQMA-300' Incorporation Zone

CAFO SWQMA-1000' Incorporation Zone

W Soils-Verify Depth To Water Before Apps

Bedrock-No Apps Unless Verify No Bedrock

Tile Inlets 25' setback Incorporation Surface = 100' setback Surface

Tile Outlet

Intermittent Stream

Perennial Stream

Incorporation = 25' Setback Surface = 100' Setback

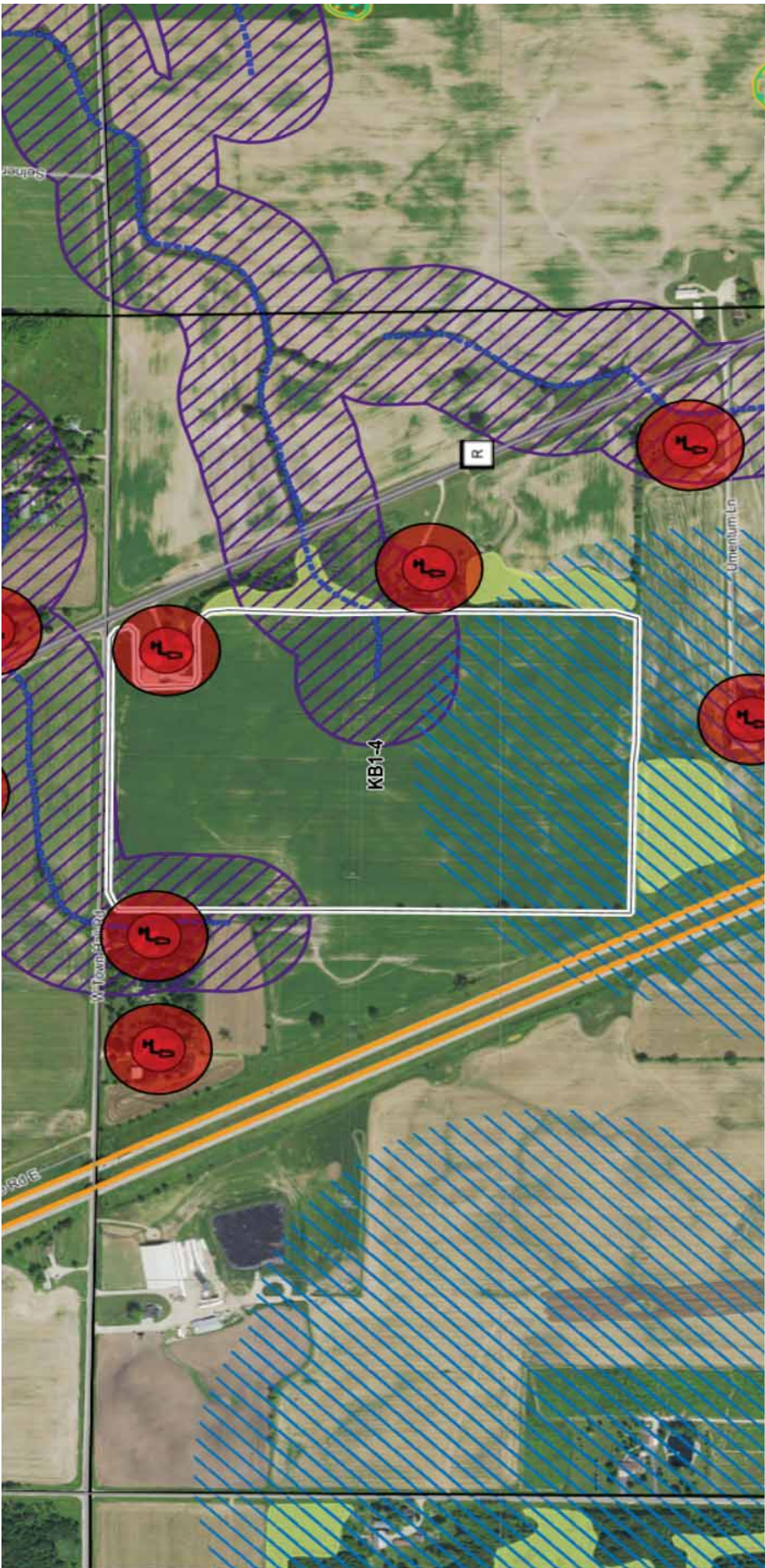
Concentrated Flow-No Apps

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KB1-4 Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

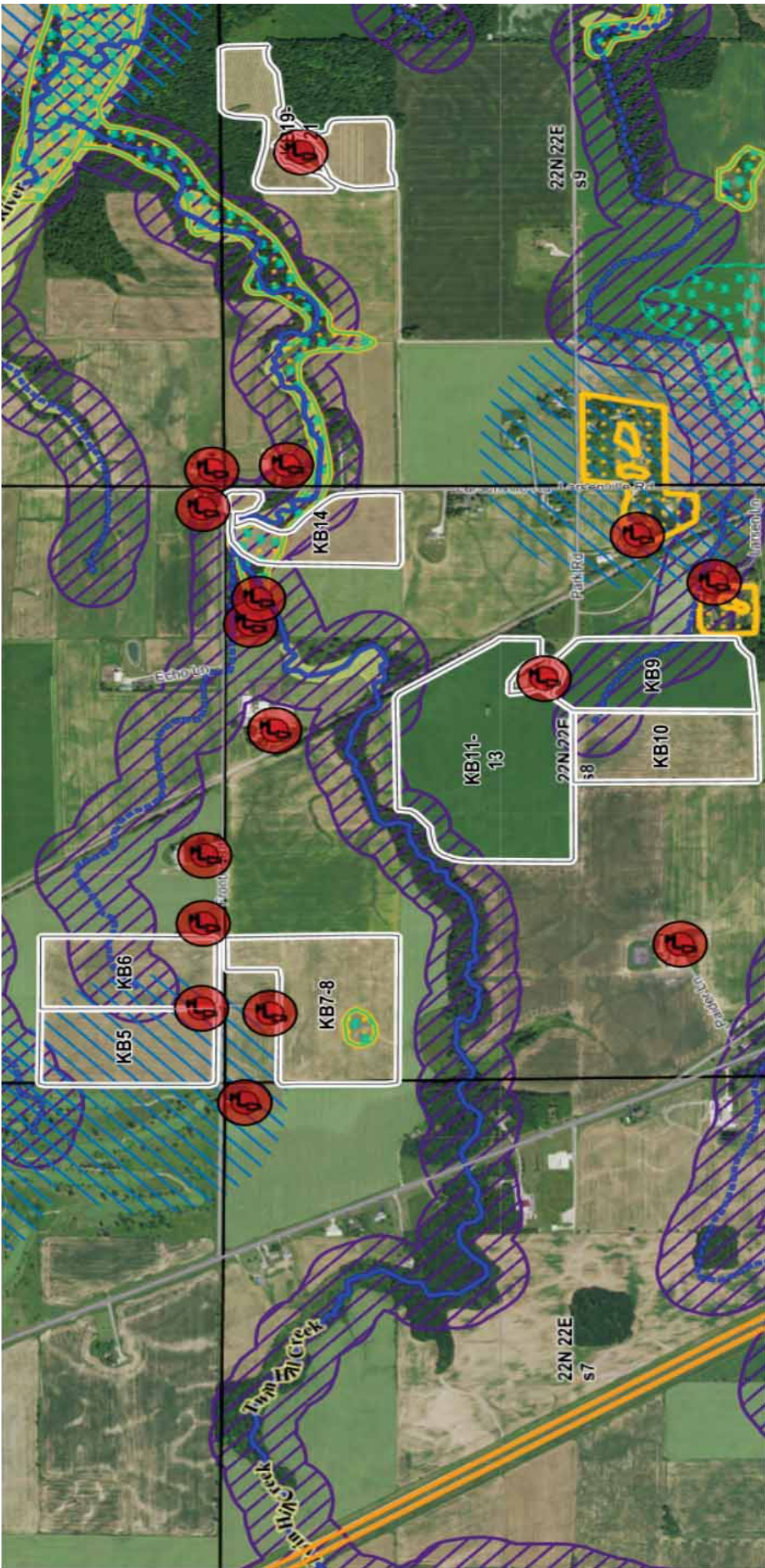
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KB5-21 Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water



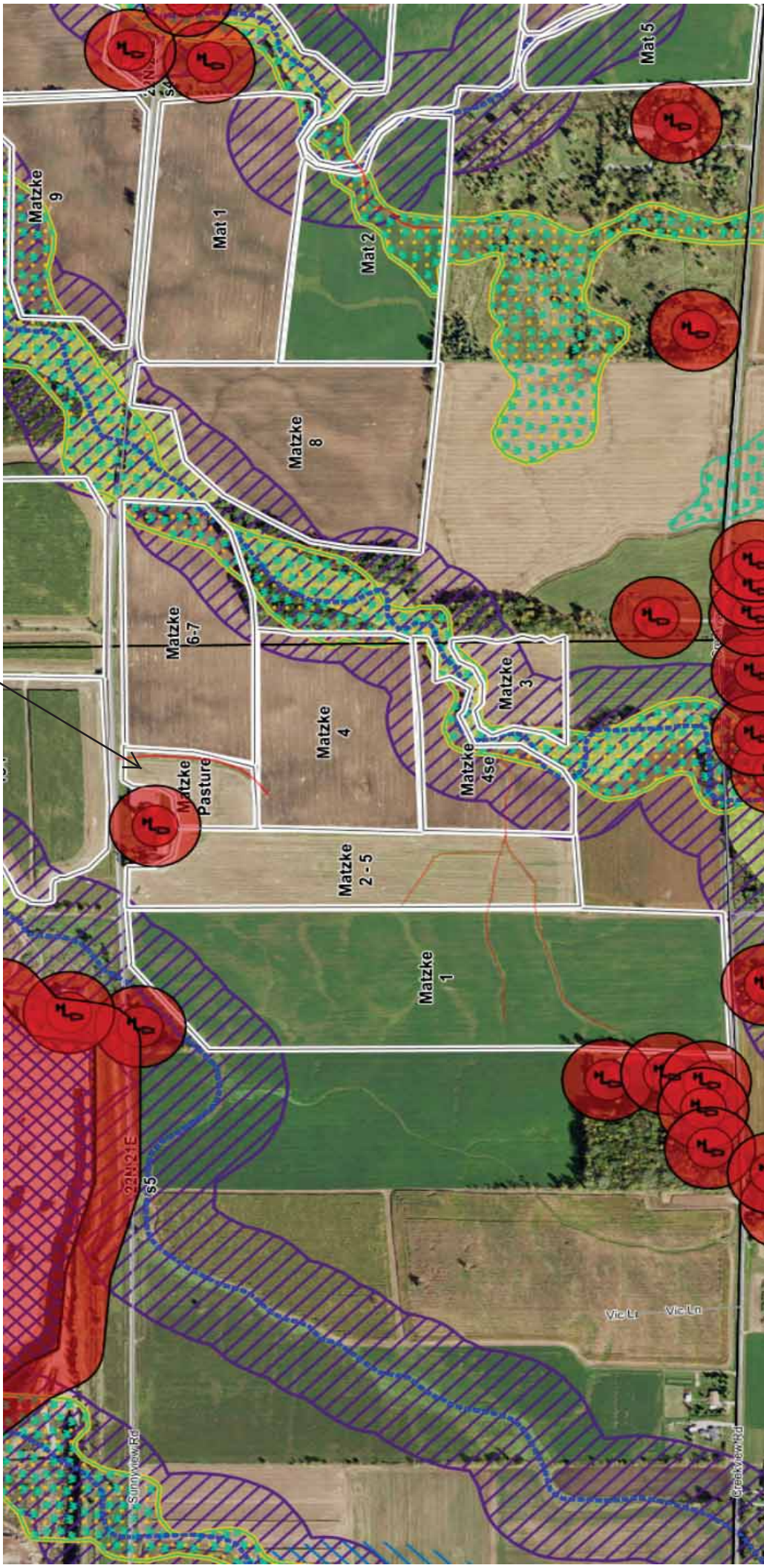
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Matzke Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 2/2/2018 SnapMap Version: 16.0, Crop year: n/a

No manure Apps -
Soil Test P >
200ppm..



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

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MM Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



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NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

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Is this a CAFO: True



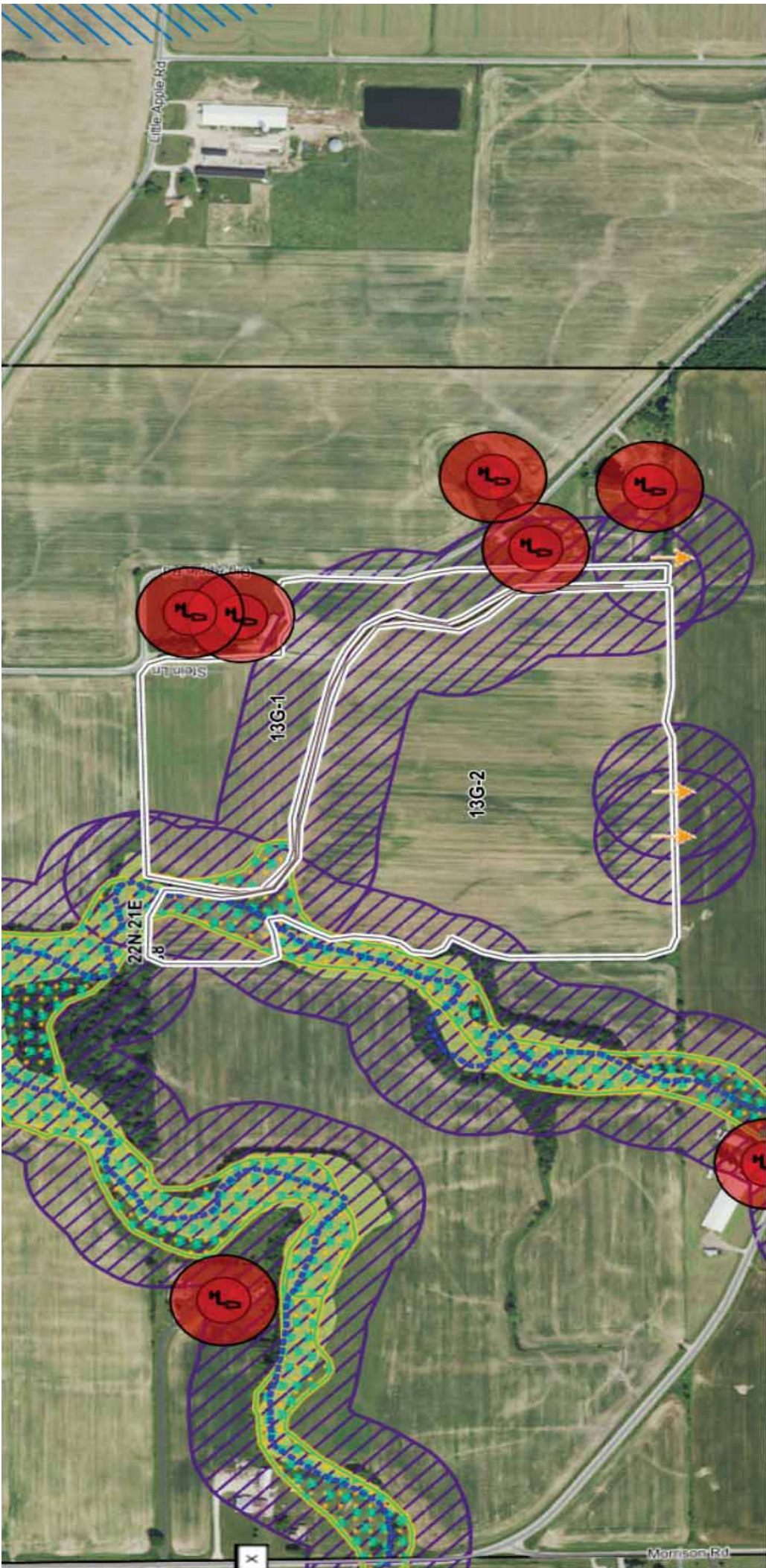
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Stein Restrictions

Farm Name: Ledgerview Farms
Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



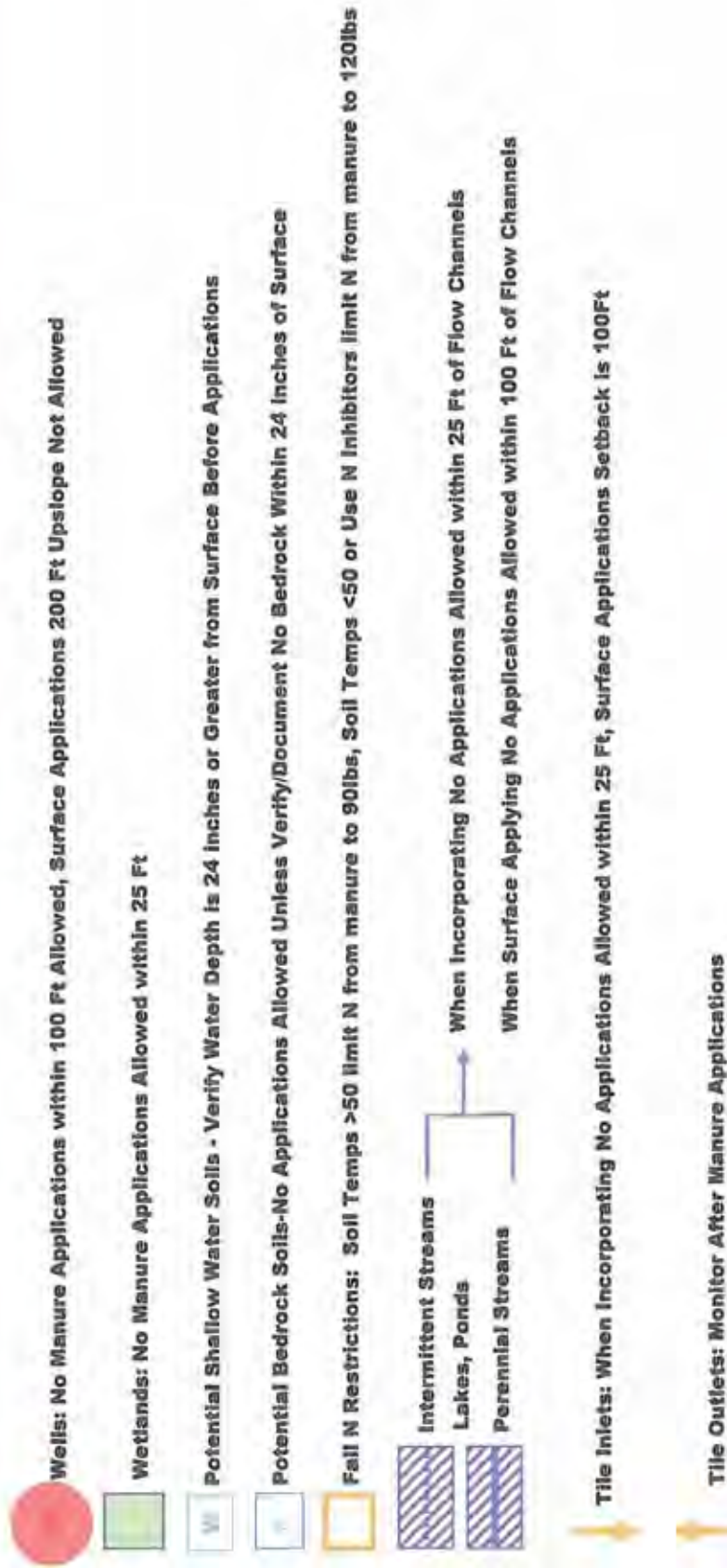
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Non Winter Manure Application Requirements



General Requirements

- No applications allowed to areas of concentrated flow (waterways, etc)
- No ponding allowed on application site
- No runoff allowed from application site via overland flow or through tile lines
- Surface applications not allowed when precipitation capable runoff is forecast within 24 hrs. of application
- Manure may not be applied to saturated soils, includes standing water in fields
- Daily Log of All Manure Applications Must be kept



**BUREAU OF WATERSHED MANAGEMENT
INTERIM GUIDANCE**

**NUTRIENT MANAGEMENT - CAFO APPLICATIONS ON SHALLOW
GROUNDWATER SOILS**

March 2009

Description: Ch. NR 243, Wis. Adm. Code, restrictions CAFO manure and process wastewater applications to fields that have less than 24 inches of soil over groundwater or bedrock.

This guidance describes how permittees and their consultants can identify and determine whether to use these fields as well as how Department staff can review fields for compliance with this requirement.

This document is intended solely as guidance, and does not contain any mandatory requirements except where requirements found in statute or administrative rule are referenced. This guidance does not establish or affect legal rights or obligations, and is not finally determinative of any of the issues addressed. This guidance does not create any rights enforceable by any party in litigation with the State of Wisconsin or the Department of Natural Resources. Any regulatory decisions made by the Department of Natural Resources in any matter addressed by this guidance will be made by applying the governing statutes and administrative rules to the relevant facts.

Background

NR 243.14(2)(b)(7) requires CAFO manure or process wastewater applications may not be applied on areas of a field with a depth to groundwater or bedrock of less than 24 inches.

This restriction applies only to those portions of field that have less than 24 inches of separation to groundwater. If portions of a field have at least 24" of soil, these portions of the field are not subject to the prohibition (i.e., there is no de minimus amount of field that falls into/out of a prohibition area that would allow the entire field to be determined to not meet/meet the restriction).

NRCS Conservation Planning Technical Note WI-1

This document (Appendix 1) identifies soils with high potential for groundwater contamination. It places restrictions on 'w' type soils. The 'w' symbol indicates the soil is very poorly and poorly drained has an apparent water table that is less than 12 inches from the surface for any duration at any time of the year. Accordingly, 'w' soils indicate, by definition, where the depth to groundwater may also be within 24 inches of the field surface for any duration at any time of the year.

Tech Note WI-1 link (Sept 2007): <http://www.wi.nrcs.usda.gov/technical/technotes.html>

NRCS Soil Description for 'w' soils

NRCS soil descriptions provide more detailed information for individual soils, including 'w' soils. Each description contains a category entitled DRAINAGE AND SATURATED HYDRAULIC CONDUCTIVITY. This category describes the depth to water table (groundwater) for specific time periods. Here are two examples:

Example 1 - Poorly drained. An apparent seasonal high water table is at 15 cm (0.5 foot) above the surface to 31 cm (1.0 foot) below the surface at some time during spring in most years.

Example 2 - Very poorly drained. Depth to the seasonal high water table ranges from 2 foot above the surface in ponded phases to 1 foot below the surface from September to June.

For specific NRCS soil descriptions, use NRCS Soil Description Search link (click on soil series name search): <http://soils.usda.gov/technical/classification/osd/index.html>

NRCS soil description, groundwater depth factors and NR 243 compliance

The NRCS soil descriptions, however, are not regulatory. They are general guidance provided by NRCS for general nutrient management purposes. *The actual depth to groundwater on a specific day or under specific conditions may vary from the NRCS narrative soil descriptions.*

The following factors influence groundwater depth:

- Soil type(s) and moisture content.
- Field topography.
- Weather patterns (wet or dry seasons).
- Drainage systems (ditches and drain tiles).
- Crop and Tillage types.

NR 243.14 requires manure applications to fields meet the depth to groundwater requirement on a field by field basis at the time of application. The steps described below provide permitted CAFO farms some methods to demonstrate compliance with the NR243 depth to groundwater requirement. Please note, this guidance does not preclude a CAFO farm from submitting or implementing alternative methods to this guidance*.

* = Alternative methods do not become effective until the department has reviewed and approved the method.

Interim guidance for shallow groundwater soils

- (1) For each field listed in farm's Nutrient Management Plan (NMP), identify and map all 'w' soil units using tools below. Keep with NMP.

Web Soil Survey - <http://websoilsurvey.nrcs.usda.gov/app/>

Tech Note WI-1 (Appx 1) - <http://www.wi.nrcs.usda.gov/technical/technotes.html>

- (2) For each field, document the NRCS Soil Series description for all 'w' soil units using link below. Keep with NMP. Use DRAINAGE AND SATURATED HYDRAULIC CONDUCTIVITY description to determine depth to water table time period(s).

NRCS Soil Description - <http://ortho.fhw.nrcs.usda.gov/cgi-bin/osd/osdname.cgi>

- (3) If possible, avoid applying manure or process wastewater to areas of fields with 'w' soils during shallow groundwater time periods listed in NRCS soil description(s). If avoidance is not possible, follow steps 4-6 below.

- (4) Before any application, inspect the 'w' soil section(s) of the field and answer the following question: Are 'w' soil sections of field 'idle' - Y or N?

For purposes of this guidance, "idle" means: the 'w' soil section(s) of field show evidence of hydric soils and exhibit: (1) Wetland vegetation (woody vegetation, shrubs, grasses) or (2) Abandoned condition (e.g., no crops or evidence of recent crops for at least two years).

- i. If Y – no application; locate alternative acreage.
- ii. If N – go to Step 5.

- (5) Before any application, demonstrate 'w' soil sections of field do not have a groundwater depth of less than 24 inches.

- i. If Y – apply manure and follow all other NR243.14 manure spreading requirements.
- ii. If N – no application; locate alternative acreage; or apply at time when groundwater depth is greater than 24 inches.

For purposes of this guidance, 'demonstrate' means one of the following options:

- (1) Locate drain tile(s) on the field with 'w' soils units. Determine drain tile(s) are functioning and tile depth is 24 inches or greater from the surface of the field. If drain tile(s) meet criteria above, complete application and follow all other NR243 spreading requirements (e.g., preventing drain tile discharges to surface waters).
- (2) Excavate at least two "representative" soil pits within at least one 'w' soil area on the field that is five acres or less in size* (using mechanical soil auger or manual hand tools) to a depth of at least 30 inches. After at least one hour, observe if the water table is below 24 inches of surface. If both pits (for each five acre area) meet the criteria above, refill each pit, complete application and follow all other NR243 spreading requirements.

*= When 'w' soil area on field is greater than five acres in size, excavate additional soil pits so a ratio of two pits for each 5 acre sized 'w' soil unit is met.

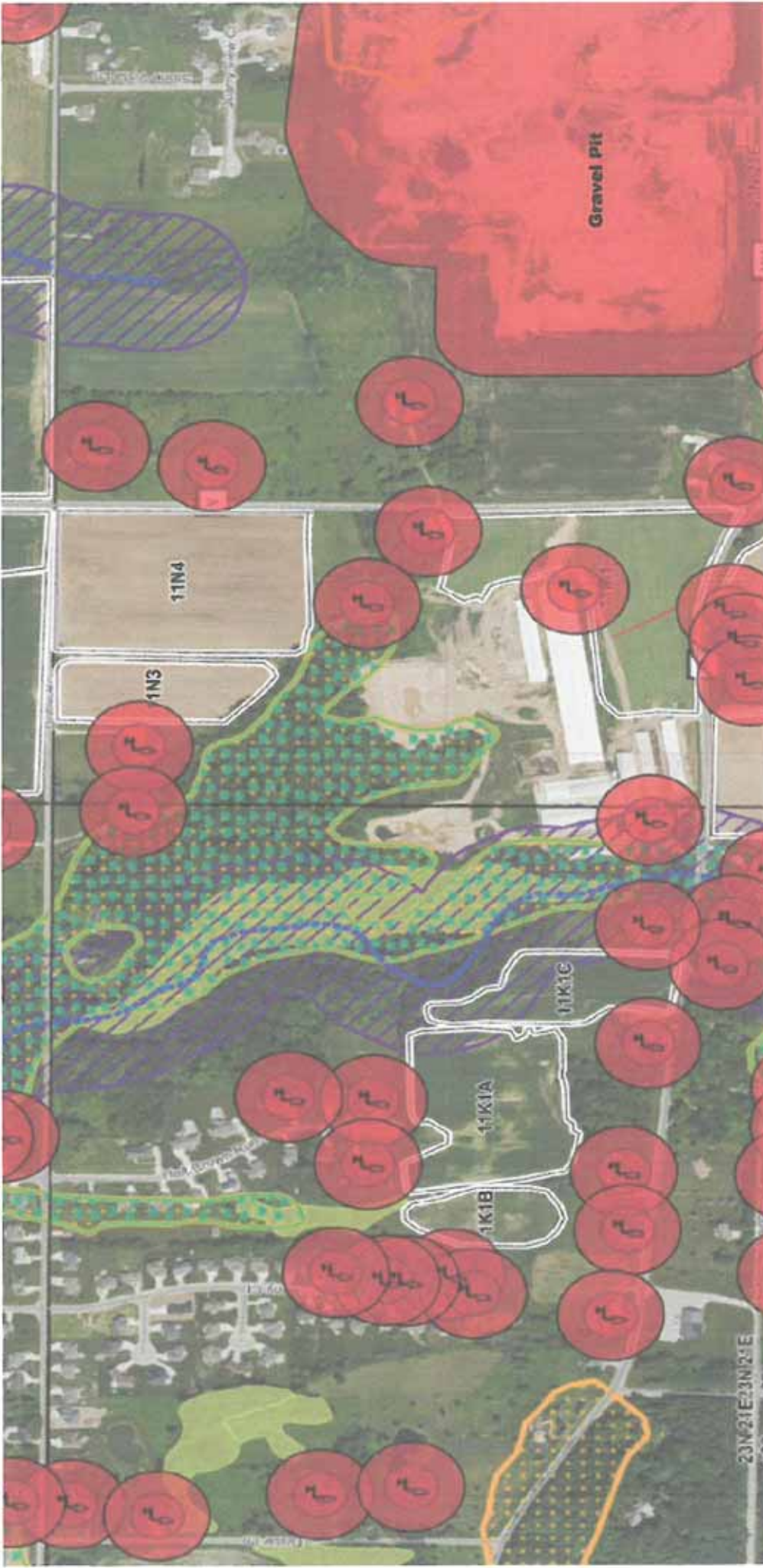
For purposes of this guidance, "representative" means choosing locations within a 'w' soil area of field that reflects the overall structure and characteristics of the 'w' soil unit.

- (6) Document steps taken at each field with 'w' soil units in WPDES permit daily and annual spreading reports.

Dairy Restrictions

Farm Name: Ledgerview Farms
Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

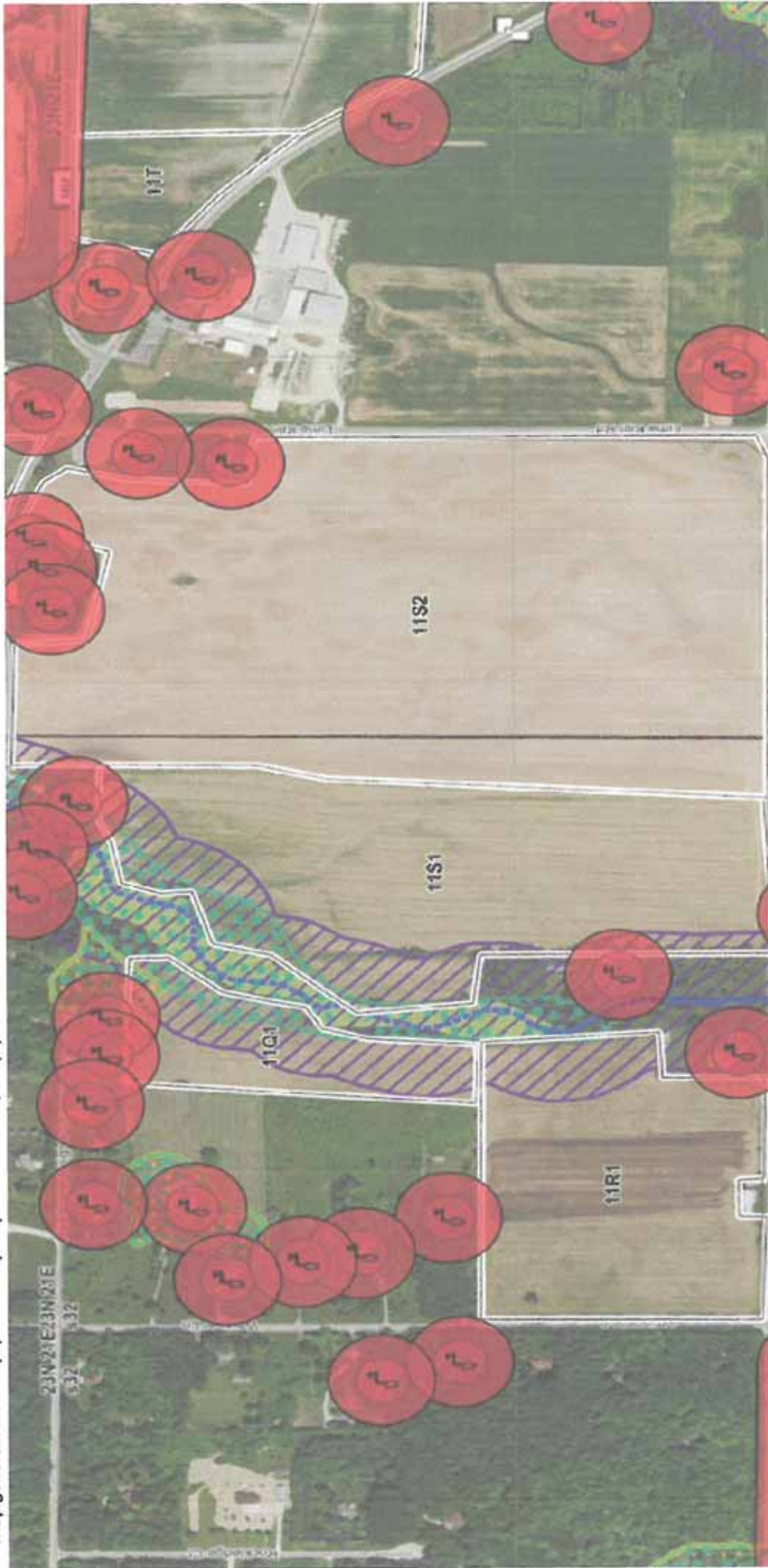
The information on this map is not guaranteed to be 100% accurate. It has been developed with the use of SNAP-Maps information, aerial imagery analysis, field knowledge and producer information. Field verification of restrictive features should be completed before applications. As new restrictive features are identified these maps will be updated.



11S1, 1S2, 11Q1, 11R1 Restrictions

Farm Name: Ledgerview Farms
Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 43 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

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Silver[®] Manure Restrictions

Farm Name: Ledgerview Farms

Is this a CAFO: True

Map generated on: 2/2/2018 SnapMap Version: 16.0, Crop year: n/a



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

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J Kast Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 2/2/2018 SnapMap Version: 16.0, Crop year: n/a



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR43 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

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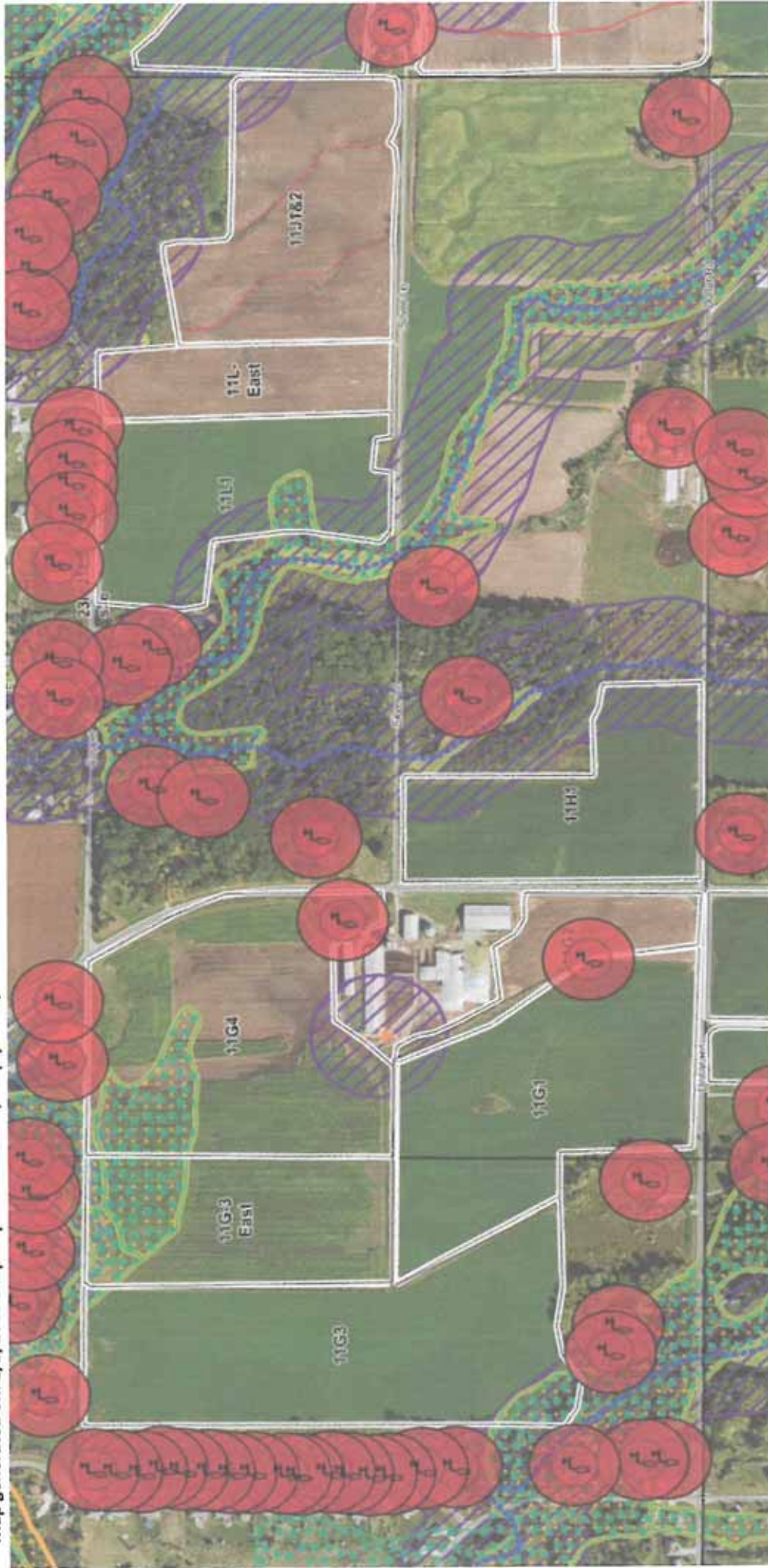


Heifer Site Restrictions

Farm Name: Ledgerview Farms

Is this a CAFO: True

Map generated on: 2/2/2018 SnapMap Version: 16.0, Crop year: n/a



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

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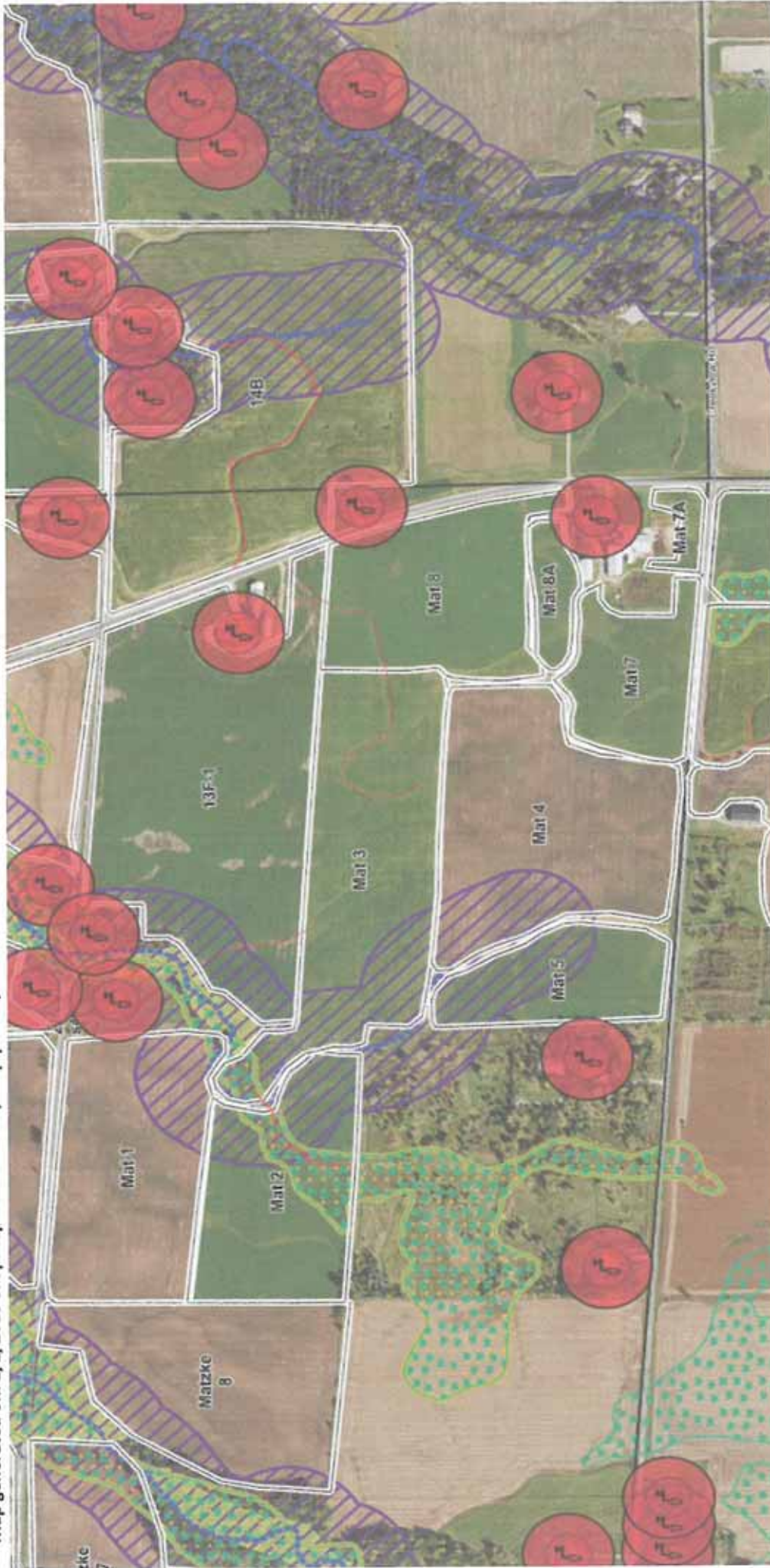


Materoski North Restrictions

Farm Name: Ledgerview Farms

Is this a CAFO: True

Map generated on: 2/2/2018 SnapMap Version: 16.0, Crop year: n/a



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 43 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

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Matzke Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

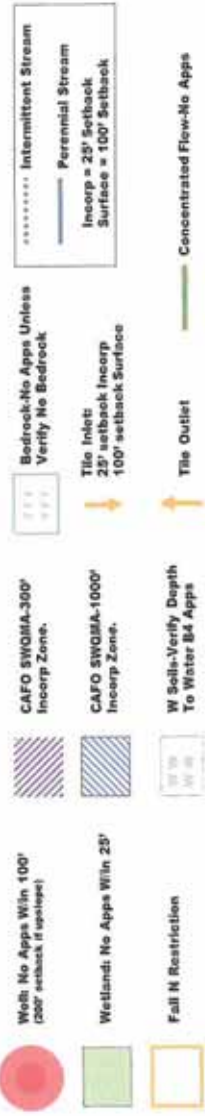
Map generated on: 2/2/2018 SnapMap Version: 16.0, Crop year: n/a

No manure Apps -
Soil Test P >
200ppm..



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 43 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water



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Materoski South Restrictions

Farm Name: Ledgerview Farms

Is this a CAFO: True

Map generated on: 2/2/2018 SnapMap Version: 16.0, Crop year: n/a



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 13 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

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VO-10 11 Restrictions

Farm Name: Ledgerview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017

No Manure can be applied here unless verified >24" to bedrock.



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 43 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

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Van S⁺aten Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 43 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

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	Well: No Apps Within 100' (25' setback if applicable)		CAFO SWQMA-300' Incorporation Zone.		Bedrock-No Apps Unless Verify No Bedrock		Intermittent Stream
	Wetlands: No Apps Within 25'		CAFO SWQMA-1000' Incorporation Zone.		Tile Inlets: 25' setback Incorporate 100' setback Surface		Perennial Stream
	Fall N Restriction		W Soils-Verify Depth To Water B4 Apps		Tile Outlet		Concentrated Flow-No Apps

Tower & W Restrictions

Farm Name: Ledgerview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

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Titula ~ Restrictions

Farm Name: Ledgerview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

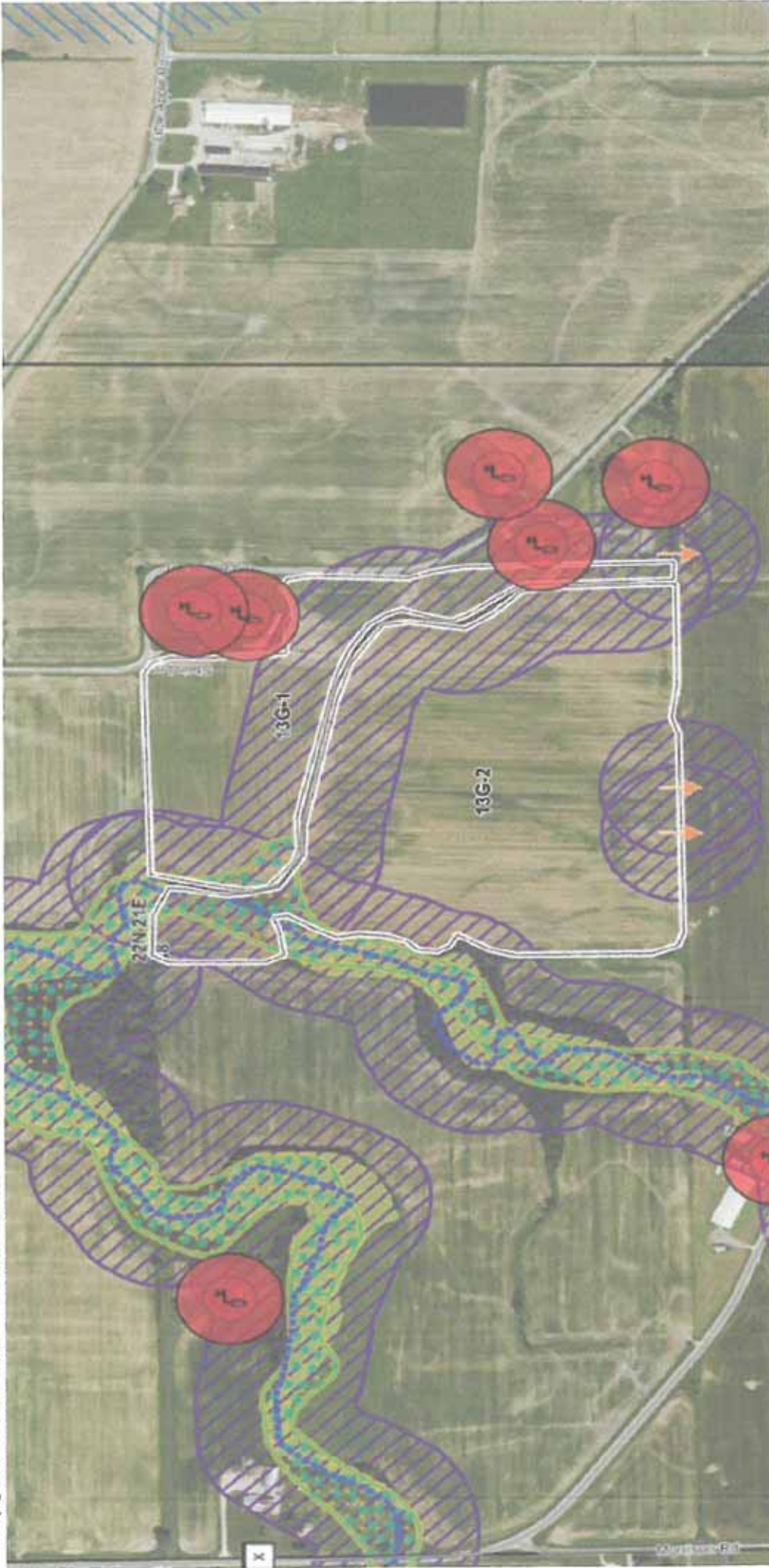


Stein Restrictions

Farm Name: Ledgerview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

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Slag Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017 Most of this area on Municipal water



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 43 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

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MM Restrictions

Farm Name: Ledgerview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



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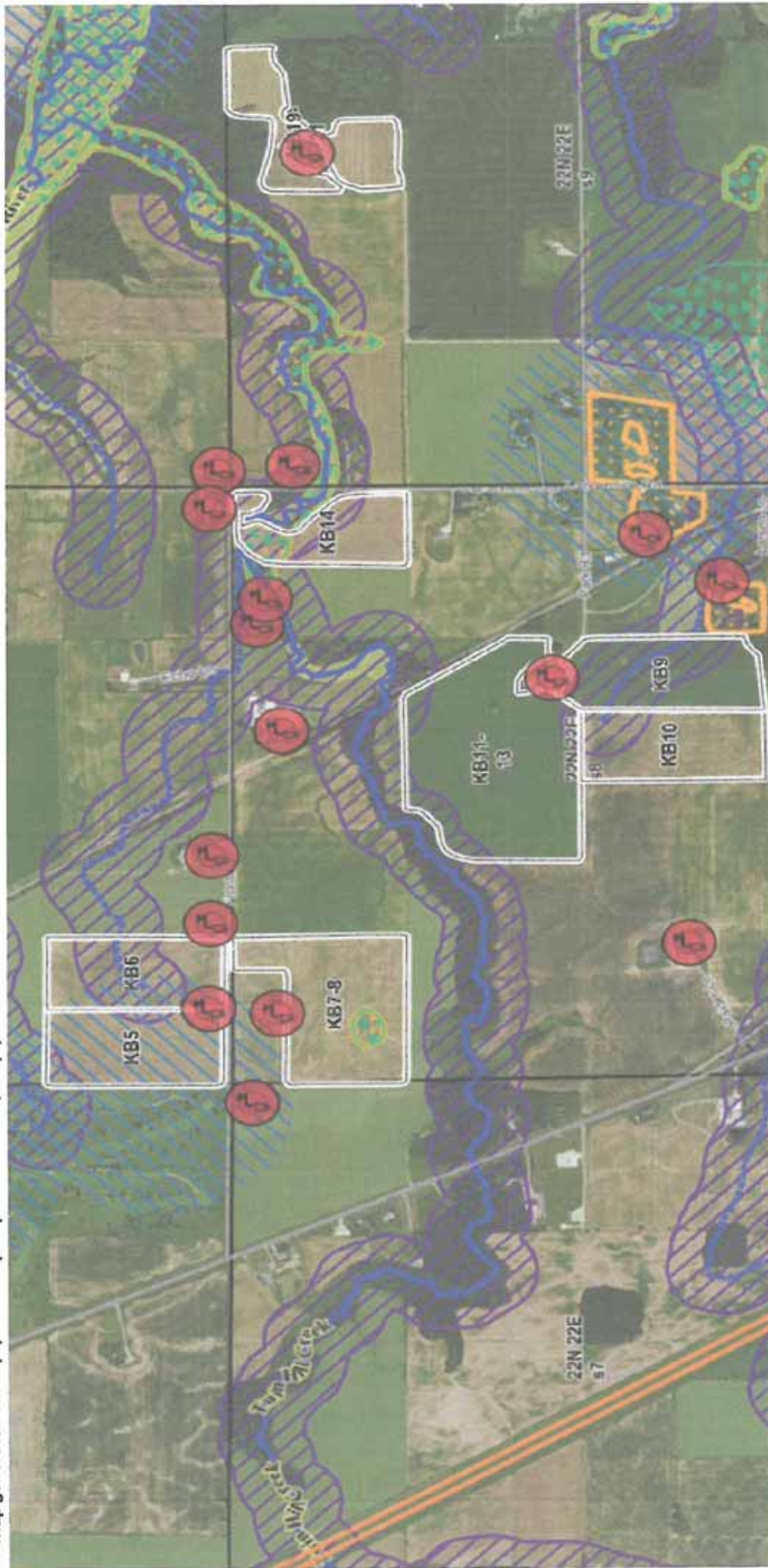


KB5-2nd Restrictions

Farm Name: Ledgerview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

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	Wells No Apps With 100' (200' setback if agappes)		CAFO SWQMA-300' Incorporate Zone.		Bedrock-No Apps Unless Verify No Bedrock		Intermittent Stream
	Wetlands No Apps With 25'		CAFO SWQMA-1000' Incorporate Zone.		Tile Inlets: 25' setback Incorporate 100' setback Surface		Perennial Stream
	Fall N Restriction		W Soils-Verify Depth To Water B4 Apps		Tile Outlet		Incorporate 25' Setback Surface = 100' Setback
							Concentrated Flow-No Apps

Is this a CAFO: True



1338

338

- | | | | | | | |
|--|---|--|--|--|--|--|
| | Wells No Apps Win 100'
(200' setback if neighbors) | | CAFO SWGMA-300'
Incorp Zone. | | Bedrock-No Apps Unless
Verify No Bedrock | Intermittent Stream

Perennial Stream
Incorporate = 25' Setback
Surface = 100' Setback |
| | Wellside No Apps Win 25' | | CAFO SWGMA-1000'
Incorp Zone. | | Tile Inlet ¹
25' setback Incorporate
100' setback Surface | |
| | Fall N Restriction | | W Sella-Verify Depth
To Water 84 Apps | | Tile Outlet | |

J Kast N-Collection Pt Restrictions

Farm Name: Ledgerview Farms
Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

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	Wall: No Apps Within 100' (250' setback if applicable)		CAFO SWQMA-300' Incorporation Zone		Bedrock-No Apps Unless Verify No Bedrock		Intermittent Stream	
	Wetland: No Apps Within 25'		CAFO SWQMA-1000' Incorporation Zone		Tile Inlet 25' setback Incorporation 100' setback Surface		Perennial Stream	
	Fall N Restriction		W Soils-Verify Depth To Water B4 Apps		Tile Outlet		Incorporation = 25' Setback Surface = 100' Setback	
								Concentrated Flow-No Apps

Herold Rd Restrictions

Farm Name: Ledgerview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 43 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

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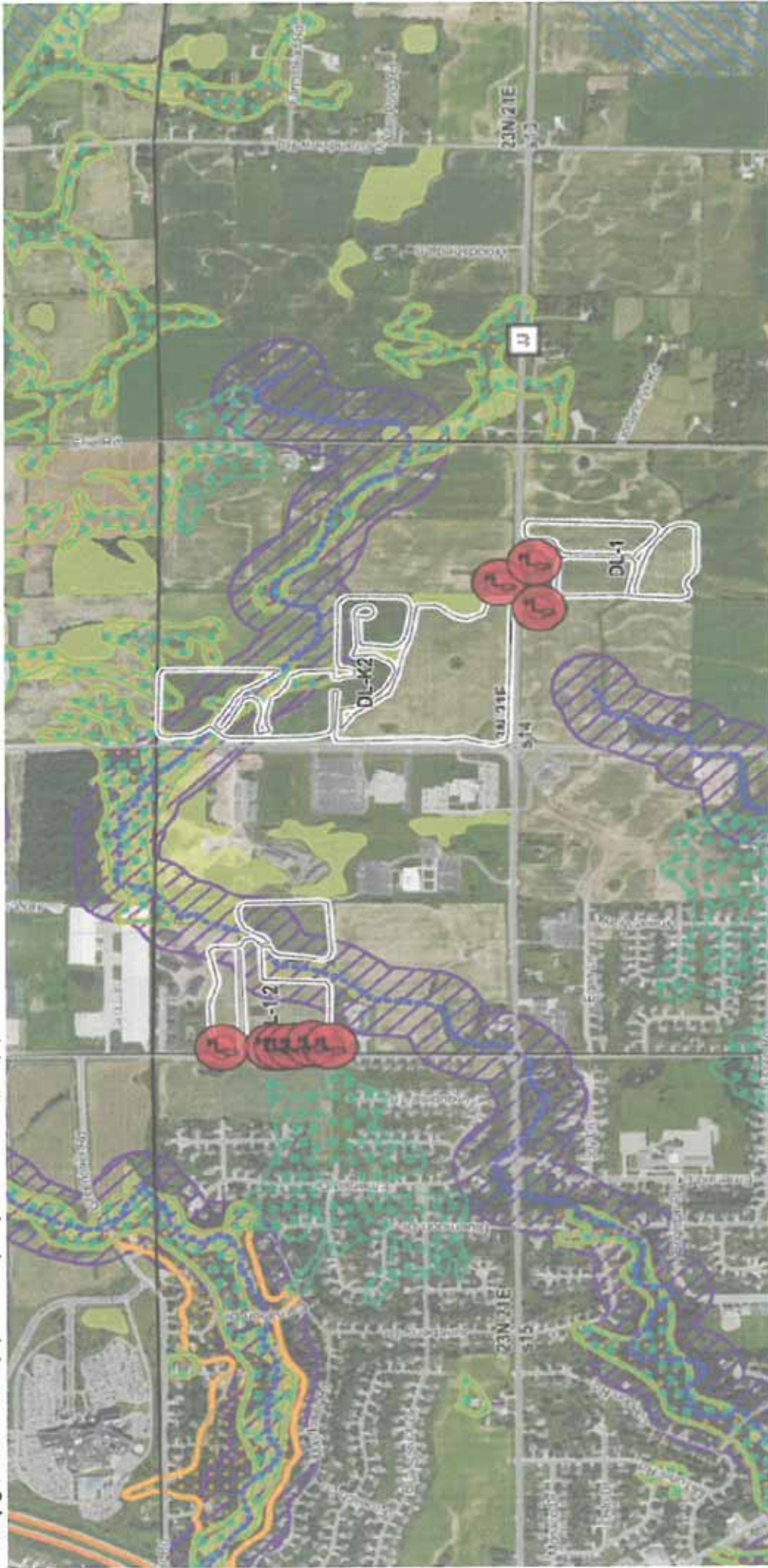
DL Fie's Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017

Municipal water in this area



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

1341

NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

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Bowe Creek Restrictions

Farm Name: Ledgerview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

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Asche brenner Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

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Asch? Restrictions

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

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22 Restrictions

Farm Name: Ledgerview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017

Municipal water in this area



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water



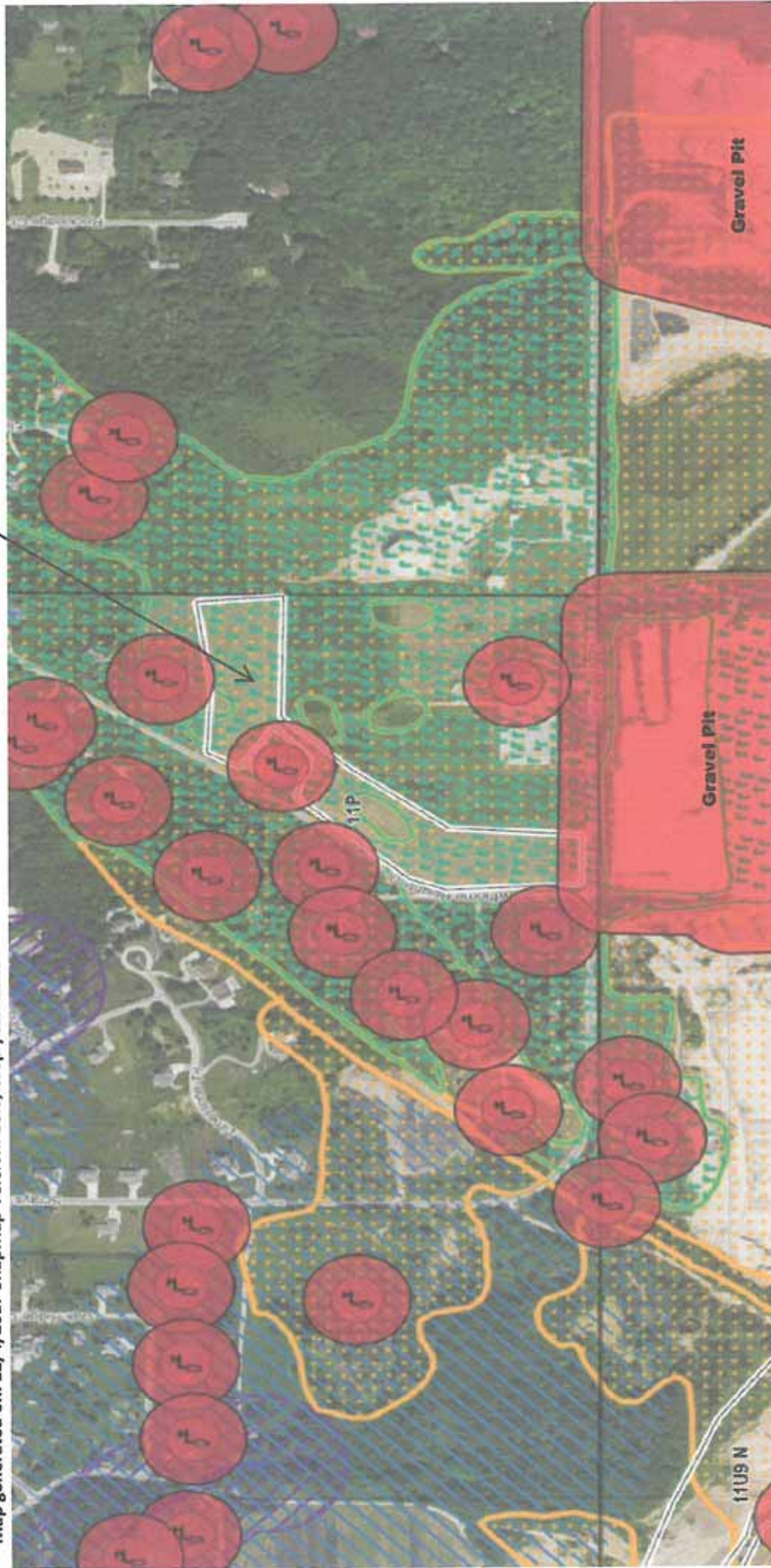
11P Restrictions

Farm Name: Ledgerview Farms

Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017

No Manure can be applied to this field unless verified >24" to bedrock.



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 43 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

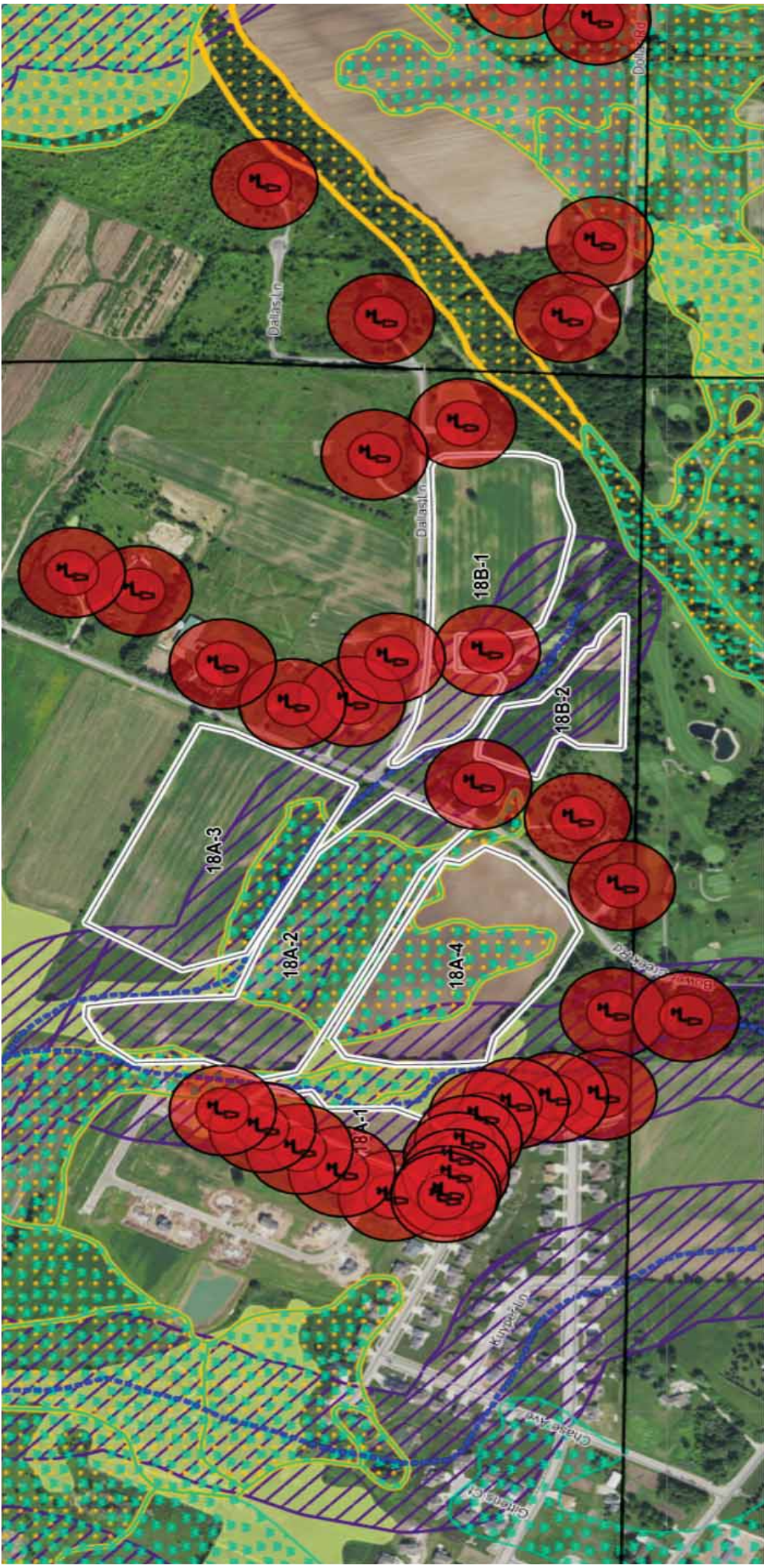
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Titulaer Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

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Tower & W Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017



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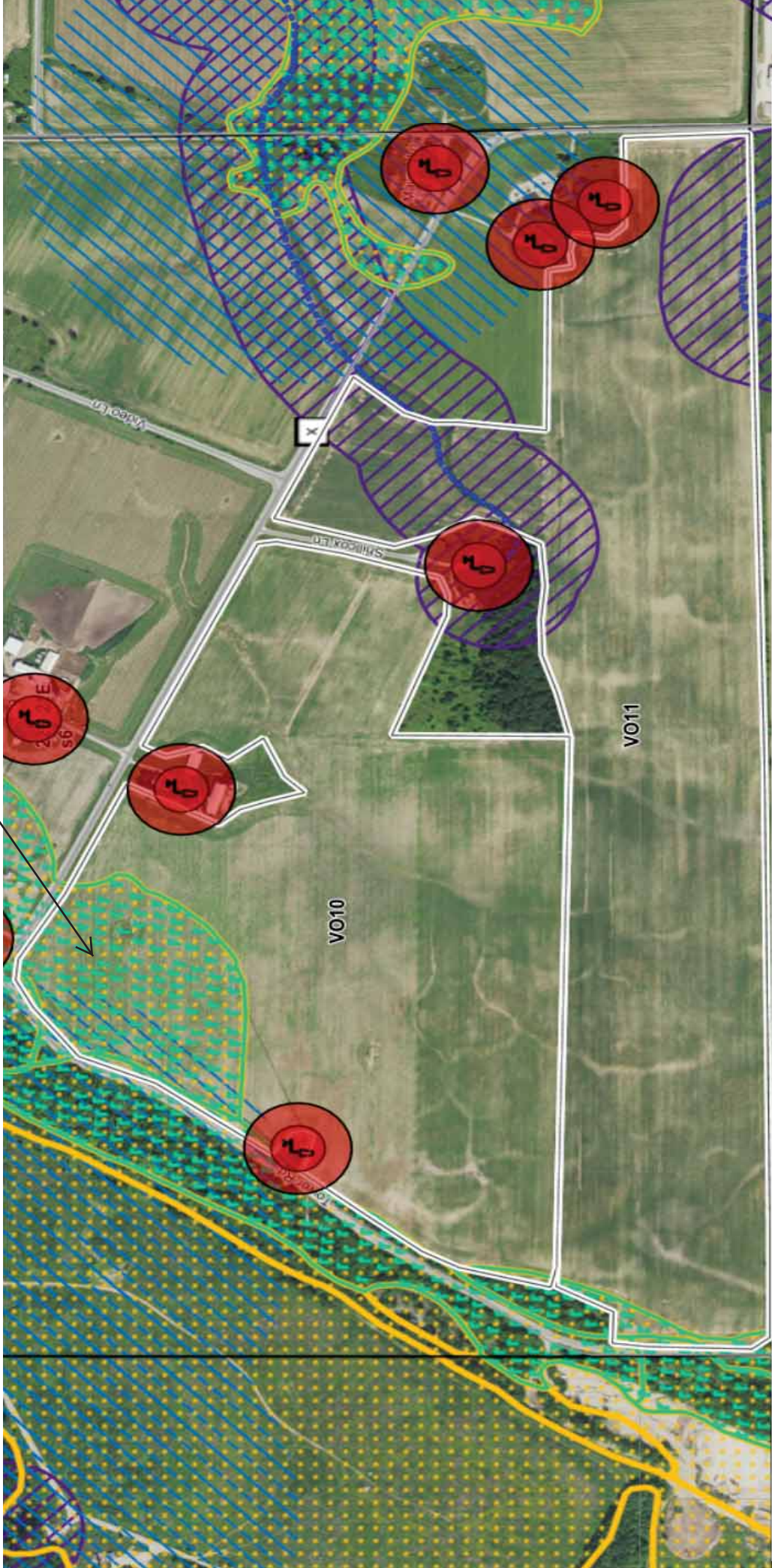


VO-10,11 Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 12/4/2017 SnapMap Version: 16.0, Crop year: 2017

No Manure can be applied here unless verified >24" to bedrock.



NR 243 SWQMA Option #1 When Incorporating Manure Do not apply manure within 25' of a navigable water, conduit to navigable water or within 25' of wetlands; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

NR 243 SWQMA Option #5 When Surface Applying Manure Do Not apply within 100' of a navigable water or conduit to navigable water

The Information on this map is not guaranteed to be 100% accurate. It has been developed with the use of SNAP-Maps information, aerial imagery analysis, field knowledge and producer information. Field verification of restrictive features should be completed before applications. As new restrictive features are identified these maps will be updated.



13E-3 Winter Restrictions

Farm Name: Ledgerview Farms
Is this a CAFO: True

Map generated on: 2/2/2018 SnapMap Version: 16.0, Crop year: n/a



- DNR Wetland
- Winter Restriction if Slope $\geq 9\%$
- No Winter App. Slope $\geq 12\%$
- CAFO SWQMA 300FT
- CAFO SWQMA 1000FT
- Local Prohibitions
- CAFO Manure Restriction (W)
- CAFO Manure Restriction (R)
- Bedrock depth $< 5ft$
- Channelized Flow: 200ft Buffer
- Direct Conduit to GW 300ft
- Wetland 200ft Buffer
- Community wells 1000ft
- Perennial Streams
- Intermittent Streams
- Waterbodies
- Counties
- Township/Range
- Roads
- Fields
- Tile lines
- Point buffers

County Defined Karst Features

131 Winter Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 2/2/2018 SnapMap Version: 16.0, Crop year: n/a

No Manure apps allowed during February-March



- DNR Wetland
- Winter Restriction if Slope > 9%
- No Winter App. Slope > 12%
- CAFO SWQMA 300FT
- SWQMA 1000FT
- Local Prohibitions
- CAFO Manure Restriction (W)
- CAFO Manure Restriction (R)
- Bedrock depth < 5ft
- Channelized Flow: 200ft Buffer
- Direct Conduit to GW 300ft
- Wetland 200ft Buffer
- Community wells 1000ft
- Perennial Streams
- Intermittent Streams
- Waterbodies
- Counties
- Township/Range
- Roads
- Fields
- Tile lines
- Point buffers

▲ County Defined Karst Features
Field 13I approved
for spreading solid manure on frozen-snow covered soils.

16A-17A Winter Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 6/26/2017 SnapMap Version: 16.0, Crop year: 2017

No Manure apps allowed during February-March



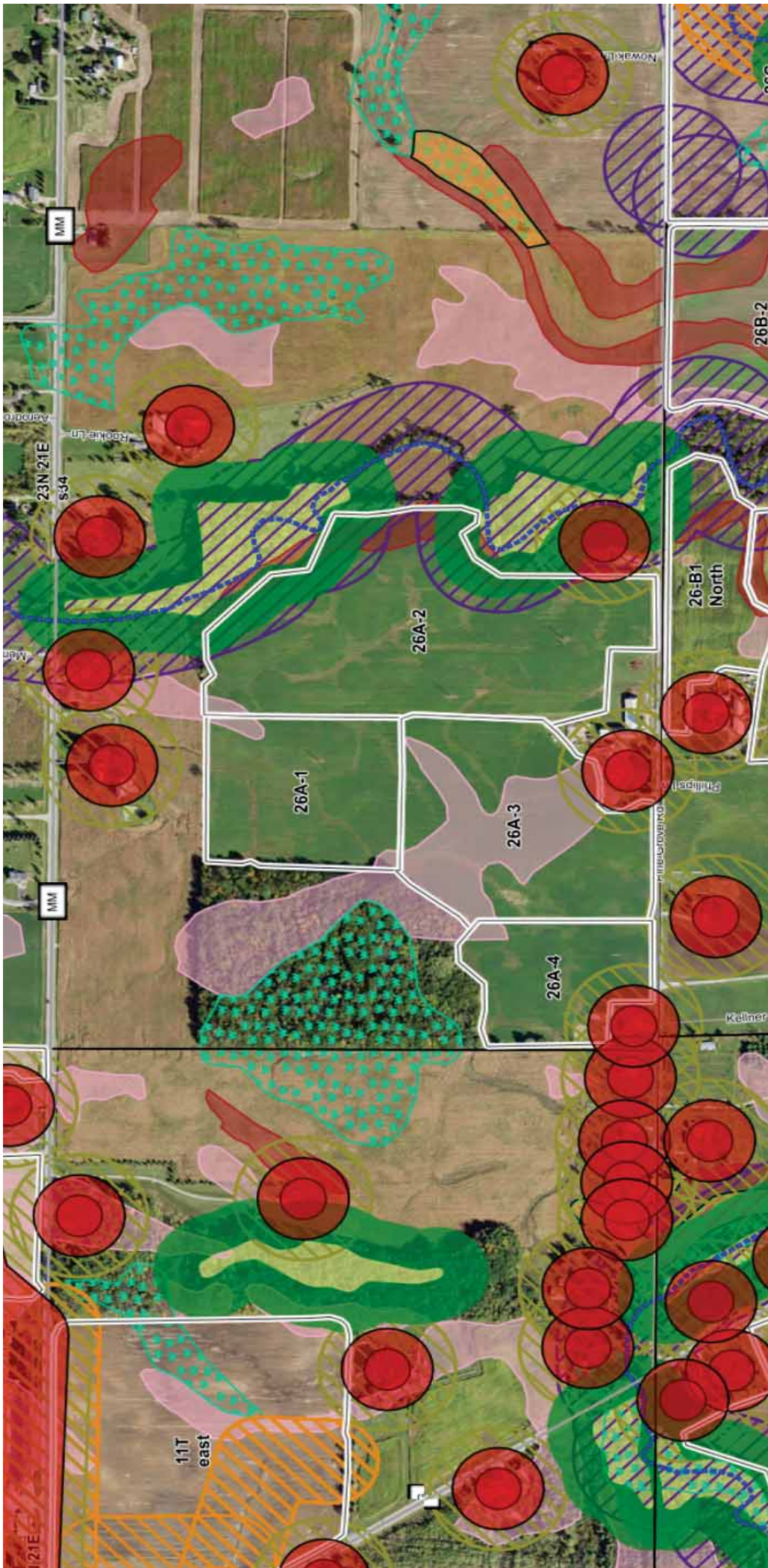
- DNR Wetland
- Winter Restriction if Slope > 9%
- No Winter App. Slope > 12%
- CAFO SWQMA 300FT
- CAFO Manure Restriction (W)
- Bedrock depth < 5ft
- Channelized Flow 200ft Buffer
- Direct Conduit to GW 300ft
- Wetland 200ft Buffer
- Perennial Streams
- Intermittent Streams
- Counties
- Township/Range
- Roads
- Fields
- Tile lines
- Designed grassed waterway
- Permanent vegetated channel
- Unvegetated ephemeral channel
- Drainage ditch
- Gully
- Point buffers

Fields 16A1 & 17A approved for spreading solid manure on frozen-snow covered soils.

26A-1, A-2 Winter Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 2/2/2018 SnapMap Version: 16.0, Crop year: n/a



- DNR Wetland
- Winter Restriction if Slope $\geq 9\%$
- No Winter App. Slope $\geq 12\%$
- CAFO SWQMA 300FT
- CAFO SWQMA 1000FT
- Local Prohibitions
- CAFO Manure Restriction (W)
- CAFO Manure Restriction (R)
- Bedrock depth $< 5ft$
- Channelized Flow: 200ft Buffer
- Direct Conduit to GW 300ft
- Wetland 200ft Buffer
- Community wells 1000ft
- Perennial Streams
- Intermittent Streams
- Waterbodies
- Counties
- Township/Range
- Roads
- Fields
- Tile lines
- Point buffers

County Defined Karst Features

Asche 1 North Winter Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 6/26/2017 SnapMap Version: 16.0, Crop year: 2017

No Manure apps allowed during February-March



- DNR Wetland
- Winter Restriction if Slope > 9%
- No Winter App. Slope > 12%
- CAFO SWQMA 300FT
- CAPO SWQMA 1000FT
- Local Prohibitions
- CAPO Manure Restriction (M)
- CAPO Manure Restriction (R)
- Bedrock depth < 5ft
- Channelized Flow 200ft Buffer
- Direct Conduit to GW 300ft
- Wetland 200ft Buffer
- Community wells 1000ft
- Perennial Streams
- Intermittent Streams
- Waterbodies
- Counties
- Township/Range
- Roads
- Fields
- Tile lines
- Point buffers

Field Asche 1 North approved for spreading solid manure on frozen-snow covered soils.

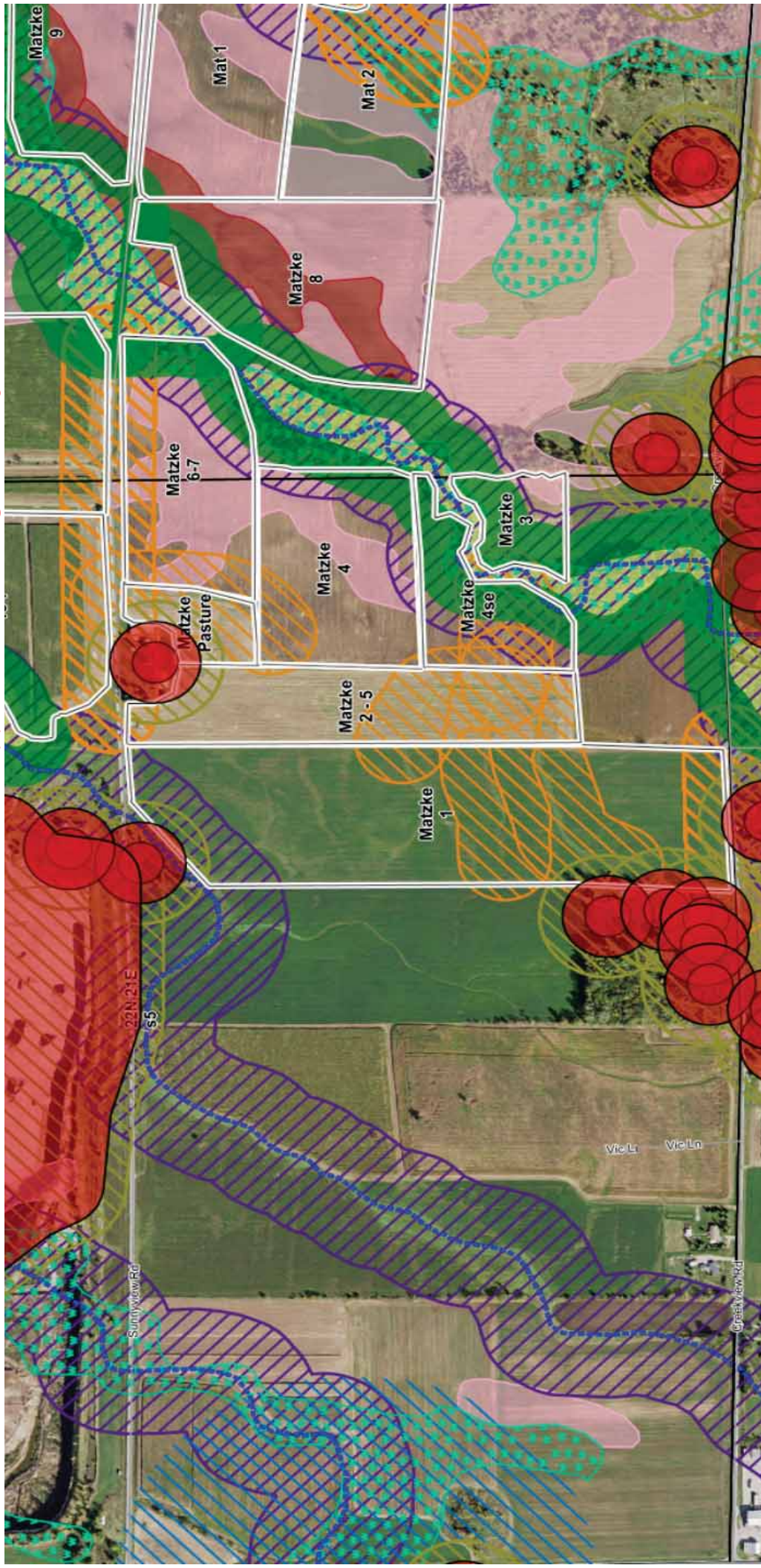
Field Asche 1 North approved for emergency applications of liquid manure. Rate of 3500 gal/acre























Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 2/2/2018 SnapMap Version: 16.0, Crop year: n/a

No Manure apps allowed during February-March



- | | | | |
|---|----------------------------------|---|------------------------|
|  | DNR Wetland |  | Wetland 200ft Buffer |
|  | Winter Restriction if Slope > 9% |  | Community wells 1000ft |
|  | No Winter App. Slope > 12% |  | Perennial Streams |
|  | CAFO SWQMA 300FT |  | Intermittent Streams |
|  | SWQMA 1000FT |  | Waterbodies |
|  | Local Prohibitions |  | Counties |
|  | CAFO Manure Restriction (W) |  | Township/Range |
|  | CAFO Manure Restriction (R) |  | Roads |
|  | Bedrock depth < 5ft |  | Fields |
|  | Channelized Flow: 200ft Buffer |  | Tile lines |
|  | Direct Conduit to GW 300ft |  | Point buffers |

▲ County Defined Karst Features

Fields Matzke1, 2-5 approved for spreading solid manure on frozen-snow covered soils.

TABLE 4 Restrictions for Surface Applying Solid Manure on Frozen and Snow Covered Ground			
Criteria	Restrictions for fields With 0-6% slopes	Restrictions for fields with slopes > 6% and up to 9%	Restrictions for fields with slopes greater than 9%
Required fall tillage practice prior to application	Chisel or moldboard plow, no-till or a department approved equivalent ^A	Chisel or moldboard plow, no-till or department approved equivalent ^A	Not allowed
Minimum % solids allowed	12%	> 20%	Not allowed
Application rate (cumulative per acre)	Not to exceed 60 lbs. P2O5 per winter season, the following growing season's crop P2O5 budget taking into account nutrients already applied, or phosphorus application restrictions specified in a department approved nutrient man-agement plan, whichever is less	Not to exceed 60 lbs. P2O5 per winter season, the following growing season's crop P2O5 budget taking into account nutrients already applied, or phosphorus application restrictions specified in a department approved nutrient man-agement plan, whichever is less	Not allowed
Setbacks from surface waters	No application allowed within SWQMA	No application allowed within 2.0 x SWQMA	Not allowed
Setbacks from downslope areas of channelized flow, vegetated buffers, and wetlands	200 feet	400 feet	Not allowed
Setbacks from direct conduits to groundwater	300 feet	600 feet	Not allowed

^A All tillage and farming practices shall be conducted in accordance with the following requirements: 0-2% slope = no contouring required, >2-6% slope = tillage and practices conducted along the general contour, >6% slope = tillage and farming practices conducted along the contour. The department may approve alternative tillage practices on a case-by-case basis in situations where conducting practices along the contour is not possible. Allowances for application on no-till fields only apply to fields where no-till practices have been in place for a minimum of 3 years.

26A-1 4-2 Winter Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 2/2/2018 SnapMap Version: 16.0, Crop year: n/a



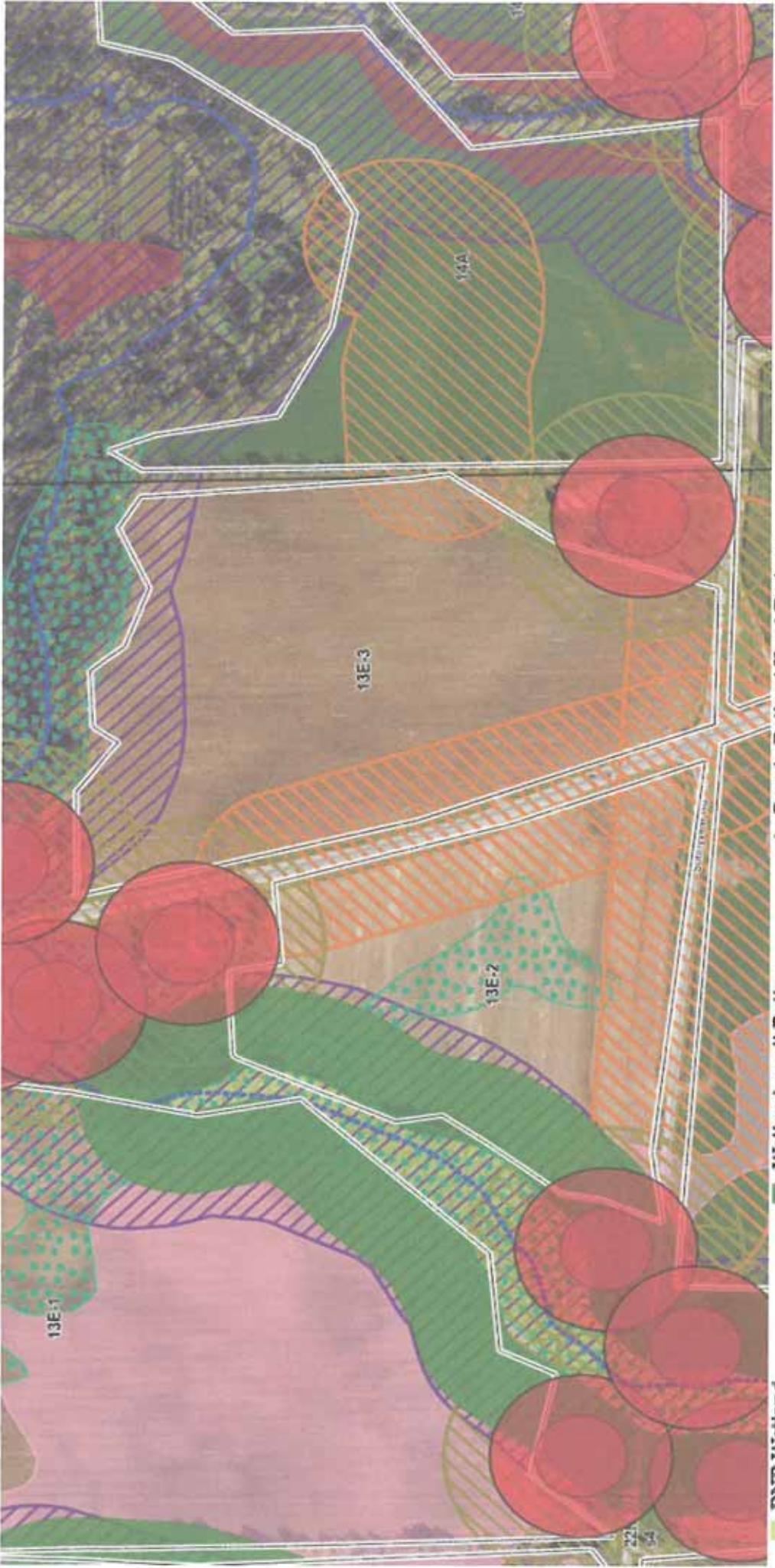
- DNR Wetland
- Winter Restriction if Slope > 9%
- No Winter App. Slope > 12%
- CAFO SWQMA 300FT
- SWQMA 1000FT
- Local Prohibitions
- CAFO Manure Restriction (W)
- CAFO Manure Restriction (R)
- Bedrock depth <5ft
- Channelized Flow 200ft Buffer
- Direct Conduit to GW 300ft
- Wetland 200ft Buffer
- Community wells 1000ft
- Perennial Streams
- Intermittent Streams
- Waterbodies
- Counties
- Township/Range
- Roads
- Fields
- Tile lines
- Point buffers

▲ County Defined Karst Features

13E-3 Winter Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 2/2/2018 SnapMap Version: 16.0, Crop year: n/a



▲ County Defined Karst Features

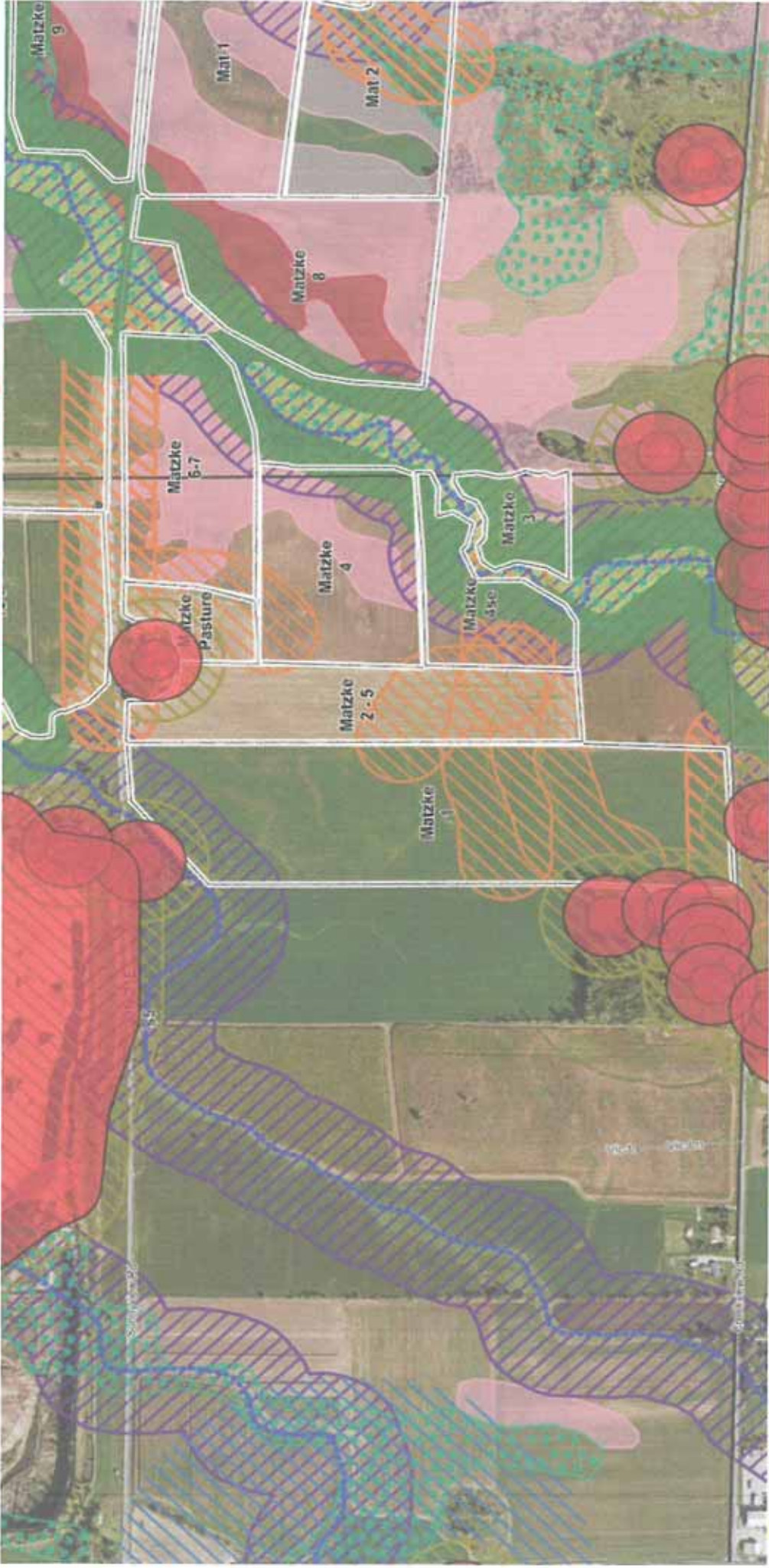
- DNR Wetland
- Winter Restriction if Slope > 9%
- No Winter App. Slope > 12%
- CAFO SWQMA 300FT
- SWQMA 1000FT
- Local Prohibitions
- CAFO Manure Restriction (W)
- CAFO Manure Restriction (R)
- Bedrock depth < 5ft
- Channelized Flow 200ft Buffer
- Direct Conduit to GW 300ft
- Wetland 200ft Buffer
- Community wells 1000ft
- Perennial Streams
- Intermittent Streams
- Waterbodies
- Counties
- Township/Range
- Roads
- Fields
- Tile lines
- Point buffers

Matzk Winter Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 2/2/2018 SnapMap Version: 16.0, Crop year: n/a

No Manure apps allowed during February-March



- Wetland 200ft Buffer

Community wells 1000ft

Perennial Streams

Intermittent Streams

Waterbodies

Counties

Township/Range

Roads

Fields

Tile lines

Point buffers

DNR Wetland

Winter Restriction if Slope > 9%

No Winter App. Slope > 12%

CAFO SWQMA 300FT

SWQMA 1000FT

Local Prohibitions

CAFO Manure Restriction (W)

CAFO Manure Restriction (R)

Bedrock depth <5ft

Channelized Flow 200ft Buffer

Direct Conduit to GW 300ft
- County Defined Karst Features

Fields Matzke1, 2-5 approved for spreading solid manure on frozen-snow covered soils.

Silver Lake Winter Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 2/2/2018 SnapMap Version: 16.0, Crop year: n/a

No Manure apps allowed during February-March



- Wetland 200ft Buffer
- Community wells 1000ft
- Perennial Streams
- Intermittent Streams
- Waterbodies
- Counties
- Township/Range
- Roads
- Fields
- Tile lines
- Point buffers
- DNR Wetland
- Winter Restriction if Slope > 9%
- No Winter App. Slope > 12%
- CAFO SWQMA 300FT
- SWQMA 1000FT
- Local Prohibitions
- CAFO Manure Restriction (W)
- CAFO Manure Restriction (R)
- Bedrock depth < 5ft
- Channelized Flow 200ft Buffer
- Direct Conduit to GW 300ft

▲ County Defined Karst Features

Fields 12A1, 12A2, 27A2, 12A45, 27, 11L, 11L-East approved for spreading solid manure on frozen-snow covered soils.

13H-1 13H-2, Mat 20-21 Winter Restrictions

Farm Name: Ledgerview Farms
Is this a CAFO: True

Map generated on: 2/2/2018 SnapMap Version: 16.0, Crop year: n/a

No Manure apps allowed during February-March



- DNR Wetland
- Winter Restriction if Slope > 9%
- No Winter App. Slope > 12%
- CAFO SWQMA 300FT
- SWQMA 1000FT
- Local Prohibitions
- CAFO Manure Restriction (W)
- CAFO Manure Restriction (R)
- Bedrock depth <5ft
- Channelized Flow 200ft Buffer
- Direct Conduit to GW 300ft
- Wetland 200ft Buffer
- Community wells 1000ft
- Perennial Streams
- Intermittent Streams
- Waterbodies
- Counties
- Township/Range
- Roads
- Fields
- Tile lines
- Point buffers

County Defined Karst Features

Fields 13H1, 13H2N, Mat20, Mat 21 approved for spreading solid manure on frozen-snow covered soils.

Asche 1 North Winter Restrictions

Farm Name: Ledgerview Farms
Is this a CAFO: True

Map generated on: 6/26/2017 SnapMap Version: 16.0, Crop year: 2017

No Manure apps allowed during February-March



- DNR Wetland
- Winter Restriction if Slope > 9%
- No Winter App. Slope > 12%
- CAFO SWQMA 300FT
- SWQMA 1000FT
- Local Prohibitions
- CAFO Manure Restriction (W)
- CAFO Manure Restriction (R)
- Bedrock depth <5ft
- Channelized Flow 200ft Buffer
- Direct Conduit to GW 300ft
- Wetland 200ft Buffer
- Community wells 1000ft
- Perennial Streams
- Intermittent Streams
- Waterbodies
- Counties
- Township/Range
- Roads
- Fields
- Tile lines
- Point buffers

Field Asche 1 North approved for spreading solid manure on frozen-snow covered soils.

Field Asche 1 North approved for emergency applications of liquid manure. Rate of 3500 gal/acre

Bower Creek Winter Restrictions

Farm Name: Ledgerview Farms
Is this a CAFO: True

Map generated on: 6/26/2017 SnapMap Version: 16.0, Crop year: 2017

No Manure apps allowed during February-March



- DNR Wetland
- Winter Restriction if Slope > 9%
- No Winter App. Slope > 12%
- CAFO SWQMA 300FT
- CAFO Manure Restriction (W)
- Bedrock depth < 5ft
- Channelized Flow 200ft Buffer
- Direct Conduit to GW 300ft
- Wetland 200ft Buffer
- Perennial Streams
- Intermittent Streams
- Counties
- Township/Range
- Roads
- Fields
- Tile lines
- Designed grassed waterway
- Permanent vegetated channel
- Unvegetated ephemeral channel
- Drainage ditch
- Gully
- Point buffers

Field Bower Creek approved for spreading solid manure on frozen-snow covered soils.

16A-17A Winter Restrictions

Farm Name: Ledgerview Farms

Is this a CAFO: True

Map generated on: 6/26/2017 SnapMap Version: 16.0, Crop year: 2017

No Manure apps allowed during February-March



- DNR Wetland
- Winter Restriction if Slope > 9%
- No Winter App. Slope > 12%
- CAFO SWQMA 300FT
- CAFO Manure Restriction (W)
- Bedrock depth < 5ft
- Channelized Flow 200ft Buffer
- Direct Conduit to GW 300ft
- Wetland 200ft Buffer
- Perennial Streams
- Intermittent Streams
- Counties
- Township/Range
- Roads
- Fields
- Tile lines
- Designed grassed waterway
- Permanent vegetated channel
- Unvegetated ephemeral channel
- Drainage ditch
- Gully
- Point buffers

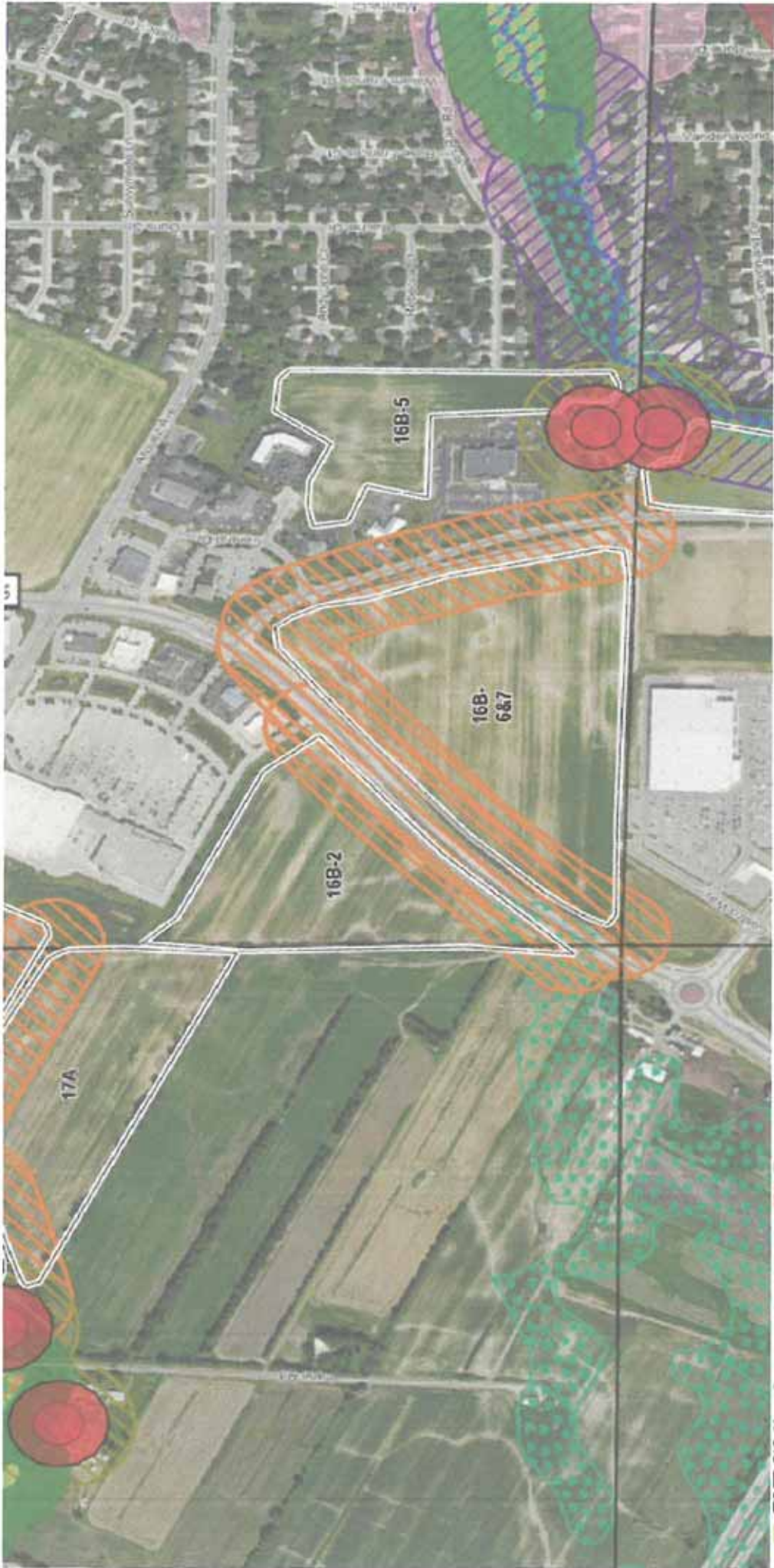
Fields 16A1 & 17A approved for spreading solid manure on frozen-snow covered soils.

16B2, 6 & 7 Winter Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

No Manure apps allowed during February-March

Map generated on: 6/26/2017 SnapMap Version: 16.0, Crop year: 2017



- DNR Wetland
- Winter Restriction if Slope > 9%
- No Winter App. Slope > 12%
- CAFO SWQMA 300FT
- CAFO Manure Restriction (W)
- Bedrock depth < 5ft
- Channelized Flow 200ft Buffer
- Direct Conduit to GW 300ft
- Wetland 200ft Buffer
- Perennial Streams
- Intermittent Streams
- Counties
- Township/Range
- Roads
- Fields
- Tile lines
- Designed grassed waterway
- Permanent vegetated channel
- Unvegetated ephemeral channel
- Drainage ditch
- Gully
- Point buffers

Fields 16B2, 16B6&7 approved for spreading solid manure on frozen-snow covered soils.

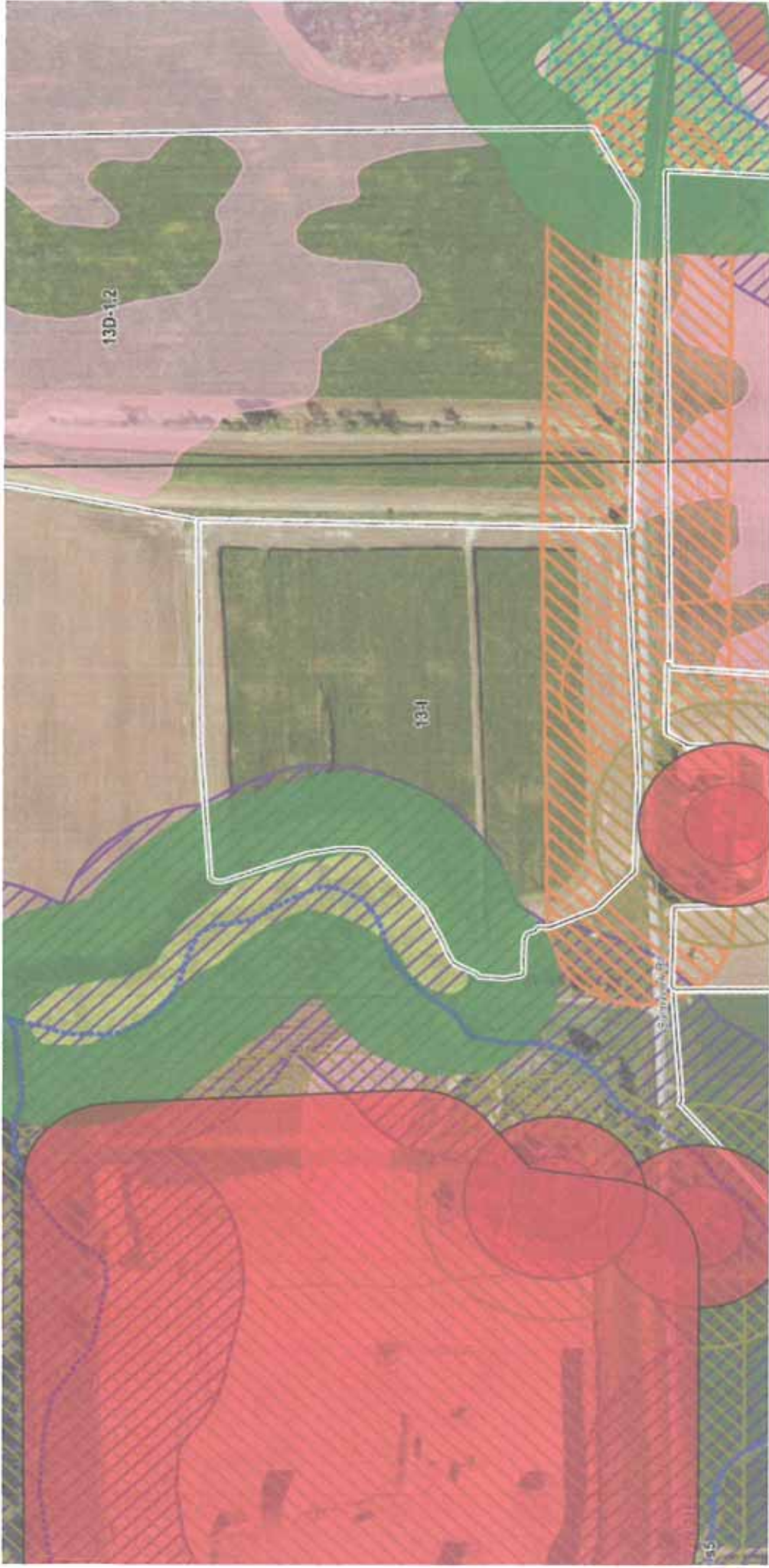
Fields 16B6&7 approved for emergency applications of liquid manure. Rate of 7000 gal/acre

131 Water Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 2/2/2018 SnapMap Version: 16.0, Crop year: n/a

No Manure apps allowed during February-March



- Wetland 200ft Buffer
- Community wells 1000ft
- Perennial Streams
- Intermittent Streams
- Waterbodies
- Counties
- Township/Range
- Roads
- Fields
- Tile lines
- Point buffers
- DNR Wetland
- Winter Restriction if Slope > 9%
- No Winter App. Slope > 12%
- CAFO SWQMA 300FT
- SWQMA 1000FT
- Local Prohibitions
- CAFO Manure Restriction (W)
- CAFO Manure Restriction (R)
- Bedrock depth <5ft
- Channelized Flow 200ft Buffer
- Direct Conduit to GW 300ft

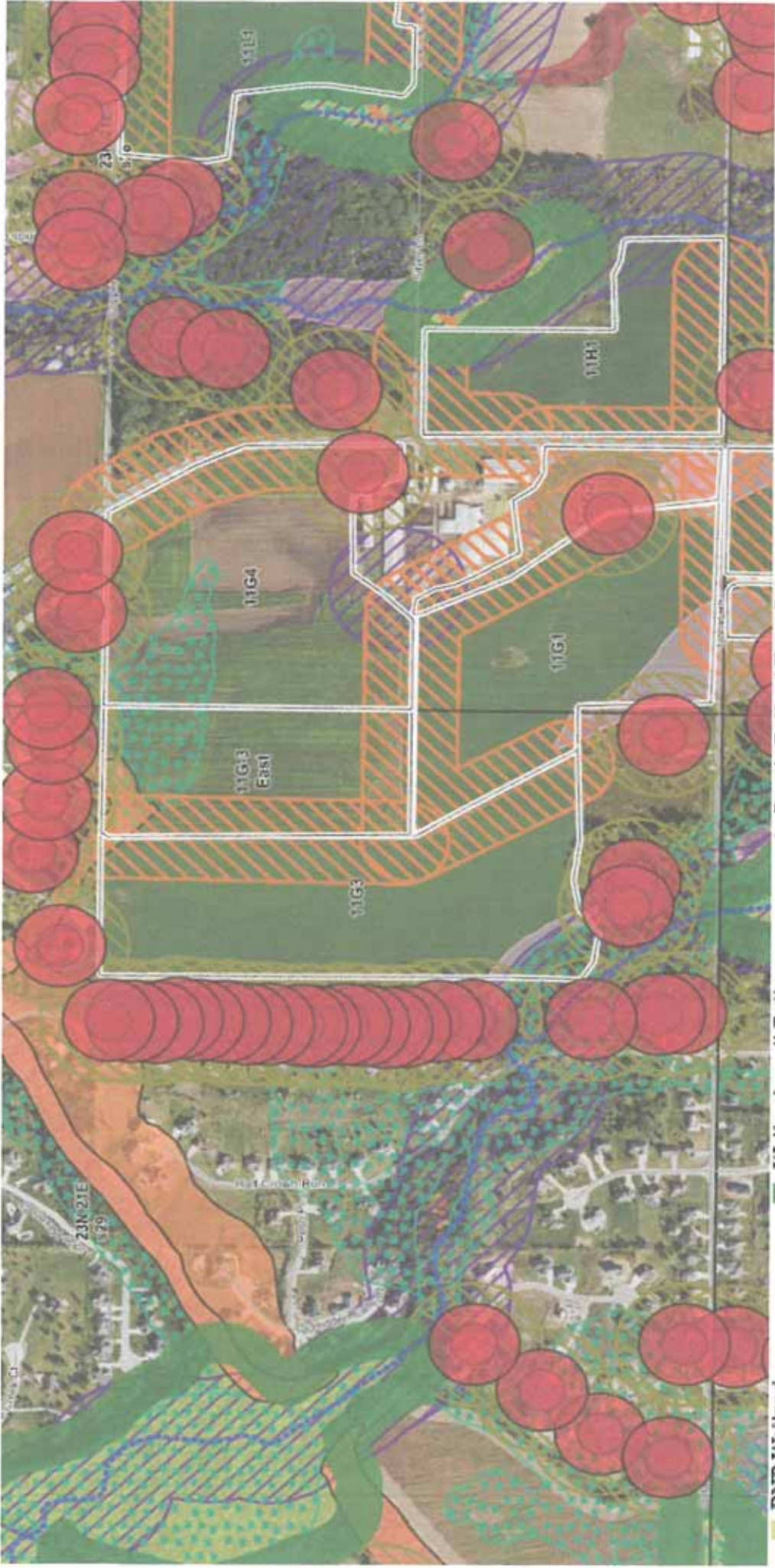
▲ County Defined Karst Features
Field 131 approved
for spreading solid manure on frozen-snow covered soils.

Heifer Site Winter Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 2/2/2018 SnapMap Version: 16.0, Crop year: n/a

No Manure apps allowed during February-March



- Wetland 200ft Buffer
 - Community wells 1000ft
 - Perennial Streams
 - Intermittent Streams
 - Waterbodies
 - Counties
 - Township/Range
 - Roads
 - Fields
 - Tile lines
 - Point buffers
- 1367

County Defined Karst Features

Fields 11G1, 11G3, 11G3 East, 11G4 approved for spreading solid manure on frozen-snow covered soils.

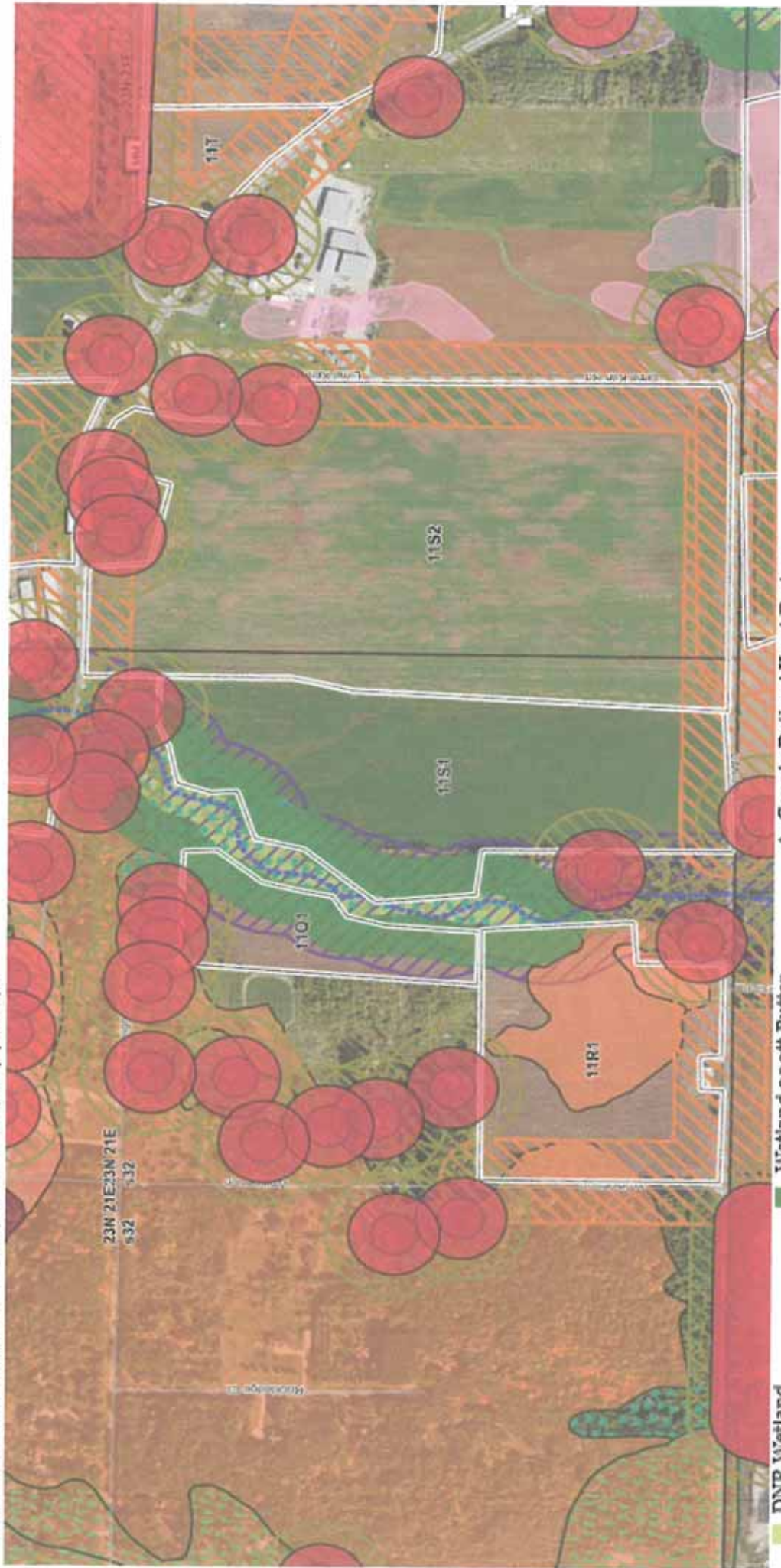
Field 11G4 approved for emergency applications of liquid manure.
Rate of 3500 gal/acre

11S1-11S2 Winter Restrictions

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 2/2/2018 SnapMap Version: 16.0, Crop year: n/a

No Manure apps allowed during February-March



- ▲ County Defined Karst Features
Fields 11S1 & 11S2 approved for spreading solid manure on frozen-snow covered soils.
Field 11S2 approved for emergency applications of liquid manure.
Rate of 3500 gal/acre
- Wetland 200ft Buffer
- Community wells 1000ft
- Perennial Streams
- Intermittent Streams
- Waterbodies
- Counties
- Township/Range
- Roads
- Fields
- Tile lines
- Point buffers
- DNR Wetland
- Winter Restriction if Slope > 9%
- No Winter App. Slope > 12%
- CAFO SWQMA 300FT
- SWQMA 1000FT
- Local Prohibitions
- CAFO Manure Restriction (W)
- CAFO Manure Restriction (R)
- Bedrock depth <5ft
- Channelized Flow 200ft Buffer
- Direct Conduit to GW 300ft

Exhibit 6-1
**Waste Storage Facility Summary-Annual Storage Period Expanded Conditions
 Leachate, Runoff Generation and Storage Capacity
 Ledgerview Farm, LLC**

Source	Volume		Comments
	(ft ³)	(gallons)	
Waste Generation			
Manure and Wastewater-Dairy	2,051,871	15,347,995	Exhibit 6-2
Manure and Wastewater-Steers	382,284	2,859,484	Exhibit 6-3
FSA Leachate-Heifer Farm	16,786	125,556	Exhibit 6-4
FSA Runoff-Heifer Farm	285,046	2,132,140	Exhibit 6-6
FSA Leachate-HQ*	1,683	12,589	Exhibit 6-9
FSA Runoff-HQ*	13,029	97,453	Exhibit 6-11
Y1 Heifer Farm Lot Runoff	84,856	634,723	Exhibit 6-8
Y1 HQ Farm Lot Runoff*	14,822	110,869	Exhibit 6-13
Sub-total	2,850,376	21,320,809	
Net Precipitation**			
WSF 1	111,303	832,546	
WSF 2	351,609	2,630,038	
Sub-total	462,912	3,462,583	
Total Waste Generated	3,313,288	24,783,392	
Waste Stored Above the MOL			
FSA-Heifer Farm 25 yr-24 hr	41,427	309,873	Exhibit 6-5
FSA-HQ 25 yr-24hr*	3,199	23,927	Exhibit 6-10
Y1 Heifer Farm Lot Runoff 25 yr-24 hr	13,263	99,204	Exhibit 6-7
Y1 HQ Farm Lot 25 yr-24 hr*	2,070	15,483	Exhibit 6-12
Total Waste Above MOL	59,958	448,487	
Waste Storage Facilities***			
WSF 1	669,334	5,006,618	
WSF 2	1,971,800	14,749,062	
Total Storage Volume	2,641,134	19,755,680	
Storage Capacity Evaluation			
Total Storage Volume	2,641,134	19,755,680	
Average Annual Storage Period	291	days	

*Allowance for future runoff collection system

**Net precipitation; 1.7 ft/year x WSF surface area

***MOL volume, determined by CADD

Ex 6-3

WASTE STORAGE FACILITY DESIGN - 313 STANDARD

Ver. March 2015

CLIENT: Ledgeview Farm, LLC

COUNTY: BROWN

DATE: 12/4/17

DSN BY: JMR

CHK BY:

DATE:

MENTS Waste Generation Steers-- Expanded Conditions

ANIMAL TYPE> 2 (1 = DAIRY, 2 = BEEF, 3 = VEAL, 4 = SWINE(finishing), 5 = SWINE(farrowing),
6 = POULTRY, 0 = OTHER)

MANURE AND WASTEWATER

LIVESTOCK		AVG. WT. PER HEAD	DAILY OUTPUT, CU FT			DAYS OF STORAGE	VOLUME REQUIRED	ANIMAL UNITS
KIND	NUMBER		MANURE	BEDDING	TOTAL			
Beef	550	350	0.35	0.3	357.5	365	130,488	193
Beef	525	850	1.00	0.3	682.5	365	249,113	446
Beef								

WASTEWATER:

55

GAL/DAY

7.4 CU FT/DAY

639 TOT. A.U.

TOTAL DAILY VOLUME: 1047.4 CU FT / DAY

Total Manure and Wastewater
Expected % solids in waste (Includes runoff and precip.)

2,859,483	GALLONS
382,284	CU FT
10.1	%

Ex 6-2

WASTE STORAGE FACILITY DESIGN - 313 STANDARD

Ver. March 2015

CLIENT: Ledgeview Farm, LLC

COUNTY: BROWN

DATE: 12/4/17

DSN BY: JMR

CHK BY:

DATE:

MENTS: Waste Generation - Dairy Expanded Conditions

ANIMAL TYPE > 1 (1 = DAIRY, 2 = BEEF, 3 = VEAL, 4 = SWINE(finishing), 5 = SWINE(farrowing), 6 = POULTRY, 0 = OTHER)

For Dairy: Rolling Herd Average 25,000 lbs/cow/yr

Is it a stanchion barn? n (Y or N)

MANURE AND WASTEWATER

LIVESTOCK		AVG. WT. PER HEAD	DAILY OUTPUT, CU FT			DAYS OF STORAGE	VOLUME REQUIRED	ANIMAL UNITS
KIND	NUMBER		MANURE	BEDDING	TOTAL			
Cows Milk	1125	1,400	2.53	0.3	3183.8	365	1,162,069	1,575
Cows Dry	230	1,400	2.00	0.3	529.0	365	193,085	322
Heifers	450	1,000	1.60	0.3	855.0	365	312,075	450
Heifers	270	600	0.96	0.3	340.2	365	124,173	162
Calves	270	350	0.56	0.4	245.7	365	89,681	95

WASTEWATER: 3500 GAL/DAY 467.9 CU FT/DAY

2,604 TOT. A.U.

TOTAL DAILY VOLUME: 5621.6 CU FT / DAY

Total Manure and Wastewater
Expected % solids in waste (Includes runoff and precip.)

15,347,995	GALLONS
2,051,871	CU FT
9.9	%

SnapPlus Manure Production Estimator Report

Crop Year 2018
 Reported For Ledgerview Farms
 Printed 2018-02-02
 Plan Completion/Update Date 2001-01-01
 SnapPlus Version 16.3 built on 2016-10-31

Prepared for:
 Ledgerview Farms
 attn: Roy, Glenn & Jason Pansier
 3875 DICKINSON RD
 DE PERE, 54115

C:\Users\Kevin Beckard\OneDrive - Cooperative Resources International
 \AgSource Data Backup\Clients\775-CV Greenleaf\Ledgeview Farms
 \SNAP 2 Database\SNAP 16\Ledgeview Farms Snap 16 Main.snapDb

Nutrient Source Summary for 2018

Values are for First Year Available Nutrients in lb/ton or lb/1000 gallons										Volumes are in Tons or Gallons						Value of Applied Nutrients in \$ (based on commercial fertilizer costs in \$/lb)							
Source-Name	Type	N	N Inc	N Inj	P	K	S	DM	Volume	Volume Applied	Volume Remain	Fall	Winter	Spring	Summer	N	P2O5	K2O	\$				
Calf Avg	Dairy, solid	4.0	5.2	5.2	5.1	9.0	1.3	26	0	0	0	0	0	0	0	0	0	0	0				
Cow Avg	Dairy, solid	2.9	3.8	3.8	3.5	4.0	0.7	19	0	7,544	-7,544	3,486	1,086	1,099	1,874	0	0	0	0				
Dairy Liquid Avg	Dairy, liquid	5.9	7.8	9.8	5.9	17.5	1.2	5	0	20,727,250	-20,727,250	5,902,750	0	4,382,500	10,442,000	0	0	0	0				
Heifer Avg	Dairy, solid	3.2	4.3	4.3	3.8	6.5	0.8	21	0	3,168	-3,168	825	1,068	1,200	75	0	0	0	0				
Maternoski Pit	Dairy, liquid	4.0	6.0	7.0	3.0	11.0	0.6	2	0	0	0	0	0	0	0	0	0	0	0				
NFO Manure	Dairy, solid	2.0	3.0	3.0	3.0	6.0	1.0	33	0	0	0	0	0	0	0	0	0	0	0				
Total Solid:										10,712	-10,712	Total Values						0	0	0	0		
Total Liquid:										20,727,250	20,727,250												

Estimated Livestock Manure Production

Animal Type	Subfarm	Barn	# Of animals	Total No. Of Days	% Collected AS Solid	% Collected AS Liquid	Yearly Tons	Yearly Gallons
Beef High Forage 750 lbs			642	365	50	50	3,632	2,811,960
Dairy Heifer 1000 lbs			360	365	5	95	269	2,246,940

SnapPlus Manure Production Estimator Report

Animal Type	Subfarm	Barn	# Of animals	Total No. Of Days	% Collected As Solid	% Collected As Liquid	Yearly Tons	Yearly Gallons
Dairy Calf 150 lbs			195	365	25	0	116	0
Dairy Calf 250 lbs			195	365	25	0	187	0
Dairy Dry Cows 1400 lbs			184	365	5	95	193	1,595,050
Dairy Heifer 750 lbs			216	365	0	100	0	1,087,992
Dairy Lactating Cows 1200 lbs			400	365	0	100	0	4,015,000
Dairy Lactating Cows 1400 lbs			500	365	0	100	0	5,840,000
Farm Totals							4,397	17,596,942

Manure Storage

No Storages Found

Spreaders

No Spreaders Found



AgSource Laboratories

A Subsidiary of Cooperative Resources International

106 N. Cecil Street
Bonduel, WI 54107
(715) 758-2178
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Manure Analysis

Submitted By: **BN00775**
COUNTRY VISIONS COOPERATIVE
W2468 CTY RD E
CHILTON, WI 53014

Submitted For:
Ledgeview Farms

Laboratory Sample #
BB97824

Date Received
25-Jul-2017

Date Reported
27-Jul-2017

Date Sampled
7/1/2017

Information Sheet #
M205057

Sample Id: **Pit 17B**

Livestock Type: **Dairy**

Manure Type: **Slurry**

Dry Matter: **5.11 %**

Moisture: **94.89 %**

Nitrogen: **> 72h or Not Inc**

Inc in 1 to 72h

Inc within 1h or Inj

Phosphorus as P_2O_5

Potassium as K_2O

Sulfur

Estimated Value of Available Nutrients

Estimated Available Nutrient Credits			
Total Nutrients lbs/1000 gal	In 1st Year of Application lbs/1000 gal	In 2nd Year of Application lbs/1000 gal	In 3rd Year of Application lbs/1000 gal
22.41	6.72	2.24	1.12
	8.96	2.24	1.12
	11.21	2.24	1.12
6.65	5.32	0.00	0.00
18.37	14.69	0.00	0.00
1.93	1.06	0.19	0.10
	\$10.78	\$0.90	\$0.45

Comments:

- *1 Applications of manure on the same field for 2 consecutive years increases the availability of N and S by 10%, and for 3 or more consecutive years by 15%. There is zero availability on P and K for 2 or more consecutive years. Availability of N changes depending on the application technique. Injection or incorporation within 3 days of application results in higher N availability.
- *2 Value based on commercial fertilizer costs as of 07/24/2017.
N(Urea) \$0.3696 / lb, P_2O_5 (Diammonium Phosphate(DAP)) \$0.4652 / lb, K_2O (Potash) \$0.2572 / lb, S(Elemental Sulfur) \$0.3658 / lb.
- *3 If minor elements are requested, they are reported on a 'dry matter' basis.
If ammonia, nitrate or pH are requested, they are reported on an 'as is' basis.
- * References: Nutrient application guidelines for field, vegetable, and fruit crops in Wisconsin (A2809), Table 9.1

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AgSource Laboratories

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Manure Analysis

Submitted By: **BN00775**
COUNTRY VISIONS COOPERATIVE
W2468 CTY RD E
CHILTON, WI 53014

Submitted For:
Ledgeview Farms

Laboratory Sample #
BB49399

Date Received:
20-Jun-2017

Date Reported:
22-Jun-2017

Date Sampled:
6/20/2017

Information Sheet #
M204677

Sample Id: **Pit 17**

Livestock Type: **Dairy**

Manure Type: **Slurry**

Dry Matter: **4.01 %**

Moisture: **95.99 %**

Nitrogen: **> 72h or Not Inc**

Inc in 1 to 72h

Inc within 1h or Inj

Phosphorus as **P₂O₅**

Potassium as **K₂O**

Sulfur

Estimated Available Nutrient Credits

Total Nutrients lbs/1000 gal	In 1st Year of Application lbs/1000 gal	In 2nd Year of Application lbs/1000 gal	In 3rd Year of Application lbs/1000 gal
18.01	5.40	1.80	0.90
	7.20	1.80	0.90
	9.01	1.80	0.90
4.74	3.80	0.00	0.00
15.52	12.42	0.00	0.00
1.75	0.96	0.18	0.09
Estimated Value of Available Nutrients	\$9.08	\$0.78	\$0.39

Comments:

****1** Applications of manure on the same field for 2 consecutive years increases the availability of N and S by 10%, and for 3 or more consecutive years by 15%. There is zero availability on P and K for 2 or more consecutive years. Availability of N changes depending on the application technique. Injection or incorporation within 3 days of application results in higher N availability.

***2** Value based on commercial fertilizer costs as of 09/01/2016.

N(Urea) \$0.4 / lb, P2O5(Diammonium Phosphate(DAP)) \$0.51 / lb, K2O(Potash) \$0.26 / lb, S(Elemental Sulfur) \$0.32 / lb.

***3** If minor elements are requested, they are reported on a 'dry matter' basis.

If ammonia, nitrate or pH are requested, they are reported on an 'as is' basis.

* References: Nutrient application guidelines for field, vegetable, and fruit crops in Wisconsin (A2809), Table 9.1

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AgSource Laboratories

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Manure Analysis

Submitted By: **BN00775**
COUNTRY VISIONS COOPERATIVE
W2468 CTY RD E
CHILTON, WI 53014

Submitted For:
Ledgeview Farms

Laboratory Sample #
AY30517 - AY30518

Date Received
9-Nov-2016

Date Reported
11-Nov-2016

Date Sampled
11/7/2016

Information Sheet #
M202400

Sample Id: **2016-Heifer New**

Livestock Type: **Dairy**

Manure Type: **Solid**

Dry Matter: **20.45 %**

Moisture: **79.55 %**

Nitrogen: **> 72h or Not Inc**

Inc in 1 to 72h

Inc within 1h or Inj

Phosphorus as P_2O_5

Potassium as K_2O

Sulfur

Estimated Value of Available Nutrients

Estimated Available Nutrient Credits			
Total Nutrients lbs/Ton	In 1st Year of Application lbs/Ton	In 2nd Year of Application lbs/Ton	In 3rd Year of Application lbs/Ton
7.40	1.85	0.74	0.37
	2.22	0.74	0.37
	2.59	0.74	0.37
3.56	2.85	0.00	0.00
7.62	6.10	0.00	0.00
0.92	0.51	0.09	0.05
	\$4.24	\$0.32	\$0.16

Comments:

**1 Applications of manure on the same field for 2 consecutive years increases the availability of N and S by 10%, and for 3 or more consecutive years by 15%. There is zero availability on P and K for 2 or more consecutive years. Availability of N changes depending on the application technique. Injection or incorporation within 3 days of application results in higher N availability.

*2 Value based on commercial fertilizer costs as of 09/01/2016.

N(Urea) \$0.4 / lb, P_2O_5 (Diammonium Phosphate(DAP)) \$0.51 / lb, K_2O (Potash) \$0.26 / lb, S(Elemental Sulfur) \$0.32 / lb.

*3 If minor elements are requested, they are reported on a 'dry matter' basis.

If ammonia, nitrate or pH are requested, they are reported on an 'as is' basis.

* References: Nutrient application guidelines for field, vegetable, and fruit crops in Wisconsin (A2809), Table 9.1



AgSource Laboratories

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Manure Analysis

Submitted By: **BN00775**
COUNTRY VISIONS COOPERATIVE
W2468 CTY RD E
CHILTON, WI 53014

Submitted For:
Ledgeview Farms

Laboratory Sample #
AY30517 - AY30518

Date Received:
9-Nov-2016

Date Reported
11-Nov-2016

Date Sampled
11/7/2016

Information Sheet #
M202400

Sample Id: **2016-Heifer Old**

Livestock Type: **Dairy**

Manure Type: **Solid**

Dry Matter: **33.23 %**

Moisture: **66.77 %**

Nitrogen: **> 72h or Not Inc**

Inc in 1 to 72h

Inc within 1h or Inj

Phosphorus as P_2O_5

Potassium as K_2O

Sulfur

Estimated Value of Available Nutrients

Estimated Available Nutrient Credits			
Total Nutrients lbs/Ton	In 1st Year of Application lbs/Ton	In 2nd Year of Application lbs/Ton	In 3rd Year of Application lbs/Ton
12.60	3.15	1.26	0.63
	3.78	1.26	0.63
	4.41	1.26	0.63
7.11	5.69	0.00	0.00
17.52	14.02	0.00	0.00
2.63	1.45	0.26	0.13
	\$8.78	\$0.59	\$0.29

Comments:

**1 Applications of manure on the same field for 2 consecutive years increases the availability of N and S by 10%, and for 3 or more consecutive years by 15%. There is zero availability on P and K for 2 or more consecutive years. Availability of N changes depending on the application technique. Injection or incorporation within 3 days of application results in higher N availability.

*2 Value based on commercial fertilizer costs as of 09/01/2016.

N(Urea) \$0.4 / lb, P_2O_5 (Diammonium Phosphate(DAP)) \$0.51 / lb, K_2O (Potash) \$0.26 / lb, S(Elemental Sulfur) \$0.32 / lb.

*3 If minor elements are requested, they are reported on a 'dry matter' basis.

If ammonia, nitrate or pH are requested, they are reported on an 'as is' basis.

* References: Nutrient application guidelines for field, vegetable, and fruit crops in Wisconsin (A2809). Table 9.1

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AgSource Laboratories

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Manure Analysis

Submitted By: **BN00775**
COUNTRY VISIONS COOPERATIVE
W2468 CTY RD E
CHILTON, WI 53014

Submitted For:
Ledgeview Farms

Laboratory Sample #
AW32041

Date Received
31-Aug-2016

Date Reported
02-Sep-2016

Date Sampled
8/22/2016

Information Sheet #
M21495

Sample Id: **Manure Pit 2016**

Livestock Type: **Dairy**

Manure Type: **Liquid**

Dry Matter: **6.83 %**

Moisture: **93.17 %**

Nitrogen: **> 72h or Not Inc**

Inc in 1 to 72h

Inc within 1h or Inj

Phosphorus as P_2O_5

Potassium as K_2O

Sulfur

Estimated Value of Available Nutrients

Estimated Available Nutrient Credits			
Total Nutrients lbs/1000 gal	In 1st Year of Application lbs/1000 gal	In 2nd Year of Application lbs/1000 gal	In 3rd Year of Application lbs/1000 gal
18.26	5.48	1.83	0.91
	7.30	1.83	0.91
	9.13	1.83	0.91
10.89	8.71	0.00	0.00
31.72	25.38	0.00	0.00
2.79	1.53	0.28	0.14
	\$15.71	\$0.82	\$0.41

Comments:

****1** Applications of manure on the same field for 2 consecutive years increases the availability of N and S by 10%, and for 3 or more consecutive years by 15%. There is zero availability on P and K for 2 or more consecutive years. Availability of N changes depending on the application technique. Injection or incorporation within 3 days of application results in higher N availability.

***2** Value based on commercial fertilizer costs as of 03/07/2016.

N(Urea) \$0.4 / lb, P_2O_5 (Diammonium Phosphate(DAP)) \$0.51 / lb, K_2O (Potash) \$0.28 / lb, S(Elemental Sulfur) \$0.33 / lb.

***3** If minor elements are requested, they are reported on a 'dry matter' basis.

If ammonia, nitrate or pH are requested, they are reported on an 'as is' basis.

* References: Nutrient application guidelines for field, vegetable, and fruit crops in Wisconsin (A2809), Table 9.1

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SnapPlus Soil Test Report

Reported For Ledgeview Farms
Printed 2017-12-15
Plan Completion/Update Date 2007-01-01
SnapPlus Version 16.3 built on 2016-10-31
 C:\Users\kbeckard\OneDrive - Cooperative Resources International
 \AgSource Data Backup\Clients\1775-CV Greenleaf\Ledgeview Farms
 \SNAP 2 Database\SNAP 16\Ledgeview Farms Snap 16 Main.snapDb

Prepared for:
 Ledgeview Farms
 attn: Roy, Glenn & Jason Pansier
 3875 DICKINSON RD
 DE PERE, 54115
Prepared by: AgSource Laboratories
 920-309-1948, kbeckard@agsource.com

WPDES Permitted Farm

Field Name	Subfarm	Acres	Predominant		Soil Test Date	Soil Test Lab	Lab Number	Samples		pH	OM%	in ppm		
			Soil Map Symbol	Soil Name				Rec. #	Actual #			P	K	S
11G1		30	MaA	MANAWA	2014-11-13	AgSource	751572	4	6	7.6	3.1	86	181	0
11G2		7.5	KhB	KEWAUNEE	2017-10-03	AgSource	798146	2	2	7.5	3.2	48	146	0
11G3		36	McA	MANAWA	2017-10-25	AgSource	799930	7	8	7.6	2.7	59	113	0
11G-3 East		20	MaA	MANAWA	2014-09-03	AgSource	747103	4	4	7.3	3.3	14	62	0
11G4		33	KhB	KEWAUNEE	2014-09-03	AgSource	747103	7	7	7.2	3.2	19	84	0
11H1		19	KhB	KEWAUNEE	2015-10-06	AgSource	763614	3	4	7.7	3.7	155	354	0
11J1&2		26	KhB	KEWAUNEE	2017-09-26	AgSource	797764	4	6	7.5	3.2	87	271	0
11K1A		9	KhB2	KEWAUNEE	2017-11-07	AgSource	701997	2	2	7.9	3.1	70	174	0
11K1B		2.5	MaA	MANAWA	2017-11-07	AgSource	701997	1	1	7.9	8.9	4	51	0
11K1C		5	KoC2	KOLBERG	2017-11-07	AgSource	701997	1	1	7.7	3.8	56	168	0
11L- East		10	KhB	KEWAUNEE	2017-09-26	AgSource	797764	2	3	7.2	3.2	74	220	0
11L1		20.5	KhB	KEWAUNEE	2017-08-17	AgSource	796573	4	4	7.4	3.1	67	146	0
11M1	Winter	10	KhB2	KEWAUNEE	2017-09-05	AgSource	796986	2	4	7.3	3.0	27	77	0
11N3		5	KhB	KEWAUNEE	2017-10-10	AgSource	798610	1	2	7.6	3.5	136	269	0
11N4		13	KhB	KEWAUNEE	2014-10-14	AgSource	748365	3	3	7.6	2.9	81	131	0
11P		9	SvB	SUMMERVILLE VARIANT	2017-08-01	AgSource	796210	2	2	6.9	3.1	20	64	0

SnapPlus Soil Test Report

12/15/2017

Field Name	Subfarm	Acres	Predominant		Soil Test Date	Soil Test Lab	Lab Number	Samples		pH	OM%	in ppm		
			Soil Map Symbol	Soil Name				Rec. #	Actual #			P	K	S
11Q1		14	KhB	KEWAUNEE	2017-10-04	AgSource	798267	3	3	7.4	3.4	41	88	0
11R1		29	KoB	KOLBERG	2017-10-04	AgSource	798267	6	6	7.3	3.3	96	109	0
11S1		42	KhB	KEWAUNEE	2017-08-03	AgSource	798291	8	8	6.8	2.6	48	35	0
11S2		95	KhB	KEWAUNEE	2017-08-08	AgSource	796341	19	20	7.3	3.1	65	98	0
11T		5	McA	MANAWA	2014-10-28	AgSource	749481	1	1	7.6	3.4	68	199	0
11T east		38	KhB2	KEWAUNEE	2017-09-22	AgSource	797602	4	6	7.5	4.0	95	235	0
11U 1A		9	KmE2	KEWAUNEE	2017-10-31	AgSource	700828	2	2	8.1	2.1	6	67	0
11U 2B		20	KmE2	KEWAUNEE	2017-09-19	AgSource	797527	4	4	7.8	1.8	5	53	0
11U1		14.5	KhC2	KEWAUNEE	2017-10-31	AgSource	700828	3	4	6.4	1.8	23	75	0
11U2		15	KhB2	KEWAUNEE	2017-11-10	AgSource	702534	3	3	7.0	2.2	18	69	0
11U3		13	KhC2	KEWAUNEE	2017-11-10	AgSource	702534	3	4	7.3	2.3	8	79	0
11U7		16	KmE2	KEWAUNEE	2014-09-03	AgSource	747105	3	5	8.1	1.5	14	69	0
11U7 N		15	KhC2	KEWAUNEE	2014-09-03	AgSource	747105	3	3	8.1	1.2	5	54	0
11U9		19	KhC2	KEWAUNEE	2016-09-20	AgSource	779895	4	4	7.5	2.1	10	85	0
11U9 N		10	KhC2	KEWAUNEE	2017-11-14	AgSource	702997	2	3	8.4	1.1	7	69	0
12A 45 & 27		30	KhB	KEWAUNEE	2014-09-03	AgSource	747106	6	6	7.3	3.1	44	103	0
12A1		35	KhB	KEWAUNEE	2017-08-22	AgSource	796671	7	7	7.0	2.6	40	118	0
12A2 & 27A2		29	KhB	KEWAUNEE	2014-09-03	AgSource	747106	6	6	7.0	3.1	54	85	0
13D-1,2		67	KhB	KEWAUNEE	2017-10-10	AgSource	798610	13	13	7.4	3.1	62	124	0
13E-1		48	KhC2	KEWAUNEE	2017-10-03	AgSource	798144B	10	11	7.5	2.3	18	65	0
13E-2		15.5	KhB2	KEWAUNEE	2017-10-06	AgSource	798401	3	4	7.5	3.2	39	142	0
13E-3		22.5	KhB2	KEWAUNEE	2017-10-03	AgSource	798144B	5	5	7.4	2.9	25	85	0
13F-1		38	KhC2	KEWAUNEE	2014-09-03	AgSource	747103	8	8	7.1	2.7	12	66	0

SnapPlus Soil Test Report

12/15/2017

Field Name	Subfarm	Acres	Predominant		Soil Test Date	Soil Test Lab	Lab Number	Samples		pH	OM%	P	in ppm		
			Soil Map Symbol	Soil Name				Rec. #	Actual #				K	S	CEC
13G-1		20	McA	MANAWA	2017-10-10	AgSource	798610	4	5	7.5	3.0	40	123	0	16
13G-2		51	KhB	KEWAUNEE	2017-11-10	AgSource	702534	10	12	7.3	2.9	11	82	0	14
13H-1		21	KIB	KEWAUNEE	2017-09-26	AgSource	797764	4	4	7.2	3.1	63	138	0	14
13H-2 N		10	KhB2	KEWAUNEE	2017-09-26	AgSource	797764	2	2	7.4	3.0	41	158	0	13
13-I		20	KhB	KEWAUNEE	2017-10-06	AgSource	798400	4	5	7.2	2.9	18	72	0	13
14A		22	KhB2	KEWAUNEE	2017-08-22	AgSource	796672	4	5	7.2	2.4	15	85	0	12
14A-11		5.5	KhB	KEWAUNEE	2017-08-17	AgSource	796570	1	1	7.2	2.6	13	89	0	14
14B		45	KhB2	KEWAUNEE	2017-10-17	AgSource	799238	9	10	7.6	2.9	21	77	0	13
16 A1 East		15	McA	MANAWA	2017-08-08	AgSource	796341	3	3	7.5	3.9	49	109	0	23
16 A1 West		13	OsA	OSHKOSH	2017-10-03	AgSource	798145	3	3	7.5	2.9	11	75	0	19
16B-2		17.5	McA	MANAWA	2017-10-06	AgSource	798401	4	6	7.2	3.4	19	91	0	18
16B-5		10	OnA	OSHKOSH	2017-08-17	AgSource	796573	2	2	7.7	2.9	15	79	0	16
16B-6&7		35	OnA	OSHKOSH	2017-08-17	AgSource	796570	4	6	7.4	3.7	45	193	0	20
16C		8.5	OnB	OSHKOSH	2017-10-03	AgSource	798145	2	2	7.6	3.3	73	192	0	16
16E		8	ShB	SISSON	2017-07-25	AgSource	796115	2	2	7.0	3.5	70	156	0	17
16F		3.5	MIB	MANISTEE	2017-08-03	AgSource	796291	1	1	6.6	2.4	42	38	0	10
17A		21	OnA	OSHKOSH	2017-08-11	AgSource	796439	4	5	7.2	3.1	22	123	0	17
18A-1		3.5	McA	MANAWA	2017-08-08	AgSource	796341	1	1	6.5	4.0	10	62	0	16
18A-2		14.5	AdA	ALLENDALE	2017-10-10	AgSource	798603	3	3	7.5	2.7	18	71	0	14
18A-3		15	McA	MANAWA	2017-08-08	AgSource	796341	3	3	7.2	3.8	16	95	0	18
18A-4		12.5	KhB	KEWAUNEE	2017-10-10	AgSource	798603	3	3	7.3	1.8	7	40	0	10
18B-1		12	KhB2	KEWAUNEE	2017-08-01	AgSource	796210	2	3	6.8	1.7	12	62	0	10
18B-2		4	KIB	KEWAUNEE	2014-09-03	AgSource	747106	1	2	7.3	2.5	13	66	0	13

SnapPlus Soil Test Report

12/15/2017

Field Name	Subfarm	Acres	Predominant		Soil Test Date	Soil Test Lab	Lab Number	Samples		pH	OM%	In ppm		
			Soil Map Symbol	Soil Name				Rec. #	Actual #			P	K	S
22		25	OsA	OSHKOSH	2017-10-04	AgSource	798269	5	5	7.6	3.4	20	114	0
26A-1		15	KhB	KEWAUNEE	2017-08-29	AgSource	796830	3	3	7.3	2.8	15	59	0
26A-2		30.5	KhB	KEWAUNEE	2017-09-05	AgSource	796986	6	6	7.2	2.8	12	64	0
26A-3		22	KhC2	KEWAUNEE	2017-08-22	AgSource	796672	4	5	7.2	2.9	39	72	0
26A-4		10	McA	MANAWA	2017-08-22	AgSource	796672	2	2	7.5	3.1	42	89	0
26-B1 North		10	KhB	KEWAUNEE	2017-10-25	AgSource	799940	2	2	8.0	3.2	74	175	0
26-B1 South		15	Bc	BELLEVUE	2017-10-25	AgSource	799940	3	4	7.8	2.8	38	112	0
26B-2 E&W		19.5	McA	MANAWA	2017-08-17	AgSource	796570	4	5	7.6	2.7	50	97	0
26-B2 South		11	KhC2	KEWAUNEE	2017-08-11	AgSource	796439	2	3	7.2	2.8	8	73	0
26C		24.5	McA	MANAWA	2017-10-03	AgSource	798146	5	5	7.7	3.1	17	69	0
26D-4		19.5	McA	MANAWA	2017-10-03	AgSource	798144A	4	4	7.7	2.5	19	72	0
26D5-7		57	McA	MANAWA	2017-10-03	AgSource	798144A	11	11	7.1	2.5	12	62	0
Asch 1 North		57	KhB	KEWAUNEE	2017-10-04	AgSource	798268	11	12	7.1	3.0	18	81	0
Asch 1 South		24.5	KhB2	KEWAUNEE	2017-10-04	AgSource	798268	5	5	7.4	2.8	9	62	0
Asch 2		27	KhB	KEWAUNEE	2017-10-04	AgSource	798268	5	5	7.6	3.1	14	57	0
Asch 3		18.5	KhB2	KEWAUNEE	2017-02-24	AgSource	790058	4	4	7.4	3.1	47	84	0
Bower Creek		50	Fa	FABIUS	2017-08-11	AgSource	796439	10	10	7.3	3.0	14	65	0
DL-1		15	KhB	KEWAUNEE	2017-12-04	Planning Value		3	1	7.0	3.0	101	201	0
DL-1,2		19	KhB	KEWAUNEE	2017-12-04	Planning Value		3	1	7.0	3.0	101	201	0
DL-K2		48	KhB	KEWAUNEE	2014-11-24	AgSource	752886	10	10	6.9	2.9	8	69	0
Herold Rd		50	WoC2	WAYMOR	2017-10-04	AgSource	798266	10	10	7.7	3.3	6	44	0
KB10	K Baeten	20	KhC2	KEWAUNEE	2017-09-27	AgSource	797874	4	4	6.6	2.4	13	71	0

SnapPlus Soil Test Report

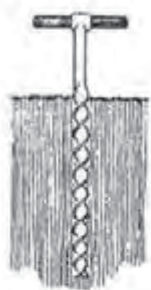
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			Predominant		Samples			in ppm							
Field Name	Subfarm	Acres	Soil Map Symbol	Soil Name	Soil Test Date	Soil Test Lab	Lab Number	Rec. #	Actual #	pH	OM%	P	K	S	CEC
KB11-13	K Baeten	50	KhC2	KEWAUNEE	2017-09-27	AgSource	797874	10	10	6.9	2.5	10	72	0	12
KB14	K Baeten	15	KhB2	KEWAUNEE	2017-09-27	AgSource	797874	3	3	6.7	3.1	40	66	0	11
KB1-4	K Baeten	57	KhB2	KEWAUNEE	2017-09-27	AgSource	797874	11	11	7.0	2.6	9	66	0	13
KB19-21	K Baeten	23	KhC2	KEWAUNEE	2017-09-27	AgSource	797875b	5	5	6.7	2.4	5	57	0	10
KB5	K Baeten	20	KhB	KEWAUNEE	2017-09-27	AgSource	797876	4	4	6.8	2.8	10	75	0	13
KB6	K Baeten	20	KhB2	KEWAUNEE	2017-09-27	AgSource	797876	4	4	6.6	2.6	10	72	0	14
KB7-8	K Baeten	30	KhB	KEWAUNEE	2017-09-27	AgSource	797876	6	6	6.9	2.1	7	76	0	14
KB9	K Baeten	21	KhC2	KEWAUNEE	2017-09-27	AgSource	797874	4	4	7.0	2.5	16	90	0	14
Mat 1	Maternoski	20	KhC2	KEWAUNEE	2016-10-11	AgSource	780903	4	4	7.5	2.7	24	119	0	12
Mat 11	Maternoski	31	KhB2	KEWAUNEE	2016-10-18	AgSource	781558	6	7	7.0	3.2	47	113	0	14
Mat 11A	Maternoski	1.5	KhB2	KEWAUNEE	2017-09-19	AgSource	797527	1	1	7.3	3.5	23	68	0	13
Mat 18	Maternoski	18	KhB2	KEWAUNEE	2015-10-23	AgSource	765331	4	4	7.3	3.1	22	119	0	12
Mat 2	Maternoski	17	KhC2	KEWAUNEE	2015-09-09	AgSource	762533	3	4	7.0	2.9	25	97	0	13
Mat 20	Maternoski	22	KhB2	KEWAUNEE	2016-09-13	AgSource	779694	4	5	7.3	3.0	22	94	0	14
Mat 21	Maternoski	24	KhB2	KEWAUNEE	2017-10-06	AgSource	798398	5	5	7.2	3.0	44	154	0	12
Mat 22	Maternoski	3	KhB	KEWAUNEE	2015-09-09	AgSource	762533	1	1	6.9	3.4	20	70	0	11
Mat 3	Winter	25	KhC2	KEWAUNEE	2015-09-22	AgSource	763028	5	6	7.5	2.2	13	78	0	12
Mat 4	Maternoski	25	KhC2	KEWAUNEE	2015-10-13	AgSource	764251	5	5	7.4	2.8	21	82	0	13
Mat 5	Maternoski	10	KhC2	KEWAUNEE	2015-09-09	AgSource	762533	2	2	7.0	2.5	17	100	0	11
Mat 7	Maternoski	8.5	KhB2	KEWAUNEE	2016-09-06	AgSource	779382	2	2	7.3	3.2	28	93	0	13
Mat 7A	Maternoski	3	KhB2	KEWAUNEE	2017-08-29	AgSource	796830	1	1	7.9	3.6	58	99	0	18
Mat 8	Maternoski	16	KhB	KEWAUNEE	2016-10-04	AgSource	780470	3	4	7.5	3.0	36	117	0	13
Mat 8A	Maternoski	3	KhB	KEWAUNEE	2015-09-09	AgSource	762533	1	1	6.9	4.4	36	71	0	16

SnapPlus Soil Test Report

12/15/2017

			Predominant				Samples			in ppm					
Field Name	Subfarm	Acres	Soil Map Symbol	Soil Name	Soil Test Date	Soil Test Lab	Lab Number	Rec. #	Actual #	pH	OM%	P	K	S	CEC
Matzke 1		40	KhB	KEWAUNEE	2017-10-25	AgSource	799940	8	8	7.3	2.7	7	87	0	12
Matzke 2 - 5		16.5	KhB	KEWAUNEE	2017-10-03	AgSource	798144C	3	4	7.4	3.6	40	79	0	14
Matzke 3		5	KhB	KEWAUNEE	2017-10-03	AgSource	798145	1	1	7.4	2.4	7	39	0	11
Matzke 4		16	KhB	KEWAUNEE	2017-10-03	AgSource	798145	3	4	7.4	2.7	39	71	0	11
Matzke 4se		8	McA	MANAWA	2016-09-06	AgSource	779382	2	2	7.2	3.1	11	59	0	13
Matzke 6-7		16.5	KhC2	KEWAUNEE	2017-10-03	AgSource	798145	3	4	7.5	2.6	43	82	0	11
Matzke 8		20	KhC2	KEWAUNEE	2017-09-19	AgSource	797527	4	4	7.5	2.9	25	81	0	15
Matzke 9		16.5	KhC2	KEWAUNEE	2017-09-19	AgSource	797527	3	4	7.7	2.8	25	67	0	15
Matzke Pasture		2	McA	MANAWA	2017-10-03	AgSource	798145	1	1	7.6	3.7	274	255	0	16
MM-East		5	KhB	KEWAUNEE	2017-10-03	AgSource	798146	1	2	7.5	3.1	10	53	0	12
MM-West		10	KhC2	KEWAUNEE	2017-10-03	AgSource	798146	2	4	7.6	3.2	61	181	0	13
TOWER & W		35	Po	POYGAN	2017-09-27	AgSource	797878	7	7	7.5	3.9	46	92	0	21
Van Rens		40	KhC2	KEWAUNEE	2017-10-03	AgSource	798146	8	8	7.5	2.7	20	68	0	14
VO10		95	McA	MANAWA	2017-10-06	AgSource	798408	19	20	6.6	2.5	10	87	0	10
VO11		100	KhB2	KEWAUNEE	2017-11-14	AgSource	702998	20	20	7.0	2.7	11	78	0	11



A2100

Sampling soils for testing

J.B. Peters, K.A. Kelling, and L.G. Bundy

Importance of taking good soil samples

A soil test is the only practical way of telling whether lime and fertilizer are needed. However, if a soil sample does not represent the general soil conditions of the field, the recommendations based on this sample will be useless, or worse, misleading. An acre of soil to a 6-inch depth weighs about 1,000 tons, yet less than 1 ounce of soil is used for each test in the laboratory. Therefore, it is very important that the soil sample is characteristic of the entire field. The following directions will help you collect good soil samples.

When to take soil samples

Take soil samples at any convenient time. Studies examining the effect of sampling time on soil test results suggest that test values for pH, phosphorus (P), and potassium (K) are typically slightly higher in early spring samples than in fall samples. To receive your recommendations early enough to enable you to apply the lime and fertilizer needed, it may be best to sample in the fall. Another benefit of fall testing is that fertilizer prices are more likely to be discounted then. Hayfields can be sampled after any cutting. Regardless of when you sample, it is best to be consistent from one year to the next.

Winter sampling, or sampling when the soil is frozen, is permissible only when it is possible to take a uniform boring or core of soil to the appropriate depth. This may require using a portable power boring tool. Using a pick or spade to remove a few chunks of frozen soil from the surface will give inaccurate results.

Where to take soil samples

If the field is generally uniform, fewer composite samples may be required than for fields with more variation. A composite sample consists of a core or boring taken from at least 10 different places in the area to be sampled.

Avoid sampling areas such as:

- dead furrows or back furrows
- lime, sludge, or manure piles
- animal droppings
- near fences or roads
- rows where fertilizer has been banded
- eroded knolls
- low spots

In general, do not sample any area of a field that varies widely from the rest of the field in color, fertility, slope, texture (sandy, clayey, etc.), drainage, or productivity. If the distinctive area is large enough to receive lime or fertilizer treatments different from the rest of the field, sample it separately. If manure or crop residues are on the surface, push aside these organic materials to keep from including them in the soil sample.

On contour strip fields, sample each strip separately if it is approximately 5 acres or more in size, following the sampling intensity guidelines listed in this publication. Cores from two or three small strips that have identical cropping and management histories may be combined following these same recommended sampling intensity guidelines.

Goals of a soil sampling program

When sampling soils for testing and obtaining fertilizer and lime recommendations, the most common objectives are to

1. obtain samples that accurately represent the field from which they were taken;
2. estimate the amount of nutrients that should be applied to provide the greatest economic return to the grower;
3. provide some estimate of the variation that exists within the field and how the nutrients are distributed spatially; and
4. monitor the changes in nutrient status of the field over time.

The ultimate goal of the fertility program needs to be considered before taking any samples, as that will determine how many are needed and where to sample. For example, if you intend to fertilize the entire field using a single application rate, you would need to collect fewer samples than if you plan to apply variable rates of fertilizer within the field. The second application strategy, known as site-specific management, requires special equipment to change rates of manure, lime, or fertilizer on the go. To select between the sampling strategies, consider analytical costs, field fertilization history, and the likelihood of response to variable fertilization. Each approach is outlined below.

Sampling fields for a single recommendation

With conventional sampling, you will receive a single set of results based on sample averages. The sampling guidelines in table 1 are based on when the field was last tested (more or less than 4 years) and whether the fields were responsive or non-responsive the last time they were tested (if within 4 years). The **responsive** range is considered to be where either soil test P or K levels are in the high (H) category or lower. A **non-responsive** field is one where both soil test P and K levels are in the very high (VH) or excessively high (EH) categories.

To assure accurate representation of the nutrient needs of the field, each sample should be made up of a minimum of 10 cores. Research has shown that taking 10–20 cores provides a more representative sample of the area than when samples are made up of fewer cores. Use a W-shaped sampling pattern (as shown in figure 1) when gathering composite

samples. Be sure to thoroughly mix the cores before placing approximately 2 cups in the sample bag.

It is an advantage to submit multiple samples for all fields. When at least three samples are provided, the Wisconsin soil test recommendation program will remove samples that are significantly higher than the field average. This ensures that no part of the field is under-fertilized. Where only one or two samples are submitted for a field, no sample can be discarded, whereas one sample can be discarded if three or four samples are submitted, and up to two samples may be discarded from fields having five or more samples.

Sampling fields for site-specific management

Site-specific management requires a distinct picture of the magnitude and location of soil variability. Sampling soils for site-specific management usually involves taking many more composite samples than sampling for a single recommendation. The global positioning system (GPS) is used to record the geographical coordinates of each sample. This information is used to generate an application map with mathematically derived boundaries between soil test levels. Using variable

rate application technology, these fields can be managed more intensively than the conventional approach of one fertilizer and lime rate per field.

When using a site-specific approach to soil sampling, sample handling and testing are similar to the traditional system, but recommendations may vary from one part of the field to another, and these areas must be managed separately to realize the potential advantages of intensive soil sampling.

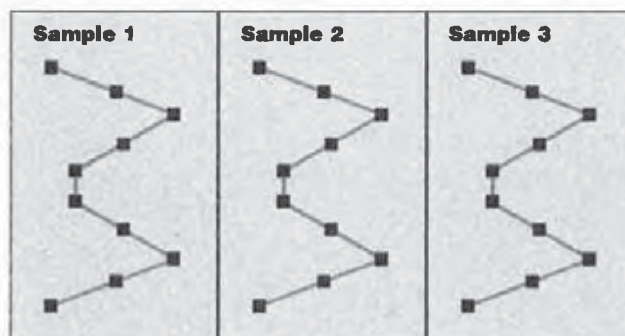
Several sampling strategies can be used to guide variable-rate fertilizer and lime applications. **Grid sampling** uses a systematic approach that divides the field into squares of approximately equal size (grid cells). The sampling technique used is known as grid-point sampling. A grid-point sample consists of at least 10 cores collected from a small area (10-foot radius) around a geo-referenced point. When using a grid sampling approach, Wisconsin research recommends a sampling strategy based on an unaligned systematic grid (figure 2). Sampling points should be unaligned because sampling in a uniform grid arrangement may lead to biased results if aligned with row patterns. Fields that have soil test P and K levels in the non-responsive categories should be grid-point sampled on a 300-foot grid. Fields that in the past have tested in the responsive categories (interpretive levels of “high” or below) may need to be sampled on a grid no larger than 200 feet. A careful evaluation of the economics of this intensive of a sampling system needs to be done before proceeding.

Table 1.
Recommended sample intensity for “uniform” fields.

Field characteristics	Field size (acres)	Suggested sample number*
Fields tested more than 4 yrs ago and fields testing in the responsive range	all fields	1 sample/5 acres
Non-responsive fields tested within past 4 yrs	5–10	2
	11–25	3
	26–40	4
	41–60	5
	61–80	6
	81–100	7

*10 cores/sample minimum.

Figure 1. Recommended W-shaped sampling pattern for a 15-acre field. Each sample should be composed of at least 10 cores.



Another approach gaining support among researchers is the **management zone sampling method**, also known as directed or “smart” sampling. The basic concept of this approach is to use various layers of information that have been collected using other precision agricultural technologies such as yield maps, aerial photographs of bare soil or crop canopy, or soil electrical conductivity measurements. Directed sampling evaluates the spatial distribution of several factors that may influence nutrient availability in soil and crop productivity to help define sampling areas with similar characteristics. The grid-point method can be used in management zones with sample points clustered within the zone, rather than being uniformly dispersed in the field. If the results of grid or management zone sampling do not warrant variable-rate application (for example, relatively little between-sample variation), average them to determine the appropriate single-rate treatment.

Regardless of the strategy used, soil must be collected from several locations within the defined sampling area. Fertilizer recommendations become increasingly accurate as the number of cores per sample and the number of

samples increases. However, the value of that accuracy must be weighed against the economics of greater expense, and the practicality of taking more samples.

How to take soil samples

The following guidelines will help you take full advantage of the soil samples collected and the Wisconsin soil test recommendation program. If the soil sample is to be used in conjunction with cost-sharing programs requiring the use of a Wisconsin certified laboratory, or is being submitted as part of a nutrient management plan, these steps must be followed.

1. **Use a sampling probe or auger to take samples.** You can obtain these tools on loan from most county Extension offices, crop consultants or fertilizer dealers.
2. **Insert the probe or auger into the soil to plow depth or at least 6 inches.** To aid year-to-year comparisons, it is important to take repeated samplings from the same field to exactly the same depth.
3. **Take at least 10 soil cores or borings for each composite sample** and, preferably, at least two

composite samples for every field. For non-responsive fields greater than 5 acres in size, obtain, at a minimum, the number of samples specified in table 1. For responsive fields that have not been sampled in the past 4 years, take one composite sample for every 5 acres.

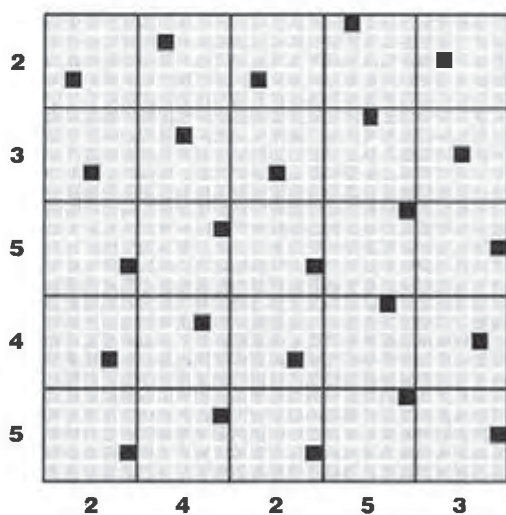
4. **Place the sample (about 2 cups) in a soil sample bag.** Sample bags are available from all soil testing labs.
5. **Identify the bag with your name, field identification, and sample number.**
6. **Record the field and sample location** on an aerial photo or sketch of the farm and retain for your reference.
7. **Fill out the soil information sheet.** The more completely and carefully this sheet is filled out, the better the recommendation will be. Read the instructions on the back side of the sheet. Be sure to include the soil series name for each field. The soil series can be obtained from your Natural Resource Conservation Service (NRCS) farm plan or your country NRCS office.

What to do with soil samples

The soil samples and a completed soil information sheet can be taken to your county Extension office for forwarding to an approved soil testing laboratory. If this is not convenient, soil samples can be sent directly to the soil testing laboratory or delivered in person. Place the soil information sheet in a separate first-class envelope and attach it to the soil sample container. The soil test report containing test results and lime and fertilizer recommendations are normally returned within 2 weeks.

The University of Wisconsin-Madison, through the Department of Soil Science, operates soil testing laboratories at Madison and Marshfield. You may also use private soil testing laboratories,

Figure 2. An example of an unaligned grid pattern for sampling site-specific fields.



some of which are approved for cost-sharing purposes. Your county Extension office can provide you with addresses of Wisconsin Certified Labs, or you can obtain a current list at the UW Soil and Plant Analysis Laboratory web site (<http://uwlab.soils.wisc.edu>). Fee schedules for the various soil tests at the University of Wisconsin soil testing labs are available from these labs. To have your soils tested at the university laboratories send samples to either:

Soil and Plant Analysis Laboratory

5711 Mineral Point Road
Madison, WI 53705-4453
(608) 262-4364

or

Soil and Forage Analysis Laboratory

8396 Yellowstone Drive
Marshfield, WI 54449-8401
(715) 387-2523

How often to sample

For field crops, sampling the soil once every 3–4 years or once in a rotation is sufficient. Fields that are more susceptible to changes in nutrient levels, such as those with sandy soils, or those used to raise high-value crops such as potatoes should be sampled more frequently.

UW
Extension

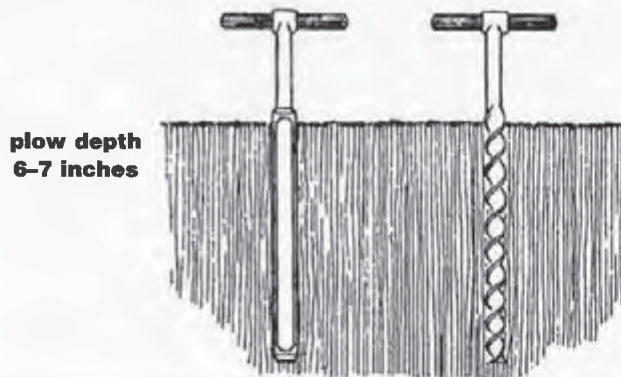
Tillage system considerations when sampling

Moldboard plowing. Sample to the depth of tillage.

Chisel plowing and offset disking. Take soil samples to $\frac{3}{4}$ of the tillage depth. When possible, take soil samples before spring or fall tillage. Sampling before tillage lets you determine the sampling depth more accurately and you can avoid fertilizer bands applied for the previous crop.

Till-plant and ridge tillage. Sample ridges to the 6-inch depth and furrows (between rows) to a depth of 4 inches. Combine equal numbers of soil cores from ridges and furrows to make up the composite sample.

No-till. Fields that have not been tilled for 5 years or more may develop an acid layer on the surface from the use of nitrogen fertilizer. This acid layer could reduce the effectiveness of triazine herbicides. Unincorporated phosphorus (P) and potassium (K) are also likely to build up in the surface soil. If an acid layer is suspected, take a separate sample to a depth of only 2 inches. When sending the soil to the lab, indicate that the sampling depth was only 2 inches. This sample will be tested for pH only, unless P and K are specifically requested. For fertilizer recommendations, take a separate sample to a depth of 6–7 inches. Fertilizer recommendations require this sampling depth because fertilizer calibration studies are based on plow-depth sampling. Sample between rows to avoid fertilizer bands.



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A2100 Sampling Soils for Testing

R-05-02-1.9M-50

Emergency Winter Application Protocol

The following is the emergency winter manure application protocols that will be followed if liquid manure needs to be applied onto frozen or snow-covered soils due to an emergency situation.

As required by NR 243, liquid manure can only be spread on frozen and snow-covered ground for emergency purposes. Winter spreading of liquid manure will only be done as a last resort to reduce the manure levels in the manure storage basin to prevent any overtopping. If emergency winter applications are necessary the manure storage facilities will be lowered to the required freeboard level. The DNR will be notified prior to any emergency winter applications. Fields or portions of fields that will be used for emergency winter liquid manure application will be the following fields:

Fields – Ash 1 North, 16B6&7, 11S2, and 11G4.

Notes: No SWQMA in areas for emergency winter spreading

Maximum application rate will be 3,500 gal/acre for field with slope of 2 to 6% and 7,000 gal/acre for fields with a slope of 0 to 2%. If possible manure will be incorporated to reduce the risk of a runoff event.

If the need to complete an emergency winter manure application arises additional fields may be added to the list above. Before any applications occur department approval will be requested. All of the necessary documentation will be provided to the department to show the requirements contained in NR 243 are being followed.

The winter PI ratings are shown on the following pages.

TABLE 5 Frozen and Snow Covered Ground Restrictions – Emergency Surface Applications of Liquid Manure			
Criteria	Restrictions for fields with 0-2% slopes	Restrictions for fields with >2-6% slopes	Restrictions for fields with slopes greater than 6%
Required fall tillage practice prior to application	Chisel or moldboard plow or department approved equivalent ^A	Chisel or moldboard plow or department approved equivalent ^A	Not allowed
Application rate (cumulative per acre)	Maximum application volume of 7,000 gallons per acre per winter season, not to exceed 60 lbs. P2O5, the following growing season's crop P2O5 budget taking into account nutrients already applied or other phosphorus application restrictions specified in a department approved nutrient management plan, whichever is less	Maximum application volume of 3,500 gallons per acre per winter season, not to exceed 30 lbs. P2O5, the following growing season's crop P2O5 budget taking into account nutrients already applied, or other phosphorus application restrictions specified in a department approved nutrient management plan, whichever is less	Not allowed
Setbacks from surface waters	No application allowed within SWQMA	No application allowed within SWQMA	Not allowed
Setbacks from downslope areas of channelized flow, vegetated buffers, wetlands	200 feet	200 feet	Not allowed
Setbacks from direct conduits to groundwater	300 feet	300 feet	Not allowed
^A All tillage and farming practices shall be conducted along the contour in accordance with the following requirements; 0-2% slope = no contouring required, >2-6% slope = tillage and practices conducted along the general contour. The department may approve alternative tillage practices on a case-by-case basis in situations where conducting practices along the contour is not possible			

Manure Stacking Protocol

The following is the manure application protocols that will be followed when bedded pack manure is going to be headland stacked.

Bedded Pack Manure Stacking Protocols

- Efforts will be made to clean out all bedded pack barns and apply the manure before the no spreading period of Feb 1st through Mar 31st annually. In the event weather conditions or time do not allow this to occur and the bedded pack barns need to be cleaned during the no spreading period then the bedded pack manure may need to be headland stacked.
- Headland stacking locations have been identified in the maps contained in the NMP. These stacking sites meet the criteria contained in Table 10 of NRCS Practice Standard 313.
- Sites will be rotated annually and the same site will not be used again for 3 years.
- The bedded pack manure consists of primarily separated solids and some straw so the solids content will be greater than 32%.
- When field conditions allow the stacked manure will be applied onto cropland at agronomic rates recommended by the NMP.

Frozen Liquid Manure Protocols

- If transfer systems fail and liquid manure becomes frozen the frozen liquid manure will be moved manually into one of the earthen manure storage lagoons. This will occur until the transfer systems are fixed or thaw out and become functional.

D. Specific Criteria For Temporary, Unconfined Stacks of Manure and Derivatives Outside the Animal Production Area

This includes solid type manure and derivatives that are deposited for subsequent loading and spreading. Waste material having less than 16% solids shall not be stacked in the field. Storage of these materials shall be in facilities meeting the criteria in section V.B.1 and 2. Criteria for unconfined waste stacks are shown in Table 10.

Conservation BMPs shall be used above stacking sites to divert overland flow, and below stacking sites to provide containment or buffering to downstream channels and lakes.

The maximum amount of manure that is stacked on any one field shall be limited to the nutrient needs of fields adjacent to the stacking site in accordance with a 590 nutrient management plan.

Table 10 – Temporary, Unconfined Stacks of Manure and Derivatives Outside the Animal Production Area

1. Waste Consistencies ^{Note 1}		
	> 32% Solids	16% to 32% Solids ^{Note 2}
2. Size & Stacking Period		
Stacking Period	8 months	8 months
Maximum Volume/Stack	≤ 40,000 cu ft.	≤ 15,000 cu ft.
Maximum Number of Stacks/40 acres ^{Note 3}	—	2
Frequency of Stacking Site Use	1 year out of 2	1 year out of 3
3. Hydrologic Soil Groups		
	B or C	B or C
4. Subsurface Separation Distance		
Subsurface Saturation	≥ 3 ft.	≥ 3 ft.
Bedrock	≥ 3 ft.	≥ 5 ft.
5. Surface Separation Distance		
Wells ^{Note 4}	≥ 250 ft.	≥ 250 ft.
Lakes	≥ 1,000 ft.	≥ 1,000 ft.
Sinkholes, or other Karst Features	≥ 1,000 ft.	≥ 1,000 ft.
Quarries	≥ 1,000 ft.	≥ 1,000 ft.
Streams	≥ 300 ft.	≥ 500 ft.
Wetlands and Surface Inlets	≥ 300 ft.	≥ 500 ft.
Areas of Concentrated Flow	≥ 100 ft.	≥ 300 ft.
Land Slope Down Gradient of Stack	≤ 6%	≤ 3%
Floodplain	≥ 100 ft.	≥ 300 ft.
Tile lines	≥ 40 ft.	≥ 40 ft.

^{Note 1} Refer to AWMFH, Figure 9-1 for consistency values and Chapter 4 for % solids, for specific livestock types.

^{Note 2} 16% to 32% solids represents waste at near saturation conditions where additions of free water from runoff, rain, or snowmelt can result in liquid flow conditions.

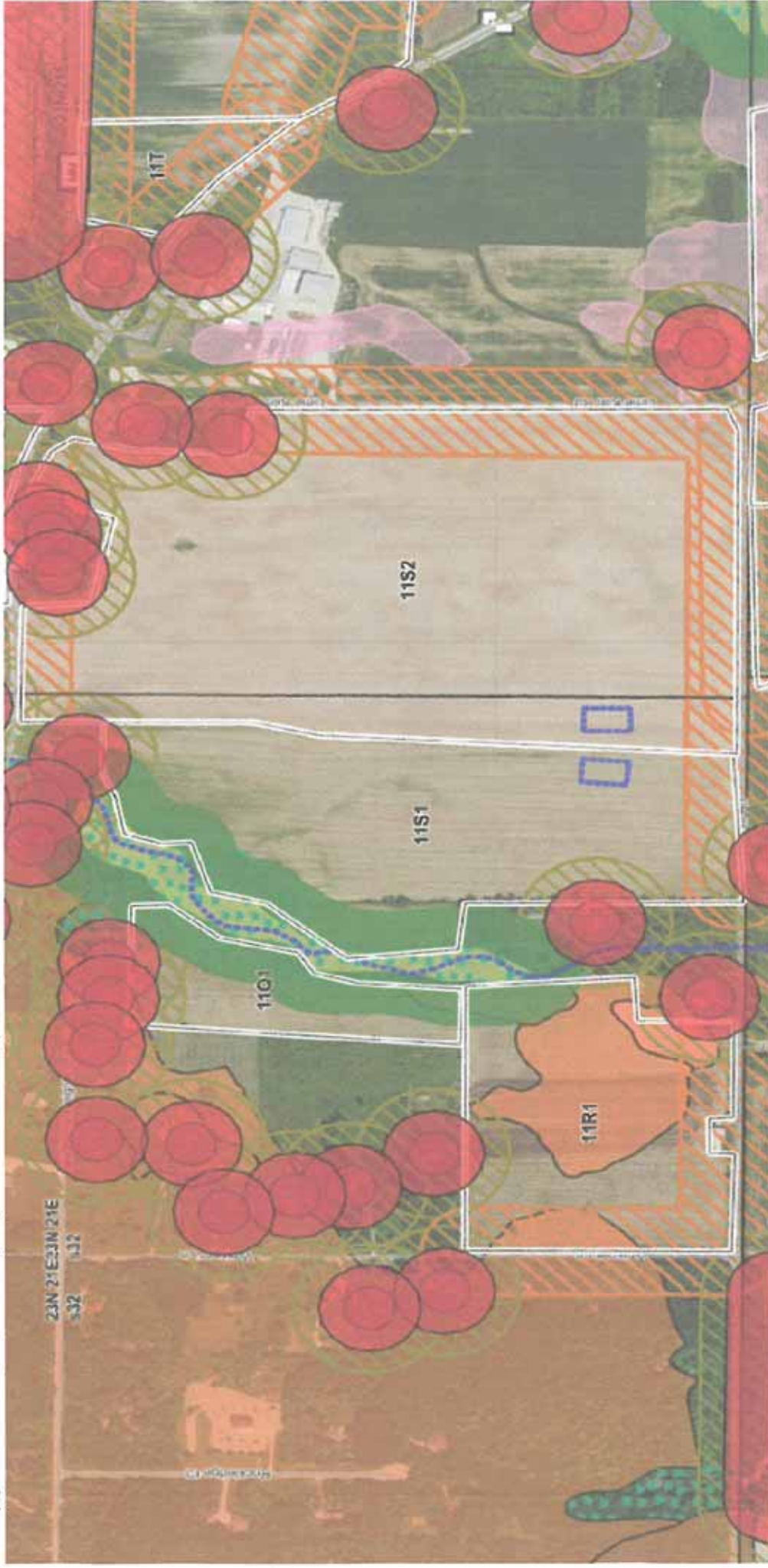
^{Note 3} The separation distance between stacks shall be at least 100 feet.

^{Note 4} Community water system wells may require larger separation distances (see NR 812).

11S1-11S2 Headland Stacking Sites

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 6/26/2017 SnapMap Version: 16.0, Crop year: 2017

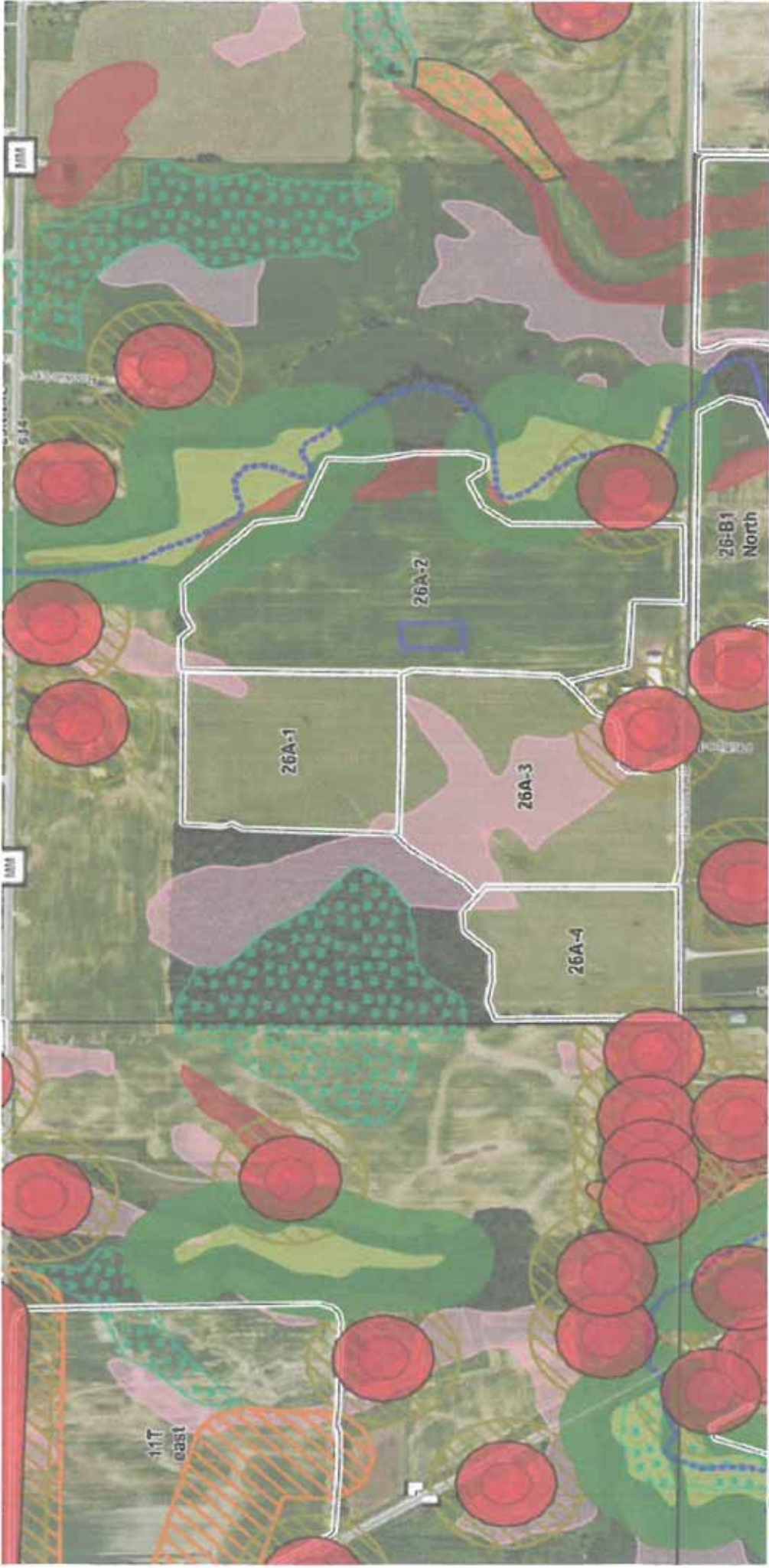


- DNR Wetland
- Winter Restriction if Slope > 9%
- No Winter App. Slope > 12%
- CAFO Manure Restriction (W)
- Bedrock depth < 5ft
- Channelized Flow 200ft Buffer
- Direct Conduit to GW 300ft
- Wetland 200ft Buffer
- Headland stacks
- Perennial Streams
- Intermittent Streams
- Counties
- Township/Range
- Roads
- Fields
- Tile lines
- Point buffers
- County Defined Karst Features

26A2 Headland Stacking Site

Farm Name: Ledgerview Farms
Is this a CAFO: True

Map generated on: 6/26/2017 SnapMap Version: 16.0, Crop year: 2017



- DNR Wetland
- Winter Restriction if Slope > 9%
- No Winter App. Slope > 12%
- CAFO Manure Restriction (W)
- Bedrock depth < 5ft
- Channelized Flow 200ft Buffer
- Direct Conduit to GW 300ft
- Wetland 200ft Buffer
- Headland stacks
- Perennial Streams
- Intermittent Streams
- Counties
- Township/Range
- Roads
- Fields
- Tile lines
- Point buffers
- County Defined Karst Features

131 Headland Stacking Site

Farm Name: Ledgerview Farms

Is this a CAFO: True

Map generated on: 6/26/2017 SnapMap Version: 16.0, Crop year: 2017



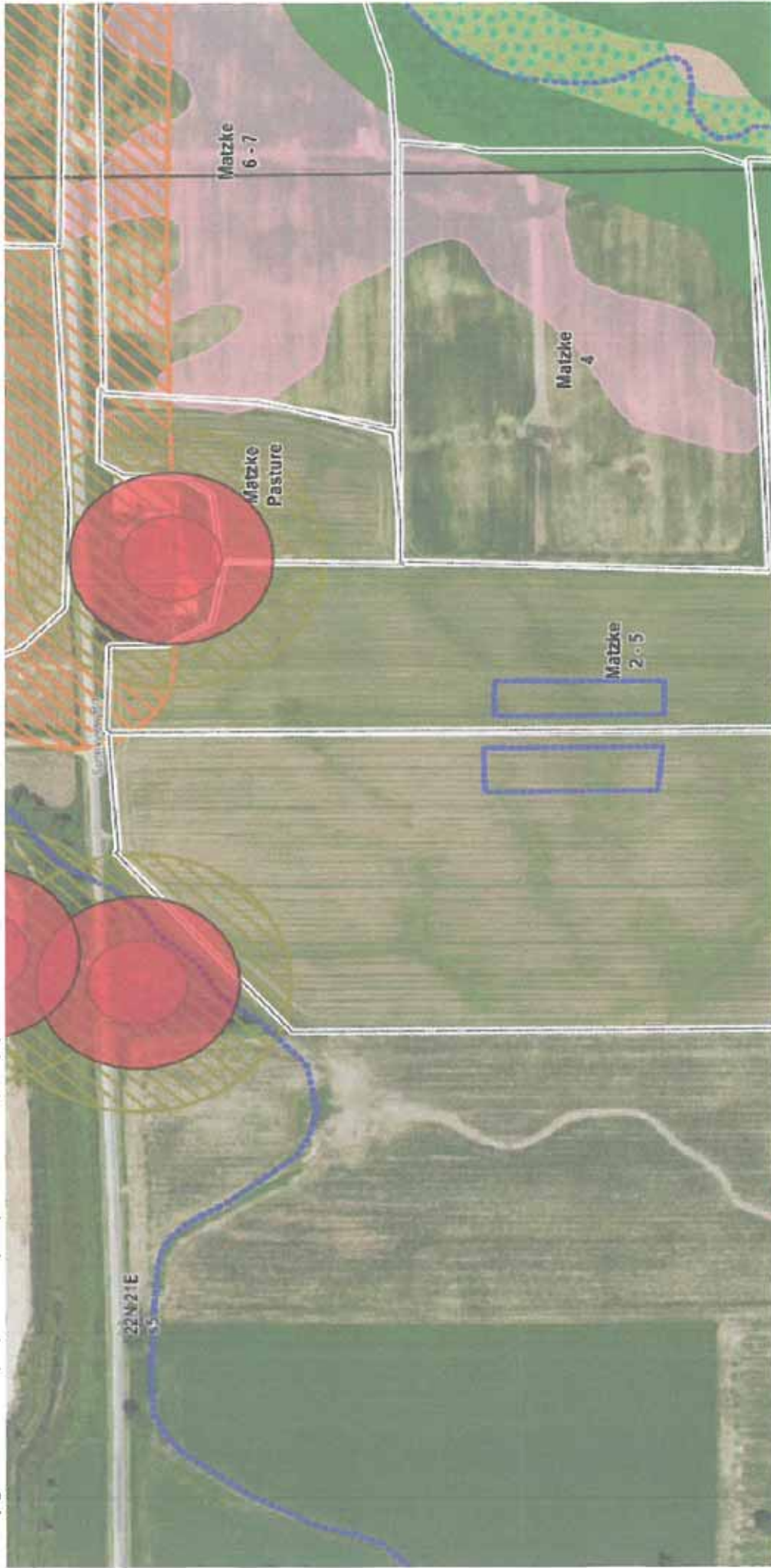
- DNR Wetland
- Winter Restriction if Slope > 9%
- No Winter App. Slope > 12%
- CAFO Manure Restriction (W)
- Bedrock depth < 5ft
- Channelized Flow 200ft Buffer
- Direct Conduit to GW 300ft
- Wetland 200ft Buffer
- Headland stacks
- Perennial Streams
- Intermittent Streams
- Counties
- Township/Range
- Roads
- Fields
- Tile lines
- Point buffers
- County Defined Karst Features

Matzke 1, 2-5 Headland Stacking Site

Farm Name: Ledgeview Farms

Is this a CAFO: True

Map generated on: 6/26/2017 SnapMap Version: 16.0, Crop year: 2017

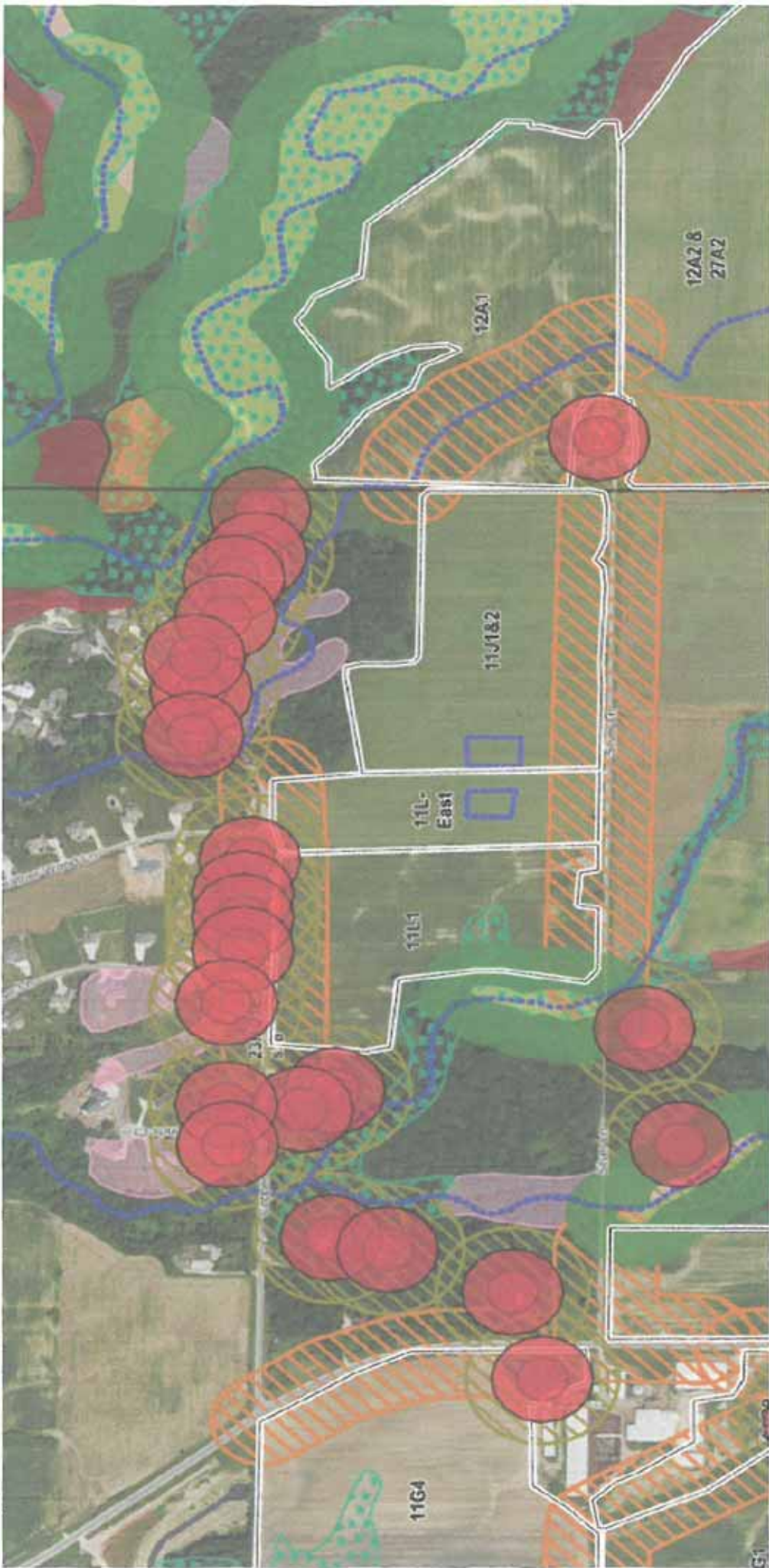


- DNR Wetland
- Winter Restriction if Slope > 9%
- No Winter App. Slope > 12%
- CAFO Manure Restriction (W)
- Bedrock depth < 5ft
- Channelized Flow 200ft Buffer
- Direct Conduit to GW 300ft
- Wetland 200ft Buffer
- Headland stacks
- Perennial Streams
- Intermittent Streams
- Counties
- Township/Range
- Roads
- Fields
- Tile lines
- Point buffers
- County Defined Karst Features

Silver Spring Headland Stacking Sites

Farm Name: Ledgeview Farms
Is this a CAFO: True

Map generated on: 6/26/2017 SnapMap Version: 16.0, Crop year: 2017



- DNR Wetland
- Winter Restriction if Slope > 9%
- No Winter App. Slope > 12%
- CAFO Manure Restriction (W)
- Bedrock depth <5ft
- Channelized Flow 200ft Buffer
- Direct Conduit to GW 300ft
- Wetland 200ft Buffer
- Headland stacks
- Perennial Streams
- Intermittent Streams
- Counties
- Township/Range
- Roads
- Fields
- Tile lines
- Point buffers
- County Defined Karst Features

Emergency Response Plan

Farm Name:	Ledgeview Farms						
Owner/Operator:	Jason Pansier			Phone:			Cell: 920-655-3875
Owner/Operator:	Roy Pansier			Phone:			Cell: 920-655-1344
Farm Address:	3870 Dickinson Rd DePere, WI 54115						
Farm Location:	Township:	23N	Range:	21E	Section:	33	County: Brown
Driving Directions or Emergency Coordinates:	From DePere follow Cty G East out of town to fire number 3870. The Farm is on the north side of the road.						

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 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	DePere	911 or
County Sheriff	Brown County Sheriff's Department	911
Farm Emergency Coordinator	Jason Pansier	920-655-3875
DNR Hazardous Spill Line		1-800-943-0003
DNR Permit Contact	Heidi Schmitt Marquez	
NMP Specialist	AgSource	
Equipment/Supplies	Contact Person (or Company)	Phone Number
Excavation Contractor		
Septic Tank Pumping Truck		
Manure Hauler		
Veterinarian		
Mortality Disposal Contractor		

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 and fire suppression equipment, emergency cut off switches or valves.

Site specific instructions:

**Manure & Hazardous Material Spill, Overflow and
Accident Incident Worksheet**

DNR Hazardous Spill Line 1-800-943-0003

Provide pictures of spill site before cleanup and after cleanup

Date/Time of Incident:

Type of Incident:

Location:

People/Agencies Contacted (how/when):

Actions Taken:

Outcome:

Field Runoff Emergency and Manure Land Spreading Risk Reduction

Excavation and emergency response equipment available on site:

- Front End Loader Tractor
- Skid steer
- Manure Spreader/Wagon
- High Volume Pump(s)
- Soil Ripper/Chisel Plow
- Baled Stalks, Straw, Hay
- Earthen Fill
- Other: Trencher, Dozer with Deep Ripper, Backhoe

Unplanned manure runoff from a farm field puts farmers at risk for contaminating surface and ground water. Planning a quick response may reduce potential damage and liability.

Field Runoff Emergency Planning Information

Recognition of potential for runoff event

Watch for up coming periods of rapid snow melt or heavy rainfall on frozen soil on crop fields where manure has been winter spread. Anticipation of runoff events is critical to implementing an effective response.

Locations of emergency fill on the farm

Identify the location(s) of any emergency earthen fill sources available on the farm or notify the excavation contractor to bring fill in.

Identify other sources of material to that can be used to contain runoff including large round/square bales of other sources of bedding, hay or silage.

Planned location of temporary manure containment dikes or other measures:

Identify places where culverts can be temporarily plugged or berms constructed to contain surface run off containing manure.

Field Runoff Emergency Response Actions

1. Assess the situation and make appropriate calls for assistance.
2. Notify DNR spill hotline: 1-800-943-0003
3. Use machinery to create cross field channels that will hold back manure. A deep ripper/chisel plow can be used to create channels perpendicular to the land slope to slow manure runoff. NOTE: Prior to implementation assess the potential for cross field channels to deliver manure runoff to subsurface drainage tiles or to impact groundwater.
4. Build a temporary berm across concentrated flow channels to contain run off using round or big square bales of corn stalks or hay. Earthen dams can be constructed to hold back run off where earthen fill is available.
5. Use pumps to load manure runoff for transport to a safer location. NOTE: If manure runoff is reapplied directly to agricultural land plan and document the application rate per acre using the NRCS Nutrient Management Practice Standard (590).

6. Document your actions.

Follow Up Actions

Collect residual manure and contaminated topsoil from the overflow area behind the temporary dike. Land apply these materials to fields approved for manure application in the nutrient management plan at rates established in the nutrient management plan.

Once the risk for runoff has passed remove temporary culvert plugs and/or dikes. Re-establish vegetative cover as needed at start of the next growing season.

Manure Spill During Transport or Land Application Emergency

Excavation and emergency response equipment available on site:

- Front End Loader Tractor
- Skid steer
- Large tank to transport water
- Manure Spreader/Wagon
- High Volume Pump(s)
- Soil Ripper/Chisel Plow
- Baled Stalks, Straw, Hay
- Earthen Fill
- Other: Trencher, Dozer with Deep Ripper, Backhoe

Manure Spill During Transportation Emergency Planning Information

Recognition of potential for spill event

Evaluate the methods utilized to transport manure from the storage facility to land application site and identify potential high risk situations (Example: high pressure transfer pipelines or hauling routes located near surface waters or conduits to groundwater).

Locations of absorbent materials and emergency fill on the farm

Identify sources of material that can be used to absorb spilled manure liquids or contain runoff including large round/square bales of other sources or bedding, hay or silage.

Identify the location(s) of any emergency earthen fill sources available on the farm or notify the excavation contractor to bring fill in.

Manure Spill Emergency Response Actions:

1. Turn off all pumps that pressurize the manure pipeline or tanker
2. Assess situation and call for assistance
3. Notify DNR spill hotline: 1-800-943-0003
4. Stop the flow of manure from the pipeline or tanker if possible
5. Build a temporary berm to contain any large volumes of manure run off using round or big square bales of corn stalks or hay. Earthen dams can be constructed to hold back run off where earthen fill is available. **NOTE:** Contact landowner for permission prior to digging or moving large amount of soil on the emergency site.

6. Use absorbent material to collect manure liquids from the road surface or where small volumes of liquid have collected in the adjoining ditches.
7. Use pump(s) as necessary to load manure and any runoff for transport to a safe location. NOTE: If manure will be applied directly to agricultural land use the NRCS Nutrient Management Practice Standard (590) to plan and document the application rate per acre.
8. Use clean water to wash remaining manure off of the road way if runoff will not cause an environmental impact (see 6. above if additional environmental protection is necessary)
9. Document your actions.

Follow Up Actions

Collect remaining manure and contaminated topsoil from the overflow area behind the temporary dike. Land apply these materials to fields approved for manure application in the nutrient management plan at rates established in the nutrient management plan.

Re-establish vegetative cover as needed at start of the next growing season.

Manure Storage Safety

- Fences will be constructed and gates installed to restrict access of animals or people from the manure pit area.
- Ventilation for covered waste storage. Holding structures will prevent inhalation of poisonous gases, asphyxiation or explosion at reception pits.
- Safety stops or gates will be installed at push off ramps to keep machinery from accidentally entering the manure pit.
- Ramp slopes will be installed consistency with equipment needs.

Slurry Store Units:

- Lowest Ladder section will be removed from the unit when not in use.
- Padlocks will be placed on release valves to avoid tampering if this is a potential issue.

Manure Storage Failure & Over Flow

Excavation and emergency response equipment available on site:

- Front End Loader Tractor
- Skid steer
- Manure Spreader/Wagon
- High Capacity Pump(s)
- Baled Stalks, Straw, Hay
- Earthen Fill

Manure Storage Failure and Overflow Emergency Planning Information

Location of emergency fill source on the farm:

Identify the location(s) of any emergency earthen fill sources available on the farm or notify the excavation contractor to bring fill in.

Identify other sources of material to that can be used to contain runoff including large round/square bales of other sources of bedding, hay or silage.

Planned location of temporary manure containment dikes or other measures

Identify locations where culverts can be temporarily plugged or berms constructed to contain surface run off containing manure and document on the CNMP site map and/or in this section of the plan.

Manure Storage Failure and Overflow Emergency Response Actions

7. Turn off All pumps that transfer manure into the storage.
8. Assess the situation and make appropriate calls for assistance.
9. Notify DNR spill hotline: 1-800-943-0003
10. Stop the flow of manure leaving the storage facility or begin to draw down the manure level in the storage by pumping from designated loading areas.
11. Create a temporary dike down slope of the storage if necessary to contain the spill.
12. Load the manure captured behind the temporary dikes using the high capacity pump(s) and spread onto crop fields as outlined in the 590 plan. NOTE: If manure runoff is applied directly to agricultural land use the NRCS Nutrient Management Practice Standard (590) to plan and document the application rate per acre.
13. Document your actions.

Follow Up Actions

Conduct engineering analysis of the manure storage failure and develop repair plan.

Obtain necessary approvals for manure storage repair plan.

Collect manure and contaminated topsoil from the overflow area behind the temporary dike. Land apply these materials to fields approved for manure application at rates established in the nutrient management plan.

Remove temporary dike(s) and temporary fill from the manure storage berm.

Manure Storage or Transfer Accidental Entry Emergency

An accidental entry into a manure storage or transfer can quickly become life threatening. Make certain all fences and safety features (grates/push-off ramp stop bars) are maintained around manure storage units. Keep gates closed and safety grates in place to minimize the opportunity for an accidental entry. Remove the lower section ladder sections from above-ground storage units when not in use.

Emergency response equipment available on site:

- First Aide Kit
- Electric Defibrillator Unit
- Electrical Cutoff Switch(s)

- Manure Transfer Pump Shut Off Switch
- Rescue equipment for manure storage structure (line with flotation device, grab pole/ladder)

Accidental Entry Manure Storage and Transfer Emergency Planning Information

Identify the locations of safety switches and emergency response equipment in this section of the plan and on the CNMP site maps.

Manure Storage and Transfer Accidental Entry Emergency Response Actions

14. **DO NOT ENTER AN ENCLOSED MANURE STORAGE AREA WITHOUT A "SELF CONTAINED BREATHING APPARATUS"**
15. Turn off all pumps or other manure handling equipment
16. Assess the situation and make appropriate calls for assistance. Describe the specific emergency and notify the 911 Operator:
 - a. the number of persons needing rescue and describe the situation
 - b. if "Self Contained Breathing Apparatus" are required due to the persons being in an enclosed manure storage and the potential presence of poisonous gas
 - c. if the rescue must be done in a confined space
 - d. if the person(s) are unconscious and approximate length of time that the person(s) have been in the manure storage/transfer system
17. Without putting yourself or others at risk, attempt to assist conscious persons with emergency rescue equipment (ladder, rope, grab pole).
18. Brief emergency responders upon arrival and assist as requested

Follow Up Actions

Replace or restock emergency materials (fire extinguishers, first aide supplies, oxygen supplies.

Assess adequacy of emergency response plan and address identified gaps or weaknesses

Assess the need for additional safety measures or training

Disposal of Animal Carcasses in Emergency Circumstances

The disposal options for dead animals in emergency circumstances are as follows (in order of preference):

1. Rendering plant
2. Licensed landfill
3. Burial on farm lands
4. Composting of carcasses (DNR approval required)

If the dead animals are buried on farmlands, every attempt should be made to bury the animals in an upland area away from surface water bodies and above the groundwater table to minimize the potential for contaminating the water. Disposal pits or trenches should be a minimum of 1,200 feet away from private or public water supply wells and 1,000 feet away from surface waters and other sensitive areas.

The carcasses should be buried in pits or trenches (usually easier for placement) that allow for at least 2 feet of soil cover over top of the carcasses. The carcasses should be placed in a single layer in the bottom of the pit/trench and then covered with barn lime and the 2 foot soil layer. This should help the decomposition of the carcasses and keep

other animals from digging them back up. The cover soil should be sloped to divert surface water away from the burial area and topsoiled, seeded, and fertilized as soon as possible to maintain a healthy vegetative cover.

This guidance generally conforms to DATCP rules and policies. If there are any questions regarding the DATCP regulations or policies, please contact DATCP staff directly at (608)224-4872.

Questions can also be directed to Deb Pingel, WDNR at 715/359-4531.

(See [State Statute s. 95.30, Disposition of Carcasses](#), as regulated by Department of Agriculture, Trade and Consumer Protection)

**Manure & Hazardous Material Spill, Overflow and
Accident Incident Worksheet**

DNR Hazardous Spill Line 1-800-943-0003

Provide pictures of spill site before cleanup and after cleanup

Date/Time of Incident:

Type of Incident:

Location:

People/Agencies Contacted (how/when):

Actions Taken:

Outcome:

SnapPlus Field Data and 590 Assessment Plan

Reported For Ledgeview Farms

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Plan Completion/Update Date 2001-01-01

SnapPlus Version 16.3 built on 2016-10-31

Prepared for:

Ledgeview Farms
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C:\Users\Kevin Becker\OneDrive - Cooperative Resources International
LagSource Data Backup\Clients\175-CV Greenleaf\Ledgeview Farms
LSNAP 2 Database\SNAP 16\Ledgeview Farms Snap 16 Main.snapDb

WPDES Permitted Farm

Field Data: 2,759 Total Acres Reported.

|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

Field Name	Subf arm	FSA Trct	FSA Fid	Acres	County	Critical Soil Series & Symbol	F-Slp %	F-Slp Len ft	Slope To Water %	Dist To Water ft	N/Fid Res	Contour/Fillars	Irrig	Tiled	Rotation	Tillage	Report Period	Field TT l/ac	Rot Avg Soil Loss l/ac	Rot Avg SCI	Soil Test P ppm	Rot P205 Bal l/ac	P205 Bal Target l/ac	
11G1				30	Brown	KEWAU NEE KHB	4	200	0 - 2	1001 - 5000	%	No / No	No	No	Cg-Csl-IRw-OfAsJ-A-A-A-Csl-Csl	FCD-FCD-Fail-None-None-FCND-FCND	2015-2022	3	2.4	0.4	5	86	181	0
11G2				7.5	Brown	KEWAU NEE KHC2	9	150	0 - 2	1001 - 5000	%	No / No	No	No	Cg-Cg-Csl-IRw-Cs30f-Csl-OgAs-A-A	FCD-FCD-FCD-FFC/CP-FCND-FCND-None-None-FCND	2015-2022	3	2.9	0.6	6	48	267	-
11G3				36	Brown	KEWAU NEE KHB	4	200	0 - 2	1001 - 5000	W %	No / No	No	No	Csl-Wwg+s-AsIs-A-A-A-Csl-Csl	FCD-Fail-FCND-None-None-None-FCND-FCND	2015-2022	3	2.3	0.4	3	59	68	0
11G4				33	Brown	KEWAU NEE KHB	4	200	0 - 2	301 - 1000	W	No / No	No	No	Csl-Csl-IRw-Cs30f-IRw-Cs30f-OgAs-A-A-Csl	SCD-FCD-FFC/CP-FFC/CP-FCND-None-FCND	2015-2022	3	2.6	0.3	6	19	87	-
11G-3 East				20	Brown	MANAW A MaA	2	250	0 - 2	301 - 1000	W	No / No	No	No	Csl-Csl-IRw-Cs30f-IRw-Cs30f-A-A-Csl	SCD-FCD-FFC/CP-FFC/CP-None-None-FCND	2015-2022	3	0.7	0.4	3	14	-23	-

Field Name	SubF arm	FSA Trel	FSA Fld	Acres	County	Critical Soil Series & Symbol	F-Slp %	F-Slp Len ft	Below Field Slope To Water %	Dist To Water ft	W/Fld Res	Contour/ Filters	Irrig	Tiled	Rotation	Tillage	Report Period	Field T ¹ Vac	Rot Avg Soil Loss Vac	Rot Avg SCI	Soil Test P ppm	Rot P205 Bal lb/ac	P205 Bal Target lb/ac	
11H1				19	Brown	KEWAU NEE KHB	4	200	0 - 2	1001 - 5000	S	No / No	No	No	Csh-Rwf- Cs30- [Rwf- Olas]-A- A-A-A-Csl	FCD- FFC/CP- CPND- None- None- None- SCND	2015- 2022	3	1.9	0.4	3	155	-172	-123
11K1A				9	Brown	KEWAU NEE KHB2	4	200	0 - 2	1001 - 5000	S	No / No	No	No	[Rwf- Cs30- [Wwg+s- Fsl]-Rwf- Cs30- Wwg+s- Cg-Cg- Ogas-A	Fcul- Fcul- FFC/CP- Fcul- FCND- FCND- FCND- None	2015- 2022	3	1.1	0.7	2	70	-53	0
11K1B				2.5	Brown	MANAW A Maa	2	250	0 - 2	1001 - 5000		No / No	No	No	Csh-Wwg +s-Fsl- [Rwf- Cs30- Wwg-Asls- A-A-A	SCND- Fcul-CP- Fcul- FCND- None- None- None	2015- 2022	3	0.3	0.6	1	4	-212	-
11K1C				5	Brown	KOLBER G KO C2	9	150	0 - 2	1001 - 5000	S %	No / No	No	No	Csh-Wwg +s-Fsl- [Rwf- Cs30- Wwg+s- Asls-A-A- A	SCND- Fcul-CP- Fcul- FCND- None- None- None	2015- 2022	2	2	0.5	3	56	-155	0
11L1				20.5	Brown	KEWAU NEE KHB	4	200	2.1 - 6	0 - 300	W S	No / No	No	No	[Wwg+s- Fsl]-Asls- A-A-A-Csl- Csl-Csl	Fcul- FCD- None- None- None- SCD- SCD- SCD-SCD	2015- 2022	3	2.3	0.3	4	67	27	0

Field Name	Subfield	FSA Trct	FSA Fld	Acres	County	Critical Soil Series & Symbol	F-Slp %	F-Slp Len ft	Below Field Slope To Water %	Dist To Water ft	N/Fld Res	Contour/ Filters	Intrg	Tiled	Rotation	Tillage	Report Period	Field "T" Uac	Rot. Avg Soil Loss Uac	Rot. Avg Pl	Soil Test P ppm	Rot P205 Bal lb/ac	P205 Target lb/ac	
11L- East				10	Brown	KEWALU NEE KhB	4	200	0 - 2	301 - 1000	S	No / No	No	No	A-Cst-Cst- [Rwf- Cs30]- [Wwg+s- Fsl]-A-A- Cst	None- FCD-FCD- FFC/CP- Fault- None- SCND	2015- 2022	3	2.4	0.3	5	74	54	0
11M1	Went er			10	Brown	KEWALU NEE KhB	4	200	0 - 2	5001 - 10000		No / No	No	No	A-A-Ag-A- Cst-Cst- Cst-Asls	None- None- None- FCD-FCD- FCD- FCND	2015- 2022	3	2.4	0.4	3	27	96	-
11N3				5	Brown	KEWALU NEE KhC2	9	150	0 - 2	1001 - 5000	%	No / No	No	No	[Rwf- Cs30]- [Rwf- Cs30]- [Rwf- OfAs]-A- A-A-A-A	Fault- Fault- CPND- None- None- None- None	2015- 2022	3	2.6	0.3	2	136	-215	-108
11N4				13	Brown	KEWALU NEE KhC2	8	150	0 - 2	1001 - 5000	%	No / No	No	No	[Rwf- Cs30]- [Rwf- Cs30]- [Rwf- OfAs]-A- A-A-A-Cg	CP- FFC/CP- CPND- None- None- None- None-SCD	2015- 2022	3	2.7	0.3	5	81	-90	0
11P				9	Brown	SUMME RVILLE VARIANT SVB	4	200	2.1 - 6	1001 - 5000	R C	No / No	No	No	A-A-A-A- A-A-A-A	None- None- None- None- None- None- None	2015- 2022	1	0.1	0.7	0	20	-400	-

Field Name	SubF Arm	FSA Trct	FSA Fld	Acres	County	Critical Soil Series & Symbol	F-Slp %	F-Slp Len ft	Below Field Slope To Water %	Dist To Water ft	N/Fld Res	Contour/ Filters	Irreg	Tiled	Rotation	Tillage	Report Period	Field T ⁺ t/ac	Rot Avg Soil Loss t/ac	Rot Avg SCI	Soil Test P ppm	Rot P205 Bal lb/ac	P205 Bal Target lb/ac	
11Q1				14	Brown	KEWAU NEE KHB	4	200	2.1 - 6	1001 - 5000	W S %	No / No	No	No	A-A-Csl- Csl-OgAs- A-A-A	None- None- SCD-FCD- FCD- None- None- None	2015- 2022	3	1.2	0.6	2	41	-38	-
11R1				29	Brown	KOLBER G Koc2	9	150	2.1 - 6	1001 - 5000	S %	No / No	No	No	A-A-Csl- Cg-OgAs- A-A-A	None- None- SCND- FCND- FCD- None- None- None	2015- 2022	2	1.7	0.6	3	96	-74	0
11S1				42	Brown	KEWAU NEE KHB	4	200	2.1 - 6	1001 - 5000	S	No / No	No	No	A-A-A-A- Cg-Cg- Csl-Cg	None- None- None- None	2015- 2022	3	1.7	0.5	3	48	51	-
11S2				95	Brown	KEWAU NEE KHB	4	200	0 - 2	5001 - 10000		No / No	No	No	[Rw]- Cs30- [Rw]- Cs30- [Rw]-Fsl- A-A-A-Csl- Csl	Fault- NT/CP- Fault- None- None- None- SCND- FCND	2015- 2022	3	2.8	0.2	4	65	-39	0
11T				5	Brown	KEWAU NEE KHB2	4	200	0 - 2	5001 - 10000		No / No	No	No	[Rw]- Cs30- [Rw]- Cs30- [Rw]-Fsl- A-A-A-A	Fault-CP- FCD- Fault- None- None- None	2015- 2022	3	2.4	0.3	4	68	-5	0

Field Name	Soil amt	FSA Trcl	FSA Fld	Acres	County	Critical Soil Series & Symbol	F. Stp %	F. Stp Len ft	Below Field Slope To Water %	Dist. To Water ft	W/Fld Res	Contour/ Filters	htg	Tiled	Rotation	Tillage	Report Period	Field "T" /ac	Rot Avg Soil Loss /ac	SCI	Rot Avg pH	Soil Test P ppm	Rot P205 Bai lb/ac	P205 Bai Target lb/ac
11T east				38	Brown	KEWAU NEE KMB2	8	200	0 - 2	5001 - 10000	W %	No / No	No	No	[Rw]- CS30- Wwg-Cst- [Rw]-Fsj- A-A-A-A	Fcult- FCult- FCD- [Rw]-Fsj- None- None- None	2015- 2022	3	3	0.4	5	95	45	0
11U1				14.5	Brown	KEWAU NEE KMC2	9	150	2.1 - 6	0 - 300	S %	No / No	No	No	Asls-Cg- Wwg+S- Asls-A-A- A-A	FCD-FCD- FCult- FCND- None- None- None	2015- 2022	3	2.2	0.5	2	23	-119	-
11U2				15	Brown	KEWAU NEE KMC2	9	150	2.1 - 6	1001 - 5000	%	No / No	No	No	Cg-Cst- Wwg+S- Asls-A-A- A-A	SCD-FCD- FCult- FCND- None- None- None	2015- 2022	3	1.6	0.5	1	18	-94	-
11U3				13	Brown	KEWAU NEE KMC2	9	150	2.1 - 6	1001 - 5000	%	No / No	No	No	Cg-Cst- Wwg+S- Asls-A-A- A-A	SCD- FCND- FCult- FCND- None- None- None	2015- 2022	3	1.6	0.6	1	8	-186	-
11U7				16	Brown	KEWAU NEE KME2	18	80	0 - 2	301 - 1000	%	No / No	No	No	A-A-Cst- Cg-Cg- Ogas-A-A	None- None- SCND- FFC- FCND- SCND- None- None	2015- 2022	5	4	0.5	3	14	-135	-

Field Name	SubF arm	FSA Trct	FSA Fld	Acres	County	Critical Soil Series & Symbol	F-Slp %	F-Slp Len ft	Below Field Slope To Water %	Dist To Water ft	N/Fld Res	Contour/ Filters	Irrig	Tiled	Rotation	Tillage	Report Period	Field T-lac	Rot Avg Soil Loss l/ac	Rot Avg Pl	Soil Test P ppm	Rot P205 Bal l/ac	P205 Target l/ac			
11U8				19	Brown	KEWAU NEE KNC2	9	150	6.1 - 12	301 - 1000		No / No	No	No	A-Cg-Cg-Csl-Wwg+s-Asls-A-A	None-FCND-FCD-Fcult-FCND-None-	2015-2022	3	2.1	0.5	2	10	-74	-		
11U 1A				9	Brown	KEWAU NEE KME2	23	80	2.1 - 6	301 - 1000	%	On contour / No	No	No	A-Csl-Wwg+s-Asls-A-A-A	None-FCD-Fcult-FCND-None-None-None-	2015-2022	5	2.8	0.4	2	6	-181	-		
11U 2B				20	Brown	KEWAU NEE KME2	18	80	2.1 - 6	301 - 1000	%	No / No	No	No	Asls-A-A-A-A-Cg-Cg	FCD-None-None-None-FCND-FCND-FCND-None-	2015-2022	5	4.3	0.3	3	5	16	-		
11U7 N				15	Brown	KEWAU NEE KNC2	8	150	2.1 - 6	301 - 1000	%	No / No	No	No	A-Cg-Csl-Cg-Wwg+s-Asls-A-A	None-FCND-FCND-FCND-Fcult-FCD-None-None-	2015-2022	3	2.7	0.4	2	5	-155	-		
11U9 N				10	Brown	KEWAU NEE KNC2	9	1	2.1 - 6	1001 - 5000		No / No	No	No	A-l-F-Csl-Csl-Cg-Cg-OgAs-A-A	None-SCD-FCD-FCND-FCND-FCND-None-None-	2015-2022	3	2	0.5	1	7	-138	-		

Field Name	Subf arm	FSA Trcl	FSA Fld	Acres	County	Critical Soil Series & Symbol	F-Slp %	F-Slp Len ft	Slope To Water %	Dist. to Water ft	N/Fld Res	Contour/Eltars	Irng	Tiled	Rotation	Tillage	Report Period	Field T- Uac	Rot Avg Soil Loss Uac	Rot Avg pl	Soil Test P ppm	Rot P205 Bal Uvac	P205 Bal Target Uvac	
12A1				35	Brown	KEWALU NEE KHB	4	200	0 - 2	1001 - 5000	S	No / No	No	No	Wwng+s-Asls-A-A-Csl-Csl	Fail-FCult-FCD-None-None-SCD-SCD-SCD	2015-2022	3	2.2	0.4	3	40	-2	-
13F-1				38	Brown	KEWALU NEE KHC2	9	150	0 - 2	10001 - 20000	S %	No / No	No	No	Cg-Csl-IRw-OIAS-A-A-A-Cg	FCD-FCND-CPND-None-None-None-None-SCND	2015-2022	3	2.4	0.4	2	12	80	-
13G-1				20	Brown	KEWALU NEE KHB	4	200	0 - 2	1001 - 5000	S %	No / No	No	No	A-A-Cg-Cg-Csl-Cg-Asls-A	None-None-SCND-FCD-FCD-FCND-FCND-None	2015-2022	3	1.5	0.5	2	40	98	-
13G-2				51	Brown	KEWALU NEE KHB	4	200	0 - 2	1001 - 5000	S %	No / No	No	Yes	OIAS-A-A-Csl-Csl-Csl-Wwng+s-Asls	FCD-None-None-FCD-FCD-SCD-FCult-FCND	2015-2022	3	2.6	0.3	3	11	72	-
13H-1				21	Brown	KEWALU NEE KIB	4	200	2.1 - 6	1001 - 5000		No / No	No	No	Csl-Csl-Csl-IRw-Fsl-A-A-A-A	SCD-SCD-SCD-Fail-None-None-None-None	2015-2022	3	2.7	0.2	5	63	65	0

Field Name	SubF arm	FSA Tct	FSA Fld	Acres	County	Critical Soil Series & Symbol	F Slip %	F Slip Len ft	Below Field Shore to Water %	Dist To Water ft	N/Fld Rus	Contour/ Filters	Irng	Tiled	Rotation	Tillage	Report Period	Field T ¹ t/ac	Rot Avg Soil Loss t/ac	SCI	Rot Avg PI	Soil Test P ppm	Rot P205 Bai lb/ac	P205 Bai Target lb/ac
13H-2 N				10	Brown	KEWAU NEE KHB2	4	200	2.1 - 6	1001 - 5000		No / No	No	No	Cs-A-Cs- [Rot-Fsl- A-A-A-A-A	FCD- FCND- Fcult- None- None- None- None-	2016- 2023	3	2.4	0.3	3	41	-206	-
13-I				20	Brown	KEWAU NEE KHB2	4	200	0 - 2	5001 - 10000	S	No / No	No	No	As-A-A-A- Cs-A-Cg- Cg-Cg-Cg	FCD- None- None- SCND- FCD-FCD- FCD-FCD	2015- 2022	3	1.9	0.5	2	18	229	-
14A				22	Brown	KEWAU NEE KHD2	16	100	0 - 2	5001 - 10000	S %	No / No	No	No	OPAs-A- A-A-A-A- Cg-Cg	SCND- None- None- None- None- None- None- SCND- SCND	2015- 2022	3	2.6	0.5	2	15	-78	-
14A-11				5.5	Brown	KEWAU NEE KHD2	16	100	0 - 2	5001 - 10000	S %	No / No	No	No	A-A-A-Cg- Wmg-s- OgAs-A-A	None- None- None- SCD- Fcult- FCND- None- None-	2015- 2022	3	1.5	0.8	1	13	-212	-
14B				45	Brown	KEWAU NEE KHB	4	200	0 - 2	5001 - 10000	S	No / No	No	No	OPAs-A- Cs-A-Cs- Cg-Cs- Cg-OgAs	SCND- None- None- FCND- FCND- SCD- FCND- FCND	2015- 2022	3	2.6	0.4	2	21	55	-

Field Name	SubF arm	FSA Treat	FSA Fid	Acres	County	Critical Soil Series & Symbol	F-Slp %	F-Slp Len ft	Below Field Slope To Water %	Dist To Water ft	N/Fid Res	Contour Filters	Irreg	Tiled	Rotation	Tillage	Report Period	Field Treat U/ac	Rot Avg Soil Loss U/ac	Rot Avg SCI	Soil Test P ppm	Rot P205 Bal lb/ac	P205 Bal Target lb/ac	
16 A1 East				15	Brown	MANAW A MCA	2	250	0 - 2	1001 - 5000		No / No	No	No	CS-RWg +S-Asis-A-A-A-Cg-Cg	FCND-Fcult-None-None-FCD-FCD	2015-2022	3	0.5	0.8	1	49	-32	-
16 A1 West				13	Brown	MANAW A MCA	2	250	0 - 2	1001 - 5000		No / No	No	Yes	CS-RWg +S-CSI-CS-RWg-Cg-Cg-Cg	FCND-FCD-SCND-FCND-								

Field Name	SubF am	FSA Tct	FSA Fld	Acres	County	Critical Soil Series & Symbol	F Slip %	F Slip Len ft	Below Slope To Water %	Dist To Water ft	N/Ftd Ret	Contour/ Fikets	Irrig	Tiled	Rotation	Tillage	Report Period	Field T I/ac	Rot Avg Soil Leve I/ac	SCI	Rot Avg PI	Soil Test P ppm	Rot P205 Bal lb/ac	P205 Bal Target lb/ac
16E				8	Brown	SISSON ShB	4	200	0 - 2	1001 - 5000	S	No / No	No	No	(Wwg+s- Fsl-A-A-A- Cg-Csl	FCul- None- Csl-Csl- None- FCND- FCND- FCND- FCND-	2015- 2022	5	0.8	0.5	1	70	13	0
16F				3.5	Brown	MANIST EE MIB	4	200	0 - 2	1001 - 5000	S	No / No	No	No	[RwL- OAs)-A- A-A-A-A- A-A	CPND- None- None- None- None- None-	2015- 2022	4	0.3	0.6	0	42	-399	-
17A				21	Brown	MANAW A MCA	2	250	0 - 2	1001 - 5000		No / No	No	No	Csl-Rwg +s-AsIs-A- A-A-Csl- Csl	FCD- FCul- FCND- None- None- None- None- SCND- FCND-	2015- 2022	3	0.6	0.6	1	22	-54	-
18A-1				3.5	Brown	MANAW A MCA	2	250	0 - 2	1001 - 5000	W/S	No / No	No	No	A-A-A-Csl- Csl-Csl- Csl-Csl	None- None- None- SCND- FCD-FCD- FCD-FCD	2015- 2022	3	0.9	0.4	3	10	252	-
18A-2				14.5	Brown	MANAW A MCA	2	250	0 - 2	1001 - 5000	W/S %	No / No	No	No	Csl-Cg- Csl-Cg- Csl-OgAs- A-A	SCD-FCD- FCD- FCND- FCD-FCD- None- None-	2015- 2022	3	0.6	0.7	1	18	-93	-

Field Name	SubF arm	FSA Trct	FSA Fld	Acres	County	Critical Soil Series & Symbol	F-Slip %	F-Slip Lan ft	Below Field Slope To Water %	Dist To Water ft	W/Fld Res	Contour/ Ftires	Irrig	Tiled	Rotation	Tillage	Report Period	Field T- /ac	Rot Soil Loss /ac	Rot Avg pl	Soil Test P ppm	Rot P305 Bal	P205 Bal Target lb/ac	
18A-3	15	Brown	KEWALU NEE KHB2	4	200	0 - 2	1001 - 5000	WS %	On contour / No	No	No	No	No	No	Cg-Wwg- AsIs-A- Cg-Cg- Cg-Cg	FCD-FCD- FCD- None- FCND- FCND- FCND- FCND- SCND	2015- 2022	3	0.8	0.7	1	16	225	-
18A-4	12.5	Brown	KEWALU NEE KHB	4	200	0 - 2	1001 - 5000	WS	No / No	No	No	No	No	No	If-CSI- Cg-CSI- CSI-Wwg +s-AsIs-A- A None	SCD-FCD- FCD-FCD- FCD- None- FCND- FCND- None- SCD-FCD- FCD-FCD	2015- 2022	3	2.3	0.3	2	7	63	-
18B-1	12	Brown	KEWALU NEE KHB2	4	200	6.1 - 12	301 - 1000	S %	No / No	No	No	No	No	No	CSI-Wwg +s-AsIs-A- A-Cg-Cg- Cg	SCD-FVT- FCD- None- None- SCND- SCND- SCND- SCND	2015- 2022	3	1.2	0.6	2	12	128	-
18B-2	4	Brown	KEWALU NEE KHB2	4	200	0 - 2	301 - 1000	S %	No / No	No	No	No	No	No	AsIs-A-A- A-Cg-Cg- Cg-CSI	FCD- None- None- None- SCND- SCND- SCND- FCD	2015- 2022	3	1.4	0.5	2	13	5	-
22	25	Brown	OSHKOS H OSA	1	250	0 - 2	1001 - 5000	WS	No / No	No	No	No	No	No	CSI-Rwg +s-CSI-Cg- CSI-CSI- CSI-CSI	FCD- FCND- FCND- FCND- FCND- FCD-FCD- FCD-FCD	2015- 2022	5	0.8	0.4	1	20	186	-
26A-1	15	Brown	KEWALU NEE KHB	4	200	0 - 2	5001 - 10000	%	No / No	No	No	No	No	No	AsIs-A-A- A-CSI-Cg- Cg-Cg	FCD- None- None- None- SCD-FCD- FCD-FCD	2015- 2022	3	1.7	0.5	2	15	103	-

Field Name	Subf area	FSA Trct	FSA Fld	Acres	County	Critical Soil Series & Symbol	F Slope %	F Slope Len ft	Below Field Slope To Water %	Dist To Water ft	W/Fld Res	Contour/ Filters	Wing	Tiled	Rotation	Tillage	Report Period	Field Type U/ac	Rot Avg Soil Loss U/ac	Rot Avg SCI	Soil Test P ppm	Rot P205 Bal lb/ac	P205 Bal Target lb/ac	
26A-2				30.5	Brown	KEWAU NEE KHB	4	200	0 - 2	5001 - 10000	S %	No / No	No	No	OgAs-A- A-A-Csl- Cg-Cg-Cg	FCD- None- None- None- SCD-FCD- FCD-FCD	2015- 2022	3	1.6	0.6	2	12	128	-
26A-3				22	Brown	KEWAU NEE KNC2	9	150	0 - 2	5001 - 10000	%	No / No	No	No	AsIs-A-A- A-A-Cg- Cg-Cg	FCD- None- None- None- FCD-FCD- FCD	2015- 2022	3	2.3	0.5	2	39	35	-
26A-4				10	Brown	KEWAU NEE KHB	4	200	0 - 2	5001 - 10000	%	No / No	No	No	AsIs-A-A- A-Cg-Cg- Cg-Cg	FCD- None- None- None- FCD-FCD- FCD-FCD	2015- 2022	3	1.5	0.5	2	42	27	-
26B-2 E&W				19.5	Brown	KEWAU NEE KNC2	8	150	0 - 2	1001 - 5000	S %	No / No	No	No	Cs4IRWf- Fsl-A-A-A- A-A-Aq	FCND- Fcult- None- None- None- None- None	2016- 2023	3	1.8	0.5	2	50	-190	-
26-B1 North				10	Brown	KEWAU NEE KND2	16	100	0 - 2	5001 - 10000	S %	No / No	No	No	Cg-Cg- OgAs-A- A-A-A-A	FCND- FCND- SCND- None- None- None- None- None	2016- 2023	3	2.8	0.6	3	74	-297	0
26-B1 South				15	Brown	KEWAU NEE KND2	8	100	0 - 2	5001 - 10000	S %	No / No	No	No	Cs4Cs4- OgAs-A- A-A-A-A	FCD-FCD- FCND- None- None- None- None- None	2016- 2023	3	2.5	0.4	2	38	-275	-

Field Name	SubP arm	FSA Trct	FSA Fld	Acres	County	Critical Soil Series & Symbol	F-Slp %	E-Slp Len ft	Below Field Slope To Water %	Dist To Water ft	N/Fld Res	Contour/ Fltens	Irrig	Tiled	Rotation	Tillage	Report Period	Field +T- t/ac	Rot Soil Loss t/ac	SCI	Rot Avg Pl	Soil Test P ppm	Rot p205 Bal t/ac	p205 Bal Target t/ac
26-B2 South				11	Brown	KEWALU NEE KNC2	8	150	0 - 2	1001 - 5000	S %	No / No	No	No	A-A-A-Cst- Cst-Wwg +s-Asls-A	None- None- None- SCND- FCD- Fcult- FCND- None	2015- 2022	3	2.1	0.5	2	8	-90	-
26C				24.5	Brown	KEWALU NEE KHB2	4	200	0 - 2	5001 - 10000	W S	No / No	No	Yes	Cst-Cg- Cst-Rwt- Fs)-A-A-A- Cst	SCD- FCD- FCND- Fcult- None- None- SCND	2015- 2022	3	2.8	0.2	3	17	-55	-
26D-4				19.5	Brown	KEWALU NEE KHB	4	200	0 - 2	301 - 1000	S	No / No	No	No	Cg-Cst- Cst-Wwg +s-Fs)-A- A-A-Cst	SCD- SCD- SCD- Fcult- None- None- SCND	2015- 2022	3	2.1	0.4	3	19	-140	-
11J1&2				26	Brown	KEWALU NEE KHB	4	200	0 - 2	5001 - 10000	S	No / No	No	No	A-Cst-Cst- Rwt- Cst)-Cg- Cst-Wwg +s-Asls	None- FCD-FCND- FFC/CP- FCD- Fcult- FCND	2015- 2022	3	2.6	0.4	4	87	267	0
12A-45 & 27				30	Brown	KEWALU NEE KHB	4	200	0 - 2	1001 - 5000	S	No / No	No	No	A-A-Cst- Cst-Cg- Cst-Wwg +s-Asls	None- None- FCD- FCND- Fcult- FCND	2015- 2022	3	2.4	0.4	4	44	145	-

Field Name	SubF arm	FSA Trcl	FSA Fid	Acres	County	Critical Soil Series & Symbol	F-Slp %	F-Slp Len ft	Below Field Slope To Water %	Dist To Water ft	W/Fld Res	Contour/ Filters	Irrg	Tiled	Rotation	Tillage	Report Period	Field 17" vac	Rot Soil Loss vac	Rot Avg Pl	Soil Test P ppm	Rot P205 Bal lb/ac	P205 Bal Target lb/ac	
12A2 & 27A2				29	Brown	KEWAU NEE KHB	4	200	0 - 2	1001 - 5000	S	No / No	No	No	A-A-Csl-Csl-Cg-Csl-Wwg +s-Asls	None-FCND-FCND-FCND-FCND-FCND-FCND-FCND-FCND	2015-2022	3	2.2	0.4	3	54	153	0
13D-1,2				67	Brown	KEWAU NEE KNC2	9	150	0 - 2	5001 - 10000	S	No / No	No	No	OPAs-A-Cg-Cg-Cg-Irwt-Cgl-Irwt-Cs30l-Wwg+s	SCND-None-SCD-FCND-SCND-CP-FEC/CP-Fcult	2015-2022	3	2.7	0.4	3	62	113	0
16B-6&7				35	Brown	OSHKOS H OnA	1	250	0 - 2	1001 - 5000		No / No	No	No	Csl-Wwg +s-Asls-A-A-A-Csl-Csl	FCND-FCND-FCND-None-None-None-None-SCD-FCD	2015-2022	5	0.5	0.5	2	45	-1	-
26D5-7				57	Brown	KEWAU NEE KHB	4	200	0 - 2	301 - 1000	S	No / No	No	No	Cg-Csl-Csl-Wwg +s-Fsl-A-A-A-Csl	SCD-SCD-SCD-FCult-None-None-None-SCND	2015-2022	3	2.3	0.3	2	12	-178	-
Asch 1 North				57	Brown	KEWAU NEE KHB2	4	200	0 - 2	1001 - 5000	S	No / No	No	No	OgAs-A-A-Cg-Csl-Csl-Csl-Wwg +s-Fsl	FCND-None-None-FCND-FCND-FCND-FCult	2015-2022	3	2.4	0.5	3	18	102	-
Asch 1 South				24.5	Brown	KEWAU NEE KHB	4	200	0 - 2	1001 - 5000	W	No / No	No	No	Asls-A-Jf-Csl-Cg-Csl-Csl-Wwg+s-Asls	FCD-None-SCD-FCD-FCult-FCND	2015-2022	3	2.8	0.3	3	9	66	-

Field Name	Subfarm	FSA Trct	FSA Fid	Acres	County	Critical Soil Series & Symbol	F-Slp %	F-Slp Len ft	Below Field Slope To Water %	Dist To Water ft	M/Fld Res	Contour/ Fillets	Irrig	Tiled	Rotation	Tillage	Report Period	Field T ₁ Vac	Rot. Avg Soil Loss t/ac	Rot. Avg Pl	Soil Test P ppm	Rot P205 Bal t/lac	P205 Bal Target t/lac	
Asch 2				27	Brown	KEWAU NEE KhB	4	200	0 - 2	301 - 1000	S %	No / No	No	No	Asis-A-F-Csl-Csl-Cg-Csl-Wmg+s-Asis	FCND-None-SCD-FCND-FCND-SCD-FCND-FCND	2015-2022	3	2.8	0.3	3	14	9	-
Asch 3				18.5	Brown	KEWAU NEE KhB	4	200	0 - 2	301 - 1000	W	No / No	No	No	Cg-Csl-IRw-Fsl-A-A-A-Cg	FCD-FCD-Fcult-None-None-FCND	2016-2022	3	2.2	0.4	3	47	-147	-
Bower Creek				50	Brown	DRESDE N D/A	2	250	0 - 2	0 - 300	WP	No / No	No	No	Csl-Csl-Wmg+s-IRw-Fcult-Cs30-Csl-Csl-Csl-FCND-FCND-FCND-SCD	SCD-SCD-Fcult-FCND-FCND-FCND-FCND-SCD	2015-2022	4	1.2	0.3	2	14	-51	-
DL-1,2				19	Brown	KEWAU NEE KhB2	4	200	0 - 2	5001 - 10000		No / No	No	No	OgAs-A-A-A-A-A-A	FCND-None-None-None-None-None-None	2017-2024	3	0.4	0.7	1	101	-170	-130
DL-1				15	Brown	KEWAU NEE KhB	4	200	0 - 2	1001 - 5000		No / No	No	No	OgAs-A-A-A-A-A-A	FCND-None-None-None-None-None-None	2017-2024	3	0.4	0.7	1	101	-170	-130

Field Name	SubF arm	FSA Trcl	FSA Fld	Acres	County	Critical Soil Series & Symbol	F-Slp %	F-Slp Len ft	Slope To Water %	Dist To Water ft	WtFid Res	Contour/ Filters	Irrig	Tiled	Rotation	Tillage	Report Period	Field TT Vac	Rot Avg Soil Loss Vac	Rot Avg Pl	Soil Test P ppm	Rot P2O5 Bal lb/ac	P2O5 Bal Target lb/ac	
DL-K2				48	Brown	KEWAL NEE KHB	4	200	0 - 2	301 - 1000	W	No / No	No	No	OgAs-A-A-A-A	FCND-None-None-None-None-None	2017-2024	3	0.4	0.7	1	8	-299	-
Herold Rd				50	Manitowoc	WAYNO R WOC2	9	150	0 - 2	0 - 300	W S %	No / No	No	No	OPAs-A-Csl-Cg-Cg-Cg-Cg-Cg	SCD-None-SCND-FCND-SCD-FCND-FCND-FCND	2015-2022	5	4	0.3	4	6	115	-
KB1-4	K Baet en			57	Brown	KEWAL NEE KHB2	4	200	0 - 2	301 - 1000		No / No	No	No	A-A-A-A-A-A-A-OgAs	None-None-None-None-None-None-FCND	2017-2024	3	0.4	0.7	1	9	-281	-
KB5	K Baet en			20	Brown	KEWAL NEE KHD2	16	100	0 - 2	301 - 1000	%	No / No	No	No	A-Sq7-Wwg+S-OgAs-A-A-A	None-FCND-FCult-FCND-None-None-None-None-None	2017-2024	3	2.2	0.6	2	10	-225	-
KB6	K Baet en			20	Brown	KEWAL NEE KHB	4	200	0 - 2	301 - 1000	%	No / No	No	No	A-A-A-A-A-A-A-OgAs	None-None-None-None-None-None-FCND	2017-2024	3	0.4	0.7	1	10	-281	-

Field Name	Subf arm	FSA Trct	FSA Fld	Acres	County	Critical Soil Series & Symbol	F-Slp %	F-Slp Len ft	Below Field Slope To Water %	Dist To Water ft	W/Fld Res	Contour/ Filters	Irrig	Tiled	Rotation	Tillage	Report Period	Field "T" t/ac	Rot Avg Soil Loss t/ac	Rot Avg SCI	Soil Test P ppm	Rot P205 Bal t/lac	P205 Bal Target t/lac	
KB7-8	K Baet en			30	Brown	KEWAU NEE KHB2	4	200	2.1 - 6	301 - 1000	W	No / No	No	No	A-A-A-A-A-A-A-OgAs	None-None-None-None-None-None-FCND	2017-2024	3	0.4	0.7	1	7	-281	-
KB9	K Baet en			21	Brown	KEWAU NEE KHC2	9	150	0 - 2	1001 - 5000		No / No	No	No	A-A-A-A-A-A-A-OgAs	None-None-None-None-None-None-None-None	2017-2024	3	0.1	0.7	0	16	-273	-
KB10	K Baet en			20	Brown	KEWAU NEE KHC2	9	150	0 - 2	1001 - 5000		No / No	No	No	A-A-A-A-A-A-A-OgAs	None-None-None-None-None-None-None-None	2017-2024	3	0.6	0.7	1	13	-281	-
KB11-13	K Baet en			50	Brown	KEWAU NEE KHC2	9	150	2.1 - 6	0 - 300	%	No / No	No	No	A-A-A-A-A-A-A-OgAs	None-None-None-None-None-None-None-None	2017-2024	3	0.1	0.7	0	10	-273	-
KB14	K Baet en			15	Brown	KEWAU NEE KHE2	25	60	0 - 2	0 - 300	%	No / No	No	No	A-Sg7-Wwg+-S-OgAs-A-A-A-A	None-None-FCND-FCND-None-None-None-None	2017-2024	5	2.9	0.6	3	40	-225	-

Field Name	Subfarm	FSA Trct	FSA Fld	Acres	County	Critical Soil Series & Symbol	F-Slp %	F-Slp Len ft	Below Field Slope To Water %	Dist. to Water ft	N/FTd Rec	Contour/ Filters	Irriq	Tiled	Rotation	Tillage	Report Period	Field Trct Vac	Rot Avg Soil Loss W/ac	Rot Avg SCI	Soil Test P ppm	Rot P205 Bal lb/ac	P205 Bal Target lb/ac	
KB19-21	K Bael en			23	Brown	KEWAU NEE KNE2	25	60	2.1 - 6	301 - 1000	%	No / No	No	No	A-A-A-A-A-A- OgAs-A	None-None-None-None-None-FCND-None	2017-2024	5	1.6	0.6	1	5	-281	-
Mat 1	Male mos KI			20	Brown	KEWAU NEE KNC2	9	150	2.1 - 6	0 - 300	S	No / No	No	No	Cg-Cg-Csl-Wwg +s-As-A-A-A	SCD-FCD-FCD-Fcult-FCND-None-None-None	2015-2022	3	2.1	0.5	2	24	-227	-
Mat 2	Male mos KI			17	Brown	KEWAU NEE KNC2	9	150	2.1 - 6	0 - 300	S	No / No	No	No	OgAs-A-A-Csl-Cg-Cg-Csl-Wwg+s	FCD-None-None-SCND-SCD-FCD-FCD-Fcult	2015-2022	3	2.9	0.5	4	25	13	-
Mat 3	Wint er			25	Brown	KEWAU NEE KNC2	9	150	2.1 - 6	0 - 300	S	No / No	No	No	A-A-A-A-A-A-Csl-Cg-Wwg+s-As-A	None-None-None-SCD-FCD-Fcult-FCND-None	2015-2022	3	2.2	0.5	2	13	-53	-
Mat 4	Male mos KI			25	Brown	KEWAU NEE KNC2	9	150	2.1 - 6	0 - 300	S	No / No	No	No	Cg-Csl-Csl-Wwg-Fsl-A-A-A-Ag	FCD-FCD-FCND-Fcult-None-None-None-None	2015-2022	3	2.9	0.4	3	21	-106	-

Field Name	Subf am	FSA Trct	FSA Fld	Acres	County	Critical Soil Series & Symbol	F-Slp %	F-Slp Len ft	Below Field To Water %	Dist To Water ft	W/Fld Res	Contour/ Filters	Irrig	Tiled	Rotation	Tillage	Report Period	Field T ¹ vbc	Rot Avg Soil Loss vbc	SCI	Rot Avg Pl ft	Soil Test P ppm	Rot P205 Bul lb/ac	P205 Bul Target lb/ac
Mat 5	Mat 5 mos KI			10	Brown	KEWAL NEE KNC2	8	150	2.1 - 6	0 - 300	S	No / No	No	No	A-A-A-Csl- [Rw]-Cgl- Csl-Wwg +s-Ogas	None- None- None- FCND- FCul- FCD- FCul- FCND	2015- 2022	3	2.4	0.7	3	17	-62	-
Mat 7	Mat 7 mos KI			8.5	Brown	KEWAL NEE KHB2	4	200	2.1 - 6	301 - 1000		No / No	No	No	A-A-A-A- Csl-Csl- Wwg+s- Ogas	None- None- None- FCND- FCul- FCD- FCND	2015- 2022	3	1.5	0.6	2	28	-158	-
Mat 7A	Mat 7A mos KI			3	Brown	KEWAL NEE KHB2	4	200	2.1 - 6	301 - 1000		No / No	No	No	[F-Csl]- Cg-OAs- A-A-A-Cg- Csl	FCul-FCD SCD-FCD- FCND- FCND- None- None- None- SCND- FCND	2015- 2022	3	2.8	0.3	3	58	-208	0
Mat 8	Mat 8 mos KI			16	Brown	KEWAL NEE KHB	4	200	2.1 - 6	301 - 1000		No / No	No	No	Csl-Csl- [Rw]- OAs]-A- A-A-A-A	FCND- FCND-CP- None- None- None- None- None-	2015- 2022	3	2.1	0.3	2	36	-400	-
Mat 8A	Mat 8A mos KI			3	Brown	KEWAL NEE KHB	4	200	2.1 - 6	301 - 1000		No / No	No	No	A-A-A-Csl- Cg-Csl- Wwg+s- Ogas	None- None- None- SCND- FCD-FCD- FCul-FCD	2015- 2022	3	1.4	0.6	2	36	-161	-
Mat 11	Mat 11 mos KI			31	Brown	KEWAL NEE KHB2	4	200	2.1 - 6	0 - 300	S	No / No	No	No	A-F-Csl- Csl-[Rw]- C30]- [Wwg+s- Fsl]-A-A- Cg	None- SCD-FCD- FCul- FCul- None- None- None- SCND	2015- 2022	3	2.3	0.4	3	47	-228	-

Field Name	SubF arm	FSA Trcl	FSA Fld	Acres	County	Critical Soil Series & Symbol	F Slip %	Below Field Slope To Water %	Dist To Water ft	W/Fld Res	Contour/ Filters	Irreg	Tiled	Rotation	Tillage	Report Period	Field T ¹ v/ac	Rot Avg Soil Loss v/ac	Rot Avg FI	Soil Test P ppm	Rot P205 Btl lb/ac	P205 Btl Target lb/ac		
Mat 11A	Mat mos KI			1.5	Brown	KEWAU NEE KHB2	4	200	2.1 - 6	0 - 300	S	No / No	No	No	A-A-A-F- Csl-Cg- Csl-Wwg +s-OgAs	None- None- SCD-FCD- FCD- Fcdll-FCD	2015- 2022	3	1.6	0.6	2	23	-180	-
Mat 18	Mat mos KI			18	Brown	KEWAU NEE KHB2	4	200	2.1 - 6	0 - 300	S	No / No	No	No	Sg7-Csl- [Rwl- Olas]-A- A-A-A-Csl	FCD- FCND- CPND- None- None- None- None- SCND	2015- 2022	3	2.3	0.3	4	22	-160	-
Mat 20	Mat mos KI			22	Brown	KEWAU NEE KHB2	4	200	2.1 - 6	301 - 1000		No / No	No	No	A-A-A-Csl- Cg-Cg- Csl-Wwg +s-OgAs	None- None- FCD- FCND- Fcdll-FCD	2015- 2022	3	1.9	0.6	2	22	48	-
Mat 21	Mat mos KI			24	Brown	KEWAU NEE KHB2	4	200	2.1 - 6	301 - 1000		No / No	No	No	Sg7-Cg- [Rwl- Olas]-A- A-A-A-A	FCD-FCD- CPND- None- None- None- None- None	2015- 2022	3	1.4	0.4	2	44	-93	-
Mat 22	Mat mos KI			3	Brown	KEWAU NEE KHB	4	200	2.1 - 6	0 - 300	S	No / No	No	No	A-A-A-Cg- Cg-Csl- Wwg+s- OgAs	None- None- None- SCD-FCD- FCD- Fcdll-FCD	2015- 2022	3	1	0.8	2	20	-24	-
Matzke 1				40	Brown	KEWAU NEE KHB	4	200	0 - 2	5001 - 10000	S	No / No	No	No	Asls-A-A- Cg-Cg- Csl-Cg-Cg	FCND- None- None- SCD-FCD- FCD-FCD- FCD	2015- 2022	3	1.8	0.5	2	7	195	-

Field Name	Subf arm	FSA Trct	FSA Fld	Acres	County	Critical Soil Series & Symbol	F. Slop %	F. Slop Len ft	Below Field Slope To Water %	Dist To Water ft	N/Fld Ras	Contour/ Filders	Irrig	Tilled	Rotation	Tillage	Report Period	Field TT U/ac	Rot Avg Soil Loss U/ac	Rot Avg SCI	Rot Avg Pl	Soil Test P ppm	Rot P2O5 Bal lb/ac	P2O5 Bal Target lb/ac
Matzke 2 - 5				16.5	Brown	KEWALU NEE KhB	4	200	0 - 2	5001 - 10000		No / No	No	No	A-A-Cst- Cg-Cg- Cst-Rwt- Cst-Wmg +S-Asis	None- None- FCD-FCD- FCD-FCD- Fcult-FCD	2015- 2022	3	2.1	0.4	3	40	77	-
Matzke 3				5	Brown	KEWALU NEE KhC2	9	150	0 - 2	10001 - 20000	S %	No / No	No	No	AsIs-A-A- Cg-OgAs- A-A-A	FCD- None- None- FCD- FCND- None- None- None	2015- 2022	3	2.2	0.6	1	7	-101	-
Matzke 4				16	Brown	KEWALU NEE KhC2	9	150	0 - 2	5001 - 10000	S %	No / No	No	No	Cg-Cg- Cst-Rwt- Fsj-A-A-A- Ag	SCD- SCD- FCND- FCult- None- None- None- None	2015- 2022	3	2.9	0.4	2	39	-176	-
Matzke 4Se				8	Brown	KEWALU NEE KhB	4	200	0 - 2	5001 - 10000	S	No / No	No	No	Ag-Ag- Cst-Cg- OgAs-A- A-A	None- None- FCND- FCND- FCND- None- None- None	2015- 2022	3	0.9	0.8	1	11	-68	-
Matzke 6-7				16.5	Brown	KEWALU NEE KhC2	9	150	0 - 2	5001 - 10000	S %	No / No	No	No	Cg-Cg- Cst-Rwt- Fsj-A-A-A- Ag	SCD- SCD- FCND- FCult- None- None- None- None	2015- 2022	3	2.9	0.4	2	43	-244	-

Field Name	SubF arm	FSA Trct	FSA Fld	Acres	County	Critical Soil Series & Symbol	F-Slp %	F-Slp Len ft	Below Field Slope To Water %	Dist To Water ft	N/Fld Res	Contour/ Fillers	Irng	Yld	Rotation	Tillage	Report Period	Field TT /ac	Rot Avg Soil Loss /ac	Rot Avg SCI	Rot Avg P	Soil Test P ppm	Rot p205 Bal /b/ac	P205 Target /b/ac
Matzke 8				20	Brown	KEWAU NEE KNC2	15	150	0 - 2	5001 - 10000	S %	No / No	No	No	A-Cg-Csl- Wmg-Fsl- A-A-A-A	None- SCD- FCND- FCult- None- None- None-	2015- 2022	3	2.5	0.5	3	25	-98	-
Matzke 9				16.5	Brown	KEWAU NEE KNC2	16	100	0 - 2	5001 - 10000	S %	On contour / No	No	No	Cg-Cg- Cg-Rwt- Fsl-A-A-A- Ag	FCD-FCD- FCND- FCult- None- None- None- None-	2015- 2022	3	2.9	0.5	2	25	-266	-
Matzke Pasture				2	Brown	KEWAU NEE KNC2	4	200	0 - 2	5001 - 10000	%	No / No	No	No	Asls-A-If- Csl-Csl- OgAs-A- A-A	FCD- None- SCD- FCND- None- None- None-	2015- 2022	3	2.4	0.4	5	274	-470	-245
MM-East				5	Brown	KEWAU NEE KNC2	8	150	0 - 2	5001 - 10000	%	No / No	No	No	Cg-Cg- Cg-Csl- Wmg+S- Asls-A-A	SCD- SCD-FCD- FCD- FCult- FCND- None- None-	2015- 2022	3	2.3	0.5	2	10	-71	-
MM-West				10	Brown	KEWAU NEE KNC2	8	150	0 - 2	5001 - 10000	%	No / No	No	No	Cg-Cg- Cg-Csl- Wmg+S- Asls-A-A	SCD- SCD-FCD- FCD- FCult- FCD- None- None-	2015- 2022	3	2.3	0.5	3	61	10	0

Field Name	SubF arm	FSA Trct	FSA Fld	Acres	County	Critical Soil Series & Symbol	F-Slp %	F-Slp Len ft	Below Field Slope To Water %	Dist To Water ft	N/Fld Res	Contour/ Filters	Irrig	Tiled	Rotation	Tillage	Report Period	Field TT Vac	Rot Avg Soil Loss /ac	Rot SCI	Rot Avg P	Soil Test P /ppm	Rot P205 Bal /vac	P205 Bal Target /vac
TOWER & W				35	Brown	KEWALU NEE KIB	4	200	0 - 2	1001 - 5000	W	No / No	No	Yes	OgA-A-Csl-Csl-Cg-Cg-Cg	FCD-None-SCND-FCDN-FCD-FCD	2015-2022	3	2.3	0.5	3	46	47	-
Van Rens				40	Brown	KEWALU NEE KNC2	9	150	0 - 2	5001 - 10000	S %	No / No	No	No	Cg-Cg-Cg-Rwf-Fsl-A-A-A-A	FCD-FCD-FCD-FCD-None-Fault-None-None-None	2015-2022	3	2.8	0.4	2	20	-90	-
VO10				95	Brown	SUNME RVILLE VARIANT S/B	3	200	2.1 - 6	301 - 1000	R	No / No	No	No	Sg7-Cg-Sg7-Cg-Sg7-Wwg-Cg	FCND-FCND-FCND-SFC	2017-2023	1	1	0.6	1	10	-110	-
VO11				100	Brown	KEWALU NEE KIB	4	200	0 - 2	1001 - 5000	R	No / No	No	No	Cg-Sg7-Cg-Sg7-Cg-Sg7	FCND-FCND-FCND-FCND-FCND	2017-2022	3	3	0.3	3	11	74	-

Crop Abbreviations

Abbreviation	Crop
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[F-Csl]	Alfalfa (1st cut) to Corn silage
[Rwf-Cg]	Winter Rye (forage) to Corn grain
[Rwf-Cs30]	Winter Rye (forage) to Corn silage, 30 inch row
[Rwf-Fsl]	Winter Rye (forage) to Late Direct Seeded Legume Forage
[Rwf-CWsf]	Winter Rye (forage) to Oatlage w/ Alfalfa Seeding Spring
[Wwg-s-Fsl]	Winter wheat (grain+straw) to Late-Direct Seeded Legume Forage

Tillage Abbreviations

Abbreviation	Tillage
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CP	Chisel Plow, disked
CPND	Chisel Plow, no disk
FCD	Fall Chisel, disked
FCND	Fall Chisel, no disk
Fcdt	Field Cultivation
FFC	Fall Cultivation

[Wing-Fs]		FFC/CP		Restriction Legend	
Seeded Legume Forage		crop 1: Fall Cull, crop 2: Chisel plow, no disk		Code	Description of Code
A	Alfalfa	FVT	Fall vertical tillage	S	Field is in SWQMA
Ag	Alfalfa (grassy, yr 3+)	None	None	D	Drinking water well within 50 feet of field.
Asle	Alfalfa Seeding Fall	NT	No Till	C	Conduit to groundwater within 200 feet upslope of field.
Cg	Com grain	NT/CP	crop 1: No-till, crop 2: Chisel plow, no disk	L	Local restrictions on nutrient applications.
Csl	Com silage	SCD	Spring Chisel, disked	%	Slope restriction for winter applications
OKAs	Cats w/ Alfalfa Seeding Spring	SCND	Spring Chisel, no disk	P	High permeability N restricted soils
OPAs	Car-Pea Forage w/ Alfalfa Seeding Spring	SFC	Spring Cultivation	R	N restricted soils with less than 20 inches to bedrock
Rwg+s	Winter Rye (grain+straw)			W	N restricted soils with less than 12 inches to apparent water table
Sgt	Soybeans 7-10 inch row			+	This map unit may have any of the N restrictive features, however an on-site investigation is needed to identify which restrictions may actually be present.
Wwg	Winter wheat (grain)				
Wwg+s	Winter wheat (grain+straw)				

SnapPlus Soil Conservation Report

Reported For Ledgeview Farms

Printed

2018-02-02

Plan Completion/Update Date

2001-01-01

SnapPlus Version 16.3 built on 2016-10-31

Prepared for:

Ledgeview Farms
 aith:Roy, Glenn & Jason Pansier
 3875 DICKINSON RD
 DE PERE, 54115

C:\Users\Kevin Becker\OneDrive - Cooperative Resources International
 \AgSource Data Backup\Clients\175-CV Greenleaf\Ledgeview Farms
 \SNAP 2 Database\SNAP 16\Ledgeview Farms Snap 16 Main.snapDb

WPDES Permitted Farm

Field Data: 2,759 Total Acres Reported.

Field Name	Report Period	FS# Tract	FS# Field	Ac	Contour / Filterstrip	Stn #	F. Stn Len ft	Soil Series & Symbol (optional)	Rotation	Plt/age	Fract T Vac	Dsl Avg Soil Loss Vac	Ror Avg Sed Dsl Vac	SCI
13E-1	2015-2022			48	No/ No	8	150	KEWAUNEE KhC2	Cg-Csl-Csl-Wmg+s-Fsl-A-A-A-Cg	FCD-FCD-FCND-Fcult-None-None-None-SCND	3	2.7		0.5
13E-2	2015-2022			15.5	No/ No	4	200	KEWAUNEE KhB2	A-A-Csl-Csl-Csl-Wmg+s-Asls-A	None-None-FCND-FCND-FCD-Fcult-FCD-None	3	2.4		0.4
13E-3	2015-2022			22.5	No/ No	4	200	KEWAUNEE KhB2	A-A-Csl-Csl-Csl-Wmg+s-Asls-A	None-None-FCND-FCD-FCD-Fcult-FCD-None	3	2.4		0.3
11G1	2015-2022			30	No/ No	4	200	KEWAUNEE KhB	Cg-Csl-Rwf-O/Asl-A-A-A-Csl-Csl	FCD-FCD-Fcult-None-None-None-FCND-FCND	3	2.4		0.4
11G2	2015-2022			7.5	No/ No	9	150	KEWAUNEE KhC2	Cg-Cg-Csl-Rwf-Cs30l-Csl-OgAs-A-A	FCD-FCD-FCD-FFC/CP-FCND-FCND-None-None	3	2.9		0.6
11G3	2015-2022			36	No/ No	4	200	KEWAUNEE KhB	Csl-Wmg+s-Asls-A-A-A-Csl-Csl	FCD-Fcult-FCD-None-None-None-FCND-FCD	3	2.3		0.4
11G4	2015-2022			33	No/ No	4	200	KEWAUNEE KhB	Csl-Csl-Rwf-Cs30l-Rwf-Cs30l-OgAs-A-A-Csl	SCD-FCD-FFC/CP-FFC/CP-FCND-None-None-FCND	3	2.6		0.3
11G-3 East	2015-2022			20	No/ No	2	250	MANAWA MAa	Csl-Csl-Rwf-Cs30l-Rwf-Cs30l-A-A-A-Csl	SCD-FCD-FFC/CP-FFC/CP-None-None-None-FCND	3	0.7		0.4
11H1	2015-2022			19	No/ No	4	200	KEWAUNEE KhB	Csl-Rwf-Cs30l-Rwf-O/Asl-A-A-A-Csl	FCD-FFC/CP-CPND-None-None-None-SCND	3	1.9		0.4
11K1A	2015-2022			9	No/ No	4	200	KEWAUNEE KhB2	[Rwf-Cs30l]-Wmg+s-Fsl-Rwf-Cs30l-Wmg+s-Cg-Cg-OgAs-A	Fcult-Fcult-FFC/CP-Fcult-FCND-FCND-FCND-None	3	1.1		0.7
11K1B	2015-2022			2.5	No/ No	2	250	MANAWA MAa	Csl-Wmg+s-Fsl-Rwf-Cs30l-Wmg+s-Asls-A-A-A	SCND-Fcult-CP-Fcult-FCND-None-None-None	3	0.3		0.6

Field Name	Report Period	FSA Tract#	FSA Field	Ac.	Contour / Filterstrip	Slope %	F-Slope Limit	Soil Series, S. Symbol (technical)	Rotation	Tillage	Field T ₁ Wt.	Rot. Avg. Soil Loss /ac	Rot. Avg. Sed Del /ac	SCI
11K1C	2015-2022			5	No/ No	9	150	KOLBERG KOC2	Csl-Wwg+s-Fsl-Rwf-Cs30l-Wwg+s-Asls-A-A-A	SCND-Fcult-CP-Fcult-FCND-None-None-None	2	2		0.5
11L1	2015-2022			20.5	No/ No	4	200	KEWAUNEE KHB	[Wwg+s-Fsl-Asls-A-A-A-Csl-Csl-Csl	Fcult-FCD-None-None-None-SCD-SCD-SCD	3	2.3		0.3
11L-East	2015-2022			10	No/ No	4	200	KEWAUNEE KHB	A-Csl-Csl-Rwf-Cs30l-Wwg+s-Fsl-A-A-Csl	None-FCD-FCD-FFC/CP-Fcult-None-None-SCND	3	2.4		0.3
11M1	2015-2022			10	No/ No	4	200	KEWAUNEE KHB	A-A-Ag-A-Csl-Csl-Csl-Asls	None-None-None-None-FCD-FCD-FCD-FCND	3	2.4		0.4
11N3	2015-2022			5	No/ No	9	150	KEWAUNEE KHC2	[Rwf-Cs30l-Rwf-Cs30l-Rwf-Olas]-A-A-A-A-A	Fcult-Fcult-CPND-None-None-None-None-None	3	2.6		0.3
11N4	2015-2022			13	No/ No	8	150	KEWAUNEE KHC2	[Rwf-Cs30l-Rwf-Cs30l-Rwf-Olas]-A-A-A-A-Cg	CP-FFC/CP-CPND-None-None-None-None-None-SCD	3	2.7		0.3
11P	2015-2022			9	No/ No	4	200	SUMMERVILLE VARIANT SWB	A-A-A-A-A-A-A-A-A	None-None-None-None-None-None-None-None	1	0.1		0.7
11Q1	2015-2022			14	No/ No	4	200	KEWAUNEE KHB	A-A-Csl-Csl-OgAs-A-A-A	None-None-SCD-FCD-None-None-None-None-None	3	1.2		0.6
11R1	2015-2022			29	No/ No	9	150	KOLBERG KOC2	A-A-Csl-Cg-OgAs-A-A-A	None-None-SCND-FCND-FCD-None-None-None	2	1.7		0.6
11S1	2015-2022			42	No/ No	4	200	KEWAUNEE KHB	A-A-A-A-Cg-Cg-Csl-Cg	None-None-None-None-FCD-FCD-FCD-FCD	3	1.7		0.5
11S2	2015-2022			95	No/ No	4	200	KEWAUNEE KHB	[Rwf-Cs30l-Rwf-Cs30l-Rwf-Fsl]-A-A-A-Csl-Csl	Fcult-NT/CP-Fcult-None-None-None-SCND-FCD	3	2.8		0.2
11T	2015-2022			5	No/ No	4	200	KEWAUNEE KHB2	[Rwf-Cs30l-Rwf-Cs30l-Csl-Rwf-Fsl]-A-A-A-A-A	Fcult-CP-FCD-Fcult-None-None-None-None-None	3	2.4		0.3
11T-east	2015-2022			38	No/ No	8	200	KEWAUNEE KHB2	[Rwf-Cs30l-Wwg-Csl-Rwf-Fsl]-A-A-A-A	Fcult-Fcult-FCD-Fcult-None-None-None-None-None	3	3		0.4
11U1	2015-2022			14.5	No/ No	9	150	KEWAUNEE KHC2	Asls-Cg-Wwg+s-Asls-A-A-A-A	FCD-FCD-Fcult-FCND-None-None-None-None-None	3	2.2		0.5
11U2	2015-2022			15	No/ No	9	150	KEWAUNEE KHC2	Cg-Csl-Wwg+s-Asls-A-A-A-A	SCD-FCD-Fcult-FCND-None-None-None-None-None	3	1.6		0.5
11U3	2015-2022			13	No/ No	9	150	KEWAUNEE KHC2	Cg-Csl-Wwg+s-Asls-A-A-A-A	SCD-FCD-Fcult-FCND-None-None-None-None-None	3	1.6		0.6
11U7	2015-2022			16	No/ No	18	80	KEWAUNEE KME2	A-A-Csl-Cg-Cg-OgAs-A-A	None-None-SCND-FFC-FCND-SCND-None-None	5	4		0.5
11U9	2015-2022			19	No/ No	9	150	KEWAUNEE KHC2	A-Cg-Cg-Csl-Wwg+s-Asls-A-A	None-SCD-FCD-FCD-Fcult-FCD-None-None-None	3	2.1		0.5
11U1A	2015-2022			9	On contour/ No	22	80	KEWAUNEE KME2	A-Csl-Wwg+s-Asls-A-A-A-A	None-FCD-Fcult-FCND-None-None-None-None-None	5	2.8		0.4

Field Name	Report Period	TSA Tract #	FSA Field	Ac	Contour / Filterstrip	Slope %	F Slope Len ft	Soil Series & Symbol (critical)	Rotation	Tillage	Field Tillage	Field Tillage	Rot Avg Soil Loss /ac	Rot Avg Sed Del /ac	SCI
11U 2B	2015-2022			20	No/ No	18	80	KEWAUNEE KMEZ	AsB-A-A-A-A-Cg-Cg-Cg	FCD-None-None-None-FCND	5	4.3			0.3
11U7 N	2015-2022			15	No/ No	8	150	KEWAUNEE KhC2	A-Cg-Csl-Cg-Wwg+s-AsIs-A-A	None-FCND-FCND-FCND-FCull-FCND-None-None	3	2.7			0.4
11U9 N	2015-2022			10	No/ No	9	1	KEWAUNEE KhC2	A-If-Csl-Csl-Cg-Cg-OgAs-A-A	None-SCD-FCND-FCND-FCND-FCND-None-None	3	2			0.5
12A1	2015-2022			35	No/ No	4	200	KEWAUNEE KhB	Wwg+s-Wwg+s-AsIs-A-A-Csl-Csl-Csl	FCull-FCull-FCND-None-None-SCD-SCD-SCD	3	2.2			0.4
13F-1	2015-2022			38	No/ No	9	150	KEWAUNEE KhC2	Cg-Csl-Rwf-OgAs-A-A-A-A-Cg	FCND-FCND-CPND-None-None-None-None-SCND	3	2.4			0.4
13G-1	2015-2022			20	No/ No	4	200	KEWAUNEE KhB	A-A-Cg-Cg-Csl-Cg-AsIs-A	None-None-SCND-FCND-FCND-FCND-FCND-None	3	1.5			0.5
13G-2	2015-2022			51	No/ No	4	200	KEWAUNEE KhB	OgAs-A-A-Csl-Csl-Csl-Wwg+s-AsIs	FCND-None-None-FCND-FCND-SCD-FCull-FCND	3	2.6			0.3
13H-1	2015-2022			21	No/ No	4	200	KEWAUNEE KIB	Csl-Csl-Csl-Rwf-Fs-A-A-A-A-A	SCD-SCD-SCD-FCull-None-None-None-None-None	3	2.7			0.2
13H-2 N	2016-2023			10	No/ No	4	200	KEWAUNEE KhB2	Csl-Csl-Rwf-Fs-A-A-A-A-A	FCND-FCND-FCull-None-None-None-None-None	3	2.4			0.3
13-I	2015-2022			20	No/ No	4	200	KEWAUNEE KhB2	AsIs-A-A-Csl-Cg-Cg-Cg-Cg	FCND-None-None-SCND-FCND-FCND-FCND-FCND	3	1.9			0.5
14A	2015-2022			22	No/ No	16	100	KEWAUNEE KhD2	OgAs-A-A-A-A-A-Cg-Cg	SCND-None-None-None-None-None-None-SCND	3	2.6			0.5
14A-11	2015-2022			5.5	No/ No	16	100	KEWAUNEE KhD2	A-A-A-Cg-Wwg+s-OgAs-A-A	None-None-None-SCD-FCull-FCND-None-None	3	1.5			0.8
14B	2015-2022			45	No/ No	4	200	KEWAUNEE KhB	OgAs-A-A-Csl-Csl-Cg-Csl-Cg-OgAs	SCND-None-SFC-FCND-FCND-SCD-FCND-FCND	3	2.6			0.4
16 A1 East	2015-2022			15	No/ No	2	250	MANAWA McA	Csl-Rwg+s-AsIs-A-A-A-Cg-Cg	FCND-FCull-FCull-None-None-None-FCND-FCND	3	0.5			0.8
16 A1 West	2015-2022			13	No/ No	2	250	MANAWA McA	Csl-Wwg+s-Csl-Csl-Cg-Csl-Cg-Cg	FCND-FCND-FCND-FCND-FCND-FCND-FCND	3	0.7			0.6
16B-2	2015-2022			17.5	No/ No	2	250	MANAWA McA	Csl-Wwg+s-Csl-Cg-Cg-Cg-Cg-Cg	SCND-FCND-FCND-FCND-FCND-FCND-SCND	3	0.6			0.9
16B-5	2015-2022			10	No/ No	1	250	OSHKOSH GNA	Csl-Rwg+s-AsIs-A-A-A-Cg-Cg	FCND-FCull-FCND-FCND-FCND-FCND-FCND	5	0.3			0.6
16C	2015-2022			8.5	No/ No	4	200	OSHKOSH ONB	A-A-Csl-Csl-Csl-Wwg+s-AsIs-A	None-None-SCD-FCND-FCND-FCull-FCND-None	5	1.2			0.6

Field Name	Report Period	FSA Tract	FSA Field	Ac.	Contour / Filterstrip	Slope %	F. Slope Left ft	Soil Series & Symbol (technical)	Rotation	Tillage	Field Tillage	Roll Avg Soil Loss t/ac	Roll Avg Sed Del t/ac	SCI
16E	2015-2022			8	No/ No	4	200	SISSON SIB	[Wwg+s-Fs]-A-A-A-Csl-Csl-Cg-Csl	Fcult-None-None-None-FCND-FCND-FCND-FCND-FCND	5	0.9	0.5	
16F	2015-2022			3.5	No/ No	4	200	MANISTEE MIB	[Rw]-O[As]-A-A-A-A-A-A-A	CPND-None-None-None-None-None-None-None	4	0.3	0.6	
17A	2015-2022			21	No/ No	2	250	MANAWA MCA	Csl-Rwg+s-Asls-A-A-A-Csl-Csl	FCD-Fcult-FCND-None-None-None-SCND-FCND	3	0.6	0.6	
18A-1	2015-2022			3.5	No/ No	2	250	MANAWA MCA	A-A-A-Csl-Csl-Csl-Csl-Csl	None-None-None-SCND-FCD-FCD-FCD-FCD	3	0.9	0.4	
18A-2	2015-2022			14.5	No/ No	2	250	MANAWA MCA	Csl-Cg-Csl-Cg-Csl-OgAs-A-A	SCD-FCD-FCD-FCND-FCND-FCD-FCND-None-None	3	0.6	0.7	
18A-3	2015-2022			15	On contour/ No	4	200	KEWAUNEE KHB2	Cg-Wwg-Asls-A-Cg-Cg-Cg-Cg	FCD-FCD-Fcult-None-FCND-FCND-FCND-FCND-SCND	3	0.8	0.7	
18A-4	2015-2022			12.5	No/ No	4	200	KEWAUNEE KHB	[F-Csl]-Cg-Csl-Csl-Wwg+s-Asls-A-A	SCD-FCD-FCD-FCD-Fcult-FCND-None-None	3	2.3	0.3	
18B-1	2015-2022			12	No/ No	4	200	KEWAUNEE KHB2	Csl-Wwg+s-Asls-A-A-Cg-Cg-Cg	SCD-FVT-Fcult-None-None-SCND-SCND	3	1.2	0.6	
18B-2	2015-2022			4	No/ No	4	200	KEWAUNEE KHB2	Asls-A-A-A-Cg-Cg-Cg-Csl	FCD-None-None-None-SCND-SCND-SCND-FCD	3	1.4	0.5	
22	2015-2022			25	No/ No	1	250	OSHKOSH OSA	Csl-Rwg+s-Csl-Cg-Csl-Csl-Csl-Csl	FCD-FCND-FCND-FCND-FCD-FCD-FCD-FCD	5	0.8	0.4	
26A-1	2015-2022			15	No/ No	4	200	KEWAUNEE KHB	Asls-A-A-A-Csl-Cg-Cg-Cg	FCD-None-None-None-SCD-FCD-FCD-FCD	3	1.7	0.5	
26A-2	2015-2022			30.5	No/ No	4	200	KEWAUNEE KHB	OgAs-A-A-A-Csl-Cg-Cg-Cg	FCD-None-None-None-SCD-FCD-FCD-FCD	3	1.6	0.6	
26A-3	2015-2022			22	No/ No	9	150	KEWAUNEE KHC2	Asls-A-A-A-Cg-Cg-Cg	FCD-None-None-None-None-FCD-FCD-FCD	3	2.3	0.5	
26A-4	2015-2022			10	No/ No	4	200	KEWAUNEE KHB	Asls-A-A-A-Cg-Cg-Cg-Cg	FCD-None-None-None-FCDFCD-FCD-FCD	3	1.5	0.5	
26B-2 EKW	2016-2023			19.5	No/ No	8	150	KEWAUNEE KHC2	Csl-[Rw]-Fs]-A-A-A-A-A-Ag	FCND-Fcult-None-None-None-None-None-None	3	1.8	0.5	
26-B1 North	2016-2023			10	No/ No	16	100	KEWAUNEE KHD2	Cg-Cg-OgAs-A-A-A-A	FCND-FCND-SCND-None-None-None-None	3	2.8	0.6	
26-B1 South	2016-2023			15	No/ No	8	100	KEWAUNEE KHD2	Csl-Csl-OgAs-A-A-A-A	FCD-FCD-FCND-None-None-None-None-None	3	2.5	0.4	
26-B2 South	2015-2022			11	No/ No	8	150	KEWAUNEE KHC2	A-A-A-Csl-Csl-Wwg+s-Asls-A	None-None-None-SCND-FCD-Fcult-FCND-None	3	2.1	0.5	

Field Name	Report Period	FSA Tracts	FSA Field	Ac	Contour / Filterstrip	Slope %	F-Slope Lim ft	Soil Series, A Symbol (critic)	Rotation	Tillage	Field Till Uac	Rot Avg Soil Loss T/ac	Rot Avg Sed Del /ac	SCI
26C	2015-2022			24.5	No/ No	4	200	KEWALUNEE KhB2	CsL-Cg-CsL-RwL-FsJ-A-A-A-A-CsL	SCD-FCND-FCND-Fcull-None-None-None-SCND	3	2.8		0.2
26D-4	2015-2022			19.5	No/ No	4	200	KEWALUNEE KhB	Cg-CsL-CsL-Wwg+s-FsJ-A-A-A-A-CsL	SCD-SCD-SCD-Fcull-None-None-None-SCND	3	2.1		0.4
11J1&2	2015-2022			26	No/ No	4	200	KEWALUNEE KhB	A-CsL-CsL-RwL-Cs30L-Cg-CsL-Wwg+s-Asis	None-FCD-FCD-Fcull/CP-FCND-FCND-Fcull-FCND	3	2.6		0.4
12A 4S & 27	2015-2022			30	No/ No	4	200	KEWALUNEE KhB	A-A-CsL-CsL-Cg-CsL-Wwg+s-Asis	None-None-FCD-FCND-FCD-FCD-Fcull-FCND	3	2.4		0.4
12A2 & 27A2	2015-2022			29	No/ No	4	200	KEWALUNEE KhB	A-A-CsL-CsL-Cg-CsL-Wwg+s-Asis	None-None-FCND-FCND-FCD-FCND-Fcull-FCND	3	2.2		0.4
13D-1,2	2015-2022			67	No/ No	9	150	KEWALUNEE KhC2	OPAs-A-Cg-Cg-Cg-RwL-CgJ-RwL-Cs30L-Wwg+s	SCND-None-SCD-FCND-SCND-CP-Fcull/CP-Fcull	3	2.7		0.4
16B-6&7	2015-2022			35	No/ No	1	250	OSHKOSH OnA	CsL-Wwg+s-Asis-A-A-A-A-CsL-CsL	FCND-FCD-FCD-None-None-None-SCD-FCND	5	0.5		0.5
26D5-7	2015-2022			57	No/ No	4	200	KEWALUNEE KhB	Cg-CsL-CsL-Wwg+s-FsJ-A-A-A-A-CsL	SCD-SCD-SCD-Fcull-None-None-None-SCND	3	2.3		0.3
Asch 1 North	2015-2022			57	No/ No	4	200	KEWALUNEE KhB2	OgAs-A-A-Cg-CsL-CsL-Wwg+s-FsJ	FCND-None-None-FCD-SCD-FCD-FCD-Fcull	3	2.4		0.5
Asch 1 South	2015-2022			24.5	No/ No	4	200	KEWALUNEE KhB	Asis-A-A-CsL-Cg-CsL-Wwg+s-Asis	FCD-None-SCD-FCD-FCD-FCD-Fcull-FCND	3	2.8		0.3
Asch 2	2015-2022			27	No/ No	4	200	KEWALUNEE KhB	Asis-A-A-CsL-CsL-Cg-CsL-Wwg+s-Asis	FCND-None-SCD-FCD-FCND-SCD-Fcull-FCND	3	2.8		0.3
Asch 3	2016-2022			18.5	No/ No	4	200	KEWALUNEE KhB	Cg-CsL-RwL-FsJ-A-A-A-Cg	FCD-FCD-Fcull-None-None-None-FCND	3	2.2		0.4
Bower Creek	2015-2022			50	No/ No	2	250	DRESDEN DfA	CsL-CsL-Wwg+s-RwL-Cs30L-CsL-CsL-CsH-CsL	SCD-SCD-Fcull-Fcull-FCND-FCND-FCND-SCD	4	1.2		0.3
DL-1,2	2017-2024			19	No/ No	4	200	KEWALUNEE KhB2	OgAs-A-A-A-A-A-A-A-A	FCND-None-None-None-None-None-None-None	3	0.4		0.7
DL-1	2017-2024			15	No/ No	4	200	KEWALUNEE KhB	OgAs-A-A-A-A-A-A-A-A	FCND-None-None-None-None-None-None-None	3	0.4		0.7
DL-K2	2017-2024			48	No/ No	4	200	KEWALUNEE KhB	OgAs-A-A-A-A-A-A-A-A	FCND-None-None-None-None-None-None-None	3	0.4		0.7
Herold Rd	2015-2022			50	No/ No	9	150	WAVMOOR Wdc2	OPAs-A-CsL-Cg-Cg-Cg-Cg-Cg	SCD-None-SCND-FCND-SCD-FCD-FCD-FCD	5	4		0.3
KB1-4	2017-2024			57	No/ No	4	200	KEWALUNEE KhB2	A-A-A-A-A-A-A-A-OgAs	None-None-None-None-None-None-None-FCND	3	0.4		0.7

SnappPlus Soil Conservation Report

02/02/2018

Field Name	Report Period	FSA Tracts	FSA Field	Ac	Contour / Filterstrip	Slope %	F. Slope Length	Soil Series & Symbol (Fertili)	Rotation	Tillage	Field "Y" Use	Rot Avg Soil Loss /ac	Rot Avg Seed Del /ac	SCI
KB5	2017-2024			20	No/ No	16	100	KEWAUNEE KND2	A-Sq7-Wwg+s-OgAs-A-A-A-A	None-F-CND-F-cult-None	3	2.2		0.6
KB6	2017-2024			20	No/ No	4	200	KEWAUNEE KtB	A-A-A-A-A-A-A-OgAs	None-None-None-None-None-None-FCND	3	0.4		0.7
KB7-8	2017-2024			30	No/ No	4	200	KEWAUNEE KtB2	A-A-A-A-A-A-A-OgAs	None-None-None-None-None-None-FCND	3	0.4		0.7
KB9	2017-2024			21	No/ No	9	150	KEWAUNEE KtC2	A-A-A-A-A-A-A-A	None-None-None-None-None-None-None-FCND	3	0.1		0.7
KB10	2017-2024			20	No/ No	9	150	KEWAUNEE KtC2	A-A-A-A-A-A-A-OgAs	None-None-None-None-None-None-None-FCND	3	0.6		0.7
KB11-13	2017-2024			50	No/ No	9	150	KEWAUNEE KtC2	A-A-A-A-A-A-A-A	None-None-None-None-None-None-None-FCND	3	0.1		0.7
KB14	2017-2024			15	No/ No	25	60	KEWAUNEE KtE2	A-Sq7-Wwg+s-OgAs-A-A-A-A	None-F-CND-F-cult-FCND-None-None-None-None	5	2.9		0.6
KB19-21	2017-2024			23	No/ No	25	60	KEWAUNEE KtE2	A-A-A-A-A-A-A-OgAs-A	None-None-None-None-None-None-None-FCND-None	5	1.6		0.6
Mat 1	2015-2022			20	No/ No	9	150	KEWAUNEE KtC2	Cg-Cg-Cst-Wwg+s-AsIs-A-A-A	SCD-FCD-FCD-F-cult-FCND-None-None-None-None	3	2.1		0.5
Mat 2	2015-2022			17	No/ No	9	150	KEWAUNEE KtC2	OgAs-A-A-Cst-Cg-Cg-Cst-Wwg+s	FCD-None-None-SCND-SCD-FCD-FCD-F-cult	3	2.9		0.5
Mat 3	2015-2022			25	No/ No	9	150	KEWAUNEE KtC2	A-A-A-If-Cst-Cg-Wwg+s-AsIs-A	None-None-None-SCD-FCD-F-cult-FCND-None	3	2.2		0.5
Mat 4	2015-2022			25	No/ No	9	150	KEWAUNEE KtC2	Cg-Cst-Cst-If-Wwg-Fst-A-A-A-Ag	FCD-FCD-F-CND-F-cult-None-None-None-None	3	2.9		0.4
Mat 5	2015-2022			10	No/ No	9	150	KEWAUNEE KtC2	A-A-A-Cst-If-Wwg-Fst-Wwg+s-OgAs	None-None-None-FCND-F-cult-FCND-F-cult-FCND	3	2.4		0.7
Mat 7	2015-2022			8.5	No/ No	4	200	KEWAUNEE KtB2	A-A-A-A-Cst-Cst-Wwg+s-OgAs	None-None-None-None-FCND-FCD-F-cult-FCND	3	1.5		0.6
Mat 7A	2015-2022			3	No/ No	4	200	KEWAUNEE KtB2	If-Cst-Cg-OtAs-A-A-A-Cg-Cst	SCD-FCD-F-CND-None-None-None-SCND-F-CND	3	2.8		0.3
Mat 8	2015-2022			16	No/ No	4	200	KEWAUNEE KtB	Cst-Cst-If-Wwg-Fst-A-A-A-A-A	FCND-F-CND-CP-None-None-None-None-None	3	2.1		0.3
Mat 8A	2015-2022			3	No/ No	4	200	KEWAUNEE KtB	A-A-A-Cst-Cg-Cst-Wwg+s-OgAs	None-None-None-SCND-FCD-FCD-F-cult-FCND	3	1.4		0.6
Mat 11	2015-2022			31	No/ No	4	200	KEWAUNEE KtB2	A-If-Cst-Cst-If-Wwg-Fst-A-A-Cg	None-SCD-FCD-F-cult-FCND-None-None-SCND	3	2.3		0.4
Mat 11A	2015-2022			1.5	No/ No	4	200	KEWAUNEE KtB2	A-A-A-If-Cst-Cg-Cst-Wwg+s-OgAs	None-None-None-SCD-FCD-FCD-F-cult-FCND	3	1.6		0.6

Field Name	Report Period	FSA Tract	FSA Field	Ac	Contour / Filterstrip	Slope %	F Slope Feet	Soil Series & Symbol (erect)	Rotation	Tillage	Field T ₁ /Ac	Soil Loss /Ac	Rot Avg Sed Del /Ac	SCI
Mat 18	2015-2022			18	No/ No	4	200	KEWALUNEE KHB2	Sgt-Csl-Rw-Olas-A-A-A-A-A-Csl	FCD-FCND-CPND-None-None-None-SCND	3	2.3		0.3
Mat 20	2015-2022			22	No/ No	4	200	KEWALUNEE KHB2	A-A-Csl-Cg-Cg-Csl-Wwg+s-Ogas	None-None-FCND-FCND-FCO-FCO-FCult-FCO	3	1.9		0.6
Mat 21	2015-2022			24	No/ No	4	200	KEWALUNEE KHB2	Sgt-Cg-Rw-Olas-A-A-A-A-A-A	FCD-FCO-CPND-None-None-None-None-None	3	1.4		0.4
Mat 22	2015-2022			3	No/ No	4	200	KEWALUNEE KHB	A-A-A-Cg-Cg-Csl-Wwg+s-Ogas	None-None-None-SCD-FCO-FCO-FCult-FCO	3	1		0.8
Matzke 1	2015-2022			40	No/ No	4	200	KEWALUNEE KHB	Asls-A-A-Cg-Cg-Csl-Cg-Cg	FCND-None-None-SCD-FCO-FCO-FCO-FCO	3	1.8		0.5
Matzke 2 - 5	2015-2022			16.5	No/ No	4	200	KEWALUNEE KHB	A-A-Csl-Cg-Cg-Csl-Wwg+s-Asls	None-None-FCO-FCO-FCO-FCO-FCult-FCO	3	2.1		0.4
Matzke 3	2015-2022			5	No/ No	9	150	KEWALUNEE KHC2	Asls-A-A-Cg-Cg-Ogas-A-A-A	FCND-None-None-FCO-FCND-None-None-None	3	2.2		0.6
Matzke 4	2015-2022			16	No/ No	9	150	KEWALUNEE KHC2	Cg-Cg-Csl-Rw-Fsl-A-A-A-A-Ag	SCD-SCD-FCND-FCult-None-None-None-None	3	2.8		0.4
Matzke 4se	2015-2022			8	No/ No	4	200	KEWALUNEE KHB	Ag-Ag-Csl-Cg-Ogas-A-A-A	None-None-FCND-FCND-FCND-None-None	3	0.9		0.8
Matzke 6-7	2015-2022			16.5	No/ No	9	150	KEWALUNEE KHC2	Cg-Cg-Csl-Rw-Fsl-A-A-A-Ag	SCD-SCD-FCND-FCult-None-None-None-None	3	2.8		0.4
Matzke 8	2015-2022			20	No/ No	15	150	KEWALUNEE KHC2	A-Cg-Csl-Wwg-Fsl-A-A-A-A	None-SCD-FCND-FCult-None-None-None-None	3	2.5		0.5
Matzke 9	2015-2022			16.5	On contour/ No	16	100	KEWALUNEE KHD2	Cg-Cg-Cg-Rw-Fsl-A-A-A-Ag	FCO-FCO-FCND-FCult-None-None-None-None	3	2.9		0.5
Matzke Pasture	2015-2022			2	No/ No	4	200	KEWALUNEE KHB	Asls-A-A-Csl-Csl-Ogas-A-A	FCO-None-SCD-FCND-FCND-None-None-None	3	2.4		0.4
MM-East	2015-2022			5	No/ No	8	150	KEWALUNEE KHC2	Cg-Cg-Cg-Csl-Wwg+s-Asls-A-A	SCD-SCD-FCO-FCO-FCult-FCND-None-None	3	2.3		0.5
MM-West	2015-2022			10	No/ No	8	150	KEWALUNEE KHC2	Cg-Cg-Cg-Csl-Wwg+s-Asls-A-A	SCD-SCD-FCO-FCO-FCult-FCO-None-None	3	2.3		0.5
TOWER & W	2015-2022			35	No/ No	4	200	KEWALUNEE KHB	Ogas-A-A-Csl-Csl-Cg-Cg-Cg	FCO-None-SCND-FCND-FCO-FCO-FCO-FCO	3	2.3		0.5
Van Rens	2015-2022			40	No/ No	9	150	KEWALUNEE KHC2	Cg-Cg-Cg-Rw-Fsl-A-A-A-A	FCO-FCO-FCO-FCult-None-None-None-None	3	2.8		0.4
VO10	2017-2023			95	No/ No	3	200	SUMMERVILLE VARIANT SWB	Sgt-Cg-Sgt-Cg-Sgt-Wwg-Cg	FCND-FFC-SFC-FFC-FCND-WT-SFC	1	1		0.6
VO11	2017-2022			100	No/ No	4	200	KEWALUNEE KHB	Cg-Sgt-Cg-Sgt-Cg-Sgt	FCND-FCND-FCND-FCND-FCND-FCND-FCND	3	3		0.3

SnapPlus Soil Conservation Report

Crop Abbreviations

Tillage Abbreviations

Abbreviation	Crop	Abbreviation	Tillage
[F-Cs]	Alfalfa (1st cut) to Corn silage	CP	Chisel Plow, disked
[RwF-Cg]	Winter Rye (forage) to Corn grain	CPND	Chisel Plow, no disk
[RwF-Cs30]	Winter Rye (forage) to Corn silage, 30 inch row	FCD	Fall Chisel, disked
[RwF-Fs]	Winter Rye (forage) to Little-Bluestem	FCND	Fall Chisel, no disk
[RwF-OAs]	Seeded Legume Forage	FCult	Field Cultivation
	Winter Rye (forage) to Oatlage w/ Alfalfa Seeding Spring	FFC	Fall Cultivation
[WwF-Fs]	Winter wheat (grain+straw) to Little-Bluestem Seeded Legume Forage	FFC/CP	crop 1: Fall Cult., crop 2: Chisel plow, no disk
	Winter wheat (grain) to Little-Bluestem Seeded Legume Forage	FVT	Fall vertical tillage
A	Alfalfa	None	None
Ag	Alfalfa (grassy, yr 3+)	NT	No Till
AsIs	Alfalfa Seeding Fall	NT/CP	crop 1: No-till, crop 2: Chisel plow, no disk
Cg	Corn grain	SCD	Spring Chisel, disked
CsI	Corn silage	SCND	Spring Chisel, no disk
CsAs	Oatlage w/ Alfalfa Seeding Spring	SFC	Spring Cultivation
CsFs	Oats w/ Alfalfa Seeding Spring		
CsFAs	Oat-Pea Forage w/ Alfalfa Seeding Spring		
RwF-Fs	Winter Rye (grain+straw)		
Sg7	Soybeans 7-10 inch row		
WwF	Winter wheat (grain)		
WwF-Fs	Winter wheat (grain+straw)		

SnapPlus Application Restriction Compliance Check Report

For Years 2018 - 2022 **Prepared for:**
Plan Year 2018 **Ledgeview Farms**
Reported For **Ledgeview Farms**
Printed 2018-02-02
Plan Completion/Update Date 2001-01-01
SnapPlus Version 16.3 built on 2016-10-31
C:\Users\Kevin Beckard\OneDrive - Cooperative Resources International
AgSource Data Backup\Clients\775-CV Greenleaf\Ledgeview Farms
ISNAP 2 Database\ISNAP 16\Ledgeview Farms Snap 16 Main.snapDb

WPDES Permitted Farm

Manure Credits: 2nd Year
Strategy for applying manure adjacent to navigable water, conduits to navigable water or wetlands:
Annual crops: No applications within 25 ft; inject or immediately incorporate in rest of SWQMA
Perennial crops: No applications within 100 ft.

Manure will be applied to the following fields with SWQMA and W soil restrictions:

For fields with W soil restrictions:

CAFO field areas that may have groundwater within 2 feet of surface at time of manure application will be verified prior to application for
 (1) groundwater depth or
 (2) presence of functioning drain tiles within all wet field areas to ensure groundwater depth is below 2 feet of surface.
 These fields will have specific records of these investigations, including methods used, which will be maintained within the NMP.

Field Name / Crop Year	In SWQMA	Has W Soils	W Soil Acknowledged	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
11G3	Yes	Yes	Yes	X	X	X	X	X	X	X	X		
11B3 (Ensl)	Yes	Yes	Yes	X	X	X	X	X	X	X	X		
11G4	No	Yes	Yes	X	X	X	X	X	X	X	X		
11H1	Yes	No	NA	X	X	X						X	
11J1&2	Yes	No	NA	X	X	X	X	X	X	X	X		
11K1A	Yes	No	NA	X	X	X		X	X	X	X		

Field Name / Crop Year	In SWQMA	Has W Soils	W Soil Acknowledged	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
11K1G	Yes	No	NA	X	X	X		X					
11L-East	Yes	No	NA	X	X	X	X	X	X	X	X		
11L1	Yes	Yes	Yes		X		X	X	X	X	X		
11Q1	Yes	Yes	Yes		X	X	X	X	X	X	X		
11R1	Yes	No	NA	X	X	X	X	X	X	X	X		
11S1	Yes	No	NA		X	X	X	X	X	X	X		
11T-east	No	Yes	Yes	X	X	X	X	X	X	X	X		
11U-28	Yes	No	NA				X	X	X	X	X		
11U1	Yes	No	NA				X	X	X	X	X		
11U7	Yes	No	NA				X	X	X	X			
11U7 N	Yes	No	NA		X			X	X				
11U9	Yes	No	NA		X		X	X	X				
12A/45 & 27	Yes	No	NA			X	X	X	X	X	X		
12A1	Yes	No	NA	X		X	X	X	X	X	X		
12A2 & 27A2	Yes	No	NA		X	X	X	X	X	X	X		
13D-1,2	Yes	No	NA	X		X	X	X	X	X	X		
13E-1	Yes	Yes	Yes	X		X	X	X	X	X	X		
13E-2	Yes	Yes	Yes			X	X	X	X	X	X		
13E-3	Yes	No	NA			X	X	X	X	X	X		
13F-1	Yes	No	NA	X		X	X	X	X	X	X		
13G-1	Yes	No	NA			X	X	X	X	X	X		
13G-2	Yes	No	NA	X		X	X	X	X	X	X		
13-I	Yes	No	NA	X			X	X	X	X	X		
14A	Yes	No	NA				X	X	X	X	X		
14A-11	Yes	No	NA				X	X	X	X			

Field Name / Crop Year	In SW/QMA	Has W Soils	W Soil Acknowledged	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
14B	Yes	No	NA				X	X	X	X	X		
16B-5	Yes	No	NA			X			X	X	X		
16C	Yes	Yes	Yes		X	X	X	X	X	X	X		
16E	Yes	No	NA	X				X	X	X	X		
16F	Yes	No	NA	X									
18A-1	Yes	Yes	Yes				X	X	X	X	X		
18A-2	Yes	Yes	Yes		X		X	X	X				
18A-3	Yes	Yes	Yes	X		X	X	X	X	X	X		
18A-4	Yes	Yes	Yes		X	X	X	X	X	X	X		
18B-1	Yes	No	NA	X	X	X		X	X	X	X		
18B-2	Yes	No	NA					X	X	X	X		
22	Yes	Yes	Yes			X	X	X	X	X	X		
26A-2	Yes	No	NA	X				X	X	X	X		
26-B1 North	Yes	No	NA		X		X						
26-B1 South	Yes	No	NA				X						
26B-2 E&W	Yes	No	NA		X	X		X	X	X	X		
26-B2 South	Yes	No	NA				X	X	X	X	X		
26C	Yes	Yes	Yes	X		X	X			X	X		
26D-4	Yes	No	NA	X			X	X	X	X	X		
26D5-7	Yes	No	NA				X	X	X	X	X		
Asch 1 North	Yes	No	NA	X		X	X	X	X	X	X		
Asch 1 South	No	Yes	Yes	X			X	X	X	X	X		
Asch 2	Yes	No	NA				X	X	X	X	X		
Asch 3	No	Yes	Yes				X	X	X	X	X		
Brower Creek	Yes	Yes	Yes	X	X	X	X	X	X	X	X		

Field Name / Crop Year	In SWQMA	Has W Soils	W Soil Acknowledged	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
DL-K2	No	Yes	Yes				X	X	X	X	X	X	X
Herold Rd	Yes	Yes	Yes				X	X	X	X	X		
KB7-8	No	Yes	Yes			X	X	X	X	X	X	X	
Mat 1	Yes	No	NA	X				X		X			
Mat 11	Yes	No	NA				X	X	X	X	X		
Mat 11A	Yes	No	NA				X	X	X	X	X		
Mat 18	Yes	No	NA			X		X	X	X	X		
Mat 2	Yes	No	NA	X		X	X	X	X	X	X		
Mat 22	Yes	No	NA				X	X	X	X	X		
Mat 3	Yes	No	NA		X	X	X	X	X	X			
Mat 4	Yes	No	NA	X	X		X	X	X	X	X		
Mat 5	Yes	No	NA			X	X	X	X	X	X		
Matzke 1	Yes	No	NA			X	X	X	X	X	X		
Matzke 3	Yes	No	NA	X			X	X					
Matzke 4	Yes	No	NA	X		X	X						
Matzke 4se	Yes	No	NA	X		X	X	X					
Matzke 6-7	Yes	No	NA	X			X						
Matzke 8	Yes	No	NA		X		X	X	X	X	X		
Matzke 9	Yes	No	NA	X	X		X						
TOWER & W	Yes	Yes	Yes	X			X	X	X	X	X		
Van Rens	Yes	No	NA		X		X	X	X	X	X		

X - Fields with manure applications

This farm uses PI for P2O5 590 Compliance

Rotational Restriction Problems

No Rotational Problems found

Soil Test Problems

Field Name	Soil Test Date	Too Few Soil Samples	Soil Test Too Old
01-1	2017-12-04	X	
01-1-2	2017-12-04	X	

Application Restriction Problems

Field Name	Year	Problem	Explanation
11G2	2019	Annual PI of 15 is greater than 12.	
11G-3 East	2018	NR 243 prohibits surface applying liquid or solid manure on a CAFO between Feb 1 to Mar 31 when there is more than 1 in. of snow or if the ground is frozen.	Ledgeview Farms has not yet been issued a WPDES permit by the WDNR. Brown City and 590 standard winter restrictions apply.
11G-3 East	2018	Winter applications prohibited within SWQMA.	Ledgeview Farms has not yet been issued a WPDES permit by the WDNR. Brown City and 590 standard winter restrictions apply.
11G-3 East	2018	Solid manure cannot be applied in the winter on a CAFO unless the field has been tilled in the fall or is in long-term no-ill.	Ledgeview Farms has not yet been issued a WPDES permit by the WDNR. Brown City and 590 standard winter restrictions apply.
11G4	2018	NR 243 prohibits surface applying liquid or solid manure on a CAFO between Feb 1 to Mar 31 when there is more than 1 in. of snow or if the ground is frozen.	Ledgeview Farms has not yet been issued a WPDES permit by the WDNR. Brown City and 590 standard winter restrictions apply.

Field Name	Year	Problem	Explanation
11G4	2018	Solid manure cannot be applied in the winter on slopes greater than 2% on a CAFO unless the field has been tilled in the fall on the contour or is in long-term no-til.	Ledgeview Farms has not yet been issued a WPDES permit by the WDNR. Brown City and 590 standard winter restrictions apply.
11J1&2	2018	NR 243 prohibits surface applying liquid or solid manure on a CAFO between Feb 1 to Mar 31 when there is more than 1 in. of snow or if the ground is frozen.	Ledgeview Farms has not yet been issued a WPDES permit by the WDNR. Brown City and 590 standard winter restrictions apply.
11J1&2	2018	Winter applications prohibited within SWQMA.	Ledgeview Farms has not yet been issued a WPDES permit by the WDNR. Brown City and 590 standard winter restrictions apply.
11J1&2	2018	Solid manure cannot be applied in the winter on slopes greater than 2% on a CAFO unless the field has been tilled in the fall on the contour or is in long-term no-til.	Ledgeview Farms has not yet been issued a WPDES permit by the WDNR. Brown City and 590 standard winter restrictions apply.
11L-East	2018	NR 243 prohibits surface applying liquid or solid manure on a CAFO between Feb 1 to Mar 31 when there is more than 1 in. of snow or if the ground is frozen.	Ledgeview Farms has not yet been issued a WPDES permit by the WDNR. Brown City and 590 standard winter restrictions apply.
11L-East	2018	Winter applications prohibited within SWQMA.	Ledgeview Farms has not yet been issued a WPDES permit by the WDNR. Brown City and 590 standard winter restrictions apply.
11L-East	2018	Solid manure cannot be applied in the winter on slopes greater than 2% on a CAFO unless the field has been tilled in the fall on the contour or is in long-term no-til.	Ledgeview Farms has not yet been issued a WPDES permit by the WDNR. Brown City and 590 standard winter restrictions apply.
11M1	2018	NR 243 prohibits surface applying liquid or solid manure on a CAFO between Feb 1 to Mar 31 when there is more than 1 in. of snow or if the ground is frozen.	Ledgeview Farms has not yet been issued a WPDES permit by the WDNR. Brown City and 590 standard winter restrictions apply.

Field Name	Year	Problem	Explanation
11M1	2018	Solid manure cannot be applied to slopes greater than 2% in the winter on a CAFO unless the field is worked on the contour.	Ledgewiew Farms has not yet been issued a WPDES permit by the WDNR. Brown Cty and 590 standard winter restrictions apply.
11T	2018	NR 243 prohibits surface applying liquid or solid manure on a CAFO between Feb 1 to Mar 31 when there is more than 1 in. of snow or if the ground is frozen.	Ledgewiew Farms has not yet been issued a WPDES permit by the WDNR. Brown Cty and 590 standard winter restrictions apply.
11T	2018	Solid manure cannot be applied in the winter on slopes greater than 2% on a CAFO unless the field has been tilled in the fall on the contour or is in long-term no-till.	Ledgewiew Farms has not yet been issued a WPDES permit by the WDNR. Brown Cty and 590 standard winter restrictions apply.
11T east	2018	NR 243 prohibits surface applying liquid or solid manure on a CAFO between Feb 1 to Mar 31 when there is more than 1 in. of snow or if the ground is frozen.	Ledgewiew Farms has not yet been issued a WPDES permit by the WDNR. Brown Cty and 590 standard winter restrictions apply.
11T east	2018	Manure with a solids content of 20% or less can not be applied in the winter to slopes greater than 6% on a CAFO.	Ledgewiew Farms has not yet been issued a WPDES permit by the WDNR. Brown Cty and 590 standard winter restrictions apply.
DL-1	2022	Soil test P is between 100 to 200 ppm and if manure is applied to this CAFO field, it must meet the P Index standard and a P205 Balance target that demonstrates soil test P drawdown over a rotation of 4 years or less. Reset CAFO P Rotation Setting to include the year of this manure application so the P205 Balance and P Index can be checked for a correct time period.	P205 balance targets have been met for the entire rotation.
DL-1,2	2022	Soil test P is between 100 to 200 ppm and if manure is applied to this CAFO field, it must meet the P Index standard and a P205 Balance target that demonstrates soil test P drawdown over a rotation of 4 years or less. Reset CAFO P Rotation Setting to include the year of this manure application so the P205 Balance and P Index can be checked for a correct time period.	P205 balance targets have been met for the entire rotation.
Mal 2	2018	NR 243 prohibits surface applying liquid or solid manure on a CAFO between Feb 1 to Mar 31 when there is more than 1 in. of snow or if the ground is frozen.	Ledgewiew Farms has not yet been issued a WPDES permit by the WDNR. Brown Cty and 590 standard winter restrictions apply.

Field Name	Year	Problem	Explanation
Mat 2	2018	Winter applications prohibited within SWQMA.	Ledgeview Farms has not yet been issued a WPDES permit by the WDNR. Brown City and 590 standard winter restrictions apply.
Mat 2	2018	Manure with a solids content of 20% or less can not be applied in the winter to slopes greater than 6% on a CAFO.	Ledgeview Farms has not yet been issued a WPDES permit by the WDNR. Brown City and 590 standard winter restrictions apply.
Matzke 1	2018	NR 243 prohibits surface applying liquid or solid manure on a CAFO between Feb 1 to Mar 31 when there is more than 1 in. of snow or if the ground is frozen.	Ledgeview Farms has not yet been issued a WPDES permit by the WDNR. Brown City and 590 standard winter restrictions apply.
Matzke 1	2018	Winter applications prohibited within SWQMA.	Ledgeview Farms has not yet been issued a WPDES permit by the WDNR. Brown City and 590 standard winter restrictions apply.
Matzke 1	2018	Solid manure cannot be applied in the winter on slopes greater than 2% on a CAFO unless the field has been tilled in the fall on the contour or is in long-term no-till.	Ledgeview Farms has not yet been issued a WPDES permit by the WDNR. Brown City and 590 standard winter restrictions apply.
VO10	2019	CAFOs are prohibited from applying manure when bedrock is within 24 inches of the surface.	Manure will not be applied to the SW corner of this field where there is potential bedrock unless it is field verified that there is no bedrock within 24 inches of the soil surface.
VO10	2020	CAFOs are prohibited from applying manure when bedrock is within 24 inches of the surface.	Manure will not be applied to the SW corner of this field where there is potential bedrock unless it is field verified that there is no bedrock within 24 inches of the soil surface.

Field Name	Year	Problem	Explanation
VO10	2021	CAFOs are prohibited from applying manure when bedrock is within 24 inches of the surface.	Manure will not be applied to the SW corner of this field where there is potential bedrock unless it is field verified that there is no bedrock within 24 inches of the soil surface.
VO11	2019	CAFOs are prohibited from applying manure when bedrock is within 24 inches of the surface.	Manure will not be applied to the corner of this field where there is potential bedrock unless it is field verified that there is no bedrock within 24 inches of the soil surface.
VO11	2020	CAFOs are prohibited from applying manure when bedrock is within 24 inches of the surface.	Manure will not be applied to the corner of this field where there is potential bedrock unless it is field verified that there is no bedrock within 24 inches of the soil surface.
VO11	2021	CAFOs are prohibited from applying manure when bedrock is within 24 inches of the surface.	Manure will not be applied to the corner of this field where there is potential bedrock unless it is field verified that there is no bedrock within 24 inches of the soil surface.
VO11	2022	CAFOs are prohibited from applying manure when bedrock is within 24 inches of the surface.	Manure will not be applied to the corner of this field where there is potential bedrock unless it is field verified that there is no bedrock within 24 inches of the soil surface.

Excess N Problems

11G3	2017	11T east	2016
13E-1	2015	22	2017
Bower Creek	2016		

Soil Test Problems Legend

Too Few Soil Samples	Less than one sample per five acres.
Soil Test Data Too Old	Soil test is greater than 4 years old

SnapPlus Nutrient Mass Balance Report

Starting Year 2018

Reported For Ledgerview Farms

Printed

2018-02-02

Plan Completion/Update Date: 2001-01-01

SnapPlus Version 16.3 built on 2016-10-31

Prepared for:

Ledgerview Farms
attn: Roy, Glenn & Jason Pansier
3875 DICKINSON RD
DE PERE, WI 54115

C:\Users\Kevin Becker\OneDrive - Cooperative Resources International
JagSource Data Backup\Clients\1775-CV Greenleaf\Ledgerview Farms\SNAP
2 Database\SNAP 16\Ledgerview Farms Snap 16 Main.snapDb

Acres/ Crop Year	2018	2019	2020	2021	2022
Spreadable Acres in plan*	2,669.3	2,669.3	2,669.3	2,669.3	2,669.3
Acres receiving manure**	2,080.3	2,454.6	2,495.8	2,439.6	2,293.5

* Calculated using SWQMA manure applications strategy of no application within 25 ft.
** Assumes all manure spreading restrictions are followed. Non-spreadable acres not included.

Nutrient Source Summary for 2018

First Year Available Nutrients in lb/ton or lb/1000 gallons										Volumes are in tons or gallons						
Source Name	Type	N	N Inc.	N Inj	P	K	S	DM %	Volume	Amount Applied	Amount Remaining	Fall	Winter	Spring	Summer	
Calf Avg	Dairy, solid	4.0	5.2	5.2	5.1	9.0	1.3	26	0	0	0	0	0	0	0	0
Cow Avg	Dairy, solid	2.9	3.8	3.8	3.5	4.0	0.7	19	0	7,544	-7,544	3,486	1,086	1,099	1,874	
Dairy Liquid Avg	Dairy, liquid	5.9	7.8	8.8	5.9	17.5	1.2	5	0	20,727,250	-20,727,250	5,902,750	0	4,382,500	10,442,000	
Heifer Avg	Dairy, solid	3.2	4.3	4.3	3.8	6.5	0.8	21	0	3,168	-3,168	825	1,068	1,200	75	
Maternski Pit	Dairy, liquid	4.0	6.0	7.0	3.0	11.0	0.6	2	0	0	0	0	0	0	0	
NFO Manure	Dairy, solid	2.0	3.0	3.0	3.0	6.0	1.0	33	0	0	0	0	0	0	0	
Total Solid:									0	10,712	-10,712					
Total Liquid:									0	20,727,250	-20,727,250					

SnapPlus Nutrient Mass Balance Report

Annual Pounds of Available N, P2O5
and K2O Applied from Manure and
Fertilizer

		2018	2019	2020	2021	2022
Produced from Manure (lb)	N [n]	0	245,477	242,877	242,877	242,877
	P2O5	0	148,772	146,222	146,222	146,222
	K2O	0	438,209	433,709	433,709	433,709
Total Available Manure Nutrients Applied (lb)	N	187,854	196,772	199,316	185,068	196,180
	P2O5	160,693	162,825	164,261	149,795	155,246
	K2O	413,793	472,649	478,172	443,313	457,978
Total Fertilizer Nutrients Applied (lb)	N	38,802	21,195	22,134	22,678	26,383
	P2O5	23,733	17,663	18,445	18,560	21,830
	K2O	90,227	61,677	36,890	40,046	44,697
Total Crop Removal (lb)	P2O5	174,285	170,018	174,220	171,973	166,793
	K2O	523,473	513,695	557,113	528,375	491,158
Nutrient Balance (Applied - Crop removal, lb)	P2O5	10,140	10,470	8,486	-3,618	10,283
	K2O	-19,453	20,631	-42,051	-45,014	11,517

Annual Manure Production and Use by Source

Total Value = \$ Value of all nutrients, incorporated including S.

Source	2018	2019	2020	2021	2022
Calf Avg	Production (Tons)	0	500	0	0
	Used (Tons)	0	70	105	88
	Analysis Date	4/5/5-5-9	4/5/5-5-9	4/5/5-5-9	4/5/5-5-9
	Analysis (N/P/K/S-P2O5-K2O)				
	Dry Matter (%)	26	26	26	26
	Total Value	0.00	0.00	0.00	0.00
Cow Avg	Production (Tons)	0	0	0	0
	Used (Tons)	7,544	713	766	165
	Analysis Date	3/4/4-4-4	3/4/4-4-4	3/4/4-4-4	3/4/4-4-4
	Analysis (N/P/K/S-P2O5-K2O)				
	Dry Matter (%)	19	19	19	19
	Total Value	0.00	0.00	0.00	0.00

SnappPlus Nutrient Mass Balance Report

Source	2018	2019	2020	2021	2022
Dairy Liquid Avg	Production (Gallons)	0	24,783,392	24,783,392	24,783,392
	Used (Gallons)	20,727,250	26,311,750	26,703,698	25,685,500
	Analysis Date	6/8/10-6-18	6/8/10-6-18	6/8/10-6-18	6/8/10-6-18
	Analysis (N/Ninc/Nmg-P2O5-K2O)				
Heifer Avg	Dry Matter (%)	5	5	5	5
	Total Value	0.00	0.00	0.00	0.00
	Production (Tons)	0	0	0	0
	Used (Tons)	3,168	1,276	1,000	525
Maternowski Pit	Analysis Date	3/4/4-4-7	3/4/4-4-7	3/4/4-4-7	3/4/4-4-7
	Analysis (N/Ninc/Nmg-P2O5-K2O)				
	Dry Matter (%)	21	21	21	21
	Total Value	0.00	0.00	0.00	0.00
New Heifer	Production (Gallons)	0	0	0	0
	Used (Gallons)	0	0	0	0
	Analysis Date	4/6/7-3-11	4/6/7-3-11	4/6/7-3-11	4/6/7-3-11
	Analysis (N/Ninc/Nmg-P2O5-K2O)				
NFO	Dry Matter (%)	2	2	2	2
	Total Value	0.00	0.00	0.00	0.00
	Production (Tons)	0	0	0	0
	Used (Tons)	0	0	0	0
NFO	Analysis Date	2009-12-22	2009-12-22	2009-12-22	2009-12-22
	Analysis (N/Ninc/Nmg-P2O5-K2O)				
	Dry Matter (%)	21	21	21	21
	Total Value	0.00	0.00	0.00	0.00

SnapPlus Nutrient Mass Balance Report

Source	2018	2019	2020	2021	2022
NFO	0	0	0	0	0
Manure	0	0	0	0	0
Production (Tons)	0	0	0	0	0
Used (Tons)	0	0	0	0	0
Analysis Date	2/3/3-6	2/3/3-6	2/3/3-6	2/3/3-6	2/3/3-6
Analysis (N/P/K/205-K/20)	2/3/3-6	2/3/3-6	2/3/3-6	2/3/3-6	2/3/3-6
Dry Matter (%)	33	33	33	33	33
Total Value	0.00	0.00	0.00	0.00	0.00

Estimated Livestock Manure Production for 2018

Animal Type	# of animals	Total No. of days	% Collected as Solid	% Collected as Liquid	Yearly Tons	Yearly Gallons
Beef High Forage 750 lbs	642	365	50	50	3,632	2,811,960
Dairy Heifer 1000 lbs	360	365	5	95	269	2,246,940
Dairy Calf 150 lbs	195	365	25	0	116	0
Dairy Calf 250 lbs	195	365	25	0	187	0
Dairy Dry Cows 1400 lbs	184	365	5	95	193	1,595,050
Dairy Heifer 750 lbs	216	365	0	100	0	1,087,992
Dairy Lactating Cows 1200 lbs	400	365	0	100	0	4,015,000
Dairy Lactating Cows 1400 lbs	500	365	0	100	0	5,840,000
Farm Totals					4,397	17,596,942

Manure Storage Pits for 2018

No Rows Found

Spreaders for 2018

No Rows Found

Tab 13 – Administrative Codes and County Ordinances

Hard copies of the Administrative Codes and County Ordinances listed below have been included in the farms copy of this nutrient management plan. To save on paper and time these copies have not been included in the copies that are sent to the DNR and counties since these agencies all should have copies of these relevant laws on file.

NUTRIENT MANAGEMENT

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I. Definition

Managing the amount, source, placement, form, and timing of the application of nutrients and soil amendments.

II. Purposes

This standard establishes the acceptable criteria and documentation requirements for a plan that addresses the application and *budgeting*¹ of nutrients for plant production. All nutrient sources, including soil reserves, commercial fertilizer, manure, organic byproducts, legume crops, and crop residues shall be accounted for and properly utilized. These criteria are intended to minimize nutrient entry into surface water, groundwater, and atmospheric resources while maintaining and improving the physical, chemical, and biological condition of the soil.

III. Conditions Where Practice Applies

This standard applies to all *fields* where plant nutrient sources and soil amendments are applied during the course of a *rotation*.

IV. Federal, State, and Local Laws

Users of this standard are responsible for compliance with applicable federal, state, and local laws, rules, or regulations governing nutrient management systems. This standard does not contain the text of federal, state, or local laws. Implementation of this standard may not eliminate nutrient losses that could result in a violation of law.

V. Criteria

This section establishes requirements for planning, design parameters, acceptable management processes, and performance requirements for nutrient management plan development and implementation. Nutrient management plans shall be prepared according to all of Criteria A., B., C., D., and E.

All of the information contained in this section is required. Wisconsin Conservation Planning Technical Note WI-1 is the companion document to this standard and includes criteria that are required where referenced within this section.

A. Criteria for Surface and Groundwater Resources

1. Nutrient Criteria for All Sites

- a. Develop and implement an annual field-specific nutrient application plan. Account for the source, rate, timing, form, and method of application for all *major nutrients* consistent with this standard and soil fertility recommendations found in University of Wisconsin-Extension (UWEX) Publication A2809, "Soil Test Recommendations for Field, Vegetable and Fruit Crops," unless use of one the following options are appropriate:
 - For crops not listed in A2809, use other appropriate Land Grant University recommendations.
 - For nutrient application decisions based on plant tissue analysis, the sampling and testing of plants and the resulting nutrient recommendations shall be done in accordance with University of Wisconsin recommendations. See V.A.1.1.

Annual plan updates shall document the crops, tillage, nutrient application rates, and methods actually implemented.

- b. The plan shall be based on yield goals that are attainable under average growing conditions and established using soil productivity, local climate information, multi-year *documented*

Conservation Practice Standards are reviewed periodically and updated if needed. To obtain the current version of this standard, contact your local NRCS office or the Standards Oversight Council office in Madison, WI at (608) 833-1833.

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¹ Words in the standard that are shown in italics are described in X. Definitions. The words are italicized the first time they are used in the text.

yields, and/or local research on yields for similar soils and crop management systems. Yield goals should not be higher than 15% above the previous 3-5 year average.

- c. Soils shall be tested a minimum of once every four years by a DATCP-certified laboratory for pH, phosphorus (P), potassium (K), and organic matter. A laboratory list is provided in Appendix 2 of the Wisconsin Conservation Planning Technical Note WI-1. Soil sampling shall be consistent with UWEX Publication A2100, "Sampling Soils for Testing." For perennial fruit crops, use of soil test recommendations from UWEX Publication A-2809 is only required as the basis for fertilizer applications prior to establishment of new plantings. Subsequent nutrient recommendations should be based on plant tissue analysis results. See V.A.1.1.
- d. Annual P and K nutrient recommendations may be combined into a single application that does not exceed the total nutrient recommendation for the rotation. This combined annual application is not allowed on frozen or snow covered soil. Commercial P fertilizers shall not be applied to soils with P tests in the non-responsive range for the crop being grown with the exception of not more than 20 pounds per acre P_2O_5 as starter for corn or recommended rates of starter P_2O_5 for potatoes and other vegetable crops as identified in UWEX Publication A3422, "Commercial Vegetable Production in Wisconsin." All the P and K starter fertilizer shall be credited against crop needs. When grouping fields for nutrient application purposes, N, P, and K application rates shall match individual field recommendations as closely as possible.
- e. Where practical, adjust soil pH to the specific range of the crop(s) grown to optimize nutrient utilization.
- f. Available nitrogen from all sources shall not exceed the annual N requirement of non-legume crops consistent with UWEX Publication A2809, or the annual N uptake by legume crops. Because of variability in N mineralization and manure applications,

it is acceptable for available N to be up to 20% more than the recommended N rate when legumes, manures, and organic byproducts are used to meet the entire N requirement of the crop to be grown.

Starter N fertilizers are to be credited against crop needs as follows: all N beyond 20 pounds per acre for corn and 40 pounds per acre for potatoes.

- g. First year available N in manure applied to fields prior to legume crop establishment shall not exceed the first year's annual N removal by legumes and companion crop. See Wisconsin Conservation Planning Technical Note WI-1, Part II B.4.
- h. First and second-year legume credits shall be applied as identified in UWEX Publication A2809, Table 25, or through soil nitrate testing as identified in UWEX Publication A3624, "Soil Nitrate Tests for Wisconsin Cropping Systems."
- i. Estimates of first-year available nutrient credits for manure shall be established in accordance with one of the following methods:
 - (1) A manure analysis from a laboratory participating in the Manure Analysis Proficiency (MAP) testing program and interpreted according to Part III, Table 3 of the Wisconsin Conservation Planning Technical Note WI-1, or
 - (2) Estimates of first-year available nutrients from manure. See Part III, Table 4 of the Wisconsin Conservation Planning Technical Note WI-1.

Note: It is strongly recommended that second-year nutrient credits, especially for areas receiving consecutive manure applications, be included in the nutrient management plan using values in Part III, Table 4

of Wisconsin Conservation Planning
Technical Note WI-1 or soil nitrate testing.

- j. Organic byproducts other than manure (i.e., industrial wastes, municipal sludge, and septage) applied to fields shall be analyzed for nutrient content and applied in accordance with applicable regulations including restrictions on heavy metal content and land application rates.
- k. Manures, organic byproducts, and fertilizers shall not run off the field site during or immediately after application. If ponding, runoff, or drainage to subsurface tiles of the applied materials occurs, implement the following activities as appropriate:
 - (1) Stop application.
 - (2) Take corrective action to prevent offsite movement.
 - (3) Modify the application (rate, method, depth of injection, timing) to eliminate runoff or drainage to subsurface tiles.
 - (4) Notify the Wisconsin Department of Natural Resources (WDNR) in the event that a spill or accidental release of any material or substance when required by the Agricultural Spill Law (s.289.11, Wis. Stats.) or the terms of a WPDES permit. Refer to the Wisconsin Conservation Planning Technical Note WI-1, Part IV, for contact information and "Agricultural Spills and How to Handle Them," Pub-RR-687-2002, August 2002.
- l. Where nutrient application decisions are based on plant tissue analysis, the sampling and testing of plants and the resulting nutrient recommendations shall be done in accordance with University of Wisconsin recommendations in the references section of this standard. Nutrient recommendations for cranberries may be based on plant analysis as defined by appropriate publications in the references section of this standard.
- m. Where *gleaning/pasturing* occurs, verify through computations that the nutrients deposited as manure within a field, do not exceed the N and P requirements of this standard.

2. Nutrient Application Prohibitions

- a. Nutrients shall not be spread on the following features.
 - (1) Surface water, established *concentrated flow channels*, or non-harvested *permanent vegetative buffers*.
 - (2) A non-farmed wetland, sinkhole, nonmetallic mine, or well.
 - (3) The area within 50 feet of a potable drinking water well shall not receive mechanical applications of manure.
 - (4) Areas contributing runoff within 200 feet upslope of *direct conduits to groundwater* such as a well, sinkhole, fractured bedrock at the surface, *tile inlet*, or nonmetallic mine unless the nutrients are *effectively incorporated* within 72 hours.
 - (5) Land where vegetation is not removed mechanically or by grazing, except to provide nutrients for establishment and maintenance, unless necessary in an emergency situation.
 - (6) Fields exceeding *tolerable soil loss (T)*. Erosion controls shall be implemented so that tolerable soil loss (T) over the crop rotation will not be exceeded on fields that receive nutrients.
- b. When frozen or snow-covered soils prevent effective incorporation at the time of application and the nutrient application is allowed, implement the following:
 - (1) Do not apply nutrients within the *Surface Water Quality Management Area (SWQMA)* except for manure deposited through winter gleaning/pasturing of plant residue.
 - (2) Do not apply nutrients to locally identified areas delineated in a *conservation plan* as contributing nutrients to direct conduits to

groundwater or surface water as a result of runoff.

- (3) Do not exceed the P removal of the following growing season's crop when applying manure. Liquid manure applications are limited to 7,000 gallons per acre. The balance of the crop nutrient requirement may be applied the following spring or summer. Winter applications shall be conducted according to Section VII.B.
- (4) Do not apply nutrients on slopes greater than 9%, except for manure on slopes up to 12% where cropland is contoured or contour strip cropped.

- (5) Do not apply N and P in the form of commercial fertilizer. An exception is allowed for grass pastures and on winter grains that do not fall within a prohibition area defined by V.A.2.

3. Nutrient Application Restrictions

- a. When unincorporated liquid manure applications (less than 12% solids) occur on non-frozen soils within a SWQMA, use Table 1 to determine maximum acceptable rates. No applications are allowed on *saturated soils*.

Sequential applications may be made to meet the desired nutrient additions consistent with this standard. Prior to subsequent applications soils shall be evaluated using Table 1 or wait a minimum of 7 days.

Table 1.

Surface Texture Class ¹	Max Application Rate <i>gal/acre</i>		Allowable Soil Moisture Description for Applications
	< 30%*	≥ 30%*	
Fine	3000	5000	Easily ribbons out between fingers, has a slick feel.
Medium	5000	7500	Forms a ball, is very pliable, slicks readily with clay.
Coarse	7000	10000	Forms a weak ball, breaks easily.

¹ Fine – clay, silty clay, silty clay loam, clay loam

Medium – sandy clay, sandy clay loam, loam, silt loam, silt

Coarse – loamy sand, sandy loam, sand. This category also includes peat and muck based on their infiltration capacity.

* Crop residue or vegetative cover on the soil surface after manure application.

For all nutrient applications on non-frozen soil within a SWQMA use one or more of the following practices as appropriate to address water quality concerns for the site:

- (1) Install/maintain permanent vegetative buffers (harvesting is allowed unless restricted by other laws or programs). Refer to NRCS Field Office Technical Guide (FOTG), Section IV, Standard 393, Filter Strip, or ATCP 48 for land in drainage districts.
- (2) Maintain greater than 30% crop residue or vegetative cover on the soil surface after nutrient application.
- (3) Incorporate nutrients within 72 hours leaving adequate residue to meet tolerable soil losses.
- (4) Establish cover crops promptly following application.

B. Criteria to Minimize Entry of Nutrients to Groundwater

To minimize N leaching to groundwater on *high permeability soils*, or soils with less than 20 inches to bedrock, or soils with less than 12 inches to *apparent water table*, or within 1000 feet of a municipal well, apply the following applicable management practices:

Note: A list of soils with a high potential for N leaching to groundwater is provided in Appendix 1 of the Wisconsin Conservation Planning Technical Note WI-1.

1. Where sources of N are applied:
 - a. No fall commercial N applications except for establishment of fall-seeded crops. Commercial N application rates, where allowed, shall not exceed 30 pounds of available N per acre.
 - b. On irrigated fields, including irrigated manure, apply one of the following management strategies:
 - (1) A split or delayed N application to apply a majority of crop N requirement after crop establishment.
 - (2) Utilize a nitrification inhibitor with ammonium forms of N.

2. When manure is applied in late summer or fall to meet the fertility needs of next year's crop and soil temperatures are greater than 50°F, apply one of the following options:
 - a. Use a nitrification inhibitor with liquid manure and limit N rate to 120 pounds available N per acre.
 - b. Delay applications until after September 15 and limit available N rate to 90 pounds per acre.
 - c. Apply to fields with perennial crops or fall-seeded crops. N application shall not exceed 120 pounds available N per acre or the crop N requirement, whichever is less.
3. When manure is applied in the fall and soil temperatures are 50°F or less, limit available N from manure application to 120 pounds per acre or the crop N requirement, whichever is less.

Note: The restrictions in B. 2. and 3. do not apply to spring manure applications prior to planting. The balance of the crop N requirements may be applied the following spring or summer.

4. Where P enrichment of groundwater is identified as a conservation planning concern, implement practices to reduce delivery of P to groundwater.

C. Additional Criteria to Minimize Entry of Nutrients to Surface Water

1. Where manure, organic byproducts, or fertilizers are applied:
 - a. Avoid building soil test P values when possible beyond the non-responsive soil test range for the most demanding crop in the rotation. For most agronomic crops in Wisconsin, the non-responsive soil test range is 30 to 50 parts per million (ppm) Bray P-1 soil test.
 - b. Establish perennial vegetative cover in all areas of concentrated flow resulting in reoccurring gullies.
2. Develop a P management strategy when manure or organic by-products are applied during the crop rotation to minimize surface water quality impacts. Use either the

Phosphorus Index (PI) in section a., or Soil Test Phosphorus Management Strategy found in section b. The single strategy chosen, either a. or b., shall be applied uniformly to all fields within a farm or tract.

Note: First year available N in manure applied to fields prior to legume crop establishment shall not exceed the first year's annual N removal by legumes and companion crop. See Wisconsin Conservation Planning Technical Note WI-1, Part II B.4. Available N applied cannot exceed the N need or legume crop N removal of the next crop to be grown.

- a. PI Strategy – The planned average PI values for up to an 8-year rotation in each field shall be 6 or lower. P applications on fields with an average PI greater than 6 may be made only if additional P is needed according to UWEX soil fertility recommendations. Strategies for reducing the PI, algorithms, and software for calculating the Wisconsin PI can be found at <http://wpindex.soils.wisc.edu/>.
- b. Soil Test Phosphorus Strategy - Management strategies based on soil test phosphorus may be used. Operations using this strategy shall have a conservation plan addressing all soil erosion consistent with the current crops and management or use the erosion assessment tools included with the Phosphorus Index model. In crop fields where ephemeral erosion is an identified problem, a minimum of one of the following runoff-reducing practices shall be implemented:
 - Install/maintain contour strips and/or contour buffer strips. Refer to NRCS FOTG, Section IV, Standard 585, Strip Cropping, and/or Standard 332, Contour Buffer Strip.
 - Install/maintain filter strips (NRCS FOTG, Section IV, Standard 393, Filter Strip) along surface waters and concentrated flow channels that empty into surface waters that are within or adjoin areas where manure will be applied.
 - Maintain greater than 30% crop residue or vegetative cover on the soil surface after planting.

- Establish fall cover crops.

Available phosphorus applications from all sources shall be based on the following soil test P values (Bray P-1).

- (1) Less than 50 ppm soil test P: nutrient application rates allowed up to the N needs of the following crop or the N removal for the following legume crop.
- (2) 50-100 ppm soil test P: P application shall not exceed the total crop P removal for crops to be grown over a maximum rotation length of 8 years.
- (3) Greater than 100 ppm soil test P: eliminate P applications, if possible, unless required by the highest P demanding crop in the rotation. If applications are necessary, applications shall be 25% less than the cumulative annual crop removal over a maximum rotation length of 8 years.
- (4) For land with potatoes in the rotation, total P applications shall not exceed crop removal over a maximum rotation length of 8 years if soil tests are in the optimum, high, or excessively high range for potatoes.

D. Additional Criteria to Minimize N and Particulate Air Emissions

Where air quality is identified in a conservation plan as a resource concern, apply a management strategy that minimizes nutrient volatilization and particulate losses while maintaining tolerable soil erosion levels for wind and water.

E. Additional Criteria to Protect the Physical, Chemical, and Biological Condition of the Soil

1. Nutrients shall be applied in such a manner as not to permanently degrade the soil's structure, chemical properties, or biological condition.
2. To the extent practical, nutrients shall not be applied to flooded or saturated soil when the

potential for soil compaction and/or the creation of ruts is high.

VI. Considerations

The following are optional management considerations and are not required practices.

- A. Promote seeding and stabilization of concentrated flow channels, installation and maintenance of vegetative filter strips, riparian buffers and other buffer strips adjacent to surface water and wetlands in conjunction with other conservation practices in order to reduce the amounts of sediment and nutrients that reach surface water and/or groundwater.
- B. Corn nitrogen recommendations in A2809 can be adjusted for the effects of current corn and nitrogen fertilizer prices using the N rate calculator available at <http://www.uwex.edu/ces/crops/NComparison.htm>. Additional management practices that can be utilized to improve N use efficiency can be found in the Wisconsin Conservation Planning Technical Note WI-1, Part II.
- C. Apply nutrients not specifically addressed by this standard (i.e., secondary and micro nutrients) based on recommendations found in UWEX Publication A2809.

Since specific environmental concerns have not been identified for potassium (K), K additions in manure or bio-solids will be determined by rate limits for the N or P in those materials. Commercial fertilizer K applications equal to crop removal will avoid building soil test K levels. K may be applied equal to crop removal at any soil test K level. Dairy producers should monitor K levels in forages and take additional steps to reduce soil K levels if consumption of forage with high K levels becomes an animal health problem.

- D. To minimize N leaching on medium and fine-textured soils, avoid fall commercial N applications for crops to be seeded the following spring. When commercial N is applied in the fall, use ammonium forms of N and delay N application until soil temperatures drop below 50°F. Use of a nitrification inhibitor with fall-applied N is recommended.
- E. Irrigated fields should use irrigation scheduling strategies with the intent of minimizing leaching losses and improving water use efficiency and not exceeding intake/infiltration capacity of the soil.
- F. Consider the use of animal feeding strategies based on published nutrition research findings (National

Research Council, etc.) to reduce excess P in rations when manure applications are made to cropland.

- G. Consider delaying surface applications of manure or other organic byproducts if precipitation capable of producing runoff is forecast within 24 hours of the time of planned application.
- H. Consider modifications to the crop rotation to provide crop fields for the application of manure during the summer crop growing season.
- I. Manure top-dressed on existing forages should not exceed the nutrient equivalent of 35 pounds N – 25 pounds P₂O₅ – 80 pounds K₂O (first year availability per acre) or no more than 10 tons of solid manure per acre per harvest. Additional management considerations can be found in “Applying Manure to Alfalfa,” North Central Regional Research Report 346.
- J. For fields directly adjacent to, or with areas of concentrated or channelized flow that drain directly to, Outstanding, Exceptional or nutrient impaired surface waters, avoid raising soil test P levels to the maximum extent practicable. In addition, implement conservation practices that reduce delivery of nutrients to these waters. For operations using the P-Index in high environmental risk areas, the P-Index values should be reduced to the maximum extent practicable by applying additional conservation practices.
- K. Where residual nitrate carryover is probable, the preplant soil nitrate test is recommended to adjust N application rates.

VII. Plans and Specifications

- A. The minimum requirements for a nutrient management plan are specified in the previous sections of this standard and expanded in Part I of the Wisconsin Conservation Planning Technical Note WI-1. Include in a nutrient management plan:
 - a soil map and aerial photograph of the site;
 - current and planned crops and crop yields; realistic yield goals;
 - results of soil, plant, manure, or organic byproduct sample analysis;
 - recommended nutrient application rates;
 - documentation of actual nutrient applications including the rate, form, timing,

- and method. Revise the plan to reflect any changes in crops, yields, tillage, management, and soil or manure analyses;
 - the location of sensitive areas and the resulting nutrient application restrictions;
 - guidance for implementation, maintaining records;
 - each field's tolerable and actual soil losses;
 - soil test P-ppm; P balance, or P Index level where applicable;
 - other management activities required by regulation, program requirements, or producer goals;
 - a narrative to explain other implementation clarifications.
- B. Winter Spreading Plan – The plan shall identify those areas of fields that meet the restrictions for frozen or snow-covered ground identified in this standard. If necessary, land application of manure on frozen and snow-covered ground shall occur on those fields accessible at the time of application that represent the lowest risk of runoff and deliverability to areas of concentrated and channelized flow and surface waters. Low-risk fields shall be identified using either the P-Index or an approved conservation plan. In general, fields most suitable for land application during frozen and snow-covered ground conditions include those fields:
- with low slope,
 - with low erosion,
 - with high levels of surface roughness,
 - with the greatest distance to surface waters and areas of concentrated flow,
 - with no drainage to Outstanding/ Exceptional/nutrient impaired water bodies,
 - with low delivery potential during active snowmelt.

Refer to section VIII.E for storage/infield stacking of manure during periods of active snowmelt.

- C. Persons who review or approve plans for nutrient management shall be certified through any certification program acceptable to the NRCS (NRCS General Manual, Title 180, Part 409.9, NRCS TechReg) or other appropriate agencies within the state.
- D. Industrial wastes and byproducts and municipal sludge are regulated by the Wisconsin Department

of Natural Resources (WDNR). They must be spread in accordance with a Wisconsin Pollution Discharge Elimination System (WPDES) permit as obtained from the WDNR.

- E. Plans for nutrient management shall be developed in accordance with policy requirements of the NRCS General Manual Title 450 Part 401.03 and Title 190, Part 402, the contents of this standard, the procedures contained in the National Planning Procedures Handbook, and NRCS National Agronomy Manual, Section 503.
- F. Plans for Nutrient Management that are elements of a more comprehensive conservation plan shall recognize other requirements of the conservation plan and be compatible with the other requirements. A Comprehensive Nutrient Management Plan (CNMP) is a conservation system unique to animal feeding operations (AFO). The CNMP will be developed to address the environmental risks identified during the resource inventory of an AFO. A CNMP will require use of all the applicable criteria in this technical standard along with the additional criteria located in NRCS National Planning Procedures Handbook, Subpart B, Part 600.54.

VIII. Operation and Maintenance

- A. Document the actual nutrient application including the rate, form, timing, and method of the application. Revise the plan to reflect any changes in crops, tillage or management, soils, and manure tests.
- B. Evaluate the need to modify field operations to reduce the risk of large nutrient losses during a single runoff event based on current field conditions or forecasted weather events.
- C. Minimize operator exposure to potentially toxic gases associated with manure, organic wastes, and chemical fertilizers, particularly in enclosed areas. Wear protective clothing appropriate to the material being handled.
- D. Protect commercial fertilizer from the weather, and agricultural waste storage facilities from accidental leakage or spillage. See Wisconsin administrative rules and county or local ordinances concerning regulations on siting, design, operation, and maintenance of these facilities.

- E. During periods when land application is not suitable, manure shall be stored in a manure storage facility designed in accordance with the criteria contained in NRCS FOTG Standard 313, Waste Storage Facility. Temporary management of manure shall be in accordance with the criteria for temporary unconfined stacks of manure contained in Table 7 of Standard 313.
- F. When cleaning equipment after nutrient application, remove and save fertilizers or wastes in an appropriate manner. If the application equipment system is flushed, use the rinse water in the following batch of nutrient mixture where possible or dispose of according to state and local regulations. Always avoid cleaning equipment near high runoff areas, ponds, lakes, streams, and other water bodies. Extreme care must be exercised to avoid contaminating potable drinking water wells.
- G. The application equipment shall be calibrated to achieve the desired application rate.

IX. References

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University of Wisconsin-Extension (UWEX) Publication A3568, A Step-by-Step Guide to Nutrient Management, May 1992.

University of Wisconsin-Extension (UWEX) Publication A3624, Soil Nitrate Tests for Wisconsin Cropping Systems, 1994.

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University of Wisconsin-Extension (UWEX) Publication A3769, Recommended Methods of Manure Analysis, 2003.

University of Wisconsin Soil and Forage Analysis Lab Sampling for plant analysis: <http://uwlab.dyn dns.org/marshfield/> (Click on Lab procedures and then plant analysis).

Wisconsin Administrative Code, Department of Agriculture, Trade and Consumer Protection, Chapter 48, Drainage Districts.

Wisconsin Phosphorus Index: <http://wpindex.soils.wisc.edu/>.

X. Definitions

Apparent Water Table (V.B) - Continuous saturated zone in the soil to a depth of at least 6 feet without an unsaturated zone below it.

Budgeting (II) - Document present and prior year's crop, estimated nutrient removal by these crops and known nutrient credits. When nutrients are applied for future crop needs in the rotation, implement a tracking process to allow adjustment of subsequent nutrient applications so that the total amount of nutrients applied to the farm or tract complies with this standard and is documented in the plan. Required as a component for all nutrient management plans (VII.A.; Wisconsin Conservation Planning Technical Note WI-1 Part 1 B.d. (1), (2); C.6.).

Concentrated Flow Channel (V.A.2.a.(1)) - A natural channel or constructed channel that has been shaped or graded to required dimensions and established in perennial vegetation for the stable conveyance of runoff. This definition may include non-vegetated channels caused by ephemeral erosion. These channels include perennial and intermittent streams, drainage ditches, and drainage ends identified on the NRCS soil survey and not already classified as SWQMAs. Concentrated flow

channels are also identifiable as contiguous up-gradient deflections of contour lines on the USGS 1:24,000 scale topographic map. The path of flow to surface water or direct conduits to groundwater must be documented. For construction, refer to NRCS FOTG Standard 412, Grassed Waterway, for more information.

Conservation Plan (V.A.2.b.(2)) - A plan developed and field verified by a conservation planner to document crop management and the conservation practices used to control sheet and rill erosion to tolerable levels (T) and to provide treatment of ephemeral soil erosion. A conservation plan must be signed by the land operator and approved by the county land conservation committee or their representative. A conservation plan will be needed for designating winter spreading restrictions other than those specifically listed in this standard, and when implementing the soil test P management strategy where the soil erosion assessment is not calculated with the Wisconsin Phosphorus Index model. A conservation planner must develop conservation plans using the minimum criteria found in the USDA, NRCS National Planning Procedures Handbook and the Wisconsin Field Office Technical Guide and be qualified by one of the following:

1. Meeting the minimum criteria in the NRCS General Manual, Title 180, Part 409.9(c), NRCS Certified Conservation Planner Designation.
2. Meeting criteria established by the county land conservation committee.
3. Meeting the NRCS TechReg Certified Conservation Planner Option 1, 2, 3.

Direct Conduits to Groundwater (V.A.2.a.(4)) - Wells, sinkholes, swallets (a sinkhole or rock hole that intercepts a stream, diverting all or a portion of it to the groundwater), fractured bedrock at the surface, mine shafts, non-metallic mines, tile inlets discharging to groundwater quarries, or depressional groundwater recharge areas over shallow fractured bedrock. For the purpose of nutrient management planning, these features will be identified on the NRCS soil survey and/or USGS 1:24,000 scale topographic map, or otherwise determined through on-site evaluation and documented in a conservation plan.

Documented yields (V.A.1.b.) - Crop production yield-records documented by field for at least two consecutive years that are used to determine

phosphorus and potassium fertility recommendations. Yield record documentation may include measurements of harvested crop weight, volume, or the use of calibrated yield-monitors.

Effectively Incorporated (V.A.2.a.(4)) - Means the mixing with the topsoil or residue or subsurface placement of nutrients with topsoil by such means as injector, disc, sweep, mold-board plow, chisel plow, or other tillage/infiltration methods. Nutrients will not run off the field or drain to subsurface tiles during application.

Fields (III) - A group or single nutrient management unit with the following conditions: similar soil type, similar cropping history, same place in rotation (i.e., second year corn fields, established alfalfa), similar nutrient requirements, and close proximity. Examples include: alternate strips in a contour strip system, pasture, variable rate nutrient application management units, and other management units where grouping facilitates implementation of the nutrient management plan.

Gleaning / Pasturing (V.A.1.m.) - An area of land where animals graze or otherwise seek feed in a manner that maintains the vegetative cover over all the area and where the vegetative cover is the primary food source for the animals. Livestock shall be managed to avoid the routine concentration of animals within the same area of the field. Manure deposited near a well by grazing of livestock does not require incorporation.

High Permeability Soils (V.B) - Equivalent to drained hydrologic group A that meet both of the following criteria:

1. Permeability = 6 inches/hour or more in all parts of the upper 20 inches and
2. Permeability = 0.6 inches/hour or more in all parts of the upper 40 inches.

Use the lowest permeability listed for each layer when evaluating a soil. For a multi-component map unit (complex), evaluate each component separately. If the high permeability components meet the criteria and cannot be separated, the entire map unit should be considered as high permeability.

Major Nutrients (V.A.1.a) - Nitrogen (N), phosphorus (P), and potassium (K).

Note (V.A.1.i.) - Any section labeled as a 'note' is to be considered a recommendation rather than a requirement. The note is included in the criteria section to ensure subject continuity.

Permanent Vegetative Buffer (V.A.2.a.(1)) - A strip or area of perennial herbaceous vegetation situated between cropland, grazing land, or disturbed land (including forest land) and environmentally sensitive areas (as defined in NRCS Technical Standard 393, Filter Strip).

Phosphorus Index (PI) (V.C.2) - The Wisconsin Phosphorus Index (PI) is an assessment of the potential for a given field to deliver P to surface water. The PI assessment takes into account factors that contribute to P losses in runoff from a field and subsequent transport to a water body, including:

- Soil erosion as calculated using the current approved NRCS soil erosion prediction technology located in Section I of the NRCS FOTG.
- Estimated annual field rainfall and snowmelt runoff volume.
- Soil P concentrations as measured by routine soil test P (Bray P-1).
- Rate and management of P applications in the form of fertilizer, manure, or other organic material.
- Characteristics of the runoff flow pathway from the field to surface water.

The algorithms and software for calculating the Wisconsin PI can be found at <http://wpindex.soils.wisc.edu/>.

Rotation (III) - The sequence of crops to be grown for up to an 8-year period as specified by the conservation plan or as part of the soil erosion assessment calculated with the Wisconsin Phosphorus Index model.

Saturated Soils (V.A.3.a) - Soils where all pore spaces are occupied by water and where any additional inputs of water or liquid wastes cannot infiltrate into the soil.

Surface Water Quality Management Areas (SWQMA) (V.A.2.b.(1)) - For the purposes of nutrient management planning, Surface Water Quality Management Areas are defined as follows:

1. The area within 1,000 feet from the ordinary high-water mark of navigable waters that consist of a lake, pond or flowage, except that, for a navigable water that is a glacial pothole lake, "surface water quality management area" means the area within 1,000 feet from the high-water mark of the lake.

2. The area within 300 feet from the ordinary high-water mark of navigable waters that consists of a river or stream that is defined as:
 - Perennial streams (continuous flow) identified on the NRCS soil survey and/or USGS 1:24,000 scale topographic map as solid lines,
 - Otherwise determined through an onsite evaluation and documented in an approved conservation plan.

Areas within the SWQMA that do not drain to the water body are excluded from this definition.

Tile Inlet (V.A.2.a.(4)) - The interception of surface runoff within a concentrated flow channel or field depression, by a constructed device designed to direct runoff into an underground tile for conveyance to surface or groundwater.

Tolerable Soil Loss (T) - For sheet and rill erosion (V.A.2.a.(6)) - T-value means the maximum rate of soil erosion established for each soil type that will permit crop productivity to be sustained economically and indefinitely. Erosion calculations shall be based on current approved erosion prediction technology found in NRCS FOTG Section I or the soil loss assessment calculated using the Phosphorous Index Model. Tolerable soil erosion rates shall be determined using the RUSLE2 Related Attributes Report located in Section 2, e-FOTG, Soil Report.

CHAPTER 26

ANIMAL WASTE MANAGEMENT

26.01 AUTHORITY. This ordinance is adopted under authority granted under Section 59.70(1), 92.15 and 92.16 of the Wisconsin Statutes. The title of this ordinance is "Brown County Animal Waste Management Ordinance" and it regulates design, construction, abandonment and maintenance of animal waste storage facilities, animal feedlots, and nutrient management.

26.02 FINDINGS AND DECLARATION OF POLICY. The Brown County Board finds this ordinance is designed to protect and promote our agricultural industry and also to promote and enhance the aesthetic conditions and general welfare of the people and communities within Brown County.

The County of Brown permits operation of properly conducted agricultural operations within the county. If the property you are purchasing or own is located near agricultural lands of operation or included within an area zoned for agricultural purposes, you may be subject to outcomes arising from such operations. Such outcomes may include, but are not limited to: noises, odors, lights, fumes, dust, smoke, insects, chemicals, operation of machinery (including aircraft) during a 24 hour period, storage and disposal of manure, and the application by spraying or otherwise of chemical fertilizers, soil amendments, herbicides and pesticides. One or more of the outcomes described may occur as a result of any agricultural operation which is in conformance with existing laws and regulations and accepted customs and standards. If you live near an agricultural area, you should be prepared to accept such outcomes as a normal and necessary aspect of living in a county with a strong rural character and an active agricultural sector. Brown County has established the Land Conservation Committee to assist in the resolution of any animal waste management disputes which might arise between residents of the county regarding agricultural operations.

26.03 PURPOSE. The purpose of this ordinance is to regulate the location, construction, installation, alteration, design and use of animal waste storage facilities and animal feedlots so as to protect the health and safety of residents and transients; prevent the spread of disease and promote the prosperity and general welfare of the citizens of Brown County. It is also intended to provide for the administration and enforcement of the ordinance and to provide penalties for its violation. It is also intended to protect the groundwater and surface water resources of Brown County.

26.04 INTERPRETATION. In their interpretation and application, the provisions of this ordinance shall be held to be minimum requirements and shall be liberally construed in favor of Brown County, and shall not be deemed a limitation or repeal of any other power granted by the Wisconsin Statutes.

26.05 SEVERABILITY CLAUSE. If any section, provision or portion of this ordinance is ruled invalid by a court, the remainder of the ordinance shall not for that reason be rendered ineffective.

26.06 APPLICABILITY. This ordinance applies only in unincorporated areas of Brown County. Abandonment requirements apply to all animal waste storage facilities regardless of the date of construction. Nutrient Management Plan (590) provisions shall apply to all animal waste storage facilities issued a permit under this ordinance regardless of the date of construction. Animal feedlot requirements shall apply only to sites that exceed the prohibitions in section 26.11 of this ordinance or the standards in Section 10.04(1)(b), Brown County Code; or receive a notice of discharge under ch. 283 Wis. Statutes; or existing sites that exceed 500 animal units; or new animal feedlots that exceed 40 animal units.

26.07 EFFECTIVE DATE. This ordinance shall become effective upon adoption and publication by Brown County.

26.08 DEFINITIONS. Definitions herein are to conform to the provisions set forth in the Wisconsin Administrative Code and Brown County Code.

"Abandonment" means a livestock waste storage facility is no longer being used for its intended purpose, and is no longer receiving animal wastes, has not received any animal wastes for a period of two years and, based on available evidence, will not receive animal wastes from an active livestock operation within the next six months.

"Animal Feedlot" means a lot or building or combination of lots and buildings intended for the confined feeding, breeding, raising, or holding of animals, specifically designed as a confinement area in which manure may accumulate, or where the concentration of animals is such that a vegetative cover cannot be maintained within the enclosure. For purposes of these parts, open lots used for the feeding and rearing of poultry (poultry ranges) shall be considered to be animal feedlots. Pastures shall not be considered animal feedlots under these parts. New animal feedlots are those that are established after the effective date of this ordinance.

"Animal Unit" means a unit of measure used to determine the total number of single animal types or combination of animal types, as specified in NR243, which are fed, confined, maintained, or stabled in an animal feeding operation.

"Animal Waste" means livestock excreta and other materials such as bedding, rain or other water, soil, hair, feathers and other debris normally included in animal waste handling operations.

"Animal waste storage facility" means concrete, steel or otherwise fabricated structure and earthen animal waste storage facility used for temporary storage of animal waste or other organic waste.

"Applicant" means any person who applies for a permit under this ordinance.

"Earthen animal waste storage facility" means a facility constructed of earth dikes, pits or ponds used for temporary storage of animal waste.

"Karst Feature" means an area or surficial geologic feature subject to bedrock dissolution so that it is likely to provide a conduit to groundwater, and may include caves, enlarged fractures, mine features, exposed bedrock surfaces, sinkholes, springs, seeps or swallets.

"Land Conservation Committee" means an operating committee of the Brown County Board of Supervisors.

"Land Conservation Department" means the enforcing authority of this ordinance.

"Manure" means livestock excreta. "Manure" includes livestock bedding, water, soil, hair, feathers, and other debris that becomes intermingled with livestock excreta in normal manure handling operations.

"Nutrient Management Plan (590)" means a plan that balances the nutrient needs of a crop with the nutrients available from legume crops, manure, fertilizers or other sources. Management includes the rate, method, and timing of the application of all sources of nutrients to minimize the amount of nutrients entering surface and groundwater. The requirements for a nutrient management plan are as established in ATCP 50.04(3).

"Pasture" means land with a permanent, uniform cover of grasses or legumes used as forage for livestock. Pastures do not include areas where supplemental forage feeding is provided on a regular basis.

"Permit" means the signed, written statement issued by the Brown County Land Conservation Department under this ordinance authorizing the applicant to construct, install, reconstruct, enlarge or substantially alter an animal waste storage facility or animal feedlot; or authorizing a winter spreading plan or unconfined manure pile.

"Permittee" means any person to whom a permit is issued under this ordinance.

"Person" means any individual, corporation, partnership, joint venture, agency, unincorporated association, municipal corporation, county, or state agency within Wisconsin, the federal government, or any combination thereof.

"Site that is susceptible to groundwater contamination" under s.281.16 (1)(g), Stats., means any one of the following:

- (a) An area within 250 feet of a private well.
- (b) An area within 1000 feet of a municipal well.
- (c) An area within 200 feet upslope or 100 feet downslope of karst features.
- (d) A channel with a cross-sectional area equal to or greater than 3 square feet that flows to a karst feature.
- (e) An area where the soil depth to groundwater or bedrock is less than 2 feet.
- (f) An area where the soil does not exhibit one of the following soil characteristics:
 - 1. At least a 2-foot soil layer with 40% fines or greater above groundwater or bedrock.
 - 2. At least a 3-foot soil layer with 20% fines or greater above groundwater or bedrock.
 - 3. At least a 5-foot soil layer with 10% fines or greater above groundwater or bedrock.

"Technical Guide" means the United States Department of Agriculture (U.S.D.A.) Natural Resources Conservation Service Field Office Technical Guide that is currently in effect, and as amended from time to time.

"Unconfined Manure Pile" means a quantity of manure, at least 175 cu. Ft. in volume, that covers the ground surface to a depth of at least 2 inches and is not confined within a manure storage facility, livestock housing facility or barnyard runoff control facility.

"Waters of the State" means those portions of Lake Michigan and Lake Superior within the boundaries of Wisconsin, and all lakes, bays, rivers, streams, springs, ponds, wells, impounding reservoirs, marshes, water courses, drainage systems and other surface water and groundwater, natural or artificial, public or private within the state or its jurisdiction as defined in Section 147.015(20) of the Wisconsin Statutes.

"Water Quality Management Areas" means the area within 1,000 feet from the ordinary high water mark of navigable waters that consist of a lake, pond or flowage, except that, for a navigable water that is a glacial pothole lake, the term means the area within 1,000 feet from the high water mark of the lake; the area within 300 feet from the ordinary high water mark of navigable waters that consist of a river or stream; and a site that is susceptible to groundwater contamination, or that has the potential to be a direct conduit for contamination to reach groundwater.

"Winter Spreading Plan" means any plan developed and approved by the Brown County Land Conservation Department and provided to farmers, which identifies high risk fields that should be completely avoided or restricted from receiving winter applications of manure.

26.09 ADMINISTRATION.

(1) Delegation of Authority. Brown County hereby designates the Brown County Land Conservation Department to administer and enforce this ordinance.

(2) Administrative Duties. In the administration and enforcement of this ordinance, the County Land Conservation Department shall:

(a) Keep an accurate record of all permit applications, animal waste facility plans, animal feedlot plans, animal waste storage facility abandonment plans, permits issued, inspections made, and other official actions.

(b) Review permit applications and issue permits in accordance with Section 26.10 of this ordinance.

(c) Inspect animal waste facility and animal feedlot construction and animal waste facility abandonment to insure the facility is being constructed according to plan specifications.

(d) Investigate complaints relating to compliance with the ordinance.

(e) Monitor the adequacy of manure storage systems including compliance with nutrient management plans.

(f) Perform other duties as specified in this ordinance.

(3) Inspection Authority. The Brown County Land Conservation Department is authorized to enter upon any lands affected by this ordinance to inspect the land prior to or after permit issuance to determine compliance with this ordinance. If permission cannot be received from the applicant or permittee, entry by the Brown County Land Conservation Department shall be according to Sections 66.122 and 66.123, Wisconsin Statutes.

26.10 APPLICATION FOR AND ISSUANCE OF PERMITS.

(1) Permit Required.

(a) No animal waste storage facility or parts thereof may be located, installed, moved, reconstructed, extended, enlarged, converted, substantially altered or its use changed, including abandonment, without an animal waste management permit as provided in this ordinance, and without compliance with the provisions of this ordinance, and without compliance with Natural Resources Conservation Service Technical Guide as adopted as part of this ordinance.

(b) Animal feedlots that exceed the prohibitions in Section 26.11 of this ordinance, or exceed the standards in Section 10.04(1)(b) of the Brown County Code, or receive a notice of discharge under ch. 283 Wis. Statutes, or exceed 500 animal units shall obtain an animal waste management permit as provided in this ordinance.

(c) The requirements of this ordinance shall be in addition to any other ordinance regulating animal waste management, such as Chapter 22 Brown County Code, Shoreland Floodplain Ordinance, and Chapter 10 Brown County Code, Agricultural Shoreland Management ordinance. In the case of conflict, the most stringent provisions shall apply.

(d) No person may apply animal waste between December 1st and March 31st without first obtaining a winter spreading permit as provided in this ordinance. The winter spreading permit shall be issued after the completion of the winter spreading plan as described in this ordinance.

(e) No unconfined manure pile shall be utilized without a temporary unconfined manure stacking permit as provided in this ordinance, and without compliance with the provisions of this ordinance, and without compliance with Natural Resources Conservation Service Technical Guide as adopted as part of this ordinance.

(2) Emergency Repairs. Emergency repairs such as repairing broken pipe or equipment, leaking dikes or the removal of stoppages may be performed without an animal waste storage facility permit. Such work shall be reported to the Land Conservation Department as soon as possible for a determination as to whether an animal waste storage facility permit will be required for an additional alteration or repair to the facility. The County Land Conservation Department shall consult with the Land Conservation Committee prior to making this determination.

(3) Fee. The fee for a permit under this ordinance shall be established through the annual budget process.

(4) Animal Waste Storage Facility Plan Requirements. Each application for a permit under this section shall include an animal waste storage facility plan.

The plan shall specify:

- (a) The number and kinds of animals for which storage is provided.
 - (b) A sketch of the facility and its location in relation to buildings within two hundred fifty (250) feet and homes within five hundred (500) feet of the proposed facility. The sketch shall be drawn to scale, with a scale no smaller than one inch equals one hundred (100) feet.
 - (c) The structural details, including dimensions, cross sections, and concrete thickness.
 - (d) The location of any wells within three hundred (300) feet of the facility.
 - (e) The soil test pit locations and soil descriptions to a depth of at least three feet below the planned bottom of the facility.
 - (f) The elevation of groundwater or bedrock if encountered in the soil profile and the date of any such determinations.
 - (g) Provisions for adequate drainage and control of runoff to prevent pollution of surface water and groundwater such as exposed bedrock or sinkholes. If a navigable body of water lies within five hundred (500) feet of the facility, the location and distance to the body of water shall be shown.
 - (h) The scale of the drawing and the North arrow.
 - (i) A time schedule for construction of the facility.
 - (j) A description of the method in transferring animal waste into the facility.
 - (k) A recoverable benchmark(s) including elevation(s) expressed in feet and hundredths.
 - (l) A preliminary Nutrient Management Plan, verifying the ability of the permittee to comply with Standard 590. A Nutrient Management Plan checklist will be completed by the County for this purpose.
 - (m) Landowners must plan and document the availability of acceptable acreage of cropland per animal unit for all future expansions of their livestock operations. Use either Phosphorus Index (PI) or Soil Test Phosphorus Management Strategy found in the most current Conservation Practice Standard NRCS 590 Nutrient Management. A Nutrient Management Checklist will be completed by the county for this purpose.
- (5) Animal Feedlot Plan Requirements. Each application for a permit under this section shall include an animal feedlot facility plan. The plan shall specify:
- (a) A plan map showing location of the facility, including buildings, homes, and wells within 300 feet of the proposed site. The sketch shall be drawn to scale, with a scale no smaller than 1 inch: 100 feet.
 - (b) The location of any wells within 300 feet of the facility.

(c) The location of all soil test pits, including a detailed log of each pit, to a depth of at least 3 feet below the planned bottom elevation of the facility. The location of each test pit, prior to digging, and the log descriptions of each pit, as it is excavated, shall be determined and recorded by Brown County Land Conservation Department staff.

(d) Depth of high ground water, estimated or observed, in the soil profile and date determined.

(e) Depth to bedrock, estimated or observed.

(f) Ground contours (2 foot maximum intervals), with spot elevations, indicating land slope at and around the site for a minimum distance of 100 feet.

(g) Provisions for adequate drainage and control of runoff to prevent pollution of surface and ground water such as exposed bedrock or sinkholes. The location of any navigable body of water within 500 feet of the proposed site must be shown. Rivers and streams in Brown County shall be presumed to be navigable if they are designated as continuous waterways or intermittent waterways on U.S. Geological Survey (USGS) quadrangle maps.

(h) Description of the type(s) of materials the facility is to consist of; size, dimensions, and cross sections of the facility, and any other specific details including, but not limited to, concrete thickness in floor and walls, steel schedules, and fencing.

(i) A time schedule for construction of the facility.

(j) Scale of the plan drawing(s) and north arrow.

(k) Description of bench mark(s) including elevation(s) expressed in feet and hundredths.

(l) Landowners must plan and document the availability of acceptable acreage of cropland per animal unit for all future expansions of their livestock operations. Use either Phosphorus Index (PI) or Soil Test Phosphorus Management Strategy found in the most current Conservation Practice Standard NRCS 590 Nutrient Management. A Nutrient Management Checklist will be completed by the county for this purpose.

(6) Animal Waste Storage Facility Abandonment Plan Requirements. Each application for a permit under this section shall include an abandonment plan. The plan shall specify:

(a) The abandonment plan may include provisions for future operation of the animal waste storage facility. The facility shall meet the standards and specifications in Section 26.11 of the ordinance and shall have a permit issued under this ordinance. Facilities not meeting this requirement shall be properly abandoned under this section.

(b) A preliminary Nutrient Management Plan, verifying the ability of the permittee to comply with Standard 590. A Nutrient Management Plan checklist will be completed by the county for this purpose.

(c) Provisions to remove and properly dispose of all accumulated wastes in the manure facility.

(d) Provisions to remove any concrete or synthetic liner, or properly use pieces of the concrete or synthetic liner, or properly use pieces of the concrete or synthetic liner as clean fill at the site.

(e) Provisions to remove and properly dispose of any soil saturated with waste from the manure storage facility.

(f) Provisions to remove any soils, to the depth of significant manure saturation or 2 feet whichever is less, from the bottom and sides of a facility without a constructed liner.

(g) Provision to remove or permanently plug the waste transfer system serving the manure storage facility.

(h) Covering all disturbed area with topsoil, seeding the areas with a grass mixture, and mulching the seeded area. This subdivision does not apply if an alternative use of the site is authorized under an abandonment plan approved by the county or town as part of the permit.

(7) Winter Spreading Plan Requirements. Each application for a permit under this section shall include a Winter Spreading Plan. The plan shall specify:

(a) The lowest risk fields for the application of winter spread manure based on slope, length of slope, soils, and depth to bedrock.

(b) Specify rates of application and applicable setbacks from the nearest surface waters and/or direct conduit to groundwater as determined by Brown County Land Conservation Department.

(c) The plan must include a description of the emergency response procedures that will be engaged immediately in the event of direct runoff related to the spreading of animal waste.

(d) Only maps prepared by Brown County Land Conservation Department, using GIS technology, may be used to identify appropriate fields for animal waste applications.

(e) For the purpose of this practice winter spreading plans shall take effect no later than December 1st prior to the winter for which the plan is developed and continue through the following March 31st unless animal waste can be effectively incorporated.

(f) The landowner shall maintain an accurate record of the date, location, and rate of application for every application of manure on the land that is subject to the winter spreading permit. The record shall be made available to the Brown County Land Conservation Department upon request and shall be retained by the landowner for one year following the date of application.

Transitional Provision.

Applicators/landowners of animal waste required to have a permit under s.26.10(d) in the Towns of Green Bay, Scott and Morrison shall notify the Brown County Land Conservation Department by December 1, 2006 of their intent to comply. BCLCD shall work with the applicator/landowner to develop winter spreading plans in priority order based on the potential for off-site impacts. An applicator/landowner is considered to be in compliance for the 2006-2007 winter season provided they have contacted the department prior to December 1, 2006 and cooperates with the department in the development of the winter spreading plan.

Applicators/landowners required to have a permit under s.26.10 in the Towns of Glenmore, Holland, Humboldt and Wrightstown shall be required to obtain a winter spreading permit prior to December 1, 2007.

Applicators/landowners in all other areas of the county will be required to obtain a winter spreading permit prior to December 1, 2008.

(8) Temporary Unconfined Manure Stacking Requirements. Each application for a permit under this section shall include a site plan. The plan shall specify:

- (a) Waste consistencies. Waste materials having less than 16% solids shall not be stacked in the field.
- (b) Size and stacking period.
- (c) Hydrologic Soil Groups.
- (d) Subsurface Separation Distance.
- (e) Surface Separation Distances.

(8) Review of Application. The County Land Conservation Department shall receive and review all permit applications.

(a) The County Land Conservation Department shall determine if the proposed facility meets the required standards set forth in Section 26.11 of this ordinance. Within sixty days after receiving the completed application and fee, the County Land Conservation Department shall inform the applicant in writing whether the permit application is approved or disapproved. If additional information is required, the County Land Conservation Department has thirty days from the receipt of the additional information in which to approve or disapprove the application. If the County Land Conservation Department fails to approve or disapprove the permit application in writing within sixty days of the receipt of the permit application or within thirty days of the receipt of additional information, as appropriate, the application shall be deemed approved and the applicant may proceed as if a permit had been issued.

(b) Prior to approval or disapproval of the permit application, the County Land Conservation Department shall submit a copy of the proposed plan(s) to the town office of the town where the site is located for their review and/or approval if appropriate.

(10) Permit Conditions. All permits issued under this ordinance shall be issued subject to the following conditions and requirements:

(a) Design, construction and management shall be carried out in accordance with the animal waste facility plan and applicable standards specified in Section 26.11 of this ordinance.

(b) The permittee shall give five (5) working days notice to the County Land Conservation Department before starting any construction activity authorized by the permit.

(c) Approval in writing must be obtained from the County Land Conservation Department prior to any modifications to the approved animal waste facility plan.

(d) The permittee and, if applicable, the contractor, shall certify in writing by signing the certification sheet that the facility was installed as planned and designed. A copy of the signed certification sheet shall be mailed to the County Land Conservation Department within thirty days of completion of installation.

(e) Activities authorized by permit must be completed within two years from the date of issuance after which such permit shall be void.

(f) Nutrient management plans shall be submitted to the Brown County Land Conservation Department annually by June 1.

(11) Permit Revocation. The County Land Conservation Department may revoke any permit issued under this ordinance if the holder of the permit has misrepresented any material fact in the permit application or animal waste facility plan, or if the holder of the permit violates any of the conditions of the permit.

26.11 STANDARDS AND SPECIFICATIONS.

(1) Animal Feedlots. The standards and specifications for design, construction, operation and maintenance of animal feedlots are those identified in Standards 350 and 312, USDA-NRCS Technical Guide. Feedlots requiring a permit under this ordinance shall not deliver more than 20 pounds of phosphorus annually as determined by the County Land Conservation Department.

(2) Animal Feedlot Separation Requirements. All new animal feedlots shall be sited a minimum of 100 feet from adjacent properties, 300 feet from any lake or perennial stream (as defined by U.S.G.S. quadrangle maps), and at least 2 vertical feet from groundwater.

(3) Animal Waste Storage Facilities. The standards and specifications for design, construction, operation, and maintenance of animal waste storage facilities are those identified in Standards 313 and 634, USDA-NRCS Technical Guide. The Standards and Specifications for abandonment/closure of animal waste storage facilities are those identified in Standard 360, USDA-NRCS Technical Guide.

(a) NRCS Standard 313 Waste Storage (NRCS WI 12/05) III. Conditions Where Practice Applies. This standard does not apply to: facilities in which greater than 10% of the design storage volume or greater than 25,000 gallons is occupied by any combination of domestic waste, industrial wastewater generated offsite, or sludge. These types of facilities are defined and regulated under various codes administered by the Wisconsin Department of Natural Resources (WDNR).

(4) Animal Waste Storage Facilities Separation Requirements. All new animal waste storage facilities shall be sited a minimum of 250 feet from adjacent properties, 300 feet from any lake or perennial stream (as defined by USGS quadrangle maps), and at least 3 vertical feet from groundwater. Reception pits as part of the animal feedlot or buildings with under-floor storage shall be sited a minimum of 100 feet from adjacent properties.

(5) Nutrient Management. Animal wastes for which permits are issued under this chapter of the Code and all wastes from existing livestock waste storage facilities shall be managed and utilized in accordance with Standard 590, USDA-NRCS Technical Guide. A current (590) Nutrient Management Plan must be submitted annually to the Brown County

Land Conservation Department by June 1st, until the animal waste storage facility is no longer in use and it has been properly abandoned.

(a) ATCP 50.04 (3)(a)

(a) A landowner shall have and follow an annual nutrient management plan when applying nutrients to any field after the date specified in par. (h). A nutrient management plan shall comply with this subsection. (Register November 2006 No. 611)

ATCP 50.04 (3)(b)

(b) The plan shall include every field on which the landowner mechanically applies nutrients. (Register November 2006 No. 611)

ATCP 50.04 (3)(c)

(c) A nutrient management planner qualified under s.ATCP 50.48 shall prepare or approve the plan. (Register November 2006 No. 611)

ATCP 50.04 (3)(g)

(g) The plan shall be consistent with any nutrient management plan required under ch. NR 113, 204 or 214 if the landowner applies septage, municipal sludge, industrial waste or industrial byproducts to the land. A landowner is not required to have a nutrient management plan under this subsection if the landowner applies only septage, municipal sludge, industrial waste or industrial byproducts according to ch. NR 113, 204 or 214. (Register November 2006 No. 611)

Nutrient Management (acre) code 590 Natural Resources Conservation Service Conservation Practice Standard V. Criteria (NRCS WI, 9/05)

(j) Organic byproducts of other than manure (i.e., industrial wastes, municipal sludge, and septage) applied to fields shall be analyzed for nutrient content and applied in accordance with applicable regulations including restrictions on heavy metal content and land application rates.

(k) Manure, organic byproducts, and fertilizers shall not run off the field site during or immediately after application. If ponding, runoff or drainage to subsurface tiles occurs, implement the following activities as appropriate:

(1) Stop application.

(2) Take corrective action to prevent offsite movement.

(3) Modify the application (rate, method, depth of injection, timing to eliminate runoff or draining to subsurface tiles.

(6) Temporary Unconfined Manure Stacking Requirements. Each application for a permit under this section shall include plan specifications identified in Standard 313, USDA - NRCS Technical Guide.

(7) Manure Management Prohibitions. The following prohibitions are incorporated into this ordinance:

(a) All livestock producers shall comply with this section.

(b) A livestock operation shall have no overflow of manure storage facilities.

(c) A livestock operation shall have no unconfined manure pile in a water quality management area.

(d) A livestock operation shall have no direct runoff from a feedlot or stored manure into the waters of the state.

(e) A livestock operation may not allow unlimited access by livestock to waters of the state in a location where high concentrations of animals prevent the maintenance of adequate sod or self-sustaining vegetative cover.

1. This prohibition does not apply to properly designed, installed and maintained livestock or farm equipment crossings.

26.12 VIOLATIONS. (1) Penalties. Any person who violates, neglects, or refuses to comply with or resists the enforcement of any provision of this ordinance shall be subject to a forfeiture of not less than \$250 plus costs of prosecution of each violation. An unlawful violation includes failure to comply with any standard of this ordinance or with any condition or qualification attached to the permit. Each day that a violation exists shall be a separate offense. Failure to obtain proper permit is considered a violation. Brown County Land Conservation Department shall refer all enforcements to the Brown County Corporation Counsel for commencement of enforcement action.

(2) Enforcement Actions, Temporary Restraining Orders and/or Other Necessary Remedial Action. As a substitute for or an addition to forfeiture actions, Brown County may seek enforcement of any part of this ordinance by Court Actions seeking injunctions or restraining orders.

26.13 APPEALS. (1) Authority. Under authority of Chapter 68, Wisconsin Statutes the Brown County Land Conservation Committee, created under Sections 59.878 Wisconsin Statutes and by the Brown County Board of Supervisors on May 19, 1982, acting as an appeal authority under Section 68.09(2) Wisconsin Statutes is authorized to hear and decide all appeals where it is alleged that there is error in any order, requirement, decision, or determination by the County Land Conservation Department in administering this ordinance.

(2) Procedure. The rules, procedures, duties and powers of Land Conservation Committee and Chapter 68 Wisconsin Statutes, shall apply to this ordinance.

(3) Who May Appeal. Appeals may be taken by any person having a substantial interest which is adversely affected by this order, requirement, decision, or determinations made by the County Land Conservation Department.

CHAPTER 10
AGRICULTURAL SHORELAND MANAGEMENT

10.01 (1) INTRODUCTION

(a) Authority. This Ordinance is adopted under the authority granted by Section 92.17, Wisconsin Statutes, 1995-96, as amended from time to time.

(b) Findings and Declaration of Policy. The Brown County Board finds that agricultural activities conducted in close proximity to surface water can pollute Brown County's water resources, and may result in actual or potential harm to the health of residents and transients; to livestock, aquatic life and other animals and plants; and to the property tax base of Brown County.

(c) Purpose. The purpose of the Ordinance is to complement Brown County's Shoreland and Floodplain Ordinance in Chapter 22 of the Brown County Code to regulate landowner activities within the approximately 1200 miles of agricultural Shoreland management area within the County to prevent surface water pollution and thereby protect the health of Brown County residents and transients; prevent the spread of disease; and promote the prosperity and general welfare of the citizens of Brown County.

(d) Applicability. This Ordinance applies to all lands and surface water in Brown County that are in the agricultural Shoreland management area, as defined in this Ordinance. Brown County shall use United States Geological Survey quadrangle maps, with a scale of 1:24,000, to identify rivers, perennial streams, intermittent streams, lakes and ponds included under the jurisdiction of this Ordinance.

Activities within a drainage district that serve to establish or maintain a district corridor are regulated by Chapter ATPC 48, Wis. Adm. Code, and are not eligible for cost-sharing under this Ordinance. Practices in a district corridor that either control livestock access to surface water or barnyard runoff are eligible for cost-sharing under this Ordinance.

(e) Interpretation. In their interpretation and application, the provisions of this Ordinance shall be held to be minimum requirements and shall be liberally construed in favor of Brown County and shall not be deemed a limitation or repeal of any other power granted by the Wisconsin Statutes.

(f) Conflicts with Brown County's Shoreland Zoning Ordinance. Any conflict or inconsistency between this Ordinance and Brown County's Shoreland Zoning Ordinance will be governed by the more restrictive provision.

(g) Severability. If any Section, provision, or portion of this Ordinance is ruled invalid by a court of competent jurisdiction, the remainder of the Ordinance shall not for that reason be rendered ineffective.

(h) Effective Date. This Ordinance shall become effective upon adoption and publication by Brown County and upon approval by the Department of Agriculture, Trade and Consumer Protection.

10.02 DEFINITIONS

1. GENERAL

(a) Agricultural Lands. Lands in agricultural use. Agricultural use has the meaning provided under Section 91.01(1), Wisconsin Statutes. Uses under this definition include beekeeping; commercial feedlots; dairying; egg or poultry production; floriculture; fish or fur farming; forest and game management; grazing; livestock raising; orchards; greenhouses and nurseries; grain, grass, mint and seed crops; raising fruits, nuts and berries; sod farming; land idled under federal payment-in-kind programs or the Conservation Reserve Program; participation in the dairy-herd buyout program; and vegetable raising.

(b) Agricultural Shoreland Corridor. Land extending 20 feet from the top of the bank on each side of a perennial stream or river, the centerline of an intermittent stream, or the ordinary high-water mark of any lake or pond shown on a United States Geological Survey quadrangle map with a scale of 1:24,000.

(c) Agricultural Shoreland Management Area. All land that is within 300 feet of the following features as designated on United States Geological Survey quadrangle maps with a 1:24,000 scale:

- 1) The top of the bank of perennial streams or rivers.
- 2) The ordinary high-water mark for ponds and lakes that are designated by name.
- 3) The centerline of an intermittent stream.

(d) Barnyard. A feedlot, dry lot or any area, other than a pasture, where animals have been or will be fed, confined, maintained or stabled for a total of 45 days or more in any 12 month period.

(e) Best Management Practice. A practice included in the Technical Guide or an alternative best management practice that the Department of Agriculture, Trade and Consumer Protection determines to be the most effective, practicable means of preventing or reducing soil erosion or pollution from agricultural nonpoint sources to a level compatible with soil and water resource objectives.

(f) Conservation Plan/Schedule. A written record of best management practices to be implemented, including installation schedule and operation and maintenance requirements.

(g) District Corridor. The access corridor and buffer strip established and maintained around a district ditch under s. ATCP 48.24, Wis. Adm. Code.

(h) District Ditch. A drainage ditch, located within a drainage district, that is constructed or operated by a county drainage board under Chapter 88, Stats. "District ditch" includes a main or lateral ditch.

(i) Drainage District. A drainage district that is subject to Chapter 88, Stats., regardless of whether the drainage district was formed under Chapter 88, Stats., former Chapter 89, Stats., or any other law.

(j) Intermittent Streams. A channel in which water does not flow continuously and that is identified as an intermittent stream on the United States Geological Survey quadrangle map with a scale of 1:24,000.

(k) Notice of availability of funds. A first class letter (certified mail), return receipt requested, mailed by Brown County to the owner of the lands not meeting Ordinance standards, informing them of the availability of cost-share funds under Section 92.14, Wisconsin Statutes.

(l) Notice of problem. A first class letter (certified mail), return receipt requested, mailed by Brown County to the owner of the lands not meeting the Ordinance standards, informing the owner of the nature of the problem and the necessary process to correct it.

(m) Ordinary high-water mark. The point on the bank or shore up to which the presence and action of surface water is so continuous as to leave a distinctive mark. This may be erosion, absence of land plants, predominance of aquatic plants, or other easily recognized characteristics.

(n) Pasture. Land with a permanent, uniform cover of grasses or legumes used as forage for livestock. Pastures do not include areas where supplemental forage feeding is provided on a regular basis.

(o) Perennial Stream. A channel where water flows continuously and that is identified as a perennial or permanent stream on the United States Geological Survey quadrangle map with a scale of 1:24,000.

(p) Technical Guide. The United States Department of Agriculture Natural Resources Conservation Service Field Office Technical Guide that is currently in effect, and as amended from time to time.

(q) Vegetative Buffer. An area within the agricultural Shoreland corridor that is maintained at a minimum level of 70 percent ground cover.

10.03 ACTIVITIES SUBJECT TO REGULATION

1. GENERAL REQUIREMENT. Any person who conducts agricultural activities within the agricultural Shoreland management area or who employs another person to do the same, on land subject to this Ordinance, shall be subject to the provisions of this Ordinance. All activities on land within agricultural Shoreland management areas must be conducted in ways that prevent soil erosion and minimize the movement of suspended solids into surface water.

2. COMPLIANCE WITH ORDINANCE REQUIREMENTS. Persons are in compliance with this Ordinance if they install or follow best management practices on their land affected by this Ordinance.

10.04 STANDARDS

1. AGRICULTURAL ACTIVITIES IN THE AGRICULTURAL SHORELAND CORRIDOR.

(a) Vegetative Buffer. Landowners or operators shall establish and maintain an adequate vegetative buffer or equally effective erosion control practice, in the agricultural Shoreland corridor. When a vegetative buffer is established, the plant variety or seed mixture shall be one of those listed in Technical Guide Standard 342, Critical Area Planting. If any activity disturbs a vegetative buffer in the agricultural Shoreland corridor, the landowner must replant or restore the disturbed area to an effective vegetative buffer as soon as practicable. Row cropping and tillage practices are prohibited in the agricultural Shoreland corridor, except that tillage practices are allowed to establish or re-establish a seed bed.

(b) Pastures. Pastures within the agricultural Shoreland management area must comply with Technical Guide Standard 510 for pasture and hayland management. Rotation grazing must comply with the UW-Extension publication "Pastures for Profit" (February 1993 edition).

(c) Agricultural lands receiving manure and other nutrients. Agricultural lands within the agricultural Shoreland management area must meet Technical Guide Standard 590 if they receive manure and other nutrients through the application of sludge, commercial fertilizer, and other added nutrients.

10.05 ADMINISTRATION

1. DELEGATION OF AUTHORITY.

(a) The County Land Conservation Department is hereby designated to administer and enforce the provisions of this Ordinance.

2. ADMINISTRATIVE DUTIES.

(a) In the administration and enforcement of this Ordinance, the Land Conservation Department shall:

1) Inform all landowners or operators subject to this Ordinance of the potential agencies which may be available to provide technical or financial assistance.

2) Establish a procedure for landowners or operators to contact the Brown County Land Conservation Department about conditions on their land that are not in compliance with the Ordinance and establish a procedure for landowners or operators to apply for funding.

3) Send notices of problems to landowners or operators that are not in compliance with the Ordinance.

4) Send notices of availability of funds to landowners or operators that are not in compliance with the Ordinance.

5) Provide accomplishment reports to the State Department of Agriculture, Trade and Consumer Protection on the activities related to this Ordinance and its effectiveness.

- 6) Investigate complaints relating to compliance with the Ordinance.
- 7) Perform other duties as specified in this Ordinance.

3. INSPECTION AUTHORITY.

(a) Brown County Land Conservation Department employees are authorized to enter upon any lands affected by this Ordinance to inspect the land to determine compliance with this Ordinance. If permission cannot be obtained from the landowner or operator, entry by Brown County Land Conservation Department employees shall be according to Sections 92.07(14), 66.122 and/or 66.123, Wisconsin Statutes.

4. ENFORCEMENT PROCEDURE.

(a) A notice of problem must be mailed to the landowner or operator stating that the standards of this Ordinance have not been met. Brown County Land Conservation Department staff shall prepare a conservation plan with the landowner or operator including a schedule of implementation. The Brown County Land Conservation Department must provide a notice of availability of funds to the landowner or operator when funds are available to implement or install the necessary practices.

(b) The Brown County Land Conservation Department must provide along with the notice of problem: a list of pertinent best management practices and associated average costs per unit as provided by the Brown County Land Conservation Department, a written statement informing the landowner of the right to appeal the decision, and the appeals procedure.

10.06 VIOLATIONS.

1. PENALTIES.

(a) Any person who violates or refuses to comply with any of the provisions of this Ordinance shall be subject to a forfeiture of not less than \$50.00 nor more than \$500.00. Each day of violation shall constitute a separate offense. A violation includes failure to comply with any standard of this Ordinance or with any condition or qualification attached to the conservation plan/schedule.

2. ENFORCEMENT BY INJUNCTION.

(a) As a substitute for or in addition to forfeiture actions, the Brown County Land Conservation Department may seek to enforce any part of this Ordinance by seeking injunctions or restraining orders.

10.07 VARIANCES

1. PROCEDURES.

(a) Variances from the requirements of this Ordinance may be granted by the Brown County Land Conservationist or designee based on any of the following findings:

1) Staff are not available due to excessive workload to develop conservation plans or schedules of implementation.

2) Cost-share funds have not been made available to the landowner or operator as required under Section 92.17(2m), Wisconsin Statutes.

3) Severe weather or other catastrophic events beyond the control of the landowner or operator make implementation impractical.

4) The installation or implementation of all components of the conservation plan/schedule will not or does not result in complete compliance with this Ordinance. A variance under this provision can only be granted if all the components of the conservation plan/schedule are installed or implemented.

10.08 APPEALS

1. AUTHORITY.

(a) Pursuant to Chapter 68, Wis. Stats., the Brown County Land Conservation Committee is hereby authorized to hear and decide appeals where it is alleged that there is error in any order, requirement, decision, or determination that has been made by the Brown County Land Conservation Department in administering this Ordinance.

2. WHO MAY APPEAL.

(a) Appeals may be made by any person having a substantial interest which is adversely affected by the order, decision, or determination made by the Brown County Land Conservation Department.

Unofficial Text (See Printed Volume). Current through date and Register shown on Title Page.

Chapter NR 243

ANIMAL FEEDING OPERATIONS

Subchapter I — General

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Subchapter II — Requirements for Large Concentrated Animal Feeding Operations

NR 243.11	Large concentrated feeding operations.
NR 243.12	WPDES permit application requirements.
NR 243.121	General permit coverage.
NR 243.13	Standard WPDES permit requirements for large CAFOs.
NR 243.14	Nutrient management.

NR 243.141	Manure stacking.
NR 243.142	Responsibility for large CAFO manure and process wastewater.
NR 243.15	Design, submittal and approval of proposed facilities or systems.
NR 243.16	Evaluations of previously constructed facilities or systems.
NR 243.17	Operation and maintenance.
NR 243.18	Combined wastes.
NR 243.19	Inspections, record keeping and reporting.

Subchapter III — Other Animal Feeding Operations

NR 243.21	Purpose.
NR 243.23	General requirements for animal feeding operations.
NR 243.24	Department discharge determination and NODs.
NR 243.25	NOD enforcement.
NR 243.26	WPDES permits for medium and small CAFOs.

Subchapter IV — CAFO Enforcement

NR 243.31	Enforcement.
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Note: Ch. NR 243 as it existed on June 30, 2007 was repealed and a new Ch. NR 243 was created, Register April 2007 No. 616, eff. 7-1-07.

Subchapter I — General

NR 243.01 Purpose. (1) The purpose of this chapter is to implement design standards and accepted management practices and to establish permit requirements and the basis for issuing permits to CAFOs. This chapter also establishes the criteria under which the department may issue a notice of discharge or a permit to other animal feeding operations that discharge pollutants to waters of the state or fail to comply with applicable performance standards and prohibitions in ch. NR 151. For other animal feeding operations, it is the intent of the department that a permit would be issued only when it can be demonstrated that an operation has a discharge of pollutants to waters of the state. The authority for promulgation of this chapter is in chs. 281 and 283, Stats.

(2) The department recognizes the unique nature of the state's agricultural industry and the industry's declared interest in protecting and preserving the state's natural resources. The department also recognizes the benefit of manure applied to land for its fertilizer and soil conditioning value, and encourages the management and use of these materials in such a manner. Only those animal feeding operations that improperly manage their wastes and as a result cause groundwater or surface water pollution or that fail to comply with applicable performance standards and prohibitions or those operations that are CAFOs will be regulated under this chapter. It is not the intent of the department to require that all animal feeding operations obtain a permit.

History: CR 05-075: cr. Register April 2007 No. 616, eff. 7-1-07.

NR 243.02 Applicability. The provisions of this chapter are applicable to large CAFOs and other animal feeding operations that discharge pollutants to waters of the state as determined under subch. III.

History: CR 05-075: cr. Register April 2007 No. 616, eff. 7-1-07.

NR 243.03 Definitions. The following definitions are applicable to terms used in this chapter. Definitions of other terms and meanings of abbreviations are in ch. NR 205.

(1) "Accepted management practices" means practices, techniques or measures through which runoff, manure, milking center waste, leachate and other waste streams associated with an animal feeding operation are handled, stored, utilized or otherwise controlled in a manner that is intended to achieve compliance with livestock performance standards and prohibitions established in ch. NR 151 and water quality objectives established under chs. 281 and 283, Stats. These practices, techniques or measures are

established in this chapter as well as ch. NR 154 and ch. ATCP 50 and may include additional practices and procedures as approved by the department on a case-by-case basis.

(2) "Agricultural storm water discharge" means:

(a) For unpermitted animal feeding operations with 300 to 999 animal units, a precipitation-related discharge of manure or process wastewater pollutants to surface waters from a land application area that may occur after the owner or operator of the animal feeding operation has land applied manure or process wastewater in compliance with a nutrient management plan that meets the nutrient management requirements of this chapter; and

(b) For permitted CAFOs, a precipitation related discharge of manure or process wastewater pollutants to surface waters from a land application area that may occur after the owner or operator of the CAFO has land applied the manure or process wastewater in compliance with the nutrient management requirements of this chapter and the terms and conditions of its WPDES permit.

Note: The definition of agricultural storm water discharge does not include discharges of manure or process wastewater pollutants to surface waters from land application activities by an unpermitted small animal feeding operation, because these land application discharges to surface waters by a small operation are not a basis for requiring WPDES permit coverage. See s. NR 243.26 (2) (c).

(3) "Ancillary service and storage areas" means areas that are adjacent to the production area, but are not used for handling or managing livestock, livestock products, mortalities, manure, process wastewater or raw materials. These ancillary areas include areas such as access roads, shipping and receiving areas, pesticide and herbicide storage, oil or fuel storage, raw material handling equipment maintenance, crop equipment or vehicle storage and maintenance areas and refuse piles.

(4) "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.

Note: While it is not the sole factor used to determine whether operations have a common system for landspreading, use of common land application equipment is one of the factors the department considers when determining if operations have a common system for landspreading.

(c) Manure, barnyard runoff or other wastes are commingled in a common storage facility prior to landspreading.

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(5) “Animal unit” means a unit of measure used to determine the total number of single animal types or combination of animal types, as specified in s. NR 243.11, that are at an animal feeding operation.

(6) “Applicant” means an owner or operator of a proposed or existing CAFO that is applying for a WPDES permit.

(7) “Areas of channelized flow” means channels or depressions that concentrate flow and are either:

(a) Man-made by a means other than typical field cultivation practices.

(b) A natural channel or depression that cannot be removed or rerouted using typical field cultivation practices or that form on a recurring basis in the same area.

(8) “ASTM” means the American society for testing and materials.

(9) “Combined animal units” means any combination of animal types calculated by adding the number of single animal types as multiplied by the equivalency factors as specified in s. NR 243.11.

(10) “Compost” has the meaning specified under s. NR 500.03 (44).

(11) “Composting” has the meaning specified under s. NR 500.03 (45).

(12) “Concentrated animal feeding operation” or “CAFO” means an animal feeding operation to which any of the following apply:

(a) The operation 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.

(b) The operation has 300 to 999 animal units and has a category I unacceptable practice under s. NR 243.24 (1) (a).

(c) Under s. NR 243.26 (2), the operation is designated by the department as having a significant discharge of pollutants to navigable waters or has caused the fecal contamination of water in a well.

(13) “CAFO outdoor vegetated area” means an area that is part of the ancillary service and storage area that consists of a large open outdoor vegetated area of land used by CAFO animals that is owned or operated by a CAFO and is adjacent or connected to, but not part of, the production area.

(14) “Conduit to a navigable water” means a natural or man-made area or structure that discharges to a navigable water via channelized flow. This includes open tile line intake structures, open vent pipes, sinkholes, agricultural well heads, drainage ditches that discharge to navigable waters and grassed waterways that drain directly to a navigable water.

Note: Conduits to navigable waters do not include the components of a subsurface drainage system that are not present at the soil surface.

(15) “Contaminated runoff” means that portion of manure, process wastewater, leachate or other wastes or raw materials mixed with precipitation from animal feeding operations that transports pollutants such as organic matter, suspended solids or nutrients.

(16) “Corrective measures” means accepted management practices or technical standards specified in ch. NR 154 or ATPC 50 designed to address an unacceptable practice or other practices determined by the department to be necessary to protect water quality.

(17) “DATCP” means the Wisconsin department of agriculture, trade and consumer protection.

(18) “Department” means the Wisconsin department of natural resources.

(19) “Designed structures” means groundwater monitoring systems, runoff control structures, permanent spray irrigation or other land application systems, manure, raw materials and waste

storage facilities or other manure or waste transfer or treatment systems.

(20) “Direct conduits to groundwater” mean wells, sinkholes, swallets, fractured bedrock at the surface, mine shafts, non-metallic mines, tile inlets discharging to groundwater quarries, or depressional groundwater recharge areas over shallow fractured bedrock.

(21) “Diversion” means a structure built to divert sheet flow or part or all of the water from an existing waterway into a different channel or area.

(22) “Exceptional resource water” means any surface water, or portion thereof, in s. NR 102.11.

(23) “Existing source CAFO” means an operation that is covered by a WPDES permit as of July 1, 2007, and any other permitted operation that is not a new source CAFO.

Note: Existing source CAFOs include CAFOs that are permitted as of July 1, 2007, and animal feeding operations in existence on a site prior to April 14, 2003 that add animals and later apply for a WPDES permit.

(24) “Frozen ground” means soil that is frozen anywhere between the first ½” and 8” of soil as measured from the ground surface.

Note: Under the definition of frozen ground, soil that is that frozen to a depth of ½” or less as measured from the ground surface is not considered frozen ground.

(25) “Governmental unit” means a municipality as defined in s. 281.01 (6), Stats.

(26) “Grassed waterway” means a natural or constructed waterway or outlet shaped or graded and established in suitable vegetation as needed for the conveyance of runoff from a field, diversion or other structure.

(27) “Hydrologic soil group” means a group of soils having similar runoff potential under similar storm and cover conditions.

(28) “Incorporation” means mixing the manure or process wastewater with surface soil so that at least 80% of applied manure or process wastewater is covered with soil and the application rate is controlled to ensure that applied material stays in place and does not run off. Incorporation includes standard agricultural practices such as tillage or other practices that are the equivalent to providing 80% soil coverage.

(29) “Injection” means the placement of liquid manure or process wastewater 4 to 12 inches below the soil surface in the crop root zone using equipment specifically designed for that purpose and where the applied material is retained by the soil and does not concentrate or pool below the soil surface.

(30) “Land application” means surface application, injection or incorporation of manure, process wastewater or other waste generated by a CAFO on cropland using manure hauling vehicles or equipment.

(31) “Large CAFO” means an animal feeding operation that has 1,000 animal units or more at any time.

(32) “Liquid manure” means manure with a solids content of less than 12%.

(33) “Livestock facility” means a structure or system constructed or established on a livestock operation or animal feeding operation, including a runoff control system associated with an outside feedlot, manure storage facility or feed bunker.

(34) “Livestock performance standards and prohibitions” means performance standards and prohibitions contained in ss. NR 151.05, 151.06, 151.07 and 151.08.

(35) “Long-term no-till” means no-till farming that has been implemented a minimum of 3 consecutive years.

(36) “Manure” means a material that consists primarily of litter or excreta, treated or untreated, from livestock, poultry or other animals. Manure includes material mixed with runoff, bedding contaminated with litter or excreta, or process wastewater.

(37) “Margin of safety level” means the level in a liquid storage or containment facility that is vertically one foot below the lowest point of the top of the facility or structure.

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(38) “Maximum operating level” means the level in a liquid storage or containment facility, measured vertically from the lowest point of top of the facility, that is the sum of the margin of safety level and the level necessary to contain the precipitation and runoff that will enter the facility as a result of 100-year, 24-hour rainfall event for swine, veal and poultry operations that are new source CAFOs or a 25-year, 24-hour storm event for all other operations.

(39) “Medium CAFO” means an animal feeding operation with 300 to 999 animal units that has a category I discharge to navigable waters under s. NR 243.24, or that is designated by the department as a CAFO under s. NR 243.26 (2).

(40) “Milking center waste” means all wastes generated at a milking center or milkhous including waste milk, detergents, acids, sanitizers, manure, bedding materials and footbath chemicals.

(41) “New source CAFO” means any of the following:

(a) An operation that is a large CAFO that has been or will be constructed on or after April 14, 2003, on a new site where no other animal feeding operation is located.

(b) An operation that is a large CAFO that was in existence prior to April 14, 2003, but that completely replaces all of its production or processing equipment on or after April 14, 2003.

(c) A new addition to an existing operation that is a large CAFO that is essentially a new production area added on or after April 14, 2003 that is completely independent of the production area in existence on the site before April 14, 2003.

(d) An animal feeding operation that has been constructed on or after April 14, 2003, on a new site where no other animal feeding operation is located and later becomes a large CAFO.

Note: New operations are operations that essentially build on a brand new site or significantly modify most or all facilities at an existing site, on or after April 14, 2003.

(42) “NOD” means notice of discharge.

(43) “NRCS” means the Wisconsin natural resources conservation service.

(44) “NRCS Standard 590” means the technical standard for nutrient management contained in Appendix B to ch. ATCP 51, except for section V.D.

Note: Appendix B to ch. ATCP 51 includes the September 2005 version of NRCS Standard 590.

(45) “100-year, 24-hour rainfall event” means a rainfall event measured in terms of the depth of rainfall occurring within a 24-hour period and having an expected recurrence interval of once in 100 years as identified in Table 1.

(46) “Outstanding resource water” means any surface water, or portion thereof, specified in s. NR 102.10.

(47) “Pasture or grazing area” means an area where animals graze in large open areas, that is not adjacent to, or connected to, a CAFO production area, and where stocking densities, management systems and management of feed sources ensure that sufficient vegetative cover is maintained over the entire area at all times. A pasture or grazing area is not an animal feeding operation.

Note: Operations that have milking centers for animals on pasture or grazing areas are animal feeding operations since the milking center is considered to be an area of confinement.

Note: A CAFO may have multiple production areas located at different sites or farms, such as a main farm and satellite feedlots or farms.

(48) “Permanent runoff control systems” means constructions or devices installed to permanently contain, control, divert or retard surface runoff water.

(49) “Permit” means a WPDES permit for the discharge of pollutants issued by the department under ch. 283, Stats.

(50) “Permittee” means an owner or operator of a WPDES permitted CAFO.

(51) “Phosphorus index” means the method for assessing and minimizing phosphorus delivery to surface waters associated with manure or process wastewater applications referenced in section V.C.2. of NRCS Standard 590.

(52) “Phosphorus index value” means the value calculated using the phosphorus index that identifies the relative level of risk for phosphorus delivery from a field where manure or process wastewater, along with other nutrients sources, have been or will be applied.

(53) “Process wastewater” means wastewater from the production area directly or indirectly used in the operation of animal feeding operation that results from any or all of the following:

(a) Spillage or overflow from animal or poultry watering systems.

(b) Washing, cleaning, or flushing pens, barns, manure pits, or other animal feeding operation facilities.

(c) Direct contact swimming, washing, or spray cooling of animals or dust control.

(d) Water that comes into contact with any raw materials or animal byproducts including manure, feed, milk, eggs or bedding.

(54) “Production area” means that part of an animal feeding operation that includes the animal confinement area, the manure storage area, the raw materials storage area, and the waste containment areas but not CAFO outdoor vegetated areas. 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 that separate uncontaminated storm water. 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.

(55) “Raw materials” means materials typically stored at an agricultural operation that are directly used in livestock production such as bedding material, silage, haylage, grain and other feed sources, but this term does not include pesticides, motor oil or fuel.

(56) “Reviewable facility or system” means runoff control structures, feed and other raw materials storage, permanent spray irrigation or other land application systems, groundwater monitoring systems, manure storage facilities, manure treatment or transfer systems, or other structures or systems associated with the storage, containment, treatment or handling of manure or process wastewater.

(57) “Saturated soils” means soils where all pore spaces are occupied by water and where any additional inputs of water or liquid wastes cannot infiltrate into the soil.

(58) “Solid manure” means manure with a solids content of 12% or more.

(59) “Small CAFO” means an animal feeding operation with less than 300 animal units that is designated by the department as a CAFO under s. NR 243.26 (2).

(60) “Snow covered ground” means areas of a field covered with any amount of snow.

(61) “Source water protection area” means an area delineated by the department for a public water system or including numerous public water systems, whether the source is ground water or surface water or both, as part of the state source water assessment program approved by the U.S. environmental protection agency under 42 USC 300j-13.

(62) “Spray irrigation” means the application of liquid manure or process wastewater to cropland using equipment that discharges manure into the air via a single nozzle or multiple nozzles or hoses and disperses the manure over distances greater than could be achieved using typical moving vehicle or manure hauling equipment.

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(63) “Storage facility” means an excavated or diked pond, walled structure or platform designed for containment of manure.

(64) “Sufficient vegetative cover” means that crop residue or vegetation is present over an entire area in an amount and density of stand that slows the movement of and limits contaminated runoff and soil erosion.

(65) “Surface applied manure” means manure applied to the ground surface by moving vehicles that is not incorporated or injected.

(66) “Surface water quality management areas” or “SWQMA” means all of the following:

(a) The area within 1,000 feet from the ordinary high water mark of navigable waters that consist of a lake, pond or flowage.

(b) The area within 1,000 feet from the high water mark of navigable waters that consist of a glacial pothole lake.

(c) The area within 300 feet from the ordinary high water mark of navigable waters that consist of a river or stream or other non-lake navigable waters.

(d) The area within 300 feet of conduits to navigable waters.

(67) “Swallet” means a sinkhole or rock hole that intercepts a stream, diverting all or a portion of it to groundwater.

(68) “303 (d) listed waters” means the list of impaired waters in the state developed by the department pursuant to 33 USC 1313 and 40 CFR s. 130.7.

(69) “Tolerable soil loss” or “T” means the maximum rate of soil erosion, in tons per acre per year, allowable for particular soils and site conditions that will maintain soil productivity.

Note: Soil loss will be calculated according to the revised universal soil loss equation II as referenced in ch. ATCP 50 or, potentially, SNAP-Plus software currently being developed by UW-Extension.

(70) “25-year, 24-hour rainfall event” means a rainfall event measured in terms of the depth of rainfall occurring within a 24-hour period and having an expected recurrence interval of once in 25 years as identified in Table 1.

(71) “Unacceptable practice” means a practice that causes or has caused the discharge of pollutants to waters of the state or that results in an operation’s failure to comply with livestock performance standards and prohibitions outlined in ch. NR 151.

(72) “Wastewater treatment strip” means a constructed strip or area of vegetation for reducing sediment, organic matter and other pollutants.

(73) “Waters of the state” has the meaning specified under s. 283.01 (20), Stats.

(74) “Water quality management area” or “WQMA” has the meaning in s. NR 151.015 (24).

(75) “Wetland” means areas delineated on a hydric soils map that are dominated by hydrophytic vegetation. Wetlands do not include prior converted or farmed wetlands.

(76) “Wetland functional values” means the values or uses of wetlands established in s. NR 103.03 (1).

(77) “Wet soil” means soil that is not saturated but has a moisture content that limits its ability to absorb significant amounts of additional liquid.

(78) “Winter acute loss index value” means the value calculated using the phosphorus index that identifies the relative level of risk for acute losses of manure and process wastewater pollutants associated with surface applications during frozen or snow-covered conditions.

(79) “WPDES” means the Wisconsin pollutant discharge elimination system established under ch. 283, Stats.

History: CR 05-075: cr. Register April 2007 No. 616, eff. 7-1-07.

NR 243.04 Rainfall events. The design rainfall amount and probable intensity of 25-year, 24-hour and 100-year, 24-hour rainfall events for locations in Wisconsin shall be determined from the data in Table 1, or for a particular location, the determination may be made on the basis of more recent rainfall

probability data verified by a government agency and approved by the department for this purpose.

TABLE 1
Probable 25-year and 100-year 24-Hour Rainfall Events, In Inches of Rain, for Counties in Wisconsin

	25-year	100-year		25-year	100-year
Adams	4.7	5.9	Marathon	4.5	5.7
Ashland	4.3	5.4	Marinette	4.1	4.9
Barron	4.6	5.8	Marquette	4.6	5.8
Bayfield	4.4	5.4	Menominee	4.3	5.2
Brown	4.3	5.1	Milwaukee	4.5	5.5
Buffalo	4.8	6.1	Monroe	4.8	6.1
Burnett	4.6	5.7	Oconto	4.2	5.1
Calumet	4.4	5.3	Oneida	4.3	5.3
Chippewa	4.7	5.8	Outagamie	4.4	5.3
Clark	4.7	5.9	Ozaukee	4.4	5.4
Columbia	4.7	5.9	Pepin	4.8	6.0
Crawford	5.0	6.2	Pierce	4.8	6.0
Dane	4.8	6.0	Polk	4.7	5.8
Dodge	4.6	5.7	Portage	4.5	5.7
Door	4.1	4.9	Price	4.4	5.5
Douglas	4.4	5.5	Racine	4.6	5.6
Dunn	4.7	6.0	Richland	4.9	6.2
Eau Claire	4.7	6.0	Rock	4.7	6.0
Florence	4.1	4.9	Rusk	4.6	5.7
Fond du Lac	4.5	5.6	St. Croix	4.7	5.9
Forest	4.2	5.1	Sauk	4.8	6.1
Grant	5.0	6.2	Sawyer	4.5	5.6
Green	4.8	6.1	Shawano	4.4	5.4
Green Lake	4.6	5.7	Sheboygan	4.4	5.4
Iowa	4.9	6.2	Taylor	4.6	5.7
Iron	4.3	5.3	Trempealeau	4.8	6.1
Jackson	4.8	6.0	Vernon	4.9	6.2
Jefferson	4.6	5.8	Vilas	4.3	5.2
Juneau	4.7	6.0	Walworth	4.6	5.8
Kenosha	4.6	5.7	Washburn	4.5	5.6
Kewaunee	4.2	5.0	Washington	4.5	5.5
LaCrosse	4.9	6.1	Waukesha	4.6	5.6
Lafayette	4.9	6.2	Waupaca	4.5	5.5
Langlade	4.3	5.3	Waushara	4.6	5.7
Lincoln	4.4	5.5	Winnebago	4.5	5.5
Manitowoc	4.3	5.2	Wood	4.6	5.8

History: CR 05-075: cr. Register April 2007 No. 616, eff. 7-1-07.

NR 243.05 Calculating animal units. (1) GENERAL. The total number of animal units at an operation shall be calculated using the methods in both subs. (2) and (3). The department shall compare the totals under both of these methods and shall use the highest calculated total to determine the size of an animal feeding operation. An owner or operator of an animal feeding operation shall use form 3400-25A for calculating the number of animal units present at the operation.

Note: In accordance with the definition in s. NR 243.03(4), animals included in the total count may be housed at more than one site or location.

Note: Form 3400-25A can be obtained at regional offices of the department or the department’s Bureau of Watershed Management, 101 S. Webster St., P.O. Box 7921, Madison, Wisconsin 53707.

(2) COMBINED ANIMAL UNITS. The number of animal units present at an operation shall be calculated by multiplying the number of animals for each animal type by the appropriate equivalency factor in Table 2A. The total number of animal units at the operation is the sum of the calculated animal unit numbers of all animal types present at the operation.

Note: Under the combined animal unit calculation, an operation with 400 animal units of milking cows, 300 animal units of heifers and 200 animal units of swine would have a total of 1000 animal units present.

(3) INDIVIDUAL ANIMAL UNITS. The number of animal units present at an operation shall be calculated by multiplying the num-

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ber of animals for each animal type by the appropriate equivalency factor in Table 2B. The total number of animal units at an operation is the highest calculated number of animal units for any individual animal type.

Note: Under the individual animal unit calculation, an operation with 400 animal units of milking cows, 300 animal units of heifers and 200 animal units of swine would have 400 animal units present.

(4) OTHER ANIMAL TYPES. For animal types not listed in Table 2A, the department shall base equivalency to animal units on live animal weights, the characteristics of the manure, including nutrient content or pollutant concentration, or a combination of both. In cases based strictly on live weight, 1,000 pounds of live weight is equivalent to one animal unit.

Animal Type	Combined Animal Equivalent of 1,000 Animal Units	Combined Animal Unit Equivalency Factor
Dairy Cattle:		
Milking and Dry Cows	715	1.4
Heifers (800 to 1200 lbs)	910	1.1
Heifers (400 to 800 lbs)	1670	0.6
Calves (under 400 lbs)	5000	0.2
Veal Calves:		
Per Animal	2000	0.5
Beef Cattle:		
Steers or Cows (400 lbs to Mkt)	1000	1.0
Calves (under 400 lbs)	5000	0.2
Bulls	700	1.4
Swine:		
Pigs (55 lbs to Mkt)	2500	0.4
Pigs (up to 55 lbs)	10000	0.1
Sows	2500	0.4
Boars	2000	0.5
Sheep:		
Per Animal	10000	0.1
Horses:		
Per Animal	500	2.0
Ducks:		
Per Bird (Liquid poultry manure handling)	5000	0.2
Per Bird (Non-liquid poultry manure handling)	100000	0.01
Chickens:		
Per Bird (Liquid poultry manure handling)	3000	0.033
Layers (Non-liquid poultry manure handling)	10000	0.01
Broilers and Pullets (Non-liquid poultry manure handling)	200000	0.005
Turkeys:		
Per Bird	55000	0.018

Animal Type	Individual Animal Equivalent of 1,000 Animal Units	Individual Animal Unit Equivalency Factor
Dairy Cattle:		
Milking and Dry Cows	700	1.43
Heifers (400 to 1200 lbs)	1000	1.0
Veal Calves:		
Per Animal	1000	1.0
Beef Cattle:		
Steers, Bulls or Cows (400 lbs to Mkt)	1000	1.0
Swine:		
Pigs (55 lbs to Mkt)	2500	0.4
Pigs (up to 55 lbs)	10000	0.1
Sheep:		
Per Animal	10000	0.1
Horses:		
Per Animal	500	2.0
Ducks:		
Per Bird (Liquid poultry manure handling)	5000	0.2
Per Bird (Non-liquid poultry manure handling)	30000	0.0333
Chickens:		
Per Bird (Liquid poultry manure handling)	30000	0.0333
Layers (Non-liquid poultry manure handling)	82000	0.0123
Broilers and Pullets (Non-liquid poultry manure handling)	125000	0.008
Turkeys:		
Per Bird	55000	0.018

History: CR 05-075: cr. Register April 2007 No. 616, eff. 7-1-07.

NR 243.06 Variances. (1) A permittee may request a waiver or variance to a requirement of this chapter. Subject to sub. (2), the department may approve a variance from a requirement in this chapter when special circumstances show that a variance is needed and the approval of the variance will not negatively impact or threaten the environment or public health. A request for a variance shall be submitted in writing and shall specify the requirement in this chapter from which a variance is requested and the reasons a variance is needed. The department shall approve or deny the variance within 30 days after the request is submitted.

(2) The department may not grant a waiver or variance to a federal statutory or regulatory requirement or to a state statutory requirement.

Note: If a permittee seeks approval of a variance to a requirement from this chapter that is specified in a WPDES permit, the permit must be modified to include the approved variance. Consequently, permittees should consider submitting any variance requests as part of the permit application process, so if approved, the variance can be incorporated into the permit.

Note: An animal feeding operation may participate in the Environmental Results Program (also known as the Green Tier Program) pursuant to s. 299.83, Stats. For more information on this innovative program that provides regulatory flexibility and

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superior environmental results, please refer to www.dnr.wi.gov/org/caer/cea/environmental.

History: CR 05-075: cr. Register April 2007 No. 616, eff. 7-1-07.

NR 243.07 Incorporation by reference. (1) CODE OF FEDERAL REGULATIONS. 40 CFR 412.22 in effect as of July 1, 2007, is incorporated by reference for this chapter. This federal regulation references 40 CFR 125.30 through 125.32 and these federal regulations are also incorporated by reference for this chapter. Copies of these regulations are available for inspection at the offices of the department and the legislative reference bureau, Madison, Wisconsin.

Note: Copies of these materials may be also be viewed online at www.gpoaccess.gov/cfr/index.html, or may be purchased for personal use from: Superintendent of Documents, U.S. Government Printing Office, PO Box 371954, Pittsburgh, PA 15250-7954, phone: (202) 783-3238.

(2) OTHER MATERIALS. The materials listed in this section are incorporated by reference for this chapter. Some of the technical standards include secondary materials which are also incorporated by reference for this chapter. Copies of these materials are available for inspection at the offices of the department and the legislative reference bureau, Madison, Wisconsin. The materials incorporated by reference include:

(a) NRCS Standard 313, dated December 2005. NRCS Standard 313, dated December 2005, includes all of the following materials:

1. NRCS Agricultural Waste Management Field Handbook, Part 651, chs. 9 and 10, 1992.
 2. NRCS Standard 342, dated June 2002.
 3. NRCS Construction Specification 4, dated September 2003.
 4. NRCS Construction Specification 203, dated March 2005.
 5. NRCS Construction Specification 204, dated March 2005.
 6. NRCS Construction Specification 300, dated December 2005.
 7. American Concrete Institute 318, Building Code Requirements for Reinforced Concrete, in effect as of July 1, 2007.
 8. ASTM Standard D-653-05.
 9. ASTM Standard D-2488-00.
 10. ASCE Standard SEI/ASCE 7-02.
 11. ASAE Standard EP378.3.
 12. ASAE Standard EP393.2.
- (b) NRCS Standard 332, dated May 2002.
- (c) NRCS Standard 360, dated December 2002.
- (d) NRCS Standard 393, dated January 2001.
- (e) NRCS Standard 585, dated June 2002.

(f) NRCS Standard 634, dated December 2005. NRCS Standard 634, dated December 2005, includes all of the following materials:

1. NRCS Construction Specification 15, Plastic Pipe Conduits, dated January 2006.
2. NRCS Standard 430DD-1, dated December 1988.

(g) NRCS Standard 635, dated January 2002. NRCS Standard 635, dated January 2002, includes all of the following materials:

1. NRCS Standard 350, dated July 2002.
2. NRCS Standard 612, dated March 2003.

Note: Copies of NRCS technical standards may be inspected at offices of the department, DATCP, NRCS, county land conservation departments and legislative reference bureau, Madison, Wisconsin. Copies may also be obtained at no charge online at www.wi.nrcs.gov.

Note: Copies of ASTM Standards may be obtained online at www.astm.org or at the corresponding address: American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

Note: Copies of ASCE Standards may be obtained from the American Society of Civil Engineers online at www.pubs.asce.org.

Note: Copies of ASAE Standards may be obtained from the American Society of Agricultural and Biological Engineers online at www.asabe.org.

History: CR 05-075: cr. Register April 2007 No. 616, eff. 7-1-07; corrections in (1) and (2) (intro.) made under s. 13.92 (4) (b) 6., Stats.

Subchapter II — Requirements for Large Concentrated Animal Feeding Operations

NR 243.11 Large concentrated feeding operations.

(1) APPLICABILITY. The provisions of this subchapter are applicable to existing large CAFOs, proposed expansions of existing animal feeding operations that will become large CAFOs and newly proposed large CAFOs.

Note: Owners or operators of animal feeding operations are responsible for obtaining all necessary state and local permits and approvals in addition to those outlined in this subchapter.

(2) CALCULATION OF ANIMAL UNITS. The determination as to whether an existing, proposed or expanded operation meets the criteria of a large CAFO shall be based on the total number of animal units at the animal feeding operation calculated pursuant to s. NR 243.05. Based on the provisions of this subchapter and information provided as part of an operation's application for a WPDES permit, as required in s. NR 243.12, the department shall determine whether a WPDES permit is required for an operation.

(3) WPDES PERMIT COVERAGE REQUIRED. (a) Except as provided in par. (b), 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. A pasture or grazing area may operate without WPDES permit coverage.

(b) If a person owns or operates an animal feeding operation with 999 animal units or less, and that person expands its operation to 1000 animal units or more due to the purchase of another animal feeding operation, that person has 90 days from the date of the purchase to apply for a WPDES permit.

(4) ADDITIONAL INFORMATION. If requested by the department, owners or operators of animal feeding operations indicating that their operation will have 900 animal units or more shall submit additional information to the department regarding how the estimated number of animal units was calculated in accordance with Table 2A and 2B.

History: CR 05-075: cr. Register April 2007 No. 616, eff. 7-1-07.

NR 243.12 WPDES permit application requirements. (1) GENERAL. 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. Pursuant to s. 283.37 (2), Stats., a complete application for a WPDES permit shall be filed in accordance with the following requirements:

(a) Except as provided for in par. (c), a person who is proposing to own or operate a large CAFO that will store manure or process wastewater in a storage facility constructed at or below grade or that will land apply manure or process wastewater shall file a preliminary application for a WPDES permit at least 12 months prior to the intended date on which the operation will become a large CAFO. The preliminary application for a WPDES permit shall consist of completed forms 3400-25 and 3400-25A. The owner or operator shall then submit a completed final WPDES permit application under sub. (2) at least 180 days prior to the intended date on which the operation would become a large CAFO. The owner or operator of a proposed large CAFO may not discharge pollutants from manure or process wastewater to waters of the state until one of the following has occurred:

1. The department has issued an individual WPDES permit for the operation.
2. The department has granted general WPDES permit coverage to the operation under s. NR 243.121.

(b) An owner or operator of an operation that is defined as a large CAFO as of July 1, 2007, that is not already covered by a WPDES permit or that has not already submitted a WPDES permit

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application, shall submit a complete permit application to the department by no later than July 31, 2007.

(c) An owner or operator of an animal feeding operation with 999 animal units or less that becomes a large CAFO as a result of the purchase of another animal feeding operation shall apply for a WPDES permit no later than 90 days from the date of the purchase.

Note: Owners or operators of an operation that has chickens or ducks with a non-liquid manure handling system, heifers, ducks or veal calves may become a CAFO for the first time due to the rule changes that became effective on July 1, 2007. Consequently, the department advises owners or operators to re-calculate the total number of animal units using the numbers in s. NR 243.05 and Table 2B to determine whether the operation has 1000 animal units or more and is required to obtain permit coverage.

(d) An owner or operator of a large CAFO that already holds a WPDES permit shall reapply at least 180 days prior to the expiration date of its current WPDES permit, unless all of the following apply:

1. The permittee has ceased operation or is no longer defined as a large CAFO under s. NR 243.03 (28).

2. The permittee has demonstrated to the department that there is no remaining potential for a discharge of manure or process wastewater pollutants to waters of the state that was generated while the operation was a CAFO.

3. The permittee submits a letter to the department documenting that subds. 1. and 2. have been satisfied.

Note: Due to the extent of water resources in the state, it is the department's position that if the manure or process wastewater from a CAFO is land applied to sites in Wisconsin, pollutants from the manure or process wastewater will reach waters of the state either via leaching to groundwater or surface runoff. Also, it is the department's position that storage facilities constructed at or below grade will have some pollutant discharges to groundwater. Therefore, all large CAFOs must apply for a WPDES permit.

(2) CONTENTS OF A FINAL PERMIT APPLICATION. (a) For a person applying for a first time permit issuance, a complete final permit application shall consist of the following:

1. The location of the existing or proposed site on maps including aerial photographs and soil survey maps.

2. A scaled drawing of existing and proposed animal housing, feed storage structures and other raw materials storage areas. The production area shall be clearly delineated as well as ancillary service and storage areas. Existing features shall be clearly delineated from proposed features.

3. A description and scaled drawing of existing and proposed manure storage or composting facilities, process wastewater storage or treatment facilities and other treatment systems. Plans and specifications for new manure storage or composting facilities and process wastewater facilities or proposed modifications to existing storage, composting or treatment facilities or systems shall be submitted. Upon approval by the department, plans and specifications for proposed storage, composting or treatment facilities may be submitted during the term of the permit if construction of the facilities will begin during the term of the permit. In addition, evaluations of existing storage, composting or treatment facilities or systems not previously reviewed and approved by the department shall be submitted.

Note: Stormwater construction site permit procedures and requirements outlined in ch. NR 216 may apply to construction activities.

4. A description and scaled drawing of existing and proposed runoff control systems, groundwater monitoring systems, water supply wells, permanent spray irrigation systems or other landspreeding or treatment systems. Plans and specifications for new systems or proposed modifications to existing systems shall be submitted. Upon approval by the department, plans and specifications for proposed systems may be submitted during the term of the permit if construction of these facilities is planned to begin during the term of the permit. In addition, evaluations of existing systems not previously reviewed and approved by the department shall be submitted.

Note: Department approval to submit plans and specifications for proposed systems and evaluations of existing systems during the term of the permit does not delay compliance with the requirements in s. NR 243.13.

5. A description and scaled drawing of any existing and proposed ancillary service and storage areas and outside animal lots, including a map showing the area's size and location, the number of animals to be using the area, projected number of days in use, and type and percent of vegetative cover to be maintained.

6. A complete nutrient management plan that meets the requirements of s. NR 243.14. The plan shall be based on the volume of manure that will be generated by the operation from 1,000 animal units or the number of animal units that are expected to be at the operation by the end of the first year of permit coverage, whichever is greater. The permittee shall specify the expected number of animal units at the operation for the first year of the permit and during the permit term. The plan shall include all of the following information:

- a. A narrative overview of the operation's nutrient management plan including a general description of anticipated amounts and types of manure and process wastewater produced on an annual basis, amount of manure and process wastewater to be land applied, anticipated frequency of land application for manure and process wastewater, methods of land application, and other methods of use, disposal, distribution or treatment.

- b. Additional information the department requests for the purpose of identifying possible water quality impacts associated with an operation's land application activities.

7. Any other information requested by the department that is necessary to comply with the requirements of ch. NR 150.

Note: The department has developed an environmental analysis questionnaire identifying most of the information needed to comply with ch. NR 150 that is included as part of a large CAFO's application package for first time issuances.

(b) For operations submitting a reissuance application, a complete reissuance application shall consist of the following:

1. Information on changes to the operation that have occurred during the current permit term and changes that are anticipated during the upcoming permit term, including changes that are necessary to comply with this chapter.

2. The location of the existing site and proposed modifications to the site on maps such as aerial photographs and soil survey maps.

3. Scaled drawing and descriptions of existing and proposed animal housing, manure storage, composting and 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 and service storage areas, loafing and outside lot areas and feed storage structures. Existing features shall be clearly delineated from proposed features.

4. An updated nutrient management plan reflecting changes that have occurred at the operation since the previous permit issuance or reissuance and that incorporates the requirements in this chapter.

5. A description of permanent spray irrigation systems and any other landspreeding or treatment systems.

6. Any other information requested by the department that is necessary to comply with the requirements of ch. NR 150.

(3) APPLICATION FORMS. Final permit and reissuance application information shall be submitted along with completed forms 3400-25 and 3400-25A. The department shall take action on a complete application pursuant to s. NR 200.10.

Note: Applications and forms 3400-25 and 3400-25A can be obtained at regional offices of the department or the department's Bureau of Watershed Management, 101 S. Webster St., P.O. Box 7921, Madison, Wisconsin 53707.

History: CR 05-075: cr. Register April 2007 No. 616, eff. 7-1-07.

NR 243.121 General permit coverage. (1) GENERAL PERMIT. (a) The department may issue a WPDES general permit to cover a category or group of CAFOs where the department has determined that the operations will not be covered by an individual permit issued pursuant to s. 283.37 (2), Stats.

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(b) For purposes of this section, a category or group of CAFOs may be defined by size of operation, type of livestock or species, geographic or watershed area, method of managing manure or any other feature or attribute that the department determines is appropriate for defining a category of coverage.

(2) **GENERAL PERMIT APPLICATION REQUIREMENTS.** An owner or operator seeking coverage under a general permit shall submit an application to the department in accordance with s. NR 243.12 and shall include information documenting that the operation qualifies for the general permit based on the eligibility criteria specified in the general permit.

(3) **GENERAL PERMIT ELIGIBILITY.** The department shall specify criteria for determining eligibility for general permit coverage in the WPDES general permit.

(4) **INDIVIDUAL PERMIT COVERAGE.** Under s. 283.35 (3), Stats., the department may withdraw general permit coverage for a CAFO and issue an individual permit to the CAFO. The CAFO shall submit additional information requested by the department that is needed for issuance of an individual permit.

Note: The department may allow a permittee to participate in a cooperative compliance program to assist the CAFO with maintaining compliance with a general permit. A cooperative compliance program is an organization comprised of several CAFOs that have been granted permit coverage under a general permit. Cooperative compliance programs primarily assist facilities in maintaining compliance with general permits. Cooperative compliance programs retain environmental experts with substantial experience and knowledge in the management of manure and nutrients, design and maintenance of agricultural best management practices and environmental protection.

History: CR 05-075; cr. Register April 2007 No. 616, eff. 7-1-07.

NR 243.13 Standard WDPES permit requirements for large CAFOs. (1) **GENERAL.** The department shall include conditions in permits that meet the requirements in subs. (2) to (8), if applicable to the primary livestock type housed at the CAFO. Pursuant to s. 283.31, Stats., the department shall include conditions in a WPDES permit for the production area and ancillary service and storage areas to ensure that clean water is diverted, as appropriate, from the production area and that are necessary to achieve compliance with surface water and groundwater quality standards contained in chs. NR 102 to 105, 140 and 207, and the livestock performance standards and prohibitions prescribed in ch. NR 151.

Note: Large CAFOs are not eligible for cost sharing under chs. NR 153 and 154, nor is cost sharing necessary for compliance with the livestock performance standards and prohibitions.

(2) **DAIRY COWS, CATTLE AND DUCKS.** (a) The standard in this subsection applies to large CAFOs that confine mostly mature dairy cows, milking or dry, or cattle such as heifers, steer or bulls, or ducks. Except as provided in par. (b) or (c), a large CAFO may not discharge manure or process wastewater pollutants to navigable waters from the production area, unless all of the following apply:

1. Precipitation causes an overflow of manure or process wastewater from a containment or storage structure.

2. The containment or storage structure is properly designed, constructed and maintained to contain all manure and process wastewater from the operation, including the runoff and the direct precipitation from a 25-year, 24-hour applicable rainfall event.

3. The production area is operated in accordance with the inspection, maintenance and record keeping requirements in s. NR 243.19.

Note: Operations are not allowed to discharge pollutants to navigable waters under any circumstance or storm event from areas of the production area where manure or process wastewater is not properly stored or contained by a structure. Wastewater treatment strips, grassed waterways or buffers are examples of facilities or systems that by themselves do not constitute a structure.

(b) 1. The department may establish an alternative discharge limitation to the standard limitation established in par. (a) if an applicant or permittee requests an alternative limitation. When requesting an alternative site specific limitation, the applicant or permittee shall submit all of the following additional information

as part of the application for WPDES permit issuance or reissuance:

a. A technical analysis, calculations and other relevant information that demonstrates that the discharge of pollutants, on a mass basis, associated with the alternative limitation will be equal to or less than the mass loading of pollutants associated with achieving the standard limitations in par. (a).

b. A calculation of daily inputs to the storage systems and all daily outputs from the storage systems, including losses due to evaporation, sludge removal, and off-site transport of manure and wastewater.

c. A calculation determining the median annual overflow volume based on a 25-year period of actual rainfall data applicable to the site.

d. Representative samples and analysis of all sources of input into the storage systems for nitrogen, phosphorus, BOD₅ and total suspended solids, or other applicable pollutant data.

e. Predicted annual average discharge of pollutants, expressed, where appropriate, as a mass discharge on a daily basis in pounds per day, and calculated considering the information in this subd. 1. b. to d.

f. Any additional information requested by the department.

2. The department may approve an alternative limitation if the alternative limitation is based on site specific alternative technologies that will achieve a quantity of pollutants discharged from the production area that is equal to or less than the quantity of pollutants that would be discharged if the production area was designed, constructed, operated and maintained in compliance with the standard limitation in par. (a). If approved, the alternative limit shall be included in the proposed WPDES permit.

(c) A large CAFO that primarily confines ducks, was in existence as of 1974 and has not completely replaced all of its production or processing equipment after 1974, may have a discharge of pollutants from the production area to navigable waters that meets the limits in 40 CFR part 412.22 provided the discharge will not exceed water quality standards. 40 CFR part 412.22 is incorporated by reference in s. NR 243.07. The department shall impose best management practices or effluent limitations on the discharge to address other pollutants associated with manure or process wastewater or to meet surface water or groundwater quality standards. If the permittee chooses this option, the permittee shall monitor pollutants in all runoff from the production area to demonstrate compliance with effluent limitations.

Note: Copies of 40 CFR part 412.22 and the other federal regulations referenced in 40 CFR part 412.22 are available for inspection at the office of the department, Madison, Wisconsin and U.S. EPA offices.

(3) **SWINE, POULTRY OTHER THAN DUCKS AND VEAL CALVES.** (a) Except as provided in par. (b), a large CAFO that is an existing source CAFO that confines mostly swine, poultry other than ducks or veal calves shall comply with the requirements in sub. (2).

Note: All existing source dairy, cattle, swine, poultry other than ducks, and veal operations, are subject to the same discharge limitations related to the 25-year, 24-hour storm event as well as the same allowances for alternative discharge limitations. New source swine, poultry other than ducks, and veal calves have more restrictive discharge limitations and additional criteria for receiving alternative discharge limitations.

(b) A large CAFO that is a new source CAFO and that confines mostly swine, poultry other than ducks or veal calves may not discharge manure or process wastewater pollutants into navigable waters from the production area except as provided in par. (c). Storage and containment facilities and structures shall be designed, constructed, operated and maintained to contain all manure and process wastewater, including runoff and the direct precipitation from a 100-year, 24-hour rainfall event, and the production area shall be operated in accordance with the inspection, maintenance and recordkeeping requirements in s. NR 243.19.

(c) 1. For swine, poultry other than ducks or veal calf operations that are new source CAFOs, the department may establish

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an alternative discharge limitation to the applicable standard limitation established in par. (b) if an owner or operator of the large CAFO requests an alternative limitation. When requesting an alternative limitation under this paragraph, the applicant shall submit all of the following additional information as part of the application for WPDES permit issuance:

a. Calculations that demonstrate that the quantity of pollutants discharged from the production area will be offset by additional best management practices that achieve an equivalent or greater reduction in the quantity of pollutants released to other media, including water and air, from the production area or land application areas. The calculations shall be made on a mass basis, where appropriate.

b. Any other specific information requested by the department that is needed by the department to make a determination pursuant to this paragraph.

2. If approved by the department, the alternative limitation shall be established in the WPDES permit and shall be based on site specific innovative technologies that will achieve an overall environmental performance across all media that is equal to, or superior to, the reductions achieved by the standard as provided in par. (b).

(4) HORSES AND SHEEP. (a) This subsection applies to large CAFOs that confine mostly horses or sheep. All large CAFOs that confine mostly horses or sheep may not discharge process wastewater pollutants into navigable waters from the production area except if both of the following are met:

1. A rainfall event causes an overflow of process wastewater from a facility or structure designed, constructed, operated and maintained to contain all process wastewater generated including the runoff from a 25-year, 24-hour rainfall event.

2. The discharge complies with water quality standards.

(b) In a WPDES permit, the department may impose additional requirements or best management practices, or other restrictions for production area discharges of manure or process wastewater to meet surface water quality or groundwater standards.

(5) ALL LARGE CAFOs. (a) If a discharge of manure or process wastewater pollutants to waters of the state occurs, including a discharge allowed under subs. (2) to (4), the discharge shall comply with groundwater and surface water quality standards.

(b) The permittee may not allow livestock to come into direct contact with navigable waters in the production area.

(6) EMERGENCY RESPONSE PLAN. (a) *General.* Within 30 days of permit issuance or reissuance, a permittee shall develop an emergency response plan, or update an existing plan if necessary, that is designed to address unauthorized spills or discharges. For purposes of this subsection, unauthorized spills or discharges include catastrophic spills resulting from failures of containment or storage structures or equipment malfunctions, leakage from pumping systems and other events creating potential environmental damage. The emergency response plan shall be maintained at the production area in a place accessible to all employees. The permittee shall notify all employees involved with manure handling of the location and contents of the emergency response plan. Relevant portions of the plan shall be retained with land application equipment and with contracted land applicators. The plan shall be implemented whenever an unauthorized spill or discharge occurs. The plan shall be made available to the department upon request.

Note: Pursuant to s. 292.11, Stats., owners or operators of CAFOs are required to report spills of hazardous substances. Under s. 292.11, Stats., manure can be considered a hazardous substance.

(b) *Plan content.* The emergency response plan shall include all of the following information:

1. The names and telephone numbers of persons who are identified by the permittee as responsible for implementing the emergency response plan.

2. Areas of the production area where potential unauthorized spills or discharges can occur, and their accompanying surface and subsurface drainage points.

3. Procedures to be followed in the event of an unauthorized spill or discharge, including the following:

a. Actions to contain, minimize and manage any unauthorized discharge.

b. Actions to mitigate the adverse effects of any unauthorized discharge.

c. Identification of contractors, equipment, equipment technical support, clean-up materials and alternative manure storage that can be used in the event of an unauthorized discharge.

d. Identification of land application sites or alternative storage facilities that can be used in the event of an unauthorized discharge during precipitation events or when soils are saturated, frozen or snow covered. Those land application sites identified shall have the lowest potential to deliver pollutants to waters of the state out of all the land application sites available to the permittee.

e. Procedures for reporting the unauthorized discharge to the permittee's main operational contact, any applicable local emergency or health authorities, and the department in accordance with permit requirements and s. 292.11, Stats.

(c) *Amendments.* The emergency response plan shall be reviewed and, if appropriate or necessary, amended whenever the operation undergoes significant expansions or other changes that affect the volume or location of potential unauthorized spills or discharges. The plan shall be amended as needed to reflect changes in available equipment, available clean-up contractors or procedures to address unauthorized spills or discharges, or amended in accordance with comments provided by the department. Dates of plan amendments shall be retained with the plan at the production area.

(7) ANCILLARY SERVICE AND STORAGE AREAS. In accordance with the terms and conditions of the WPDES permit, a permittee may discharge contaminated storm water to waters of the state from ancillary service and storage areas provided the discharges of contaminated stormwater comply with groundwater and surface water quality standards. These areas include CAFO outdoor vegetated areas, access roads, sites used for the handling or storage of material or refuse other than manure, bedding, feed or process wastewater, areas for storage or maintenance of material handling equipment, areas for shipping and receiving, and other sources of contamination that are not identified as part of the production area. These areas do not include land application areas. The permittee shall take preventive maintenance actions and conduct periodic visual inspections to minimize the discharge of pollutants from these areas to surface waters. For CAFO outdoor vegetated areas, the permittee shall also implement the following practices:

(a) Manage stocking densities, implement management systems and manage feed sources to ensure that sufficient vegetative cover is maintained over the entire area at all times.

(b) Prohibit direct access of livestock or poultry to surface waters or wetlands located in or adjacent to the area unless approved by the department.

(c) Comply with other measures specified in the permit to prevent exceedances of groundwater and surface water quality standards.

Note: Examples of ancillary service and storage areas include access roads into the production area, pesticide storage, motor oil and fuel drums, equipment repair areas, and junk or scrap piles. These areas do not include land application areas or areas that are part of the production area. Contaminated stormwater discharges from construction site areas are subject to the WPDES permit requirements under ch. NR 216.

(8) MORTALITY MANAGEMENT. (a) Animal carcasses may not be disposed of in a manner that results in a discharge of pollutants to surface waters, violates groundwater standards or impairs wetland functional values. Animal carcasses may not be disposed of

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directly into waters of the state. In addition, carcasses may not be disposed of in liquid manure or process wastewater containment, storage or treatment facilities unless the containment, storage or treatment facility is adequately designed to contain and treat carcasses and the facility has been approved by the department for that use.

(b) The permittee shall maintain records of mortality management and disposal methods in accordance with s. NR 243.19.

Note: The permittee should be aware that there are additional restrictions on the disposal of animal carcasses in ch. 95, Stats., and ch. ATPC 3. Furthermore, there may be local regulations regarding disposal of carcasses. If a carcass is disposed of off-site, the disposal may be subject to the requirements in s. NR 502.12 or ch. NR 518.

Note: In accordance with s. 283.53, Stats., the term of a WPDES permit cannot exceed 5 years.

History: CR 05-075; cr. Register April 2007 No. 616, eff. 7-1-07.

NR 243.14 Nutrient management. (1) NUTRIENT MANAGEMENT PLANS. (a) *General.* Permittees shall submit a nutrient management plan developed by a nutrient management planner qualified under s. ATPC 50.48 to the department for review and approval outlining the amounts, timing, locations, methods and other aspects regarding the land application of manure and process wastewater. A complete nutrient management plan shall be submitted with a permit application in accordance with s. NR 243.12. The nutrient management plan shall comply with the requirements of this section and the permittee's WPDES permit. Subject to additional requirements specified in this section and in a WPDES permit, the land application practices identified in the nutrient management plan shall, at a minimum, conform with the nutrient budgeting, soil test recommendations, application practices and restrictions contained in NRCS Standard 590.

(b) *Plan content.* The permittee's nutrient management plan shall contain information necessary to document how the operation's land application activities will comply with the restrictions in NRCS Standard 590, this chapter and the conditions of the operation's WPDES permit. In cases where there is limited acreage available for application, the department may require that the permittee submit additional or more specific information, including verification that the permittee has permission to land apply manure on fields not owned by the permittee. The department may require additional management practices be included in the nutrient management plan to ensure compliance with the requirements of this chapter and the permittee's WPDES permit.

Note: The Wisconsin Conservation Planning Technical Note WI-1 contains additional detail on the information that needs to be included in a plan drafted in accordance with NRCS Standard 590, as well as additional background information useful for nutrient management planning. While additional information beyond that outlined in the technical note is needed to comply with the requirements of this section, the technical note does provide general guidance on how to create a nutrient management plan.

(c) *Amendments.* 1. The nutrient management plan shall be reviewed and amended by the permittee on an annual basis to reflect any changes in operations. Except as provided in subd. 2., the management plan may be amended at any time provided the proposed amendments are approved in writing by the department. An amendment does not become effective until the department has reviewed and approved the amendment.

2. The department may establish a condition in the WPDES permit that allows the permittee to implement certain types of nutrient management plan amendments without obtaining, or prior to obtaining, department approval.

(2) GENERAL REQUIREMENTS. (a) A discharge of manure or process wastewater pollutants to waters of the state by a CAFO as a result of the land application of manure or process wastewater is subject to the WPDES permit terms and conditions except where the discharge is an agricultural storm water discharge. A permittee's land application practices for manure and process wastewater shall comply with this section, the terms and conditions of the WPDES permit and the permittee's approved nutrient management plan. Except as provided in s. NR 243.142 (2), the permittee is responsible for ensuring that the manure and process wastewater generated or handled at the operation is land applied

or disposed of in a manner that complies with this subchapter and the terms and conditions of the WPDES permit.

(b) A permittee who land applies manure or process wastewater shall land apply all manure and process wastewater in compliance with the following requirements:

1. Manure or process wastewater may not pond on the application site.

2. During dry weather conditions, manure or process wastewater may not run off the application site, nor discharge to waters of the state through subsurface drains.

3. Manure or process wastewater may not cause the fecal contamination of water in a well.

4. Manure or process wastewater may not run off the application site nor discharge to waters of the state through subsurface drains due to precipitation or snowmelt except if the permittee has complied with all land application restrictions in this subchapter and the WPDES permit, and the runoff or discharge occurs as a result of a rain event that is equal to or greater than a 25-year, 24-hour rain event.

5. Manure or process wastewater may not be applied to saturated soils.

6. Land application practices shall maximize the use of available nutrients for crop production, prevent delivery of manure and process wastewater to waters of the state, and minimize the loss of nutrients and other contaminants to waters of the state to prevent exceedances of groundwater and surface water quality standards and to prevent impairment of wetland functional values. Practices shall retain land applied manure and process wastewater on the soil where they are applied with minimal movement.

7. Manure or process wastewater may not be applied on areas of a field with a depth to groundwater or bedrock of less than 24 inches.

8. Manure or process wastewater may not be applied within 100 feet of a direct conduit to groundwater.

9. Manure or process wastewater may not be applied within 100 feet of a private well or non-community system as defined in ch. NR 812 or within 1000 feet of a community well as defined in ch. NR 811.

10. On a field with soils that are 60 inches thick or less over fractured bedrock, manure or process wastewater may not be applied on frozen ground or where snow is present.

11. Manure or process wastewater may not be applied on fields when snow is actively melting such that water is flowing off the field.

12. Where incorporation of land applied manure is required under NRCS Standard 590, the incorporation shall occur within 48 hours of application.

13. Manure or process wastewater may not be surface applied when precipitation capable of producing runoff is forecast within 24 hours of the time of planned application.

(c) Land application of process wastewater shall be included in the permittee's nutrient management plan and shall be done in accordance with the requirements of this section, except that process wastewater may be applied to frozen or snow covered ground in accordance with the requirements in s. NR 214.17 (2) to (6) instead of subs. (6) and (7). The permittee shall specify in the nutrient management plan or permit application whether process wastewater will be applied to frozen or snow-covered ground in accordance with subs. (6) and (7) or s. NR 214.17 (2) to (6).

(d) If incorporation is required under this section or the WPDES permit, the permittee shall specify the method of incorporation in the nutrient management plan.

Note: In addition to implementing practices specified in a nutrient management plan, the permittee should consider the following factors when making decisions about the timing of application and placement of manure and process wastewater on fields: the ability of the soil to absorb or otherwise hold liquids associated with manure and process wastewater based on the soil's moisture content or permeability, if snow is present on a field or the ground is frozen, the prediction of temperature increases that will likely result in sudden snowmelts or pollutant movement, upslope

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areas contributing runoff or snow melt to the site where applications occur, and other field conditions that may contribute to runoff events.

(e) A permittee shall identify as part of its nutrient management plan, to the maximum extent practicable, the presence of subsurface drainage systems in fields where its manure or process wastewater is applied.

(f) Subject to other restrictions on application rates in this section, the permittee shall use results of manure, process wastewater and soil analyses to determine nutrient application rates for manure and process wastewater.

Note: Under s. NR 243.19, the permittee shall conduct sampling of manure, process wastewater and soils, keep records associated with sampling and land application activities and submit reports to the department regarding the sample results and land application of manure and process wastewater.

Note: Pursuant to s. NR 243.142, the permittee is responsible for land application activities of the manure and process wastewater generated by the large CAFO, including the land application activities of contract haulers and employees.

(3) NUTRIENT CREDITING. A permittee's manure and process wastewater application rates shall take into account soil nutrient levels prior to landspreading, nutrient applications from other sources, including commercial fertilizers, biosolids, first and second year manure and legume credits, and other sources of nutrients that are expected to be applied or have already been applied to land where manure or process wastewater will be applied. Adjustments shall be made to assumed nutrient credits based on actual crop yields.

(4) SWQMA APPLICATION RESTRICTIONS. (a) Subject to additional restrictions in subs. (6) and (7) for the winter season, a permittee shall choose and implement one of the following options whenever manure or process wastewater is applied on areas of fields within the SWQMA:

1. Not apply manure or process wastewater within 25 feet of a navigable water, conduit to a navigable water or wetland; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA.

2. Not apply manure or process wastewater within 25 feet of a navigable water, conduit to a navigable water or wetland; and surface apply liquid manure and process wastewater in all other areas of the SWQMA provided that all of the following conditions are met:

- The application is on long-term no-till ground.
- The ground has 30% crop residue or more at the time of application.
- The hydraulic application rate is limited to that specified in Table 3.

3. Establish a 35-foot wide vegetated buffer adjacent to the navigable water, conduit to a navigable water or wetland where there is no application of manure or process wastewater on the buffer; and comply with a practice in this subd. 3. a. or b. For the purposes of this subdivision, a vegetated buffer means a narrow, permanent strip of dense perennial vegetation established parallel to the contours of and perpendicular to the dominant slope of the field for the purposes of slowing water runoff, enhancing water infiltration, and minimizing the risk of any potential nutrients or pollutants from leaving the field and reaching navigable waters.

a. Inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA, or

b. Surface apply in all other areas of the SWQMA provided the ground has 30% residue or more at the time of application and the hydraulic application rate is limited in accordance with Table 3.

4. Establish a filter strip that is a minimum of 21 feet wide adjacent to the navigable water, conduit to a navigable water or wetland; and comply with a practice in this subd. 4. a. or b. The filter strip shall be designed in accordance with NRCS Standard 393, dated January 2001. NRCS Standard 393, dated January 2001, is incorporated by reference in s. NR 243.07.

Note: Copies of NRCS Standard 393, dated January 2001 and documents referenced in this standard may be inspected at the offices of the department, DATCP,

NRCS, county land conservation departments and the legislative reference bureau, Madison, Wisconsin.

a. Inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA, or

b. Surface apply in all other areas of the SWQMA provided the ground has 30% residue or more at the time of application and the hydraulic application rate is limited in accordance with Table 3.

5. Not apply manure or process wastewater within 100 feet of a navigable water or conduit to a navigable water.

6. Implement other practices within the SWQMA that are approved, in writing, by the department provided that the permittee demonstrates pollutant reductions are equivalent to, or better than, reductions achieved by not applying manure or process wastewater within 100 feet of downgradient navigable waters or conduits to navigable waters.

Note: The Wisconsin buffer initiative may provide additional information on the proper design and use of riparian buffers to best protect water quality.

Note: Demonstrations of equivalent practices may consist of model outputs, calculations or other means of demonstrating equivalent pollutant reductions.

(b) The nutrient management plan shall specify the land application practices that have been selected and will be followed on each field to meet the requirements of this subsection. Permittees implementing practices under par. (a) 1., 2. or 4. shall demonstrate to the department how the practices provide for pollutant reductions equivalent to, or better than, reductions achieved by not applying manure and process wastewater within 100 feet of downgradient navigable waters or conduits to navigable waters.

(c) If the application rates in Table 3 apply pursuant to any of the requirements in par. (a) 2. to 4., any additional applications made to meet the allowed nutrient crop budget shall be done with a minimum of 7 days between applications, provided the soils are not saturated.

TABLE 3 Maximum Rates of Unincorporated Liquid Manure and Process Wastewater Applied Within a SWQMA	
Surface Texture Class ¹	Max Application Rate (gallons/acre)
Fine	5,000
Medium	7,500
Coarse	10,000

¹ Fine – clay, silty clay, silty clay loam, clay loam.

Medium – sandy clay, sandy clay loam, loam, silt loam, silt.

Coarse – loamy sand, sandy loam, sand. This category includes peat and muck based on their infiltration capacity.

(5) PHOSPHORUS DELIVERY. (a) The permittee shall assess and minimize the potential for delivery of phosphorus to waters of the state from fields by applying its manure and process wastewater in accordance with one of the methods specified in subd. 1. or 2. The permittee shall specify the method it will apply to a field in the nutrient management plan.

1. Use the soil test phosphorus method specified in NRCS Standard 590. In addition, for applications to fields directly adjacent to, or that have been determined by the department to have a high potential to deliver phosphorus to, 303 (d) listed waters impaired by nutrients or outstanding or exceptional resource waters, the permittee may not increase soil test phosphorus levels over a crop rotation unless the permittee receives department approval, and the permittee can demonstrate that deliverability of phosphorus to these waters will not increase as a result of increases in soil test phosphorus in the field. The permittee may not raise soil test phosphorus levels over a rotation above the optimum level for the highest phosphorus demanding crop in a rotation for a field with soil test phosphorus levels below optimum levels.

Note: Maps or written descriptions of the locations of outstanding and exceptional resource and 303 (d) listed waters can be found on the department's website at <http://dnr.wi.gov>.

Note: In accordance with s. NR 243.14 (1) (a) and NRCS Standard 590, a permittee shall determine optimum soil phosphorus levels for various Wisconsin crops as

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specified in University of Wisconsin–Extension Publication A2809, “Soil Test Recommendations for Field, Vegetable and Fruit Crops.”

2. Use the phosphorus index method specified in NRCS Standard 590.

(b) If a permittee applies manure or process wastewater on fields with soil test levels greater than 100 ppm, the permittee shall comply with the requirements in both subd. 1. and 2.:

1. For fields with soil test phosphorus levels between 100 ppm and 200 ppm, the permittee shall calculate the planned average phosphorus index value for the crop rotation or for the next 4-year period, whichever time period is less. If the calculated average phosphorus index value is greater than 6, manure and process wastewater applications to that field are prohibited. If the calculated phosphorus index value is 6 or less, applications are allowed provided that the cumulative application of phosphorus from manure and process wastewater does not exceed 50% of the cumulative annual crop phosphorus removal over the rotation or the next 4-year period, whichever is less.

2. For fields with soil test phosphorus levels of 200 ppm and greater, applications of phosphorus from manure and process wastewater are prohibited unless the permittee receives department approval. The department may only approve the application if all of the following requirements are met:

a. The permittee can demonstrate that additional applications of manure or process wastewater will not significantly increase phosphorus delivery to surface waters or wetlands.

b. The permittee calculates the planned average phosphorus index value for the rotation or the next 4-year period, whichever is less and the planned average phosphorus index value is 6 or less.

c. The cumulative application of phosphorus from manure and process wastewater does not exceed 50% of the cumulative annual crop phosphorus removal over the rotation or the following 4-year period, whichever is less.

Note: Strategies for assessing and reducing phosphorus index (PI) values, algorithms, and software for calculating the Wisconsin PI can be found at <http://wpindex.soils.wisc.edu/>.

Note: A permittee that complies with the requirements of this section and its WPDES permit also addresses delivery of nitrogen to waters of the state.

Note: Also see s. NR 217.04 (1) (a) 5.

(6) SOLID MANURE WINTER RESTRICTIONS. The restrictions in this subsection apply to the land application of solid manure on frozen or snow covered ground.

(a) *Frozen ground—solid manure.* Unless prohibited under par. (c), solid manure may be surface applied on frozen ground if the manure is applied in compliance with the restrictions in Table 4 or otherwise immediately incorporated.

(b) *Snow covered ground—solid manure.* Unless prohibited under par. (c), solid manure may only be land applied to snow covered ground in accordance with the following:

1. If less than one inch of snow is present on the area where manure is to be land applied, the permittee may surface apply or immediately incorporate the solid manure.

Note: If there is less than one inch of snow on the ground and the ground is frozen, pursuant to par. (a), Table 4 restrictions must be followed when surface applying solid manure.

2. If one to 4 inches of snow is present on the area where manure is to be land applied, the permittee shall surface apply the manure in compliance with restrictions in Table 4 or otherwise immediately incorporate the solid manure.

3. If more than 4 inches of snow is present on the area where manure is to be land applied, the permittee shall surface apply the solid manure in compliance with the restrictions in Table 4. Incorporation of solid manure is prohibited.

Note: It is assumed that proper incorporation of solid manure is not achievable if more than 4 inches of snow is present at the time of application.

(c) *High-risk runoff period.* 1. Beginning January 1, 2008, solid manure may not be surface applied from February 1 through March 31 if any of the following conditions exist on the area of the field where the manure is to be applied:

a. Snow is present to a depth of one inch or greater.

b. The ground is frozen.

Note: Under the initial applicability provisions, the prohibition of surface application of solid manure during the high-risk period does not apply to an operation permitted as of July 1, 2007, until permit reissuance or modification. An exception to delaying compliance until permit reissuance or modification is if an operation is permitted as of July 1, 2007, and the permit requires compliance upon written department notification. Under par. (c), department notification may not require compliance prior to January 1, 2008.

Note: Solid manure may be surface applied at other times of the winter, or may be incorporated at other times during the winter, including high-risk runoff periods, if the application is done in accordance with pars. (b) and (c) and other land application requirements in this chapter.

(d) To meet the requirements of par. (c), a permittee may choose to stack solid manure generated at a production area location in accordance with s. NR 243.141 (1) rather than use a storage facility that meets the design requirements in s. NR 243.15.

TABLE 4
Restrictions for Surface Applying Solid Manure on Frozen and Snow Covered Ground

Criteria	Restrictions for fields With 0–6% slopes	Restrictions for fields with slopes > 6% and up to 9%	Restrictions for fields with slopes greater than 9%
Required fall tillage practice prior to application	Chisel or moldboard plow, no-till or a department approved equivalent ^A	Chisel or moldboard plow, no-till or department approved equivalent ^A	Not allowed
Minimum % solids allowed	12%	> 20%	Not allowed
Application rate (cumulative per acre)	Not to exceed 60 lbs. P ₂ O ₅ per winter season, the following growing season's crop P ₂ O ₅ budget taking into account nutrients already applied, or phosphorus application restrictions specified in a department approved nutrient management plan, whichever is less	Not to exceed 60 lbs. P ₂ O ₅ per winter season, the following growing season's crop P ₂ O ₅ budget taking into account nutrients already applied, or phosphorus application restrictions specified in a department approved nutrient management plan, whichever is less	Not allowed
Setbacks from surface waters	No application allowed within SWQMA	No application allowed within 2.0 x SWQMA	Not allowed
Setbacks from downslope areas of channelized flow, vegetated buffers, and wetlands	200 feet	400 feet	Not allowed
Setbacks from direct conduits to groundwater	300 feet	600 feet	Not allowed

^A All tillage and farming practices shall be conducted in accordance with the following requirements; 0–2% slope = no contouring required, >2–6% slope = tillage and practices conducted along the general contour, >6% slope = tillage and farming practices conducted along the contour. The department may approve alternative tillage practices on a case-by-case basis in situations where conducting practices along the contour is not possible. Allowances for application on no-till fields only apply to fields where no-till practices have been in place for a minimum of 3 years.

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(7) **LIQUID MANURE WINTER RESTRICTIONS.** The following additional restrictions in this subsection apply to the land application of liquid manure on frozen or snow covered ground:

(a) *Frozen ground—liquid manure.* Surface application of liquid manure on frozen ground is prohibited, except for an emergency situation under par. (d) or if allowed under par. (e). Injection or immediate incorporation of liquid manure is allowed on frozen ground, except if prohibited due to snow covered conditions under par. (b).

(b) *Snow covered ground—liquid manure.* Unless prohibited under par. (c) and subject to the frozen ground prohibition in par. (a), liquid manure may only be land applied to snow covered ground in accordance with the following:

1. If less than one inch of snow is present on the area where liquid manure is to be applied, surface application, injection or immediate incorporation of liquid manure is allowed.

2. If there is one to 4 inches of snow present on the area where liquid manure is to be applied, surface application of liquid manure is prohibited, except for department approved emergencies under par. (d) or if allowed under par. (e). Immediate incorporation or injection is allowed on areas where there is one to 4 inches of snow.

3. If there is greater than 4 inches of snow on the area where liquid manure is to be applied, surface application and incorporation of liquid manure is prohibited, except for department approved emergencies under par. (d) or if allowed under par. (e). Injection of liquid manure is allowed on areas where there is greater than 4 inches of snow.

(c) *High-risk runoff period.* 1. Unless there is a department approved emergency situation under par. (d), liquid manure may not be surface applied from February 1 through March 31.

Note: Prior to January 1, 2010, existing source CAFOs may surface apply liquid manure at other times of the winter. Also, during the high-risk period, liquid manure may be injected or incorporated if allowed under pars. (b) and (c) and other requirements in this chapter.

(d) *Emergency applications for liquid manure.* 1. Except as provided in subd. 3., a permittee may surface apply liquid manure on frozen or snow covered ground on an emergency basis in accordance with the restrictions in Table 5 if all of the following conditions are met:

a. The manure is from a storage or containment facility that is designed and maintained in accordance with ss. NR 243.15 and 243.17 to provide 180 days of storage for the manure.

b. The application of manure is necessitated by exceedances or expected exceedances of the margin of safety level that were unavoidable due to unusual weather conditions, equipment failure or other unforeseen circumstances beyond the control of the permittee.

c. The permittee has notified the department verbally prior to the emergency application. Unless necessitated by imminent impacts to the environment or human or animal health, the permittee may not apply manure to a field on an emergency basis until the department has verbally approved the application.

d. The permittee submits a written description of the emergency application and the events leading to the emergency application to the department within 5 days of the emergency application.

2. Allowances for emergency surface applications of liquid manure do not apply to situations where a permittee has failed to properly maintain storage capacity either through improper design or management of the storage facility, including failure to properly account for the number or volume of wastestreams entering the facility, failure to empty a storage or containment facility in accordance with permit conditions prior to the onset of frozen or snow covered ground conditions or due to an increase in animal units.

Note: The allowance for emergency surface applications in compliance with permit conditions is intended to avoid more significant impacts to human health and water quality associated with uncontrolled overflows of manure storage facilities. Causes of emergency surface applications could include conditions such as prolonged storm events or early onset of frozen ground conditions that preclude applications of manure prior to the onset of frozen or snow covered ground conditions provided that the operation made all other attempts to maintain storage volume before an emergency application became necessary.

3. The permittee shall conduct emergency surface applications of liquid manure in accordance with the restrictions in Table 5. The permittee may only conduct emergency surface applications on fields that the department has approved for emergency applications, in writing, as part of a nutrient management plan. The department may approve alternate fields and impose alternative restrictions, in writing and on a case-by-case basis, if fields that meet the restrictions in Table 5 are not available at the time of the emergency application, the permittee has explored all other options identified in its emergency response plan and the application results in a winter acute loss index value of 4 or less using the phosphorus index.

Note: The winter acute loss index value is displayed under the heading "Acute Loss Frozen Soil PI" in the cropping screen of the Snap-Plus nutrient management software program.

Note: Reporting requirements for emergency surface applications are contained in s. NR 243.19.

(e) *Existing source CAFOs—liquid manure exception.* Prior to January 1, 2010, if an existing source CAFO does not have 180 days of storage for liquid manure as specified in s. NR 243.15, the permittee may surface apply liquid manure on frozen or snow covered ground in accordance with the restrictions in Table 5 without satisfying the emergency criteria in par. (d). If a permittee does not have access to sites that meet the criteria in Table 5, the department may approve alternate sites and restrictions, in writing on a case-by-case basis as part of a nutrient management plan provided the application results in a winter acute loss index value of 4 or less using the phosphorus index. This allowance for existing source CAFOs to surface apply liquid manure on frozen or snow covered ground without satisfying the emergency criteria in par. (d) is not applicable after January 1, 2010.

Note: An existing source CAFO is defined under s. NR 243.115(1).

(f) *Frozen liquid manure.* Liquid manure that is frozen and cannot be transferred to a manure storage facility may be surface applied on frozen or snow-covered ground in accordance with the restrictions in Table 5. Surface applications of frozen liquid manure do not require prior department approval or notification provided application sites for frozen liquid manure are identified in the approved nutrient management plan. During February and March, the permittee shall notify the department if the permittee expects to surface apply frozen liquid manure more than 5 days in any one month.

Note: Applications of frozen manure under par. (f) are limited to times when the operation's manure handling system is not functioning due to very cold weather.

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TABLE 5 Frozen and Snow Covered Ground Restrictions – Emergency Surface Applications of Liquid Manure			
Criteria	Restrictions for fields with 0–2% slopes	Restrictions for fields with >2–6% slopes	Restrictions for fields with slopes greater than 6%
Required fall tillage practice prior to application	Chisel or moldboard plow or department approved equivalent ^A	Chisel or moldboard plow or department approved equivalent ^A	Not allowed
Application rate (cumulative per acre)	Maximum application volume of 7,000 gallons per acre per winter season, not to exceed 60 lbs. P ₂ O ₅ , the following growing season's crop P ₂ O ₅ budget taking into account nutrients already applied or other phosphorus application restrictions specified in a department approved nutrient management plan, whichever is less	Maximum application volume of 3,500 gallons per acre per winter season, not to exceed 30 lbs. P ₂ O ₅ , the following growing season's crop P ₂ O ₅ budget taking into account nutrients already applied, or other phosphorus application restrictions specified in a department approved nutrient management plan, whichever is less	Not allowed
Setbacks from surface waters	No application allowed within SWQMA	No application allowed within SWQMA	Not allowed
Setbacks from downslope areas of channelized flow, vegetated buffers, wetlands	200 feet	200 feet	Not allowed
Setbacks from direct conduits to groundwater	300 feet	300 feet	Not allowed
^A All tillage and farming practices shall be conducted along the contour in accordance with the following requirements; 0–2% slope = no contouring required, >2–6% slope = tillage and practices conducted along the general contour. The department may approve alternative tillage practices on a case-by-case basis in situations where conducting practices along the contour is not possible			

(8) IDENTIFICATION OF SITES. The permittee shall submit sites that meet or are expected to meet the criteria in Tables 4 and 5 for manure and the criteria in s. NR 214.17 (2) to (6) for process wastewater to the department for review and approval as part of its nutrient management plan. In addition, the permittee shall evaluate each field at the time of application to determine if conditions are suitable for applying manure and complying with the requirements of this section. All surface applications of manure or process wastewater on frozen or snow-covered ground shall occur on those fields that represent the lowest risk of pollutant delivery to waters of the state and where the application results in a winter acute loss index value of 4 or less using the phosphorus index.

(9) ADEQUATE STORAGE. All permittees shall have and maintain adequate storage for all manure and process wastewater generated at the operation to ensure that wastes can be properly stored and land applied in compliance with the conditions and timing restrictions of the permit, nutrient management plan and this chapter. As part of the nutrient management plan, the permittee shall provide the department with documentation that it has adequate storage and methods of maintaining adequate storage for manure and process wastewater generated at the operation. For liquid manure, adequate storage means a minimum of 180 days of storage designed and maintained in accordance with ss. NR 243.15 (3) (i) to (k) and 243.17 (3) and (4).

(10) ADDITIONAL RESTRICTIONS. The department may require the permittee to implement practices in addition to or that are more stringent than the requirements specified in this section when necessary to prevent exceedances of groundwater quality standards, prevent impairments of wetland functional values, prevent runoff of manure or process wastewater during dry weather conditions or to address previous manure or process wastewater runoff events or discharges from a site to waters of the state that occurred despite compliance with this section and the conditions of a WPDES permit. These conditions may include additional restrictions on nitrogen and phosphorus loadings or other nutrients and pollutants associated with the manure or process wastewater, injection or incorporation requirements, restrictions on winter landspreading, distribution schedules, and other management or site restrictions. The department may also consider nutrient management conditions contained in ch. ATP 50 as well as the following site-specific factors when developing permit conditions or reviewing and approving the nutrient management plan or any proposed amendments to an approved nutrient management plan:

- (a) Soil limitations such as permeability, infiltration rate, drainage class and flooding hazard.
- (b) Volume and water content of the waste material.
- (c) Available storage capacity and method of application.
- (d) Nutrient requirements of the crop or crops to be grown on the fields utilizing the manure.
- (e) The presence of subsurface drainage systems.
- (f) Potential impacts to waters identified as source water protection areas.
- (g) Potential impact to groundwater in areas with direct conduits to groundwater, shallow soils over bedrock, highly permeable soils and shallow depth to groundwater.

History: CR 05-075: cr. Register April 2007 No. 616, eff. 7-1-07.

NR 243.141 Manure stacking. (1) STACKING TO AVOID SURFACE APPLICATIONS IN FEBRUARY AND MARCH. For solid manure with a solids content of 16% or greater, the department may approve stacking of the manure outside of a department approved manure storage facility where a permittee chooses to stack solid manure in accordance with s. NR 243.14 (6) (d). Permittees choosing to stack solid manure under s. NR 243.14 (6) (d) shall land apply all stacked manure from a site within 8 months of the date when stacking first began at the site.

(2) OTHER STACKING ALLOWANCES. For periods when the ground is not frozen or snow-covered, the department may approve stacking of solid manure with a solids content of greater than 32% outside of a department approved manure storage facility on a case-by-case basis as allowed under a WPDES permit. Factors the department shall consider when approving stacking of solid manure on a case-by-case basis include the potential for leachate or runoff from the stack causing exceedances of surface water or groundwater quality standards or impairments to wetland functional values, information submitted or proposed to be submitted by the permittee outlining leaching and runoff characteristics of the manure, and practices to be implemented by the permittee to minimize the potential for leachate or runoff from the stack such as limiting the frequency, volume of manure to be stacked and length of stacking period.

(3) STACKING CONDITIONS. All proposed stacking sites shall be reviewed and approved by the department and identified in the permittee's nutrient management plan. Stacking approvals may be rescinded based on documented impacts to waters of the state

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at or from the stacking site. Stacking may only be approved provided the following requirements are met:

(a) When piled in a stack, the solid manure stack must be able to maintain its shape with minimal sloughing such that an angle of repose of 45 degrees or greater is maintained when the manure is not frozen.

(b) Stacking of solid manure outside of a department approved manure storage facility shall, at a minimum, meet the specifications in NRCS Standard 313, Table 9, dated December 2005. Alternatively, stacks may be placed on sites with soils in the hydrologic soil group D provided the manure has a solids content of greater than 32% and all other criteria in NRCS Standard 313, Table 9, dated December 2005, are met. NRCS Standard 313, dated December 2005, is incorporated by reference in s. NR 243.07.

Note: Copies of NRCS Standard 313, dated December 2005 and documents referenced in this standard may be inspected at the offices of the department, DATCP, NRCS, county land conservation departments and the legislative reference bureau, Madison, Wisconsin.

(c) The permittee shall implement any necessary additional best management practices to ensure stacking areas maintain compliance with the production area requirements in s. NR 243.13. Best management practices may include upslope clean water diversions or downslope containment structures.

Note: Manure with a solids content of approximately 20% or less may not meet the stacking criteria either because it cannot be stacked or is prone to runoff. This manure may require storage in a constructed facility during the months of February and March.

Note: Manure stacks are considered to be part of the animal production area and are subject to production area discharge restrictions in s. NR 243.13. For CAFOs, if a manure stack is not placed in a containment or storage structure or the runoff from the stack is not contained in a structure, discharges to navigable waters are not allowed under any circumstance or storm event.

(d) The stacked manure shall have minimal leaching so that leachate from the stack is contained within the designated stacking area and does not cause an exceedance of groundwater quality standards.

(e) Solid manure may not be stacked in a water quality management area.

(f) Stacks may only be placed on cropland.

(4) The department may require additional restrictions on stacking of solid manure needed to protect water quality, that include acceptable time periods for stacking, how long the manure stacks may remain in place, size of manure stacks, stack siting restrictions based on slope and soil conditions, loading and resting requirements of stacking sites, conservation practices and site monitoring requirements.

History: CR 05-075: cr. Register April 2007 No. 616, eff. 7-1-07.

NR 243.142 Responsibility for large CAFO manure and process wastewater. (1) **GENERAL.** Except as provided in sub. (2), the owner or operator shall be responsible for the storage, management and land application of all manure and process wastewater generated by the operation in accordance with terms and conditions contained in the WPDES permit and the approved nutrient management plan.

Note: If manure or process wastewater is stored or sent out of the state of Wisconsin, it is not regulated under ch. NR 243 or the WPDES permit once it is out of the state.

(2) **EXEMPTIONS.** Upon written department approval as required under sub. (3), once the manure or process wastewater is distributed offsite, the permittee is not responsible for the land application, use or disposal of manure or process wastewater if the manure or process wastewater is distributed in compliance with the conditions of the department approval and in accordance with any of the following:

(a) *De minimus quantity of solid manure distributed.* A de minimus amount of solid manure is sold or given away to another person. Under this paragraph, a de minimus amount of solid manure means the total quantity of manure distributed to the other person is no more than 175 cubic feet within a 30-day period and no more than 525 cubic feet within a 12-month period.

(b) *Distributed as a commercial product.* 1. The manure is sold or given away to another person and that person manipulates the manure, and distributes it as a commercial fertilizer pursuant to a fertilizer license issued by DATCP or distributes it as a soil or plant additive pursuant to a soil and plant additive license issued by DATCP.

2. The permittee manipulates the manure and distributes it as a commercial fertilizer pursuant to a fertilizer license issued by DATCP or distributes it as a soil or plant additive pursuant to a soil and plant additive license issued by DATCP. The permittee is responsible for the manipulated manure until it is distributed off-site to another person.

Note: If the permittee manipulates the manure and distributes the manure under a DATCP license, the permittee responsible for the manure and the manipulated manure is subject to the WPDES permit requirements until it is distributed off-site (off of any part of the CAFO) to another person. Transfer of responsibility can only occur if the conditions in sub. (3) are met.

(c) *Alternative uses of distributed manure.* For solid manure, the manure is sold or given away to another person for landscaping, greenhouse use, use as an animal bedding product or for other beneficial purposes that do not include application to croplands.

(d) *Manure or process wastewater is distributed to another permittee.* The manure or process wastewater is sold or given away to another operation permitted under a WPDES permit that has a department approved management plan that addresses the manure or process wastewater, and the manure or process wastewater will be land applied under the other permit.

(e) *Composted manure.* The manure is sold or given away to another person who composts the manure and the department has determined that the composting process and land application or use of the distributed manure will be more appropriately regulated under ch. NR 518.

(3) **DEPARTMENT APPROVAL.** If a permittee wants to transfer responsibility to another person for the land application, disposal or use of manure or process wastewater that will be distributed in accordance with one of the methods in sub. (2) (b) to (e), the permittee shall obtain written department approval for the distribution. If written approval is not obtained, the permittee remains responsible for the land application, disposal and use of the distributed manure or process wastewater in accordance with the terms of the permit and this chapter. To obtain department approval for the purposes of transferring responsibility, the permittee shall comply with all of the following conditions:

(a) Neither the permittee, its agent or a contract hauler working on behalf of the permittee may land apply the distributed manure.

(b) The permittee shall demonstrate to the department that the distributed manure will be beneficially used.

(c) If the manure is distributed in accordance with sub. (2) (b) or (c), and if the person receiving the manure intends to store the manure, the permittee shall demonstrate to the department that the distributed manure will be delivered to proper storage. For purposes of this paragraph, proper storage means one of the following:

1. The distributed manure will be stored in a facility that complies with NRCS Standard 313, December 2005.

2. The distributed manure will be stored in a manner that will not cause exceedances of groundwater and surface water quality standards and will not impair wetland functional values.

Note: Proper storage may include manure stored in bags provided that the manure is dry enough to avoid leachate generation.

Note: A permittee does not need to obtain approval from the department to transfer responsibility for de minimus amounts of manure under sub. (2) (a).

(4) **REVOCATION OF APPROVAL.** The department may revoke its approval of the responsibility transfer if the department determines that the conditions of approval are not being met by the permittee or recipients of the manure.

(5) **RECORDKEEPING AND REPORTING.** (a) The permittee shall estimate the amount of manure and process wastewater distributed under sub. (2) in its nutrient management plan and record the actual amount distributed at the time of distribution. The permit-

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tee shall create and maintain records that identify the name and address of the recipient of the distributed manure or process wastewater, the quantity distributed, and the dates of distribution. The permittee shall keep these records for at least 5 years and shall make them available to the department upon request. The permittee shall report the amount of manure distributed under sub. (2) to the department in the annual report.

(b) Prior to distribution, the permittee shall notify the recipient, in writing, of the nutrient content of the distributed manure and process wastewater based on the most recent representative sampling information that has been conducted in accordance with the permittee's WPDES permit. At a minimum, the permittee shall provide information to the recipient regarding the nitrogen and phosphorus content of the manure.

History: CR 05-075: cr. Register April 2007 No. 616, eff. 7-1-07.

NR 243.15 Design, submittal and approval of proposed facilities or systems. (1) SUBMITTAL AND APPROVAL.

(a) *Plans and specifications.* 1. Plans and specifications for proposed reviewable facilities or systems shall be submitted as part of the permit application unless written department approval is received for a later submittal. Plans and specifications shall be submitted during the term of the permit if construction of a reviewable facility or system or a modification to an existing reviewable facility or system is proposed during the term of the permit. Submittal of plans and specifications shall meet the requirements in s. NR 108.04 (2). Plans and specifications submitted for department approval shall include a narrative describing the proposed facility or system, a written management and site assessment, scaled drawings, an operation and maintenance plan and relevant calculations for the proposed facility or system. An owner or operator may not commence construction of a proposed reviewable facility or system until plans and specifications have been approved by the department in writing.

Note: Department approval should not be viewed as a guarantee that the approved facility or system or permittee can or will comply with WPDES permit conditions.

2. Barnyards, feedlots and reviewable facilities or systems may not be located within 250 feet of a private well or noncommunity system as defined in ch. NR 812 or within 1000 feet of a community well as defined in ch. NR 811.

3. Owners or operators of large CAFOs shall, at a minimum, design and construct reviewable facilities or systems that are part of the production area to meet the production area requirements in s. NR 243.13, accepted management practices, and the adequate storage requirements under ss. NR 243.14 (9) and 243.17 (3). All proposed plans and specifications, including the operation and maintenance plan, shall include a written explanation regarding the ability of the proposed facility or system to meet the production area requirement in s. NR 243.13 and the adequate storage requirements under ss. NR 243.14 (9) and 243.17 (3).

4. The department may require the submittal of additional information necessary to meet the requirements of ch. NR 150.

(b) *Department approval.* The department shall review and approve, conditionally approve or reject the plans and specifications in accordance with the timelines established in s. 281.41, Stats.

Note: In accordance with s. NR 108.04, submittals shall occur at least 90 days prior to the anticipated date upon which the owner or operator plans to commence construction.

Note: Department approval may be in addition to any local or county approvals needed. Also, a storm water construction WPDES permit may be required prior to construction pursuant to ch. NR 216.

(c) *Alternative practices or designs.* When the owner or operator of the large CAFO demonstrates that accepted management practices or those practices or design standards specified in this section are more stringent than necessary to avoid a detrimental effect on water quality, the department may approve alternative practices or design standards. This demonstration may be made during the permit issuance process under ch. 283, Stats., or during the plan review process under this section. The department may

only approve alternative practices or design standards if the owner or operator can demonstrate that the design and operation of the alternative practices will achieve compliance with the requirements of ss. NR 243.13 and 243.14 (9), surface water and groundwater quality standards and the 180-day storage requirement in s. NR 243.17 (3).

(d) *Additional requirements.* As part of its written approval of plans and specifications, the department may require that accepted management practices or design standards or those practices or design standards specified in this section be superseded by more stringent operational or design requirements or practices, based on the following site-specific conditions:

1. Physical location of the facilities or systems, including depth to groundwater and bedrock and proximity to surface waters and wetlands.

2. Soil limitations such as permeability, infiltration rate, drainage class and flooding hazard.

3. Volume and water content of the waste material.

4. Available storage capacity and method of application.

5. Additional requirements or practices necessary to prevent exceedance of groundwater or surface water quality standards or impairments to wetland functional values.

(2) **RUNOFF CONTROL.** Runoff control systems in the production area shall be designed to comply with the applicable standards in s. NR 243.13 using permanent runoff control systems that are consistent with accepted management practices such as wastewater treatment strips, sediment basins, waste storage facilities, roof runoff management, grassed waterways and clean water diversions. Wastewater treatment strips shall be designed in accordance with NRCS Standard 635, dated January 2002. NRCS Standard 635, dated January 2002, is incorporated by reference in s. NR 243.07.

Note: Copies of NRCS Standard 635, dated January 2002 and documents referenced in this standard may be inspected at the offices of the department, DATCP, NRCS, county land conservation departments, and the legislative reference bureau, Madison, Wisconsin.

Note: In accordance with s. NR 243.13(2), operations are not allowed to discharge pollutants to navigable waters under any circumstance or storm event from parts of the production area where manure or process wastewater is not properly stored or contained by a structure. Wastewater treatment strips, grassed waterways or buffers are examples of facilities or systems that by themselves do not constitute a structure.

(3) **STORAGE OR CONTAINMENT.** Permittees proposing to construct storage or containment facilities shall design and install facilities that, at a minimum, meet the following requirements:

(a) *Nutrient management.* Storage and containment facilities shall be designed to provide storage capacity that is consistent with the department approved nutrient management plan and the requirement in ss. NR 243.14 (9) and 243.17 (3).

(b) *Alarm systems.* For storage or containment facilities that are either covered, buried or otherwise concealed in a manner that does not allow visual inspection of the level of manure or process wastewater in the facility, submitted designs shall include installation of a monitoring or alarm system to prevent overflows from the facility.

(c) *Leakage collection or monitoring.* 1. The permittee shall assess if a leakage collection or monitoring system or secondary containment system is necessary to prevent discharges of manure and process wastewater to groundwater or surface waters and include the assessment as part of submittal plans and specifications. If the permittee determines that these systems are necessary, it shall include plans and specifications for these systems as part of its submittal. Components of a collection or monitoring system design may include secondary containment associated with liner installation, leachate collection, leachate recirculation, monitoring sumps or monitoring wells. Components of secondary containment may include concrete or earthen berms or diversions designed to temporarily collect or divert overland flow away from surface waters or areas susceptible to groundwater contamination.

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2. The department may require the installation of a leakage collection or monitoring system or secondary containment based on the following considerations:

- a. Whether facilities are located on or near areas that are susceptible to groundwater contamination such as direct conduits to groundwater, sandy soils, and sites with minimal separations between bedrock and high water tables.
- b. The size and depth of the facility.
- c. The type of liner used.
- d. Characteristics of waste being stored.
- e. Other considerations based on potential impacts to waters of the state.

(d) *Process wastewater.* Storage and containment facilities for process wastewater that are stored separately from manure shall be designed and constructed in accordance with ch. NR 213 and shall be designed to achieve compliance with the applicable standards in ss. NR 243.13 and 243.14 (9).

(e) *Permanent markers.* Liquid manure and process wastewater storage and containment facilities shall be constructed with permanent markers to clearly indicate the margin of safety level and maximum operating levels. Liquid manure storage and containment facilities shall also have a marker near the bottom of the facility indicating the level at which the facility provides 180 days of storage.

(f) *Standard 313.* Manure storage and containment facilities constructed after July 1, 2007, shall, at a minimum, be designed and constructed in accordance with the design criteria contained in NRCS Standard 313, December 2005.

(g) *Solid manure—storage design capacity.* Subject to par. (h), all permittees shall have properly designed storage for all solid manure generated by the CAFO during February 1 through March 31 or shall obtain department approval to stack manure under s. NR 243.141.

(h) *Solid manure—timeframe for compliance.* 1. Except as provided in subd. 2., after July 1, 2007, all permit issuances, reissuances and modifications shall require that permittees provide solid manure storage for at least the time period from February 1 through March 31 or obtain department approval to stack manure under s. NR 243.141. If solid manure storage capacity is not obtained by an existing source CAFO at the time of public notice for a proposed permit reissuance or modification, the department shall include an evaluation and a schedule in the proposed permit to ensure that storage capacity is available by November 30th after permit reissuance or modification.

2. If an owner or operator of a large CAFO holds a WPDES permit on July 1, 2007, that requires compliance with the revised land application requirements in s. NR 243.14 upon department notification of rule changes, then the permittee shall meet the requirements in par. (g) by January 1, 2008.

(i) *Liquid manure—new source CAFOs.* All proposed liquid manure storage or containment facilities for new source CAFOs shall be designed and constructed to provide a minimum of 180 days of storage in accordance with par. (k). The design shall include a level indicator on the storage or containment facility indicating when the necessary amount of material has been removed to provide 180 days of storage. At the time of permit issuance or prior to November 30 after permit issuance, all new source CAFOs shall have properly designed liquid manure storage or containment facilities or a system of designed facilities that can contain, at a minimum, all liquid manure generated by the large CAFO for the animals present at the operation and other waste sources directed to the storage facility during any 180-day period. Properly designed storage is storage that meets the design requirements in par. (f). If a new source CAFO does not have at least 180 days of storage at the time of public notice of a proposed permit, the WPDES permit shall contain a construction schedule in order to ensure that an operation has a design volume of at least 180 days of storage prior to November 30.

(j) *Liquid manure—existing source CAFOs.* By January 1, 2010, all existing source CAFOs shall have liquid manure storage or containment facilities that are properly designed to provide a minimum of 180 days of storage in accordance with par. (k). All plans and specifications submitted on or after January 1, 2010 for proposed liquid manure storage or containment facilities by existing source CAFOs shall be designed to continue to provide a minimum of 180 days of storage in accordance with par. (k). The design shall include a marker near the bottom of the facility indicating when the necessary amount of material has been removed to provide 180 days of storage. The department may include requirements for evaluations, plan and specification submittal and construction schedules in permits prior to January 1, 2010 if necessary to insure that an operation meets the requirements for 180 days of storage for liquid manure storage or containment facilities by January 1, 2010.

(k) *Calculating design volume.* Design volume for providing 180 days of storage for liquid manure shall be calculated based on the maximum animals present at an operation for the period of time liquid manure and other wastes mixed with the liquid manure are to be stored during any 180-day period and other design considerations. Liquid manure that is not directed to any facility or structure covered by the operation's WPDES permit may be subtracted from the design volume calculations. At a minimum, design volume shall include all of the following:

1. Capacity for liquid manure that will be stored as well as process wastewater and other wastes that will be mixed and stored with the liquid manure.

2. Anticipated direct precipitation, runoff directed to the facility and evaporation for the 180-day storage period, including direct precipitation and runoff from a 100-year, 24-hour storm event for swine, veal and poultry operations that are new source CAFOs or a 25-year, 24-hour storm event for all other operations.

3. A margin of safety.

4. Other design and storage considerations specified in NRCS Standard 313, dated December 2005.

Note: 180 days of design storage is not required for process wastewater if process wastewater is stored separately from liquid manure. Requirements for storage of process wastewater are contained in s. NR 243.15 (3) (d).

(4) **TRANSFER SYSTEMS.** Manure and process wastewater transfer systems constructed after July 1, 2007, shall be designed, constructed and operated in accordance with the criteria contained in NRCS Standard 634, dated December 2005. NRCS Standard 634, dated December 2005 is incorporated by reference in s. NR 243.07.

Note: Copies of NRCS Standard 634, dated December 2005, and documents referenced in this standard may be inspected at the offices of the department, DATCP, NRCS, county land conservation departments, and the legislative reference bureau, Madison, Wisconsin.

(5) **DIGESTERS FOR BIOGAS PRODUCTION.** After July 1, 2007, digester facilities for biogas production shall be designed and constructed in accordance with NRCS Standard 313, December 2005. The department may apply additional design requirements in accordance with ch. NR 213 based on materials added or chemical characterization of the digester influent or effluent. Plans and specifications for digesters shall be submitted in accordance with sub. (1). At a minimum, the following information shall be included in the plans and specifications submitted for the construction of a digester for biogas production:

- (a) The adequacy of each facility's proposed linings to prevent exfiltration of manure, untreated or digested, and other pollutants to groundwater.

- (b) The proximity of bedrock and the water table to the proposed elevation of each facility's floors verified through onsite soil test borings or pits.

- (c) Additional design considerations based on operation of the digester, including use of additives and operational temperatures.

(6) **PERMANENT SPRAY IRRIGATION SYSTEMS.** Proposed permanent spray irrigation and other treatment systems shall at a mini-

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must meet the requirements of s. NR 214.14, soil investigation and groundwater monitoring criteria in ss. NR 214.20 and 214.21, and land application requirements specified in s. NR 243.14.

Note: Permanent spray irrigation systems are considered a reviewable system or facility; therefore, plans and specifications must be submitted to the department in accordance with sub. (1).

(7) GROUNDWATER MONITORING. The department may require the installation of groundwater monitoring wells in the vicinity of manure storage facilities, runoff control systems, permanent spray irrigation systems and other treatment systems where the department determines monitoring is necessary to evaluate impacts to groundwater and geologic or construction conditions warrant monitoring. If a groundwater monitoring system is required, plans and specifications for a monitoring system shall be submitted and the system shall, at a minimum, be designed, constructed and monitored in accordance with chs. NR 140 and 141 and s. NR 214.21.

(8) COMPOSTING FACILITIES. The department shall determine if the design and operation of a manure or animal carcass composting facility that is part of the production area is more appropriately approved under this section or ch. NR 502. This determination shall be based on factors such as the type of materials mixed with the manure or animal carcass and the amount and source of the materials, the method of composting and the characteristics of the final composted material. If the department determines that design and operation requirements for a composting facility are appropriately reviewed and approved under this section, the department may still apply additional design and operation requirements contained in ch. NR 502 as needed to protect water quality and shall apply additional design and operation requirements as needed to meet the requirements in ss. NR 243.13 and 243.14 (9).

(9) FEED STORAGE. Proposed feed storage facilities and associated runoff control systems shall be designed and constructed to ensure that leachate and contaminated runoff are collected or controlled in a manner that complies with the applicable production area requirements in s. NR 243.13 and adequate storage requirements in s. NR 243.14 (9). Plans and specifications submitted to the department for proposed feed storage facilities shall include an evaluation of the need for underground leachate collection to prevent exceedances of groundwater quality standards.

(10) CONSTRUCTION AND POST CONSTRUCTION. All facilities or systems shall be constructed in accordance with the approved plans and specifications. After construction of a reviewable facility or system has been completed, the WPDES permit applicant or permittee shall submit a post-construction report to the department that includes:

- (a) Scaled drawings of the constructed facility or system.
- (b) Documentation that construction has complied with approved plans and specifications and applicable design standards.

History: CR 05-075: cr. Register April 2007 No. 616, eff. 7-1-07.

NR 243.16 Evaluations of previously constructed facilities or systems. (1) All owners or operators applying for a WPDES permit shall submit an evaluation of any constructed reviewable facilities and systems not previously approved or evaluated by the department, as part of the application for a WPDES permit. Evaluations shall be submitted under the signature and the seal of a professional engineer registered in Wisconsin or other qualified individual. At a minimum, evaluations shall include the following information:

- (a) A narrative providing general background and operational information on existing facilities and systems.
- (b) Available post-construction documentation including the date and materials of construction.
- (c) For facilities or systems that are part of the production area, an assessment of the ability of the facility or system to meet the production area requirements in s. NR 243.13, the adequate stor-

age requirement under s. NR 243.14 (9), and accepted management practices.

(d) An assessment of the ability of the facility or system to meet the applicable design requirements identified in s. NR 243.15.

(e) Any proposed actions to address issues identified as part of the evaluation.

(2) The department may require an evaluation of a constructed facility or system previously reviewed and approved or evaluated by the department based on factors including the age of the facility or system, the facility's or system's ability to meet current design standards, requirements of this chapter or permit conditions, identified environmental impacts or physical location of the storage facility relative to waters of the state.

(3) The department may require additional practices, conditions or permittee actions based on department review of submitted evaluations of previously constructed structures or systems. This includes the installation of a leakage collection or monitoring system, secondary containment systems, or groundwater monitoring, increased inspection frequency, or replacement, upgrade or closure of systems or structures in order to ensure compliance with requirements in ss. NR 243.13 and 243.15, prevent exceedances of groundwater or surface water quality standards or to prevent impairments to wetland functional values.

(4) By January 1, 2010, permittees shall have or install the permanent markers specified in s. NR 243.15 (3) (e) to previously constructed liquid manure and process wastewater storage or containment facilities.

History: CR 05-075: cr. Register April 2007 No. 616, eff. 7-1-07.

NR 243.17 Operation and maintenance. The permittee shall operate all constructed facilities and systems in accordance with applicable requirements of s. NR 243.13, the operation and maintenance plan for a given facility or system, and WPDES permit conditions.

(1) DIGESTER FACILITIES. (a) *Influent and effluent characterization.* 1. Prior to introducing any additives to a digester, other than manure, the permittee shall obtain written department approval. If any materials other than manure are used in the digester, the permittee shall maintain daily records of the volumes of all manure and non-manure components added to the digester influent.

2. The department may require monitoring for additional pollutants, including metals, based on the characterization of digester additives or the digester influent or effluent.

3. The department may apply additional requirements under chs. NR 213 and 214 if either:

a. Materials other than manure comprise 10% or greater of the total digester volume.

b. The department determines that the chemical characterization of the digester influent or effluent warrants additional requirements.

(2) CHEMICAL ADDITION OR DISPOSAL. (a) *Additive approval.* Except as provided in par. (b), the permittee shall notify the department and obtain written department approval prior to adding any chemicals, pollutants or other wastes to any manure, process wastewater, or stormwater storage facility or treatment system. In this section, other wastes means any waste other than manure, process wastewater or stormwater. Factors the department will consider when approving a chemical or pollutant include:

- 1. The beneficial use or purpose of the chemical or pollutant.
- 2. The potential impact the storage or land application of the mixed waste containing the chemical or pollutant may have on waters of the state.

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(b) *Exceptions.* The WPDES permit may specify certain additives for which written department approval is not required before adding the substance to a treatment or storage facility.

(c) *Prohibited materials.* Medical wastes, including expired or unused antibiotics, petroleum products not designed for use in manure storage facilities, pesticides, paints, solvents and hazardous wastes may not be disposed of in storage or treatment facilities specified in par. (a).

(3) LIQUID MANURE—MAINTAINING 180 DAYS OF STORAGE. (a) Except as provided in sub. (4), once a permittee has constructed or established properly designed manure storage or containment facilities or a system of properly designed facilities that provide a minimum of 180 days of storage for liquid manure pursuant to s. NR 243.15 (3) (i) or (j), the operation shall operate and maintain the storage facilities or system such that the 180-day design requirement is met for all animals onsite, except as allowed under sub. (4).

(b) Liquid storage facilities or systems shall be emptied so that the 180-day level indicator, specified in s. NR 243.15 (3) (i) or (j), is visible on at least one day between October 1 and November 30, except for liquid manure remaining due to unusual fall weather conditions prohibiting manure applications during this time period. The permittee shall record the day on which the 180-day level indicator was visible during this time period. Permittees unable to empty their storage facility to the 180-day level indicator between October 1 and November 30, shall notify the department by December 5.

(c) Permittees shall demonstrate compliance with the 180-day design storage capacity requirement at all the following times:

1. As part of an application for permit issuance and reissuance.
2. At the time of submittal of plans and specifications for proposed reviewable facilities or systems.
3. In annual reports to the department.
4. Subject to sub. (4), when a facility is proposing, at any time, a 20% expansion in animal units or an increase by an amount of 1,000 animal units or more.

(4) LIQUID MANURE—EXCEPTIONS TO MAINTAINING 180 DAYS OF STORAGE. (a) Permittees that have maintained a minimum of 180 days of storage capacity for liquid manure in accordance with sub. (3) may be allowed to temporarily reduce this level of minimum required design capacity to 150 days design capacity if all of the following are met:

1. The reduction in storage is related to a planned increase in animal units.
2. The permittee notifies the department in writing of the proposed reduction prior to the planned expansion and reduction in 180-day design storage.
3. The permittee has a department approved expansion plan and schedule outlining how the operation will acquire or construct additional storage to achieve 180 days of storage after the expansion. The proposed schedule to acquire or construct additional storage may not exceed 24 months from the date of notification.

(b) Failure to maintain 180 days of storage under this paragraph is not reason for allowing emergency applications of liquid manure under s. NR 243.14 (7) (d).

Note: The 180-day storage capacity includes process wastewater and other wastes mixed and stored with liquid manure. See s. NR 243.15 (3) (k).

(5) SOLID MANURE—MAINTAINING STORAGE DURING FEBRUARY AND MARCH. Pursuant to s. NR 243.15 (3) (g) and (h), once a permittee has constructed or established properly designed manure storage facilities or a system of properly designed facilities that provide storage for solid manure generated at an operation site during February 1 through March 31, the operation shall operate and maintain the storage facilities or system to continue to provide storage for all solid manure generated at the operation site from February 1 to March 31, or otherwise obtain department approval

to stack some or all of the manure in accordance with ss. NR 243.14 (6) (d) and 243.141 (1).

(6) DISCHARGE PREVENTION. A permittee shall operate and maintain storage and containment facilities to prevent overflows and discharges to waters of the state.

(a) The permittee may not exceed the maximum operating level in liquid storage or containment facilities except as a result of recent precipitation or conditions that do not allow removal of material from the facility in accordance with permit conditions.

(b) The permittee shall maintain a margin of safety in liquid storage or containment facilities that levels of manure, process wastewater and other wastes contained in the storage or containment facility may not exceed. Materials shall be removed from the facility in accordance with the permittee's nutrient management plan to ensure that the margin of safety is not exceeded.

(7) CLOSURE. (a) *General.* If the permittee wishes to abandon or discontinue use of structures or systems covered under this subchapter, a closure plan shall be submitted to the department for prior approval.

(b) *Manure storage facilities.* Closure of manure storage facilities shall be completed, at a minimum, according to NRCS Standard 360, dated December 2002. NRCS Standard 360, dated December 2002, is incorporated by reference in s. NR 243.07. Closure of a manure storage facility shall occur when manure has not been added or removed for a period of 24 months, unless the owner or operator can provide information to the department that the structure is designed to store manure for a longer period of time or information that the storage structure will be utilized within a specific period of time.

Note: Copies of NRCS Standard 360, dated December 2002, and documents referenced in this standard may be inspected at the offices of the department, DATCP, NRCS, county land conservation departments and the legislative reference bureau, Madison, Wisconsin.

(c) *Monitoring wells.* Groundwater monitoring wells shall be abandoned in accordance with ch. NR 141.

History: CR 05-075: cr. Register April 2007 No. 616, eff. 7-1-07.

NR 243.18 Combined wastes. If a permittee combines manure or process wastewater with other types of waste not generated by the operation, the combined wastewater shall be stored and land applied in accordance with this subchapter. The permittee shall obtain department approval prior to combining other wastes with manure or process wastewater. The department may apply additional requirements such as the requirements in ch. NR 113, 213, 204 or 214 to the land application of the combined wastes and to the design of structures or systems associated with the combined wastes. Factors that the department shall consider in determining other applicable requirements include the volume and characteristics of the wastes or wastewater combined with the manure, requirements in other rules and any treatment of the combined wastes. The operation's nutrient management plan shall address land application of these wastes.

Note: Other wastes do not include process wastewater from the operation itself. Examples of other wastes include septage or municipal biosolids.

History: CR 05-075: cr. Register April 2007 No. 616, eff. 7-1-07.

NR 243.19 Inspections, record keeping and reporting. (1) **MONITORING AND INSPECTION PROGRAM.** In accordance with a WPDES permit, the permittee shall submit a monitoring and inspection program designed to determine compliance with permit conditions that identifies the areas that the permittee will inspect in accordance with this section, the person responsible for conducting the inspections and how inspections will be recorded and submitted to the department. The monitoring and inspection program shall be consistent with the requirements in this subsection.

(a) *Inspections.* Visual inspections shall be completed by the permittee or designee in accordance with the following frequencies:

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1. Daily inspection for leakage of all water lines that potentially come into contact with pollutants or drain to storage or containment structures or runoff control systems, including drinking or cooling water lines.

2. Weekly inspections to ensure proper operation of all storm water diversion devices and devices channeling contaminated runoff to storage or containment structures.

3. Weekly inspections of liquid storage and containment structures. For liquid storage and containment facilities, the berms shall be inspected for leakage, seepage, erosion, cracks and corrosion, rodent damage, excessive vegetation and other signs of structural weakness. In addition, the level of material in all liquid storage and containment facilities shall be measured and recorded in feet or inches above or below the margin of safety level.

4. Quarterly inspections of the production area, including outdoor animal pens, barnyards and raw material storage areas. CAFO outdoor vegetated areas shall be inspected quarterly.

5. Periodic inspections and calibration of landspreading equipment to detect leaks and ensure accurate application rates for manure and process wastewater. An initial calibration of spreading equipment shall be followed by additional calibration after any equipment modification that may impact application of manure or process wastewater or after changes in product or manure or process wastewater consistency. Spreading equipment for both liquid and solid manure shall be inspected just prior to the hauling season, and equipment used for spreading liquids shall be inspected at least once per month during months when hauling occurs.

6. Inspections each time manure or process wastewater is surface applied on frozen or snow-covered ground to determine if applied materials have run off the application site. Inspections shall occur during and shortly after application.

(b) *Corrective actions.* The permittee shall take corrective actions as soon as practicable to address any equipment, structure or system malfunction, failure or other problem identified through monitoring or inspections in par. (a).

(c) *Sampling.* Manure, process wastewater and soil on fields used for land application shall be sampled by the permittee in accordance with this chapter and WPDES permit conditions. Manure or process wastewater shall be analyzed on at least an annual basis for nitrogen, phosphorus and percent solids in years when the manure or process wastewater is applied. The department may require more frequent monitoring and monitoring for other parameters as part of a WPDES permit where necessary to provide representative samples of manure and process wastewater. Manure and soil samples shall be analyzed by a laboratory certified under s. ATCP 50.50. Samples of process wastewater that are not mixed with manure shall be analyzed using applicable methods specified in ch. NR 219. The department may specify alternative methods for sampling in the WPDES permit. The permittee shall submit appropriate quality control information for sampling and analysis upon written request of the department.

Note: NRCS Standard 590 requires soil testing once every 4 years.

(2) **RECORD KEEPING.** The permittee shall retain complete records onsite of all information required as part of this subchapter for a period of at least 5 years from the date the records are created. Results of inspection information, sampling and other information required under this section shall be recorded at the time the information is obtained.

(a) *Record keeping requirements for the production area.* The permittee shall create and retain records documenting the following information for the production area:

1. Current design of any manure storage structures, including volume for solids accumulation, design treatment volume, total design volume, and approximate number of days of storage capacity.

2. Sampling and inspection information required under sub. (1) (a) and (c).

Note: This subsection requires that specific information must be recorded when samples are taken or inspections are conducted.

3. The date that liquid storage facilities were emptied to the 180-day level indicator.

4. The date, time and estimated volume of any overflow.

5. Any actions taken to correct deficiencies as required under sub. (1) (b). Deficiencies not corrected within 30 days shall be accompanied by an explanation of the factors preventing correction.

6. Mortality management and practices used by the permittee to meet the requirements of s. NR 243.13 (8), including the dates and methods of disposal.

(b) *Record keeping requirements for land application activities.* The permittee shall create and retain the following records for activities associated with land application:

1. A copy of the nutrient management plan.

2. Daily logs recorded using form 3200-123A or a department approved equivalent, indicating the following.

a. The dates manure or process wastewater is applied to each field.

b. Fields used.

c. Acres applied.

d. Manure source and waste type.

e. Spreader volume.

f. Number of loads.

g. Whether the soil was dry, wet, saturated, frozen or snow covered at the time of application.

h. Weather conditions at time of application.

i. Whether manure was injected, incorporated or surface applied.

j. Dates of emergency applications in winter.

k. For surface applications on frozen or snow-covered ground, whether any applied manure or process wastewater ran off the application site.

3. A weather log for all dates that manure and process wastewater is spread, including weather 24 hours prior to and following application.

4. Total amount of nitrogen and phosphorus actually applied to each field, including documentation of calculations for the total amount applied.

5. Results from manure, process wastewater and soil sampling.

6. Dates of manure application equipment inspection.

7. Records of the date, recipient name and address, approximate amount and nutrient content of manure or process wastewater distributed to another person in accordance with s. NR 243.142.

(c) *Record keeping for sampling.* For each manure, process wastewater and soil sample taken, the permittee shall record the following information:

1. The date, exact place, method and time of sampling or measurements.

2. The individual or lab that performed the sampling or measurements.

3. The date the analysis was performed.

4. The individual who performed the analysis.

5. The analytical techniques or methods used.

6. The results of the analysis.

(d) *Record keeping for inspections.* For each inspection conducted by the permittee, the permittee shall record the following information:

1. The date and name of persons performing the inspection.

2. An inspection description, including components inspected.

3. Details of what was discovered during the inspection.

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4. Recommendations for repair or maintenance.
5. Any corrective actions taken.

(3) REPORTING REQUIREMENTS. (a) *Corrective actions.* If the permittee fails to take corrective action within 30 days of identifying a malfunction, failure or other problem identified under sub. (1), the permittee shall contact the department immediately following the 30-day period and provide an explanation for its failure to take action.

(b) *Quarterly reporting requirements.* The permittee shall summarize the results of the inspections conducted at the production area in a written quarterly report. The reports shall be maintained onsite until submittal as part of the annual report in par. (c). The report shall include the following information:

1. Identified permit violations including all discharges of manure or process wastewater to surface waters, overflows of liquid manure or process wastewater storage and containment structures, and number of missed inspections.
2. Dates, times and approximate volume of discharges in subd. 1.
3. Corrective actions taken.
4. A summary of the condition of runoff control systems and storage and containment structures.
5. A summary of recorded levels of materials in liquid storage and containment structures, including exceedances of the maximum operating and margin of safety levels.
6. Other information requested by the department in writing or in the permit.

(c) *Annual reporting requirements.* The permittee shall submit written annual reports to the department by the date specified in the WPDES permit for all manure and other process wastewater that is generated. These annual reports shall cover the previous calendar year or cropping year, as specified in the WPDES permit, and shall include the following:

1. The quarterly reports required under par. (b).
2. The number and type of mature and immature animals at the operation and whether the animals are in open confinement or housed under roof.
3. The total amount of material in large CAFO storage or containment facilities, including manure and process wastewater generated by the large CAFO in the previous 12 months, precipitation and runoff diverted to storage or containment structures.
4. Lab analyses of manure and process wastewater land applied in the previous 12 months, and the most recent soil test analysis completed for fields receiving manure or process wastewater in the previous 12 months.
5. An annual spreading report summarizing manure and other process wastewater land application activities using form 3200-123 or a department-approved equivalent, indicating the following for each field receiving manure or process wastewater:
 - a. Date of application.
 - b. Information on the fields where manure or process wastewater is applied including field identification, slope and soil test phosphorus levels.
 - c. Acres applied.
 - d. Source and nutrient content of applied manure.
 - e. Current and previous field crops.
 - f. Nutrient balance indicating crop nutrient need in comparison to nutrients applied and credited from all sources.
 - g. Whether the soil was dry, wet, saturated, frozen or snow covered.
 - h. Method and rate of application in tons or gallons per acre.
 - i. Whether fields meet T.
 - j. Whether soil tests have been taken within the last 4 years.
 - k. Number of years of crop phosphorus need applied based on crop rotation.

L. For surface applications on frozen or snow-covered ground, whether any applied manure or process wastewater ran off the application site.

6. Dates on which storage facilities were emptied to the 180-day level indicator.

7. Total amount of manure and process wastewater distributed to another person by the permittee in accordance with s. NR 243.142 in the previous 12 months.

8. Total number of acres for land application covered by the nutrient management plan developed in accordance with s. NR 243.14.

9. Total number of acres actually used by the permittee for land application of manure and process wastewater in the previous 12 months.

10. A statement indicating whether the current version of the permittee's nutrient management plan was developed or approved by a certified nutrient management planner.

11. Results of land application equipment inspections and calibration.

12. Other information requested by the department in writing or in the permit.

Note: Forms 3200-123 and 3200-123A can be obtained at regional offices of the department or the department's Bureau of Watershed Management, 101 S. Webster St., P.O. Box 7921, Madison, Wisconsin 53707.

History: CR 05-075: cr. Register April 2007 No. 616, eff. 7-1-07.

Subchapter III — Other Animal Feeding Operations

NR 243.21 Purpose. The purpose of this subchapter is to establish procedures, in cooperation with other federal and state agencies and governmental units, for addressing unacceptable practices through the issuance of a notice of discharge or WPDES permit under s. 281.16 or ch. 283, Stats. Animal feeding operations with fewer than 1000 animal units that have unacceptable practices are subject to this subchapter.

History: CR 05-075: cr. Register April 2007 No. 616, eff. 7-1-07.

NR 243.23 General requirements for animal feeding operations. (1) **LIVESTOCK PERFORMANCE STANDARDS AND PROHIBITIONS.** (a) Owners and operators of animal feeding operations shall comply with the livestock performance standards and prohibitions in accordance with the requirements s. NR 151.095.

(b) The department may grant a variance to livestock performance standards or accepted management practices consistent with s. NR 151.097. A variance may not be granted to a livestock prohibition or other statutory requirements.

Note: Additional procedures for implementing cropland performance standards are included in ch. NR 151.

Note: Under s. 281.16 (3) (e), Stats., an owner or operator may not be required by the state, or a governmental unit through an ordinance or regulation, to bring existing livestock facilities into compliance with the livestock performance standards or prohibitions, technical standards or conservation practices unless cost sharing is available.

History: CR 05-075: cr. Register April 2007 No. 616, eff. 7-1-07.

NR 243.24 Department discharge determination and NODs. Unless based on information provided as part of a WPDES permit application submitted pursuant to s. NR 243.26 (1), no determination may be made by the department that an unacceptable practice exists at an operation until there has been an onsite investigation by the department or a federal or state agency or governmental unit.

(1) **CATEGORIES OF UNACCEPTABLE PRACTICES.** The department shall identify the categories of discharge associated with unacceptable practices pursuant to the following criteria:

(a) *Category I.* A category I unacceptable practice is a practice or facility at an animal feeding operation that causes a point source discharge of pollutants to navigable waters by either of following means:

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1. Pollutants are discharged into navigable waters through a man-made ditch, flushing system or other similar man-made device.

2. Pollutants are discharged into navigable waters that originate outside of the operation and pass over, across or through the operation or otherwise come into direct contact with the animals confined at the operation.

(b) *Category II.* A category II unacceptable practice is a practice or facility at an animal feeding operation that causes a discharge of pollutants to waters of the state that is the result of an owner's or operator's failure to comply with a livestock performance standard or prohibition in ss. NR 151.05 to 151.08. For Category II discharges, waters of the state has the meaning specified under s. 281.01 (18), Stats.

(c) *Category III.* A category III unacceptable practice is a practice or facility at an animal feeding operation that caused a discharge of pollutants to waters of the state and that is not described in par. (a) or (b).

(2) **COORDINATION WITH GOVERNMENTAL UNITS.** Unless an unacceptable practice is an imminent threat to public health or fish and aquatic life, the department shall notify the appropriate governmental unit prior to taking any of the following actions:

(a) Contacting an owner or operator of an animal feeding operation under the procedures in this subchapter to investigate a discharge from an unacceptable practice.

(b) Issuing an NOD for a category II unacceptable practice.

(c) Taking enforcement action under s. 281.98, Stats., against an owner or operator of an animal feeding operation for failing to comply with a livestock performance standard or prohibition.

(3) **DEPARTMENT ACTION.** If the department determines that an unacceptable practice exists at an operation based on its own onsite investigation, an investigation conducted by a federal or state agency or governmental unit, or information provided as part of WPDES permit application, the department may take any of the following actions:

(a) *For all unacceptable practices.* 1. The department may coordinate with a designated governmental unit to address the unacceptable practice and provide assistance to the owner or operator. This contact shall be made as soon as possible after the determination that an unacceptable practice exists at an operation to maximize opportunities for the governmental unit to provide assistance to the owner or operator.

2. The department may issue a notice of intent to issue an NOD.

(b) *Category I unacceptable practices.* For category I unacceptable practices, the department may take any of the following actions:

1. Issue an NOD to the owner or operator of the animal feeding operation to address the unacceptable practices.

2. Send the owner or operator a permit application if the owner or operator has not filed a WPDES permit application pursuant to s. NR 243.26.

3. Designate the operation as a CAFO under s. NR 243.26 (2).

4. Take direct enforcement action.

Note: In general, the department considers factors such as the degree of harm to a waterbody and the level of mismanagement or negligence by an owner or operator when deciding whether to take direct enforcement action.

(c) *Category II unacceptable practices.* For category II unacceptable practices, the department may take any of the following actions:

1. Issue an NOD if requested by a governmental unit or if a governmental unit is not addressing a facility's noncompliance with livestock performance standards or prohibitions in a manner consistent with the procedures established in ch. NR 151.

2. Follow the procedures outlined in s. NR 151.095.

3. Designate the operation as a medium or small CAFO under s. NR 243.26 (2).

(d) *Category III unacceptable practices.* For category III unacceptable practices, the department may take any of the following actions:

1. Issue an NOD to the owner or operator.

2. Take direct enforcement action.

3. Designate the operation as a medium or small CAFO under s. NR 243.26 (2).

Note: In most cases, the department will rely on governmental units to fully implement the livestock performance standards and prohibitions and address impacts to water quality from category II unacceptable practices. The department intends to issue NODs in accordance with this section in cases where a governmental unit has requested assistance in implementing and enforcing the performance standards or prohibitions or in cases where a governmental unit has failed to appropriately address unacceptable practices at animal feeding operations in a timely manner. The department recognizes that coordination between governmental units, the department of agriculture, trade and consumer protection and other state agencies is needed to achieve statewide compliance with the performance standards and prohibitions. Accordingly, the department has worked with counties, the department of agriculture, trade and consumer protection and other interested partners to develop a detailed intergovernmental strategy for achieving compliance with the performance standards and prohibitions that recognizes the procedures in this subchapter, state basin plans and the priorities established in land and water conservation plans.

(4) **NOTICE OF DISCHARGE.** (a) If the department issues an NOD to an owner or operator of an animal feeding operation, it shall be sent certified mail, return receipt requested or personal delivery.

(b) The department shall include all of the following information in an NOD:

1. A summary of the results of the onsite investigation used to determine that unacceptable practices exist at an operation. The summary shall include a determination of the category of the unacceptable practice that exists at the operation. The department shall provide a copy of the summary to the animal feeding operation and appropriate governmental unit.

2. One or more suggested corrective measures for the unacceptable practice identified in the summary report. The department may amend an NOD at any time to reflect changes to suggested corrective measures based on further evaluation and planning associated with addressing the unacceptable practice.

3. A list of known governmental or private services that may be available to provide technical or financial assistance.

4. For category II unacceptable practices, the NOD shall contain determinations consistent with s. NR 151.095, except that the length of the compliance period shall be determined in accordance with subd. 5. Determinations required under s. NR 151.095 may be included as part of the NOD or as amendments to the NOD.

Note: Section NR 151.095 contains the criteria and establishes the procedures for determining when cost sharing is required for eligible costs associated with corrective measures and when cost sharing is considered to have been made available. Cost sharing is not required for new facilities and for practices that do not involve eligible costs, such as moving a manure pile. Cost sharing for eligible costs may be available under ch. NR 120 or 153.

5. A reasonable compliance period for implementing necessary corrective measures shall be specified in the NOD. The compliance period identified in the NOD shall be determined by the department in accordance with the following:

a. The length of the compliance period shall be from 60 days to 2 years unless otherwise provided for in this paragraph.

b. The length of the compliance period may be less than 60 days if the site is an imminent threat to public health or fish and aquatic life.

c. The compliance period may not be more than 2 years unless an alternative compliance period has been mutually agreed upon by the department and the owner or operator of the animal feeding operation.

d. For existing practices or facilities where corrective measures require cost sharing in accordance with s. NR 151.095 and where cost sharing has not previously been made available, the compliance period specified in an NOD shall begin on the date that cost share dollars are available pursuant to s. NR 151.095 (5) (d).

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Note: Cost-share dollars may be offered as part of an NOD or may be included in an amendment to an NOD.

e. For all other practices or facilities, the compliance period specified in the NOD shall begin on the date of the NOD, regardless of the availability of cost sharing.

6. An explanation of the possible consequences if the owner or operator fails to comply with the provisions of the notice, including enforcement or loss of cost sharing, or both.

(c) The department may request that proposed corrective measures be submitted to the department for review prior to implementing the corrective measures.

(d) The department may require that accepted management practices be superseded by additional design requirements or practices if they are necessary for water quality protection.

(e) The department may require that the owner or operator of the animal feeding operation, or a designee, notify the department as to the status of implementing the corrective measures prior to the end of the compliance period.

History: CR 05-075: cr. Register April 2007 No. 616, eff. 7-1-07.

NR 243.25 NOD enforcement. (1) CATEGORIES I AND III. (a) Owners or operators or animal feeding operations that receive an NOD for a category I or III unacceptable practice shall implement corrective measures within the compliance period specified, regardless of the availability of cost sharing. The owner or operator may seek cost sharing to implement corrective measures within the specified compliance period, but if cost sharing is not available, the owner or operator shall install corrective measures to abate or eliminate the discharge without cost sharing or otherwise apply for a WPDES permit.

(b) If the owner or operator does not implement the corrective measures within the specified time frame to address category I or III unacceptable practices, the department may issue a specific WPDES permit or grant general permit coverage or the department may pursue enforcement action under ch. 283, Stats.

(2) CATEGORY II. For operations issued an NOD for a category II unacceptable practice, if the owner or operator of the animal feeding operation does not implement corrective measures within the compliance period specified in the NOD, and cost sharing has been made available for existing facilities or practices or if cost sharing is not required under s. NR 151.095, the department may take enforcement action pursuant to s. 281.98, Stats., require the submittal of a WPDES permit application or take other appropriate actions against the owner or operator.

Note: The procedures specified in this subchapter for category II unacceptable practices are limited to actions taken by the department under s. 281.98, Stats., for noncompliance with a livestock performance standard or prohibition. Pursuant to other statutory authority, the department may take direct enforcement action without cost sharing against a livestock producer for willful or intentional acts or other actions by a producer that pose an imminent or immediate threat to human health or the environment.

History: CR 05-075: cr. Register April 2007 No. 616, eff. 7-1-07.

NR 243.26 WPDES permits for medium and small CAFOs. (1) OPERATIONS DEFINED AS A MEDIUM CAFO. Any owner or operator of an animal feeding operation with 300 to 999 animal units shall submit a complete application for a WPDES permit to the department before a category I discharge to navigable waters occurs. An owner or operator of an animal feeding operation that has 300 to 999 animal units may not have a Category I discharge to navigable waters under s. NR 243.24 (1) (a) unless the discharge is covered by and in compliance with a WPDES permit. In the event an owner or operator of an animal feeding operation has a Category I discharge to navigable waters and that operation is not covered by a WPDES permit at the time of the discharge, the owner or operator shall immediately contact the department and shall immediately apply for a WPDES permit.

(2) OPERATIONS DESIGNATED AS MEDIUM OR SMALL CAFOs. (a) Subject to par. (c), for animal feeding operations not already defined as a CAFO under sub. (1), the department may designate

an animal feeding operation with 999 animal units or less as a CAFO if all of the following occur:

1. The department conducts an onsite investigation of the operation.

2. The department determines one of the following:

a. The operation is a significant contributor of pollutants to navigable waters and the department considers the factors in par. (b) when making this determination; or

b. The operation has caused the fecal contamination of water in a well constructed in accordance with ch. NR 811 or 812.

3. For discharges of pollutants from land applied manure or process wastewater to navigable waters by an animal feeding operation with 300 to 999 animal units, the department determines the discharge was not an agricultural storm water discharge.

4. The department provides written notification to the owner or operator of the designation.

Note: Consistent with past regulatory practices, the department intends to continue to work cooperatively with animal feeding operations to address discharges to waters of the state to the maximum extent practicable in order to make designation of an operation as a CAFO unnecessary. This approach includes using voluntary programs or the issuance of an NOD, which typically provides an opportunity to obtain cost-share and technical assistance, to aid an operation to implement corrective measures.

Note: Written notification by the department may be included as part of a Category I, II or III NOD or a separate written notice may be sent to the owner or operator.

Note: For animal feeding operations with less than 300 animal units, a significant discharge of pollutants to navigable waters from land application activities is not a basis for designating an operation as a CAFO and requiring a WPDES permit—see par. (c). For animal feeding operations with 300-999 animal units, a significant discharge of pollutants to navigable waters from either the production area or land application areas is a basis for CAFO designation and WPDES permit coverage.

(b) The department shall consider all of the following factors when determining whether an operation is a significant contributor of pollutants to navigable waters under par. (a):

1. The size of the animal feeding operation and the amount of manure or process wastewater reaching navigable waters.

2. The location of the operation's production and land application areas relative to the navigable waters.

3. The means of conveyance of the manure or process wastewater into navigable waters.

4. The slope, vegetation, rainfall and other factors affecting the likelihood or frequency of discharges of manure or process wastewater into navigable waters.

5. Other factors relevant to water quality impacts.

(c) If the animal feeding operation has less than 300 animal units, the department may not designate the operation as a CAFO based on the discharge criteria in par. (a) 2. a. unless the operation had a Category I discharge to navigable waters under s. NR 243.24 (1) (a) that the department determines contributed a significant amount of pollutants to navigable waters.

(d) If an animal feeding operation is designated as a CAFO under par. (a), the owner or operator of the operation shall take one of the following actions within 90 days of written notification by the department of the designation:

1. In accordance with sub. (3), submit a completed WPDES permit application for an individual permit or for general permit coverage to the department. If a general permit is not available from the department, the permittee shall apply for an individual permit.

2. Demonstrate to the complete satisfaction of the department that the owner or operator has taken actions to permanently eliminate or significantly reduce the discharge that was the basis of the designation.

(e) If the owner or operator fails to take the actions required in par. (d) within 90 days of notification, the department may take enforcement action.

(3) APPLICATIONS. Applications shall, at a minimum, be submitted on forms 3400-25 and 3400-25A. The department may require additional information as part of the permit application consistent with the requirements of subch. II.

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Note: Applications can be obtained at regional offices of the department or the department's Bureau of Watershed Management, 101 S. Webster St., P.O. Box 7921, Madison, Wisconsin 53707.

(4) WPDES TERMS AND CONDITIONS. (a) WPDES permits issued under this subchapter shall contain requirements designed to implement corrective measures to address unacceptable practices, to protect groundwater and surface waters, and to prevent impairments to wetland functional values. At a minimum, permits shall contain requirements that a permittee do all of the following:

1. Comply with livestock performance standards and prohibitions, regardless of the availability of cost sharing.

2. Address manure, process wastewater and contaminated runoff from the production area in a manner that is consistent with accepted management practices and that treats or contains all manure, process wastewater and contaminated runoff for storm events up to and including a 25-year, 24-hour storm event.

Note: In determining accepted management practices for small and medium CAFOs, the department shall consider the factors contained in 40 CFR § 125.3 (d).

3. Control all discharges from the production area in a manner that does not cause exceedances of groundwater or surface water quality standards or impair wetland functional values.

4. Develop and implement a nutrient management plan in accordance with s. NR 243.14 for the land application of manure and process wastewater.

5. Comply with the requirements in ss. NR 243.13 (5) (b) and (6) to (8) and 243.142 (5).

6. Conduct periodic inspections of the production area and land application equipment at a frequency specified in the WPDES permit.

7. Conduct manure, process wastewater and soil sampling in accordance with WPDES permit conditions.

8. Maintains and submit reports to the department in accordance with WPDES permit conditions.

Note: The WPDES permit requirements outlined in this subsection for small and medium CAFOs, including the requirement to develop and implement a nutrient management plan in accordance with s. NR 243.14, are only mandatory for those small and medium operations that have been issued a WPDES permit. For small and medium CAFOs that have not been issued a WPDES permit, nutrient management requirements contained in ch. ATCP 50 apply.

(b) All submitted plans and specifications or evaluations of facilities or structures required under a WPDES permit shall be done in accordance with ss. NR 243.15 and 243.16 unless the department includes alternative requirements in the WPDES permit.

Note: Under par. (b), all permitted medium and small CAFOs are required to install 180 days of storage for liquid manure.

(c) The permittee shall comply with the operation and maintenance requirements in s. NR 243.17, unless the department includes alternative requirements in the WPDES permit.

Note: Pursuant to s. 283.31, Stats., and federal regulations, a point source discharge by a medium size CAFO is prohibited unless the discharge is covered by, and in compliance with, a WPDES permit.

Note: Pursuant to ch. NR 153, operations covered by a WPDES permit are no longer eligible for cost sharing under s. 281.65, Stats.

(5) GENERAL PERMITS. The department may issue a general permit to cover a category of medium or small CAFOs.

(6) REISSUANCE OR TERMINATION OF WPDES COVERAGE. If a medium or small CAFO is covered by an individual or general WPDES permit, the owner or operator shall maintain permit coverage and shall reapply for continued coverage at least 180 days prior to the expiration of the WPDES permit unless:

(a) The permittee has ceased operation or is no longer a CAFO.

(b) The permittee has demonstrated to the satisfaction of the department that there is no remaining potential for a discharge to navigable waters of manure and process wastewater that was generated while the operation was a CAFO, or there is no remaining potential to cause well contaminations.

History: CR 05-075: cr. Register April 2007 No. 616, eff. 7-1-07.

Subchapter IV — CAFO Enforcement

NR 243.31 Enforcement. (1) If the department finds that the owner or operator of a CAFO violated a term or condition of its WPDES permit, the department may, following notice to the permittee, modify, suspend or revoke the permit, in whole or in part, under s. 283.53 (2), Stats.

(2) If the department finds that the owner or operator of a CAFO is violating a term or condition of its WPDES permit, any requirement in this chapter or ch. 283, Stats., or that the owner or operator of a CAFO is discharging manure or process wastewater pollutants to waters of the state without a WPDES permit, the department may refer the matter to the department of justice for enforcement, pursuant to s. 283.89, Stats. In an enforcement action, the department may seek temporary or permanent injunctive relief and may seek the civil and criminal penalties established in s. 283.91, Stats. The department may recover the costs of investigating the violation and the expenses of prosecution, including attorneys fees under s. 283.91 (5), Stats., and the costs of removing, terminating or remedying the adverse effects on the water environment under s. 283.87, Stats.

History: CR 05-075: cr. Register April 2007 No. 616, eff. 7-1-07.

LOCATION ALLENDALE

MI+MN WI

Established Series

Rev. RWJ-WEF-LMC

08/2012

ALLENDALE SERIES

The Allendale series consists of very deep, somewhat poorly drained soils that formed in sandy sediments and in the underlying clayey lacustrine deposits or till on lake basins, lake terraces, lake plains, outwash plains, and ground moraines. Slope ranges from 0 to 12 percent. Mean annual precipitation is about 787 mm (31 inches), and mean annual temperature is about 6.1 degrees C (43 degrees F).

TAXONOMIC CLASS: Sandy over clayey, mixed, semiactive, frigid Alfic Epiaquods

TYPICAL PEDON: Allendale loamy sand, on a west-facing, 2 percent slope in a forested area. (Colors are for moist soil unless otherwise stated.)

A--0 to 8 cm (3 inches); very dark gray (10YR 3/1) loamy sand, gray (10YR 5/1) dry; very weak medium granular structure; very friable; slightly acid; abrupt smooth boundary. [2.5 to 13 cm (1 to 5 inches) thick]

E--8 to 25 cm (3 to 10 inches); gray (10YR 6/1) sand, light brownish gray (10YR 6/2) dry; single grain; loose; moderately acid; abrupt irregular boundary. [0 to 25 cm (10 inches) thick]

Bhs--25 to 33 cm (10 to 13 inches): dark brown (7.5YR 3/2) sand; weak coarse subangular blocky structure; very friable; few fine prominent strong brown (7.5YR 5/6) masses of oxidized iron throughout; moderately acid; gradual wavy boundary. [0 to 13 cm (5 inches) thick]

Bs1--33 to 41 cm (13 to 16 inches): brown (7.5YR 4/4) sand; single grain; loose; common medium distinct grayish brown (10YR 5/2) iron depletions throughout; moderately acid; gradual wavy boundary.

Bs2--41 to 66 cm (16 to 26 inches): yellowish brown (10YR 5/6) sand; single grain; loose; common medium distinct brown (10YR 5/3) masses of oxidized iron throughout; common medium prominent grayish brown (10YR 5/2) iron depletions throughout; slightly acid; abrupt wavy boundary. [Combined thickness of the Bs horizon is 0 to 64 cm (25 inches).]

E'--66 to 71 cm (26 to 28 inches); pale brown (10YR 6/3) sand; single grain; loose; slightly acid; abrupt irregular boundary. [0 to 20 cm (8 inches) thick]

2Bt--71 to 86 cm (28 to 34 inches); brown (7.5YR 5/4) clay; ped coatings and crack fillings of pale brown (10YR 6/3) sand in upper 5 to 10 cm (2 to 4 inches); moderate fine angular blocky structure; very firm; common medium prominent yellowish brown (10YR 5/8) masses of oxidized iron throughout; common medium faint pale brown (10YR 6/3) iron depletions throughout; slightly acid; abrupt wavy

boundary. [10 to 82 cm (4 to 32 inches) thick]

2C--86 to 152 cm (34 to 60 inches); brown (7.5YR 5/4) clay; weak fine angular blocky fragments; very firm; common medium distinct pinkish gray (7.5YR 6/2) and prominent gray (N 6/) iron depletions; strongly effervescent; moderately alkaline.

TYPE LOCATION: Arenac County, Michigan; about 2 1/2 miles north of Standish; 2220 feet north and 2340 feet west of the southeast corner of sec. 26, T. 19 N., R. 4 E.; USGS Omer SW, MI topographic quadrangle; lat. 44 degrees 01 minute 03 seconds N. and long. 83 degrees 57 minutes 21 seconds W., NAD 27.

RANGE IN CHARACTERISTICS:

Depth to the argillic horizon: 51 to 102 cm (20 to 40 inches)

Depth to carbonates: 51 cm (20 inches) to greater than 152 cm (60 inches)

A horizon:

Hue: 7.5YR or 10YR, or is neutral

Value: 2, 2.5, or 3

Chroma: 0 to 2, or is neutral

Texture: sand, loamy sand, fine sand, loamy fine sand, sandy loam, or fine sandy loam

Rock fragment content: 0 to 8 percent gravel

Reaction: extremely acid to neutral

Ap horizon, where present:

Hue: 7.5YR or 10YR

Value: 2 to 4

Chroma: 1 to 3

Texture: sand, loamy sand, fine sand, loamy fine sand, sandy loam, or fine sandy loam

Rock fragment content: 0 to 8 percent gravel

Reaction: extremely acid to neutral

E horizon:

Hue: 7.5YR or 10YR

Value: 5 to 7

Chroma: 1 to 4

Texture: sand, loamy sand, fine sand, loamy fine sand, sandy loam, or fine sandy loam

Rock fragment content: 0 to 8 percent gravel

Reaction: very strongly acid to neutral

Bhs horizon:

Hue: 5YR or 7.5YR, or less commonly 10YR

Value: 2, 2.5, or 3; 10YR hue has value of 3 only

Chroma: 2 or 3; 10YR hue has chroma of 1 only

Texture: fine sand, sand, loamy fine sand, or loamy sand

Rock fragment content: 0 to 8 percent gravel

Reaction: very strongly acid to moderately acid

Bs1 horizon in pedons with no Bhs horizons:

Hue: 5YR or 7.5YR

Value: 3 or 4

Chroma: 4

Texture: fine sand, sand, loamy fine sand, or loamy sand

Rock fragment content: 0 to 8 percent gravel

Reaction: very strongly acid to moderately acid

Bs1 horizon in pedons with a Bhs horizon:

Hue: 5YR to 10YR

Value: 3 to 5

Chroma: 4 to 6

Texture: fine sand, sand, loamy fine sand, or loamy sand

Rock fragment content: 0 to 8 percent gravel

Reaction: very strongly acid to moderately acid

Bs2 horizon:

Hue: 7.5YR or 10YR

Value: 4 to 6

Chroma: 4 to 8

Texture: fine sand, sand, loamy fine sand, or loamy sand

Rock fragment content: 0 to 8 percent gravel

Reaction: very strongly acid to slightly acid

A few weakly to strongly cemented pieces of ortstein are in the Bhs and Bs horizons in some pedons. The colors of ortstein normally correspond to the colors of both the Bhs and Bs horizons.

E' horizon:

Hue: 2.5YR to 10YR

Value: 4 to 7

Chroma: 2 to 4

Texture: fine sand, sand, loamy sand, or loamy fine sand

Rock fragment content: 0 to 8 percent gravel

Reaction: very strongly acid to neutral

Some pedons do not have an E' horizon. Some pedons have a glossic horizon (E/Bt or Bt/E horizon). Some pedons have thick coatings of E material on faces of ped in the upper part of the 2Bt horizon. Some pedons have a thin layer that is sandy loam, silty clay loam, or clay loam, which is just above the 2Bt horizon.

2Bt horizon:

Hue: 2.5YR to 10YR

Value: 4 to 6

Chroma: 2 to 4

Texture: silty clay or clay

Clay content: averages 40 to 60 percent

Rock fragment content: 0 or 1 percent

Reaction: slightly acid to moderately alkaline

2C horizon:

Hue: 2.5YR to 10YR

Value: 4 to 6

Chroma: 2 to 4

Texture: silty clay or clay; thin strata of silty clay loam and silt loam are in some pedons

Rock fragment content: 0 or 1 percent

Reaction: slightly acid to moderately alkaline

Sandy substratums below 152 cm (60 inches) are recognized.

COMPETING SERIES: This is the Fibre series. The Fibre soils are saturated for longer periods and at a shallower depth in the upper part of the series control section.

GEOGRAPHIC SETTING: Allendale soils are on lake basins, lake terraces, lake plains, outwash plains, and ground moraines. Slope ranges from 0 to 12 percent. Mean annual precipitation ranges from 686 to 864 mm (27 to 34 inches). Mean annual temperature ranges from 5.0 to 8.3 degrees C (41 to 47 degrees F).

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Au Gres, Bergland, Croswell, Kalkaska, Kellogg, Manistee, Melita, Pickford, Pinconning, Rubicon, Rudyard, and Selkirk soils. The well drained Manistee, the moderately well drained Kellogg, and the poorly drained or very poorly drained Fibre and Pinconning soils form a drainage sequence with Allendale. The somewhat excessively drained Kalkaska and Melita, the excessively drained Rubicon, the moderately well drained Croswell, and the somewhat poorly drained Au Gres are sandy soils associated with the Allendale soils. The somewhat poorly drained Selkirk and Rudyard soils and the poorly drained Pickford and Bergland soils are clayey soils that are in association with Allendale soils in some areas.

DRAINAGE AND SATURATED HYDRAULIC CONDUCTIVITY: Somewhat poorly drained. Depth to the top of a perched seasonal high water table ranges from 15 to 61 cm (0.5 to 2 feet) during October, November, March, April, May, and June in normal years. The water tends to perch at the interface between the sandy and clayey materials. Potential for surface runoff is negligible to very low, dependent on slope. Saturated hydraulic conductivity is high or very high in the sandy part and moderately low or low in the clayey part. Permeability is rapid in the sandy upper part and slow or very slow in the clayey lower part.

USE AND VEGETATION: Cleared areas are used for the production of small grains, alfalfa-grass hay, and corn with some soybeans and field beans. Some areas are in permanent pasture or in woodland. Natural forest vegetation consists of quaking aspen, balsam fir, paper birch, red maple, eastern white pine, white ash, and white spruce.

DISTRIBUTION AND EXTENT: MLRAs 90A, 92, 93A, 93B, 94A, 94B, 94C, 95A, 96, 98, and 99 in the northern half of the Lower Peninsula and the Upper Peninsula of Michigan, northwestern Wisconsin, and northern Minnesota. This series is of moderate extent.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: AMHERST, MASSACHUSETTS

SERIES ESTABLISHED: Ottawa County, Michigan, 1922.

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REMARKS: Diagnostic horizons and features recognized in this pedon are:

Ochric epipedon: from the surface to a depth of 25 cm (10 inches) (A and E horizons).

Albic horizon: from a depth of 8 to 25 cm (3 to 10 inches) and from 66 to 71 cm (26 to 28 inches) (E and E' horizons).

Spodic horizon: from a depth of 25 to 41 cm (10 to 16 inches) (Bhs and Bs1 horizons).

Argillic horizon: from a depth of 71 to 84 cm (28 to 34 inches) (2Bt horizon).

Aquic conditions: redoximorphic features in the Bhs horizon.

National Cooperative Soil Survey

U.S.A.

LOCATION BELLEVUE WI

Established Series
Rev. HFG-AAC
01/2011

BELLEVUE SERIES

The Bellevue series consists of very deep, moderately well drained soils formed in stratified reddish alluvium on flood plains. Slope ranges from 0 to 3 percent. Mean annual precipitation is about 787 mm (31 inches). Mean annual air temperature is about 7.8 degrees C (46 degrees F).

TAXONOMIC CLASS: Fine-loamy, mixed, superactive, mesic Fluventic Hapludolls

TYPICAL PEDON: Bellevue silt loam - on a 2 percent slope in a pasture at an elevation of about 183 meters (600 feet) above mean sea level. (Colors are for moist soil unless otherwise stated.)

A1--0 to 33 cm (0 to 13 inches); very dark grayish brown (10YR 3/2) silt loam, dark brown (10YR 3/3) crushed, grayish brown (10YR 5/2) dry; moderate medium and fine subangular blocky structure; friable; common fine fibrous roots; common fine and very fine and few medium continuous dendritic pores; slightly alkaline; clear wavy boundary.

A2--33 to 46 cm (13 to 18 inches); mixed very dark grayish brown (10YR 3/2) and very dark brown (10YR 2/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium and fine angular and subangular blocky structure; firm; few fine fibrous roots; common fine and very fine and medium continuous dendritic pores; many prominent reddish brown (5YR 4/4) worm casts; slightly alkaline; clear wavy boundary. [Combined thickness of the A horizons ranges from 31 to 51 cm (12 to 20 inches).]

Bw1--46 to 56 cm (18 to 22 inches); dark reddish brown (5YR 3/4) silt loam; moderate medium and fine subangular blocky structure; firm; few fine fibrous root; common fine and very fine and few medium continuous inped dendritic pores; many dark reddish brown (5YR 3/4) worm casts; dark organic stains on some vertical faces of peds; few fine prominent yellowish red (5YR 4/6) masses of iron accumulation; slightly alkaline; clear wavy boundary. [5 to 18 cm (2 to 7 inches) thick]

Bw2--56 to 71 cm (22 to 28 inches); dark reddish brown (5YR 3/4) loam; moderate medium and fine subangular blocky structure; firm; few fine roots; common fine and very fine continuous inped dendritic pores; common fine prominent yellowish red (5YR 4/6) masses of oxidized iron in the matrix; neutral; clear wavy boundary. [10 to 23 cm (4 to 9 inches) thick]

BC--71 to 91 cm (28 to 36 inches); reddish brown (5YR 4/4) sandy loam; weak and moderate medium subangular blocky structure; friable; few fine continuous inped dendritic pores; common medium prominent yellowish red (5YR 5/8) masses of oxidized iron in the matrix; neutral; clear wavy boundary. [15 to 31 cm (6 to 12 inches) thick]

C1--91 to 117 cm (36 to 46 inches); reddish brown (5YR 4/4) loam; weak medium subangular blocky structure; friable; few fine continuous inped tubular pores; many medium prominent yellowish red (5YR

5/8) masses of oxidized iron in the matrix; slightly alkaline; clear wavy boundary. [13 to 38 cm (5 to 15 inches) thick]

C2--117 to 152 cm (46 to 60 inches); reddish brown (5YR 4/4) silty clay loam; massive; firm; few fine tubular pores; many medium prominent yellowish red (5YR 5/8) masses of oxidized iron in the matrix; moderately alkaline.

TYPE LOCATION: Brown County, Wisconsin; about 1/2 mile south of De Pere; 330 feet east of County Highway X at the point where it crosses the East River Bridge in Public Claim (P.C.) 38. USGS De Pere, Wisconsin Topographic quadrangle; lat. 44 degrees 25 minutes 24 seconds N., and long. 88 degrees 02 minutes 24 seconds W., NAD 27.

RANGE IN CHARACTERISTICS:

Thickness of the mollic epipedon: 25 to 51 cm (10 to 20 inches)

Depth to the base of soil development: 61 to 122 cm (24 to 48 inches)

Particle-size control section: averages 18 to 25 percent, 30 to 60 percent fine sand or coarser

Rock fragments: 0 percent

Reaction: slightly acid to slightly alkaline in the solum, mildly alkaline or moderately alkaline in the substratum

Redox accumulations and saturation: within 102 cm (40 inches) from the surface for one month or more per year in 6 or more out of 10 years

Special features: These soils have an irregular decrease in organic carbon content with increasing depth.

A horizon:

Hue: 7.5YR or 10YR

Value: 2 or 3

Chroma: 1 to 3

Texture: silt loam

Bw and/or BC horizons:

Hue: 5YR or 7.5YR

Value: 3 or 4

Chroma: 3 to 6

Texture: typically silt loam, loam or sandy loam

Other features:

Thin strata of finer or coarser texture are in the B horizons in some pedons.

C horizon:

Hue: 5YR or 7.5YR

Value: 4 or 5

Chroma: 4 to 8

Texture: commonly stratified layers of loam, silt loam, or silty clay loam, with thin layers of fine sandy loam, sandy loam, sand or fine sand

COMPETING SERIES: This is the Rosburg series. Rosburg soils have hue of 10YR in the middle and lower parts of the series control section.

GEOGRAPHIC SETTING: Bellevue soils are on flood plains. Slopes range from 0 to 3 percent.

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Bellevue soils formed in stratified reddish silty and loamy alluvium. Mean annual precipitation ranges from 711 to 838 mm (28 to 33 inches). Mean annual air temperature ranges from 7.8 to 10.6 degrees C (46 to 51 degrees F).

GEOGRAPHICALLY ASSOCIATED SOILS: Bellevue soils typically occur in narrow flood plains and are associated mainly with upland or lake plain soils such as Kewaunee and Oshkosh. Kewaunee soils are clayey till soils and Oshkosh soils are clayey lacustrine soils.

DRAINAGE AND SATURATED HYDRAULIC CONDUCTIVITY: Moderately well drained. Surface runoff is low or medium. Saturated hydraulic conductivity is moderately high to high (4.23 to 14.11 micrometers per second). Permeability is moderate. Bellevue soils are subject to frequent but brief flooding. These soils have an apparent seasonal high water table within a depth of 102 cm (40 inches) for one month or more per year in 6 or more out of 10 years.

USE AND VEGETATION: Most areas are used for pastureland and a few are in woodland. Small areas are used for cropland but crops are generally damaged by stream overflow. Native vegetation consists of mixed deciduous forests, dominated by northern red oak and sugar maple.

DISTRIBUTION AND EXTENT: MLRAs 95A, and 95B in eastern Wisconsin. This soil is of small extent.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Indianapolis, Indiana

SERIES ESTABLISHED: Brown County, Wisconsin, 1970.

REMARKS: Diagnostic horizons and features recognized in this pedon are: mollic epipedon - 0 to 46 cm (0 to 18 inches) (A1, A2); cambic horizon - 46 to 91 cm (18 to 36 inches) (Bw1, Bw2, BC); Oxyaquic feature redox accumulations and saturation within a depth of 102 cm (40 inches) for one month or more per year in 6 or more out of 10 years; other feature - irregular decrease in organic carbon content with increasing depth.

National Cooperative Soil Survey
U.S.A.

LOCATION DRESDEN

IL+MI WI

Established Series
Rev. JDA-JBF-DEC
05/2008

DRESDEN SERIES

The Dresden series consists of very deep, well drained soils on kames, outwash plains, and stream terraces. Slope ranges from 0 to 30 percent. These soils formed in as much as 51 cm (20 inches) of silty material and the underlying loamy sediments over calcareous gravel and sand. Mean annual precipitation is about 940 mm (37 inches), and mean annual air temperature is about 10 degrees C (50 degrees F).

TAXONOMIC CLASS: Fine-loamy over sandy or sandy-skeletal, mixed, active, mesic Mollic Hapludalfs

TYPICAL PEDON: Dresden silt loam - on a 3 percent slope in a cultivated field at an elevation of about 177 meters (580 feet) above mean sea level. (Colors are for moist soil unless otherwise stated.)

Ap--0 to 18 cm (0 to 7 inches); very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine and medium granular structure; friable; common very fine roots; neutral; gradual wavy boundary. [18 to 25 cm (7 to 10 inches) thick]

E--18 to 25 cm (7 to 10 inches); brown (10YR 4/3) silt loam; weak thin platy structure; friable; common fine roots; common distinct very dark grayish brown (10YR 3/2) organic coatings on horizontal faces of peds and in pores; neutral; gradual wavy boundary. [0 to 18 cm (0 to 7 inches) thick]

2Bt1--25 to 41 cm (10 to 16 inches); brown (7.5YR 4/3) clay loam; moderate fine and medium prismatic structure; friable; common very fine roots; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and on surfaces along pores; neutral; gradual wavy boundary.

2Bt2--41 to 61 cm (16 to 24 inches); brown (7.5YR 4/4) clay loam; moderate medium subangular blocky structure; firm; common very fine roots; many prominent very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and on surfaces along pores; few fine distinct strong brown (7.5YR 5/6) weakly cemented iron-manganese nodules throughout; 1 percent gravel; neutral; clear smooth boundary.

2Bt3--61 to 76 cm (24 to 30 inches); brown (7.5YR 4/3) clay loam; weak medium subangular blocky structure; firm; common fine roots; many prominent very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and on surfaces along pores; common medium prominent brownish yellow (10YR 6/6) and distinct strong brown (7.5YR 4/6) weakly cemented iron-manganese nodules throughout; 7 percent gravel; very slightly effervescent; slightly alkaline; clear smooth boundary. [Combined thickness of the 2Bt horizon is 25 to 81 cm (10 to 32 inches).]

3C--76 to 152 cm (30 to 60 inches); yellowish brown (10YR 5/4) gravelly loamy sand; single grain;

loose; 21 percent gravel; strongly effervescent; moderately alkaline.

TYPE LOCATION: Will County, Illinois; about 2.4 km (1.5 miles) northeast of Channahon; 445 m (1,460 feet) south and 43 m (140 feet) east of the northwest corner of sec. 10, T.34 N., R.9 E.; USGS Channahon, Illinois, topographic quadrangle; lat. 41 degrees 26 minutes 42 seconds N. and long. 88 degrees 11 minutes 41 seconds W., NAD 27; UTM zone 16, 400202 easting and 4588865 northing, NAD 83.

RANGE IN CHARACTERISTICS: The depth to the base of soil development and the depth to carbonates ranges from 61 to 102 cm (24 to 40 inches). The depth to horizons, with greater than 90 percent sand and greater than 20 percent rock fragments, ranges from 61 to 102 cm (24 to 40 inches). The thickness of the silty mantle ranges from 0 to 51 cm (0 to 20 inches). The series control section ranges from moderately acid to neutral in the upper part and slightly alkaline to moderately alkaline in the lower part.

The Ap or A horizon has hue of 10YR, value of 2 or 3 (4 or 5 dry), and chroma of 2 or 3. It is silt loam or loam, and less commonly sandy loam.

The E horizon, where present, has hue of 10YR, value of 4 or 5, and chroma of 2 or 3.

The Bt or 2Bt horizon has hue of 10YR, value of 4 or 5, and chroma of 3 or 4. It is silty clay loam, clay loam, or loam. Rock fragment content is less than 10 percent.

BC or 2BC horizon (where present) has hue of 10YR or 7.5YR, value of 3 or 4, and chroma of 2 or 3. It is loam, clay loam, sandy clay loam, sandy loam, or their gravelly or very gravelly analogs. Clay content averages between 20 and 30 percent, and sand content averages 30 to 70 percent. The rock fragment content averages between 0 and 45 percent.

2C horizon or 3C horizon has hue of 7.5YR or 10YR, value of 4 to 7, and chroma of 2 to 6. It is gravelly coarse sand, gravelly sand, gravelly loamy coarse sand, gravelly loamy sand, and the very gravelly or extremely gravelly analogs of these textures. Rock fragment content ranges from 20 to 75 percent.

COMPETING SERIES: There are no other series in this family. The Gardenvale, Menomin, Meridian, Merimod, Merit, and Sattre series are in the similar family with superactive cation exchange activity. Gardenvale soils have a paralithic contact within 152 cm (60 inches). Menomin, Meridian, Merimod, Merit and Sattre soils do not have carbonates within a depth of 102 cm (40 inches).

GEOGRAPHIC SETTING: Dresden soils are on kames, outwash plains, and stream terraces. Slope gradients range from 0 to 30 percent. These soils formed in 61 to 102 cm (24 to 40 inches) of loamy sediments over calcareous stratified gravel and sand. Some pedons have a silty mantle that ranges from 0 to 51 cm (0 to 20 inches) in thickness. Mean annual air temperature ranges from 7 to 12 degrees C (45 to 54 degrees F.), mean annual precipitation ranges from 762 to 1020 cm (30 to 40 inches), frost free days range from 140 to 180 days, and elevation ranges from 155 to 311 m (510 to 1020 feet) above mean sea level.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Fox, Matherton, Warsaw, and Will soils. The well drained Fox and Warsaw soils form a biosequence with Dresden soils and are on similar parts of the landform. The somewhat poorly drained Matherton soils and the poorly drained Will soils

are on lower positions on the landform.

DRAINAGE AND SATURATED HYDRAULIC CONDUCTIVITY: Well drained. The potential for surface runoff is slow to rapid. Saturated hydraulic conductivity is moderately high or high (4.23 to 14.11 micrometers per second) in the solum and very high (greater than 141.11 micrometers per second) in the underlying material. Permeability is moderate in the solum and very rapid in the underlying material.

USE AND VEGETATION: Most areas are cultivated. Corn, soybeans, small grain, and meadow are the principal crops. Native vegetation was mixed hardwood trees and prairie grasses.

DISTRIBUTION AND EXTENT: Northeastern Illinois, southeastern Wisconsin, and southern Michigan. Extent is moderate in MLRAs 95B, 95A, 108, and 110.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Indianapolis, Indiana

SERIES ESTABLISHED: Will County, Illinois, 1951.

REMARKS: Diagnostic horizons and features recognized in this pedon are: ochric epipedon - the zone from the surface of the soil to a depth of 25 cm (10 inches) (Ap and BE horizons); argillic horizon - the zone from approximately 25 to 76 cm (10 to 30 inches) (Bt1, 2Bt2, and 2Bt3 horizons); strongly contrasting particle-size classes - the contact between the 2Bt3 and 3C horizons; udic moisture regime.

National Cooperative Soil Survey
U.S.A.

LOCATION FABIUS MI+WI

Established Series

Rev. RWJ-EPW-WEF

06/2011

FABIUS SERIES

The Fabius series consist of very deep somewhat poorly drained soils formed in loamy and sandy drift on lake plains, outwash plains, valley trains, and beach ridges. Slope ranges from 0 to 6 percent. Mean annual precipitation is about 813 mm (32 inches), and mean annual temperature is about 8.9 degrees C (48 degrees F).

TAXONOMIC CLASS: Fine-loamy over sandy or sandy-skeletal, mixed, semiactive, mesic Aquic Argiudolls

TYPICAL PEDON: Fabius sandy loam, in a cultivated field. (Colors are for moist soil unless otherwise noted.)

Ap--0 to 18 cm (7 inches); very dark grayish brown (10YR 3/2) sandy loam, grayish brown (10YR 5/2) dry; weak fine granular structure; very friable; many medium and fine roots; slightly acid; abrupt smooth boundary. [18 to 30 cm (7 to 12 inches) thick]

E--18 to 25 cm (7 to 10 inches); brown (10YR 5/3) sandy loam; weak coarse granular structure; very friable; many roots; slightly acid; clear smooth boundary. [0 to 10 cm (4 inches) thick]

Bt1--25 to 30 cm (10 to 12 inches); brown (10YR 5/3) sandy loam; weak coarse granular structure; firm; common fine roots; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common medium faint dark yellowish brown (10YR 4/4) masses of iron accumulation; about 2 percent gravel; slightly acid; clear wavy boundary. [0 to 10 cm (4 inches) thick]

Bt2--30 to 46 cm (12 to 18 inches); yellowish brown (10YR 5/6) sandy clay loam; weak medium subangular blocky structure; firm; few roots; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common medium prominent grayish brown (10YR 5/2) iron depletions; common medium distinct dark yellowish brown (10YR 4/4) masses of oxidized iron; about 5 percent gravel; slightly acid; abrupt wavy boundary. [10 to 20 cm (4 to 8 inches) thick]

2C--46 to 152 cm (18 to 60 inches); pale brown (10YR 6/3) stratified gravel and coarse sand; single grain; loose; strongly effervescent; moderately alkaline.

TYPE LOCATION: Lapeer County, Michigan; about 2 miles east and 2 miles north of Dryden; 550 feet south and 420 feet east of the northwest corner of the NE1/4 of sec. 6, T. 6 N., R. 12 E.

RANGE IN CHARACTERISTICS:

Thickness of the solum: 30 to 76 cm (12 to 30 inches)

Depth to sand and gravel: 46 to 76 cm (18 to 30 inches)

Reaction: moderately acid to slightly alkaline in the solum

Ap horizon:

Hue: 10YR

Value 3

Chroma: 1 or 2

Texture: sandy loam or loam

Rock fragment content: 0 to 10 percent gravel

E horizon:

Hue: 10YR

Value: 5 or 6

Chroma: 1 to 6

Texture: sandy loam or loam

Rock fragment content: 0 to 10 percent gravel

Bt horizon:

Hue: 7.5YR or 10YR

Value: 4 or 5

Chroma: 3 to 6

Texture: dominantly sandy clay loam, loam, clay loam, or the gravelly analogs of these textures; sandy loam or gravelly sandy loam subhorizons are allowed

Clay content: 18 to 30 percent

Sand content: 45 to 70 percent fine sand or coarser

Rock fragment content: 0 to 30 percent

2C horizon:

Hue: 10YR

Value: 5 or 6

Chroma: 1 to 6

Texture: stratified sand and gravel, dominantly coarse sand, or coarse gravel

Rock fragment content 0 to 30 percent

COMPETING SERIES: There are no other series in the same family.

GEOGRAPHIC SETTING: Fabius soils are on outwash plains, valley trains, beach ridges, and lake plains of Wisconsinan Age. Slopes are dominantly between 0 to 2 percent, but they range up to 6 percent. The Fabius soils formed in sandy and loamy drift. Mean annual precipitation ranges from 737 to 940 mm (29 to 37 inches). Mean annual temperature ranges from 8.3 to 12.2 degrees C (47 to 54 degrees F).

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Casco, Matherton, Mussey, and Sebewa soils. Fabius soils are in a drainage sequence with the somewhat excessively drained Casco and the poorly drained or very poorly drained Mussey soils. Matherton soils and the poorly drained or very poorly drained Sebewa soils are associated in many places.

DRAINAGE AND SATURATED HYDRAULIC CONDUCTIVITY: Somewhat poorly drained. Depth to the top of a seasonal high water table ranges from 30 to 61 cm (1 to 2 feet) from November to

May in normal years. Potential for surface runoff is negligible to medium. Saturated hydraulic conductivity is moderately high in the upper part and high or very high in the lower part. Permeability is moderate or moderately rapid in the upper part and rapid or very rapid in the lower part.

USE AND VEGETATION: Most areas are cultivated. Small grain, beans, corn, and legume-grass hay are the principal crops, especially where artificial drainage is adequate. A part is in permanent pasture or forest. Native vegetation is lowland hardwoods, chiefly American elm, white ash, and swamp white oak.

DISTRIBUTION AND EXTENT: MLRAs 95A, 95B, 98, and 99 in central Michigan and eastern Wisconsin. This series is of moderate extent.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Indianapolis, Indiana.

SERIES ESTABLISHED: Lapeer County, Michigan, 1967.

REMARKS: Diagnostic horizons and features recognized in this pedon are:

Mollic epipedon: from the surface to a depth of 18 cm (7 inches) (Ap horizon).

Argillic horizon: from a depth of 25 to 46 cm (10 to 18 inches) (Bt1 and Bt2 horizons).

Aquic conditions: redoximorphic features present from a depth of 25 to 46 cm (10 to 18 inches) (Bt1 and Bt2 horizons).

National Cooperative Soil Survey
U.S.A.

The first part of the report discusses the current state of the world economy and the challenges it faces. It highlights the need for a coordinated international response to these challenges and the role of the G20 in this regard.

The second part of the report focuses on the specific challenges facing the G20 member states. It examines the impact of the global financial crisis and the need for a comprehensive reform of the international financial system.

The third part of the report discusses the role of the G20 in promoting sustainable development and the need for a new global development agenda. It also examines the challenges facing the G20 in this regard.

The fourth part of the report discusses the role of the G20 in promoting global peace and security. It examines the challenges facing the G20 in this regard and the need for a new global security agenda.

The fifth part of the report discusses the role of the G20 in promoting global governance and the need for a new global governance agenda. It also examines the challenges facing the G20 in this regard.

The sixth part of the report discusses the role of the G20 in promoting global development and the need for a new global development agenda. It also examines the challenges facing the G20 in this regard.

The seventh part of the report discusses the role of the G20 in promoting global peace and security. It examines the challenges facing the G20 in this regard and the need for a new global security agenda.

The eighth part of the report discusses the role of the G20 in promoting global governance and the need for a new global governance agenda. It also examines the challenges facing the G20 in this regard.

The ninth part of the report discusses the role of the G20 in promoting global development and the need for a new global development agenda. It also examines the challenges facing the G20 in this regard.

The tenth part of the report discusses the role of the G20 in promoting global peace and security. It examines the challenges facing the G20 in this regard and the need for a new global security agenda.

The eleventh part of the report discusses the role of the G20 in promoting global governance and the need for a new global governance agenda. It also examines the challenges facing the G20 in this regard.

The twelfth part of the report discusses the role of the G20 in promoting global development and the need for a new global development agenda. It also examines the challenges facing the G20 in this regard.

The thirteenth part of the report discusses the role of the G20 in promoting global peace and security. It examines the challenges facing the G20 in this regard and the need for a new global security agenda.

LOCATION KEOWNS

WI+MI

Established Series

Rev. HFG-AAC

12/2011

KEOWNS SERIES

The Keowns series consists of very deep, poorly drained soils formed in mostly loamy and fine sandy calcareous outwash or lacustrine deposits on glacial lake basins and outwash plains. Slope ranges from 0 to 3 percent. Mean annual precipitation is about 762 mm (30 inches). Mean annual air temperature is about 8.9 degrees C (48 degrees F).

TAXONOMIC CLASS: Coarse-loamy, mixed, superactive, nonacid, mesic Mollic Endoaquepts

TYPICAL PEDON: Keowns silt loam - on a 1 percent slope in a cultivated field at an elevation of about 258 meters (847 feet) above mean sea level. (Colors are for moist soil unless otherwise stated.)

Ap--0 to 23 cm (0 to 9 inches); black (10YR 2/1) silt loam; dark grayish brown (10YR 4/2) dry; moderate medium subangular blocky structure parting to moderate medium granular; friable; slightly alkaline; abrupt smooth boundary. [15 to 23 cm (6 to 9 inches) thick]

Eg--23 to 41 cm (9 to 16 inches); light brownish gray (2.5Y 6/2) silt loam; weak medium platy structure parting to weak fine subangular blocky; friable; few fine prominent olive yellow (2.5Y 6/6) masses of oxidized iron in the matrix; slightly alkaline; gradual wavy boundary. [0 to 20 cm (0 to 8 inches) thick]

Bg1--41 to 66 cm (16 to 26 inches); light brownish gray (10YR 6/2) silt loam; weak medium subangular blocky structure; friable; common fine distinct yellowish brown (10YR 5/4) masses of oxidized iron in the matrix; slightly alkaline; clear smooth boundary.

Bg2--66 to 81 cm (26 to 32 inches); light brownish gray (2.5Y 6/2) silt loam with thin strata of grayish brown (10YR 5/2) very fine sand; weak medium subangular blocky structure; very friable; common fine distinct yellowish brown (10YR 5/4) masses of oxidized iron in the matrix; slightly effervescent; moderately alkaline; gradual wavy boundary. [Combined thickness of the Bg horizons is 25 to 51 cm (10 to 20 inches).]

Cg--81 to 102 cm (32 to 40 inches); grayish brown (2.5Y 5/2) fine sand with thin strata of light brownish gray (2.5Y 6/2) silt loam; massive; friable; few streaks of very dark brown (10YR 2/2); many fine distinct yellowish brown (10YR 5/4) and prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; strongly effervescent; moderately alkaline; abrupt wavy boundary.

C--102 to 152 cm (40 to 60 inches); yellowish brown (10YR 5/6) fine sand stratified with thin layers of light brownish gray (2.5Y 6/2) silt loam; massive; friable; many medium and fine faint strong brown (7.5YR 5/6) and distinct yellowish brown (10YR 5/4) masses of oxidized iron in the matrix of the fine sand; many medium and fine prominent grayish brown (10YR 5/2) iron depletions in the matrix of the

fine sand; strongly effervescent; moderately alkaline.

TYPE LOCATION: Dodge County, Wisconsin; about 3/4 mile northwest of Ashippun; 100 feet south and 1800 feet east of the northwest corner of sec. 30, T. 9 N., R. 17 E.

RANGE IN CHARACTERISTICS:

Depth to the base of soil development: 46 to 102 cm (18 to 40 inches)

Depth to carbonates: 31 to 102 cm (12 to 40 inches)

Particle-size control section:m: averages 10 and 18 percent clay, 15 to 55 percent fine sand or coarser

Carbonates: in the C horizon and are in the lower part of the Bg horizon in many pedons

Reaction: neutral to moderately alkaline in the upper part of the solum, slightly alkaline or moderately alkaline in the lower part and in the substratum

Redox accumulations: throughout the soil below the A horizon; saturation and chroma of 2 or less in the matrix in the layer directly under the epipedon

Ap or A horizon:

Hue: 10YR, 2.5Y or N

Value: 2 or 3

Chroma: 0 to 2

Texture: silt loam, fine sandy loam or very fine sandy loam

Eg horizon:

Hue: 10YR or 2.5Y

Value: 4 to 6

Chroma: 1 or 2

Texture: silt loam, loam, sandy loam, fine sandy loam or very fine sandy loam

Bg horizon:

Hue: 10YR, 2.5Y or 5Y

Value: 4 to 7

Chroma: 1 or 2

Texture: silt loam, loam, sandy loam, fine sandy loam or very fine sandy loam with thin strata of coarser or finer texture especially in the lower part in many pedons

C horizon:

Hue: 10YR, 2.5Y or 5Y

Value: 4 to 7

Chroma: 1 or 2, but below a depth of 40 inches, it is not uncommon to have chroma of 3 to 6.

Texture: dominantly stratified layers of silt, silt loam, fine sand, or very fine sand with thin strata of coarser or finer texture in some pedons, the sandy layers in upper part of the C horizon less than 6 inches thick

COMPETING SERIES: There are no competing series.

GEOGRAPHIC SETTING: The Keowns soils are on glacial lake basins and outwash plains. Slope ranges from 0 to 3 percent. These soils formed in mostly loamy and fine sandy calcareous outwash or lacustrine deposits. Mean annual precipitation ranges from 710 to 813 mm (28 to 32 inches). Mean annual air temperature ranges from 7.8 to 10.6 degrees C (46 to 51 degrees F).

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Colwood, Pella, and Yuhara soils. Colwood and Pella soils are in similar landscape positions. Yuhara soils are on slightly higher landscape positions.

DRAINAGE AND SATURATED HYDRAULIC CONDUCTIVITY: Poorly drained. The potential for surface runoff is negligible or low. Saturated hydraulic conductivity is moderately high to high (4.23 to 14.11 micrometers per second). Permeability is moderate. These soils have an apparent seasonal high water table at a depth of 0 to 31 cm (0 to 1 foot) for long periods in most years.

USE AND VEGETATION: Where adequately drained, these soils are used for cropland. Many areas have been retained in pasture or used for woodlots and wildlife. The native vegetation is swamp hardwoods with some prairie grasses.

DISTRIBUTION AND EXTENT: MLRAs 95A, 95B, 98, and 89 in southeastern and eastern Wisconsin and southwestern Michigan. These soils are of moderate extent.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Indianapolis, Indiana

SERIES ESTABLISHED: Brown County, Wisconsin, 1970.

REMARKS: Diagnostic horizons and features recognized in this pedon are: ochric epipedon - 0 to 23 cm (0 to 9 inches) (Ap); cambic horizon - 41 to 81 cm (16 to 32 inches) (Bg1, Bg2); mollic subgroup - have Ap horizon with color value and chroma, moist, of less than 4, and color value, dry, of less than 6; aquic feature chroma of 2 or less in the matrix with redox accumulations and saturation in the layer directly under the epipedon.

National Cooperative Soil Survey
U.S.A.

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The thirteenth of these is the fact that the majority of the cases of the disease are reported from the United States and Canada, and that the majority of the cases are reported from the United States and Canada.

LOCATION KIBBIE

MI+OH WI

Established Series

Rev. NWS-LWB-RAR

06/2011

KIBBIE SERIES

The Kibbie series consists of very deep, somewhat poorly drained soils on lake plains, ground moraines, outwash plains, and deltas. They formed in stratified loamy and silty glaciofluvial or glaciolacustrine deposits. Slope ranges from 0 to 6 percent. Mean annual precipitation is about 813 mm (32 inches), and mean annual temperature is about 9.4 degrees C (49 degrees F).

TAXONOMIC CLASS: Fine-loamy, mixed, active, mesic Aquollic Hapludalfs

TYPICAL PEDON: Kibbie loam, on a 2 percent slope in a cultivated field. (Colors are for moist soil unless otherwise stated.)

Ap--0 to 18 cm (7 inches); very dark grayish brown (10YR 3/2) loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; many fine roots; slightly acid; abrupt smooth boundary. [15 to 23 cm (6 to 9 inches) thick]

E--18 to 28 cm (7 to 11 inches); grayish brown (10YR 5/2) loam; moderate medium granular structure; friable; many fine roots; many medium distinct yellowish brown (10YR 5/4) masses of oxidized iron in the matrix; slightly acid; clear smooth boundary. [0 to 15 cm (6 inches) thick]

Bt1--28 to 48 cm (11 to 19 inches); brown (10YR 5/3) silt loam; moderate medium subangular blocky structure; firm; many fine roots; few lenses of very fine sand 3 to 25.4 mm (1/8- to 1-inch) thick; thin clay films on faces of peds and in root channels; common medium faint brown (10YR 4/3) iron depletions in the matrix; slightly acid; gradual wavy boundary.

Bt2--48 to 86 cm (19 to 34 inches); brown (10YR 5/3) silty clay loam; moderate medium subangular blocky structure; firm; few fine roots; thin lenses of very fine sand and silt loam; thin clay films on faces of peds and in some root channels; many medium distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common medium faint light brownish gray (10YR 6/2) iron depletions in the matrix; neutral; abrupt wavy boundary. (Combined thickness of the Bt horizon is 20 to 86 cm (8 to 34 inches).)

C--86 to 152 cm (34 to 60 inches); brown (10YR 5/3) stratified silt loam, fine sand and very fine sand; massive; friable; common medium prominent yellowish brown (10YR 5/8) masses of oxidized iron in the matrix; many medium faint light brownish gray (10YR 6/2) iron depletions in the matrix; strongly effervescent; slightly alkaline.

TYPE LOCATION: Lapeer County, Michigan; about 9 miles east and 2 1/2 miles north of North Branch; 760 feet east and 420 feet north of the southwest corner of southeast quarter of sec. 23, T. 10 N., R. 12 E.

RANGE IN CHARACTERISTICS:

Thickness of the solum: typically 71 to 107 cm (28 to 42 inches) but ranges from 61 to 122 cm (24 to 48 inches)

Depth to carbonates: typically 71 to 107 cm (28 to 42 inches) but ranges from 61 to 122 cm (24 to 48 inches)

Particle-size control section: averages 18 to 35 percent clay

Rock fragment content: 0 to 1 percent

Ap horizon:

Hue: 10YR

Value: 2 or 3, 5 or less dry

Chroma: 1 to 3

Texture: loam, silt loam, very fine sandy loam, fine sandy loam, or loamy fine sand

Rock fragment content: 0 to 1 percent

Reaction: moderately acid to neutral

E horizon:

Hue: 10YR

Value: 5 or 6

Chroma: 2 or 3

Texture: loam, silt loam, very fine sandy loam, fine sandy loam, or loamy fine sand

Rock fragment content: 0 to 1 percent

Reaction: moderately acid to neutral

Bt horizon:

Hue: 10YR or 2.5Y

Value: 4 to 6

Chroma: 3 to 6

Texture: loam, clay loam, sandy clay loam, silty clay loam, or silt loam; thickness and sequence of strata of silt loam, fine sandy loam, fine sand, and very fine sand are variable within short horizontal distances

Rock fragment content: 0 to 1 percent

Reaction: moderately acid to neutral, and includes slightly alkaline in the lower part

Some pedons have a BC or BCg horizon. Some pedons have Bk horizons with colors and textures similar to that of the C horizon.

C or Cg horizon:

Hue: 10YR or 2.5Y

Value: 5 or 6

Chroma: 2 to 4

Texture: thickness and sequence of layers of different textures vary within short horizontal distances; strata are dominantly silt loam to fine sand and range in thickness from 6 mm to more than 38 cm (1/4 to more than 15 inches); in some pedons strata 6 mm to 8 cm (1/4 to 3 inches) thick ranging from clay to loamy sand or fine sand are in the lower part of the B horizon and in the C horizon

Rock fragment content: 0 to 1 percent

Reaction: slightly alkaline or moderately alkaline

Silty clay loam and clay loam till is below 102 cm (40 inches) in some pedons. Sandy substratum phases that have sand or fine sand below 102 cm (40 inches) are presently. These sandy substratum phases may have stratified silt loam to sand between the solum and sandy substratum. See REMARKS.

COMPETING SERIES: These are the Alida, Ashippun, Lourdes, Marker, Montmorenci, and Symco series. Alida, Ashippun, Lourdes, Marker, Montmorenci, and Symco soils contain more than 1 percent rock fragments in some part of the series control section.

GEOGRAPHIC SETTING: Kibbie soils are on lake plains, ground moraines, outwash plains, and deltas of Wisconsin age. Slope ranges from 0 to 6 percent. Kibbie soils formed in stratified loamy and silty glaciofluvial or glaciolacustrine deposits. Mean annual precipitation ranges from 711 to 914 mm (28 to 36 inches). Mean annual temperature ranges from 8.3 to 10.0 degrees C (47 to 50 degrees F).

GEOGRAPHICALLY ASSOCIATED SOILS: The poorly drained or very poorly drained Colwood, the well drained Sisson, and the moderately well drained Tuscola soils are in a drainage sequence with Kibbie soils. Conover and Metamora soils are associated where deltas and outwash plains grade into till plains. The Del Rey and the poorly drained or very poorly drained Lenawee soils are associated on lake plains.

DRAINAGE AND SATURATED HYDRAULIC CONDUCTIVITY: Somewhat poorly drained. Depth to the seasonal high water table ranges from 30 to 61 cm (1 to 2 feet) below the surface from November to May in normal years. Potential for surface runoff is negligible to medium. Saturated hydraulic conductivity is moderately high. Permeability is moderate.

USE AND VEGETATION: Most areas are cultivated. Corn, small grains, beans, and hay are the principal crops. A small part is in permanent pasture or in woodland. Native vegetation is forests of American elm, American beech, red maple, and American basswood.

DISTRIBUTION AND EXTENT: MLRAs 95A, 95B, 96, 97, 98, 99, and 111B in southern Michigan, southeastern Wisconsin, and northwestern Ohio. The series is of large extent.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Indianapolis, Indiana.

SERIES ESTABLISHED: Newton County, Indiana; 1943.

REMARKS: The till substratum and sandy substratum phases will become new series when their area of use is updated.

Diagnostic horizons and features recognized in this pedon are:

Ochric epipedon: from the surface to a depth of 28 cm (11 inches) (Ap and E horizons).

Albic horizon: from a depth of 18 to 28 cm (7 to 11 inches) (E horizon).

Argillic horizon: from a depth of 28 to 86 cm (11 to 34 inches) (Bt1 and Bt2 horizons).

Aquic conditions: iron depletions with chroma of 2 or less in horizons below a depth of 48 cm (19 inches) (Bt2 and C horizons).

LOCATION POYGAN

WI

Established Series

Rev. HFG-AAC

01/2011

POYGAN SERIES

The Poygan series consists of very deep, poorly drained soils formed in clayey till on ground moraines. Slope ranges from 0 to 3 percent. Mean annual precipitation is about 762 mm (30 inches). Mean annual air temperature is about 8.9 degrees C (48 degrees F).

TAXONOMIC CLASS: Fine, mixed, active, mesic Typic Epiaquolls

TYPICAL PEDON: Poygan silty clay loam - on a 1 percent slope in a pasture at an elevation of about 254 meters (833 feet) above mean sea level. (Colors are for moist soil unless otherwise stated.)

A--0 to 18 cm (0 to 7 inches); black (10YR 2/1) silty clay loam, dark grayish brown (10YR 4/2) dry; moderate medium and fine granular structure; friable; slightly alkaline; clear wavy boundary. [18 to 31 cm (7 to 12 inches) thick]

AB--18 to 33 cm (7 to 13 inches); very dark gray (5Y 3/1) silty clay; olive gray (5Y 5/2) dry; moderate fine subangular blocky structure; firm; slightly alkaline; clear irregular boundary. [0 to 18 cm (0 to 7 inches) thick]

Bg--33 to 48 cm (13 to 19 inches); gray (5Y 5/1) clay; weak coarse prismatic structure parting to moderate fine subangular blocky; firm; common fine prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; slightly alkaline; clear irregular boundary. [13 to 20 cm (5 to 8 inches) thick]

BC--48 to 69 cm (19 to 27 inches); olive (5Y 5/3) and brown (7.5YR 5/4) clay; weak coarse prismatic structure parting to moderate and strong medium angular blocky; firm; many coarse prominent brown (7.5YR 4/4) masses of oxidized iron in the matrix; slightly alkaline; clear irregular boundary. [15 to 23 cm (6 to 9 inches) thick]

C--69 to 152 cm (27 to 60 inches); reddish brown (5YR 4/4) silty clay; weak coarse prismatic structure parting to weak medium subangular blocky in the upper few inches; firm; light brownish gray (10YR 6/2) coatings around root channels; common medium distinct yellowish red (5YR 5/6) masses of oxidized iron in the matrix; few igneous and dolomititic gravel; slightly effervescent; slightly alkaline.

TYPE LOCATION: Fond du Lac County, Wisconsin; about 2 1/2 miles northwest of Vandyne; 2,375 feet west and 100 feet south of the northeast corner of sec. 2, T. 16 N., R. 16 E. USGS Van Dyne, Wisconsin topographic quadrangle; lat. 43 degrees 53 minutes 36 seconds N., and long. 88 degrees 33 minutes 11 seconds W., NAD 83.

RANGE IN CHARACTERISTICS:

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Thickness of the mollic epipedon: 18 to 38 cm (7 to 15 inches)
Depth to the base of soil development: 51 to 102 cm (20 to 40 inches)
Thickness of loess or silty material: 0 to 51 cm (0 to 20 inches)
Depth to carbonates: 51 to 102 cm (20 to 40 inches)
Particle-size control section: averages 35 to 60 percent clay, 5 to 30 percent fine sand or coarser
Volume of gravel: 1 to 12 percent
Volume of cobbles: 0 to 2 percent
Reaction: slightly acid to to slightly alkaline in the upper part of the solum, neutral to moderately alkaline in the lower part; slightly or moderately alkaline in the substratum
Saturation: within a depth of 31 cm (12 inches) for some time in most years

A horizon:

Hue: 10YR, 2.5Y, 5Y or N

Value: 2 or 3

Chroma: 0 or 1

Texture: silty clay loam; silt loam or fine sandy loam in some pedons

AB horizon (whrer present):

Hue: 7.5YR, 10YR, 2.5Y, 5Y or N

Value: 2 or 3

Chroma: 0 to 2

Texture: clay, silty clay or silty clay loam; clay loam in some pedons

Bg horizon:

Hue: 5YR, 7.5YR, 10YR, 2.5Y, 5Y or N

Value: 4 to 6; 3 in upper part in some pedons

Chroma: 0 to 2

Texture: clay, silty clay or silty clay loam; clay loam in some pedons

BC horizon:

Hue: 5YR, 7.5YR, 10YR, 2.5Y or 5Y

Value: 4 or 5

Chroma: 0 to 4

Texture: silty clay, clay, silty clay loam or clay loam

C horizon:

Hue: 2.5YR, 5YR or 7.5YR

Value: 4 to 6

Chroma: 3 or 4

Texture: silty clay or clay; silty clay loam or clay loam in some pedons

COMPETING SERIES: There are no competing series.

GEOGRAPHIC SETTING: Poygan soils are on ground moraines. Slope ranges from 0 to 3 percent. Poygan soils formed in clayey till. Mean annual precipitation ranges from 711 to 813 mm (28 to 32 inches). Mean annual air temperature ranges from about 7.2 to 10.0 degrees C (45 to 50 degrees F).

GEOGRAPHICALLY ASSOCIATED SOILS: These are the [Kewaunee](#), [Manawa](#), and [Oshkosh](#) soils

and the competing Menasha and Poy soils. The well drained and moderately well drained Kewaunee and somewhat poorly drained Manawa soils are in a drainage sequence with the Poygan soils. Oshkosh soils are on the higher rises and are better drained than Poygan soils. Menasha soils are in similar landscape positions. Poy soils are in a similar landscape position as the Poygan soils.

DRAINAGE AND SATURATED HYDRAULIC CONDUCTIVITY: Poorly drained. The potential for surface runoff ranges from negligible to high. Saturated hydraulic conductivity is moderately low to moderately high (0.42 to 1.41 micrometers per second). Permeability is slow. These soils have a seasonal perched high water table within a depth of 31 cm (1 foot) for long periods in most years.

USE AND VEGETATION: Many areas are drained and used for cropland. Common crops are corn, oats, and alfalfa. Undrained areas are used for in woodland or pastureland. Native vegetation is deciduous swamp forest of American elm, red maple, and white ash.

DISTRIBUTION AND EXTENT: MLRAs 89, 95A, and 95B in southeastern Wisconsin. The Poygan soils are of moderate extent.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Indianapolis, Indiana

SERIES ESTABLISHED: Waushara County, Wisconsin, 1909.

REMARKS:

12/04 1650 acres of Poygan were correlated in Door County as a temperature taxadjunct because they are in the frigid temperature zone. A new series is needed.

12/04 - This series previously included 2 different parent materials (clayey till and clayey lacustrine deposits). This revision redefines this series as being formed in clayey till only. A new series is needed for 1100 acres in Columbia County, 3850 acres in Green Lake County, 5240 acres in Juneau County, and 3480 acres in Marquette County which were correlated as being formed in clayey lacustrine deposits. In addition, a portion of the acreage correlated in surveys in Adams, Brown, Calumet-Manitowoc, Fond du Lac, Kewaunee, Outagamie, Ozaukee, Sheboygan, and Waushara Counties may be formed in clayey lacustrine deposits. A new series will be needed for these acres when these surveys are updated.

Diagnostic horizons and feature recognized in this pedon are: mollic epipedon - 0 to 33 cm (0 to 13 inches) (A, AB); cambic horizon - 33 to 69 cm (13 to 27 inches) (Bg, BC); aquic suborder saturation between 41 to 51 cm (16 and 20 inches) with chroma of 1 in the lower part of the mollic epipedon and chroma of 1 in the matrix immediately below the mollic epipedon with hue yellower than 2.5Y.

National Cooperative Soil Survey
U.S.A.

LOCATION SUMMERVILLE MI+NY WI

Established Series

Rev. JRC-WEF

06/2011

SUMMERVILLE SERIES

The Summerville series consists of shallow, well drained soils formed in loamy materials overlying limestone on ground moraines, end moraines, and glacial lake benches. Slope ranges from 0 to 45 percent. Mean annual precipitation is about 762 mm (30 inches), and mean annual temperature is about 6.1 degrees C (43 degrees F).

TAXONOMIC CLASS: Loamy, mixed, active, frigid Lithic Eutrudepts

TYPICAL PEDON: Summerville fine sandy loam, on a southeast-facing, 3 percent slope in a forested area. (Colors are for moist soil unless otherwise stated).

Oi--2 to 0 cm (1 to 0 inch); undecomposed leaf litter.

A--0 to 5 cm (2 inches); very dark grayish brown (10YR 3/2) fine sandy loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; many fine and medium and common coarse roots; slightly acid; clear wavy boundary. [2 to 13 cm (1 to 5 inches) thick]

Bw1--5 to 23 cm (2 to 9 inches); brown (7.5YR 4/4) fine sandy loam; moderate fine subangular blocky structure; friable; common medium and coarse and many fine roots; about 2 percent gravel; slightly acid; clear wavy boundary.

Bw2--23 to 41 cm (9 to 16 inches); brown (7.5YR 4/4) fine sandy loam; moderate fine subangular blocky structure; friable; common medium and coarse and many fine roots; very dark grayish brown (10YR 3/2) organic stains; about 2 percent gravel and cobbles; slightly acid; abrupt wavy boundary. [Combined thickness of the Bw horizon is 8 to 41 cm (3 to 16 inches).]

2R--41 to 66 cm (16 to 26 inches); limestone.

TYPE LOCATION: Menominee County, Michigan; about 8 miles southwest of Powers; 2000 feet south and 100 feet east of the northwest corner of sec. 27, T. 38 N., R. 27 W.

RANGE IN CHARACTERISTICS:

Depth to a lithic contact: 25 to 50 cm (10 to 20 inches)

Reaction: slightly acid to moderately alkaline throughout the pedon

Rock fragment content: 0 to 35 percent limestone stones, cobbles, channers, and flagstones on the surface and mixed throughout the pedon; 0 to 5 percent limestone gravel throughout

Texture: sandy loam, fine sandy loam, very fine sandy loam, silt loam, or loam, or the cobbly, flaggy or channery analogs of these textures throughout the pedon

Ap horizon, where present:

Thickness: 10 to 23 cm (4 to 9 inches)

A horizon or Ap horizon:

Hue: 5YR to 10YR, or is neutral

Value: 2, 2.5, or 3

Chroma: 0 to 3

E horizon, where present:

Hue: 7.5YR or 10YR

Value: 5 to 7

Chroma: 2 or 3

Bw horizon:

Hue: 5YR to 10YR

Value: 2 to 6

Chroma: 3 to 8

BC or C horizon, where present:

Thickness: up to 13 cm (5 inches)

Hue: 5YR to 10YR

Value: 3 to 6

Chroma: 2 to 4

A 2 to 8 cm (1 to 3 inches) thick calcareous layer immediately above the bedrock is in some pedons and it appears to be residuum weathered from the limestone.

COMPETING SERIES: This is the Kings Falls (T) series. Kings Falls soils have more than 5 percent gravel throughout. Other closely related series are the Glover, Peshekee, and Woodstock series. Glover soils are underlain by interbedded dark mica schist and metamorphosed limestone or phyllite bedrock. Peshekee soils are underlain by igneous or metamorphic bedrock and have spodic horizons. Woodstock soils are underlain by light colored schist, granite, or gneiss bedrock.

GEOGRAPHIC SETTING: The Summerville soils are on ground moraines, end moraines, and glacial lake benches underlain at a shallow depth by limestone. Slope gradients typically are 2 to 12 percent but range from 0 to 45 percent. Summerville soils formed in loamy materials overlying limestone bedrock. Mean annual precipitation ranges from 660 to 1016 mm (26 to 40 inches). Mean annual temperature ranges from 5.0 to 7.2 degrees C (41 to 45 degrees F).

GEOGRAPHICALLY ASSOCIATED SOILS: The somewhat poorly drained Ensign soils and poorly drained or very poorly drained Ruse soils form a drainage sequence with Summerville soils. Well drained Longrie soils, somewhat poorly drained Sundell soils, and poorly drained Nahma soils are associated soils underlain by limestone at 50 to 102 cm (20 to 40 inches). Well drained or moderately well drained Chatham, Onaway, and Trenary soils are near Summerville soils on higher positions on ground moraines. Excessively drained Alpena soils are in association on glacial lake benches and lake beaches.

DRAINAGE AND SATURATED HYDRAULIC CONDUCTIVITY: Well drained. Potential for surface runoff is negligible to high depending on slope. Saturated hydraulic conductivity is moderately

high. Permeability is moderate.

USE AND VEGETATION: Most of this soil supports second growth woodland. Present vegetation consists of sugar maple, American basswood, quaking aspen, balsam fir, eastern white pine and northern white cedar. Cleared areas are used for hay or pasture. Some areas are used for cropland.

DISTRIBUTION AND EXTENT: MLRAs 93B, 94A, 94B, 94C, 95A, 96, and 142 in the northern part of Lower Michigan; central and southeastern part of the Upper Peninsula of Michigan, northeastern Wisconsin and northern New York. The series is of large extent.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Indianapolis, Indiana.

SERIES ESTABLISHED: Alpena County, Michigan, 1924.

REMARKS: Diagnostic horizons and features recognized in this pedon are:

Ochric epipedon: from the surface to 5 cm (2 inches) (A horizon).

Cambic horizon: from a depth of 5 to 41 cm (2 to 16 inches) (Bw1 and Bw2 horizons).

Lithic contact: limestone bedrock at 41 cm (16 inches) (2R layer).

National Cooperative Soil Survey
U.S.A.

Shallow Groundwater Record Keeping Form

Field: _____ Date: _____

Person Completing Analysis: _____

	Yes	No
Does NRCS Soil Series description list a time period(s) of when to expect shallow groundwater?		
If yes, is the application outside those dates?		
Are the "w" soil selections of the field "idle"? *See Interim guidance for shallow groundwater soils definitions.		

For fields with tile drainage systems:	Yes	No
Are drain tiles functioning properly?		

What is the depth to the drain tile from the soil surface? _____ in.

For fields without tile drainage systems:

Complete two pit evaluations per 5 acres of "w" soils as described in Interim guidance for shallow groundwater soils.

Pit number	Start time	Finish time	Depth of pit (Inches)	Depth of groundwater from soil surface. (Inches)

Inspection of Fields with Drain Tile

Inspection of Fields with Drain Tile					
Prior to Applications				During/After Applications	
Date	Field ID	Have spreading restriction maps been reviewed?	Have all known drain tile or outlets been identified?	Have all drain tile outlets been inspected for discharge?	If discharge is present, were actions recorded on Accident/Incident worksheet? (Found in Section 1 of NMP)

Daily Manure Application Log

<u>Date</u>	<u>Field</u>	<u>Acres Applied</u>	<u>Source:</u>	<u># of Loads & Size of Loads or Amt Applied</u>	<u>Applicator</u>	<u>Application Method:</u> (Circle)	<u>Soil Conditions:</u> (Circle)	<u>Weather During Application:</u> (Circle)	<u>Temp</u>	<u>Notes:</u>
			Cow Manure, Milkhouse, Heifer, Calf			Surface, Incorp, Inject	Dry, Wet, Frozen, Snow Covered	Sunny, Cloudy, Mist, Raining, Snowing		
			Cow Manure, Milkhouse, Heifer, Calf			Surface, Incorp, Inject	Dry, Wet, Frozen, Snow Covered	Sunny, Cloudy, Raining, Snowing		
			Cow Manure, Milkhouse, Heifer, Calf			Surface, Incorp, Inject	Dry, Wet, Frozen, Snow Covered	Sunny, Cloudy, Raining, Snowing		
			Cow Manure, Milkhouse, Heifer, Calf			Surface, Incorp, Inject	Dry, Wet, Frozen, Snow Covered	Sunny, Cloudy, Raining, Snowing		
			Cow Manure, Milkhouse, Heifer, Calf			Surface, Incorp, Inject	Dry, Wet, Frozen, Snow Covered	Sunny, Cloudy, Raining, Snowing		
			Cow Manure, Milkhouse, Heifer, Calf			Surface, Incorp, Inject	Dry, Wet, Frozen, Snow Covered	Sunny, Cloudy, Raining, Snowing		
			Cow Manure, Milkhouse, Heifer, Calf			Surface, Incorp, Inject	Dry, Wet, Frozen, Snow Covered	Sunny, Cloudy, Raining, Snowing		
			Cow Manure, Milkhouse, Heifer, Calf			Surface, Incorp, Inject	Dry, Wet, Frozen, Snow Covered	Sunny, Cloudy, Raining, Snowing		
			Cow Manure, Milkhouse, Heifer, Calf			Surface, Incorp, Inject	Dry, Wet, Frozen, Snow Covered	Sunny, Cloudy, Raining, Snowing		
			Cow Manure, Milkhouse, Heifer, Calf			Surface, Incorp, Inject	Dry, Wet, Frozen, Snow Covered	Sunny, Cloudy, Raining, Snowing		
			Cow Manure, Milkhouse, Heifer, Calf			Surface, Incorp, Inject	Dry, Wet, Frozen, Snow Covered	Sunny, Cloudy, Raining, Snowing		

Date: _____

Person Completing Analysis:

No	Yes

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--	--

No	Yes

--	--

in.

For fields without tile drainage systems:

Complete two pit evaluations per 5 acres of mow soils as described in Interim guidance for shallow groundwater soils.

[illegible]

Ledgeview Farms Field Verification Form

[illegible]

Fields will be inspected before manure applications to ensure no new restrictive features are present

Applicator

1549

Applicator

1550

Daily Manure Application Log

Applicator _____

<u>Application Date</u>	<u>Field ID</u>	<u>Acres Applied</u>	<u>Source</u>	<u># of Loads & Size of Loads or Amt Applied</u>	<u>Application Method:</u> (Circle)	<u>Soil Conditions:</u> (Circle)	<u>Weather 24hrs Prior to Application:</u>	<u>Weather During Application:</u>	<u>Weather 24hrs After Application:</u>	<u>Emergency Winter App</u>	<u>Evidence of Runoff</u>
					Surface, Incorporated, Injected	Dry, Wet, Saturated, Frozen, Snow Covered	Temp: Precip:	Temp: Precip:	Temp: Precip:	Yes, No Yes, No	Yes, No
					Surface, Incorporated, Injected	Dry, Wet, Saturated, Frozen, Snow Covered	Temp: Precip:	Temp: Precip:	Temp: Precip:	Yes, No Yes, No	Yes, No
					Surface, Incorporated, Injected	Dry, Wet, Saturated, Frozen, Snow Covered	Temp: Precip:	Temp: Precip:	Temp: Precip:	Yes, No Yes, No	Yes, No
					Surface, Incorporated, Injected	Dry, Wet, Saturated, Frozen, Snow Covered	Temp: Precip:	Temp: Precip:	Temp: Precip:	Yes, No Yes, No	Yes, No
					Surface, Incorporated, Injected	Dry, Wet, Saturated, Frozen, Snow Covered	Temp: Precip:	Temp: Precip:	Temp: Precip:	Yes, No Yes, No	Yes, No
					Surface, Incorporated, Injected	Dry, Wet, Saturated, Frozen, Snow Covered	Temp: Precip:	Temp: Precip:	Temp: Precip:	Yes, No Yes, No	Yes, No
					Surface, Incorporated, Injected	Dry, Wet, Saturated, Frozen, Snow Covered	Temp: Precip:	Temp: Precip:	Temp: Precip:	Yes, No Yes, No	Yes, No
					Surface, Incorporated, Injected	Dry, Wet, Saturated, Frozen, Snow Covered	Temp: Precip:	Temp: Precip:	Temp: Precip:	Yes, No Yes, No	Yes, No
					Surface, Incorporated, Injected	Dry, Wet, Saturated, Frozen, Snow Covered	Temp: Precip:	Temp: Precip:	Temp: Precip:	Yes, No Yes, No	Yes, No
					Surface, Incorporated, Injected	Dry, Wet, Saturated, Frozen, Snow Covered	Temp: Precip:	Temp: Precip:	Temp: Precip:	Yes, No Yes, No	Yes, No
					Surface, Incorporated, Injected	Dry, Wet, Saturated, Frozen, Snow Covered	Temp: Precip:	Temp: Precip:	Temp: Precip:	Yes, No Yes, No	Yes, No
					Surface, Incorporated, Injected	Dry, Wet, Saturated, Frozen, Snow Covered	Temp: Precip:	Temp: Precip:	Temp: Precip:	Yes, No Yes, No	Yes, No
					Surface, Incorporated, Injected	Dry, Wet, Saturated, Frozen, Snow Covered	Temp: Precip:	Temp: Precip:	Temp: Precip:	Yes, No Yes, No	Yes, No
					Surface, Incorporated, Injected	Dry, Wet, Saturated, Frozen, Snow Covered	Temp: Precip:	Temp: Precip:	Temp: Precip:	Yes, No Yes, No	Yes, No
					Surface, Incorporated, Injected	Dry, Wet, Saturated, Frozen, Snow Covered	Temp: Precip:	Temp: Precip:	Temp: Precip:	Yes, No Yes, No	Yes, No

Daily Manure Application Log

Applicator _____

<u>Application Date</u>	<u>Field ID</u>	<u>Acres Applied</u>	<u>Source</u>	<u># of Loads & Size of Loads or Amt Applied</u>	<u>Application Method:</u> (Circle)	<u>Soil Conditions:</u> (Circle)	<u>Weather 24hrs Prior to Application:</u>	<u>Weather During Application:</u>	<u>Weather 24hrs After Application:</u>	<u>Emergency Winter App</u>	<u>Evidence of Runoff</u>
					Surface, Incorporated, Injected	Dry, Wet, Saturated, Frozen, Snow Covered	Temp: Precip:	Temp: Precip:	Temp: Precip:	Yes, No Yes, No	Yes, No
					Surface, Incorporated, Injected	Dry, Wet, Saturated, Frozen, Snow Covered	Temp: Precip:	Temp: Precip:	Temp: Precip:	Yes, No Yes, No	Yes, No
					Surface, Incorporated, Injected	Dry, Wet, Saturated, Frozen, Snow Covered	Temp: Precip:	Temp: Precip:	Temp: Precip:	Yes, No Yes, No	Yes, No
					Surface, Incorporated, Injected	Dry, Wet, Saturated, Frozen, Snow Covered	Temp: Precip:	Temp: Precip:	Temp: Precip:	Yes, No Yes, No	Yes, No
					Surface, Incorporated, Injected	Dry, Wet, Saturated, Frozen, Snow Covered	Temp: Precip:	Temp: Precip:	Temp: Precip:	Yes, No Yes, No	Yes, No
					Surface, Incorporated, Injected	Dry, Wet, Saturated, Frozen, Snow Covered	Temp: Precip:	Temp: Precip:	Temp: Precip:	Yes, No Yes, No	Yes, No
					Surface, Incorporated, Injected	Dry, Wet, Saturated, Frozen, Snow Covered	Temp: Precip:	Temp: Precip:	Temp: Precip:	Yes, No Yes, No	Yes, No
					Surface, Incorporated, Injected	Dry, Wet, Saturated, Frozen, Snow Covered	Temp: Precip:	Temp: Precip:	Temp: Precip:	Yes, No Yes, No	Yes, No
					Surface, Incorporated, Injected	Dry, Wet, Saturated, Frozen, Snow Covered	Temp: Precip:	Temp: Precip:	Temp: Precip:	Yes, No Yes, No	Yes, No
					Surface, Incorporated, Injected	Dry, Wet, Saturated, Frozen, Snow Covered	Temp: Precip:	Temp: Precip:	Temp: Precip:	Yes, No Yes, No	Yes, No
					Surface, Incorporated, Injected	Dry, Wet, Saturated, Frozen, Snow Covered	Temp: Precip:	Temp: Precip:	Temp: Precip:	Yes, No Yes, No	Yes, No
					Surface, Incorporated, Injected	Dry, Wet, Saturated, Frozen, Snow Covered	Temp: Precip:	Temp: Precip:	Temp: Precip:	Yes, No Yes, No	Yes, No
					Surface, Incorporated, Injected	Dry, Wet, Saturated, Frozen, Snow Covered	Temp: Precip:	Temp: Precip:	Temp: Precip:	Yes, No Yes, No	Yes, No
					Surface, Incorporated, Injected	Dry, Wet, Saturated, Frozen, Snow Covered	Temp: Precip:	Temp: Precip:	Temp: Precip:	Yes, No Yes, No	Yes, No
					Surface, Incorporated, Injected	Dry, Wet, Saturated, Frozen, Snow Covered	Temp: Precip:	Temp: Precip:	Temp: Precip:	Yes, No Yes, No	Yes, No

Applicator_

1553

Applicator

1554

1555

[illegible]

Ledgeview Farms Field Verification Form

[illegible]

Fields will be inspected before manure applications to ensure no new restrictive features are present

DATE: 2-1-2018

TO: Sarah Burdette – Town of Ledgeview Administrator

FROM: Kevin Beckard, AgSource Laboratories

SUBJECT: Ledgeview Farms WPDES-Siting Application NMP

Sarah,
Enclosed you will find the updated 5-year WPDES-Siting Application NMP for Ledgeview Farms. This plan does have some changes from when the plan was conditionally approved on May 24, 2017. I have included the WDNR conditional approval letter with this submittal.

If you have any questions or need additional information contact me at 920-309-1948.

Thank You,

Kevin Beckard
AgSource

Record of Delivery

Documents Delivered

- Ledgeview Farms 2018-2022 Nutrient Management Plan

I hereby certify that the above information was hand delivered to the Town of Ledgeview at 3700 Dickinson Road DePere, WI 54115.

Signature

Date