

Permit Fact Sheet

General Information

| | |
|-------------------------------|---|
| Permit Number: | WI-0049492-05-0 |
| Permittee Name: | Denmark Dairy LLC (Ridgeland) |
| Address: | 148 13 ½ Street |
| City/State/Zip: | Ridgeland WI 54763 |
| Discharge Location: | 148 13 ½ Street, Ridgeland, WI 54763 <i>(SE ¼ & NE ¼ of the SW ¼ Sec. 29 T32N R12W)</i> |
| Receiving Water: | Lower Pine Creek within the Pine Creek and Red Cedar Watershed, and groundwaters of the state |
| Stream Classification: | 303(d) Listed Impaired Water |

| Animal Units | | | | | |
|----------------------|------------|------------|---|------------|----------------------------|
| | Current AU | | Proposed AU <i>(Note: If all zeroes, expansions are not expected during permit term)</i> | | |
| | Mixed | Individual | Mixed | Individual | Date of Proposed Expansion |
| Animal Type | | | | | |
| Milking and Dry Cows | 1348 | 1377 | 0 | 0 | - |
| TOTAL | 1348 | 1377 | 0 | 0 | - |

Facility Description

Denmark Dairy LLC (Ridgeland) is an existing Concentrated Animal Feeding Operation (CAFO) owned and operated by Karl Kragness. Denmark Dairy (Ridgeland) currently has a total of approximately 1,377 animal units (963 milking & dry cows) and does not have any plans to increase animal unit numbers during the upcoming five-year permit term. Based on the current herd size Denmark Dairy (Ridgeland) has approximately 369 days of liquid manure storage capacity with the existing waste storage facilities that are available on site. Denmark Dairy (Ridgeland) has approximately 2,234 acres included in their nutrient management plan (NMP) that are available for land application of manure and process wastewater, of which 2,142 are considered spreadable acres. Of the total acreage, approximately 118 are owned and approximately 2,116 are controlled through contracts, rental agreements, or are under manure agreements.

Substantial Compliance Determination

DENMARK DAIRY LLC (RIDGELAND) IS IN SUBSTANTIAL COMPLIANCE WITH THE CURRENT PERMIT

Compliance determination entered by Clare Freix, Agricultural Runoff Management Specialist on October 7, 2024 (a summary of permit violations/noncompliance from the current permit term are outlined below)

- 1. Notice of Noncompliance: July 14, 2021**

Permit Section 1.7.1 Monitoring and Inspection Program – Weekly inspections of liquid storage and containment structures: *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.*

- On January 28, 2021 the operation submitted its Annual Report for 2020. Upon review of the Annual Report, the Department determined that the operation did not record the level of material in any liquid storage or containment structures at any point in 2020. The Department later completed an onsite records review on June 24, 2021 during a routine inspection, at which point the Department found that the operation also did not measure or record the level of material in any liquid storage or containment structures at any point up to that date in 2021.
- On January 21, 2022 the operation submitted an updated monitoring and inspection program outlining the liquid storage and containment facilities where liquid measurements are required and specifies the person responsible for measuring and recording the level in each liquid storage and containment facility each week.
- On January 28, 2021 the operation submitted production site inspection records showing the level of material recorded in each liquid storage and containment facility each week between August 1, 2021 and October 30, 2021.

**Compliance Demonstrated –
Close Out Date:** May 3, 2022

2. Notice of Noncompliance: October 7, 2024

Permit Section 3.1.13 Submittal of Plans and Specifications: *In accordance with s. NR 243.15, the permittee shall submit plans and specifications for proposed new or upgraded reviewable facilities or system to the Department for approval prior to construction.*

- On December 1, 2021 the Department approved plans and specifications for a new feed storage area and associated feed storage runoff control system.
- On August 30, 2023 the Department received another set of plans and specifications for abandonment of the existing waste storage facility, due to significant issues having been discovered, along with construction of a new proposed waste storage facility that would replace the existing storage. The plans also included a proposed feed storage area and associated runoff control system with a runoff collection basin, which differed from the plans for the feed storage area and runoff control system that were previously approved by the Department on December 1, 2021. Upon reviewing the plans, the Department discovered that construction of the feed storage area, associated runoff control system, and the runoff collection basin from the most recent set of plans had already commenced and/or had already been completed prior to Department plan approval.
- On September 25, 2023 the Department approved the plans and specifications for the abandonment of the existing waste storage facility and for construction of the new proposed waste storage facility and the associated transfer system. However, the Department also rejected the plans and specifications for the feed storage area, associated runoff control system, and runoff collection basin, all of which have since been constructed without a Department plan approval.
- To demonstrate compliance with the above permit condition, the operation will need to complete engineering evaluations of the feed storage area and the associated runoff control system with runoff collection basin, as well as address any corrective actions determined as needed from the evaluation. Although an engineering evaluation has not been submitted to date, the Department has decided to move forward with permit reissuance and address the noncompliance as a requirement of the proposed permit instead. Therefore, the notice of noncompliance has been closed out and engineering evaluations of the feed storage area and associated runoff control system along with the runoff collection basin will be

required to be completed in accordance with the schedules section of the proposed permit (see permit sections 2.5 & 2.6 below)

Close Out Date: October 7, 2024

| Sample Point Designation For Animal Waste | |
|--|---|
| Sample Point Number | Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable) |
| 001 | WSF 1 (Old) - Sample point 001 is for liquid waste storage facility one (WSF 1). WSF 1 is a HDPE lined waste storage facility that was constructed in 2000. Significant issues with WSF 1 were discovered in 2023 and it was determined that the waste storage facility would need to be abandoned and replaced. Plans and specifications for the abandonment of WSF 1 and for proposed WSF 2 (sample point 002) as its replacement were approved by the Department in 2023. Abandonment of WSF 1 shall be completed as approved by the Department in accordance with the schedules section of the permit (permit section 2.4). |
| 002 | WSF 2 (New) - Sample point 002 is for liquid waste storage facility two (WSF 2). WSF 2 is a concrete lined waste storage facility that was constructed to replace WSF 1 (sample point 001). WSF 2 has an approximate maximum operating level capacity of 15,365,337 gallons and accepts liquid manure and wastewater generated within the freestall barns and milking parlor after manure solids have been separated out by the solids separation system (sample point 005). WSF 2 also accepts leachate and feed storage area runoff from WSF 3 (sample point 003). Plans and specifications for WSF 2 were approved by the Department in 2023 and construction was completed in 2024. Post construction documentation shall be submitted in accordance with the schedules section of the permit (permit section 2.10), if not already submitted prior to permit issuance. |
| 003 | WSF 3 (PWW) - Sample point 003 is for liquid waste storage facility three (WSF 3). WSF 3 is a concrete lined runoff collection and containment basin which accepts leachate and feed storage area runoff (process wastewater) from the feed storage area (sample point 008). WSF 3 was constructed in 2023 and has an approximate maximum operating level capacity of 227,360 gallons. Plans and specifications for WSF 3 were rejected by the Department since construction had already commenced prior to obtaining Department plan approval. Therefore, an engineering evaluation of WSF 3 shall be completed in accordance with the schedules section of the permit (permit section 2.5). |
| 004 | Under Barn Tank - Sample point 004 is for the calf barn concrete underbarn storage tank. Plans and specifications to abandon the underbarn storage tank were approved by the Department in 2021. Abandonment of the underbarn storage tank has since commenced, and full abandonment shall be completed as approved by the Department in accordance with the schedules section of the permit (permit section 2.3). |
| 005 | Separated Solids - Sample point 005 is for manure solids that are separated out and staged within the solid manure separation building. Separated manure solids are returned to the freestall barns to be reused as bedding and remaining liquids are transferred to WSF 2. Representative samples shall be taken for solids which are directly land applied from the separation building. |
| 006 | Misc. Solids - Sample point 006 is for miscellaneous sources of solid manure, separated manure solids, solids removed from liquid waste storage facilities, manure laden bedding, waste feed, etc. which are directly land applied. Representative samples shall be taken for each solid source that is directly land applied. |
| 007 | Headland Stacking Sites - Sample point 007 is for solid manure land applied from approved headland stacking sites. Representative samples shall be taken from each stacking site prior to land application. Stacking sites are defined as part of the production area and therefore are subject to the Production Area |

| Sample Point Designation For Animal Waste | |
|--|---|
| Sample Point Number | Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable) |
| | Discharge Limitations section of the permit. Weekly inspections of stacking sites are required and shall be recorded according to the Monitoring and Inspection Program. |
| 008 | Feed Storage Area & Runoff Controls - Sample point 008 is for visual monitoring and inspection of the feed storage area and associated runoff control system. The feed storage area was initially constructed sometime prior to 2000 without a runoff control system in place. Construction of a new feed storage area, located over the footprint of the existing feed storage, and an associated runoff control system was completed in 2023. The runoff control system is intended to provide total containment of leachate and feed storage area runoff for a minimum of a 25 year 24 hour storm event. Leachate and feed storage runoff is directed into the runoff collection basin, WSF 3 (sample point 003), and is then pumped to WSF 2 (sample point 002). Plans and specifications for the feed storage area and associated runoff control system were initially approved by the Department in 2021. However, modified plans and specifications were later rejected by the Department since construction of the modifications not previously approved by the Department had already commenced prior to obtaining Department plan approval. Therefore, an engineering evaluation of the feed storage area and associated runoff control system shall be completed in accordance with the schedules section of the permit (permit section 2.6). Proper operation and maintenance are required to ensure discharges meet permit requirements. Weekly inspections are required and shall be recorded according to the Monitoring and Inspection Program. |
| 009 | Storm Water Runoff Controls - Sample point 009 is for visual monitoring and inspection of all production site storm water conveyance systems. This includes roof gutters and downspout structures, drainage systems, storm water ponds, grassed waterways and any other diversion systems which transport uncontaminated storm water. Proper operation and maintenance are required to keep uncontaminated runoff diverted away from manure and process wastewater handling systems. Weekly inspections are required and shall be recorded according to the Monitoring and Inspection Program. |

1 Livestock Operations - Proposed Operation and Management

Production Area Discharge Limitations

Beginning on the effective date of the permit, the permittee may not discharge pollutants from the operation’s production area (e.g., manure storage areas, outdoor animal lots, composting and leachate containment systems, milking center wastewater treatment/containment systems, raw material storage areas) to navigable waters, except in the event a 25-year, 24-hour rainfall event (or greater) causes the discharge from a structure which is properly designed and maintained to contain a 25-year, 24-hour rainfall event for this location as determined under s. NR 243.04. If an allowable discharge occurs from the production area, state water quality standards may not be exceeded.

Runoff Control

The permit requires control of contaminated runoff from all elements of the production area to prevent a discharge of pollutants to navigable waters in accordance with the Production Area Discharge Limitations and to comply with surface water quality standards and groundwater standards. Beginning on the effective date of this permit, (if needed) interim measures shall be implemented to prevent discharges of pollutants to navigable waters. In addition, permanent runoff control system(s) shall be designed, operated, and maintained in accordance with the requirements found in USDA Natural Resources Conservation Service standards and ch. NR 243, Wis. Adm. Code. If any upgrading or modifications to runoff controls are necessary, formal engineering plans and specifications must be submitted to the Department for approval.

Manure and Process Wastewater Storage

The permit requires the operation to have adequate storage for manure and process wastewater and that storage or containment facilities are designed, operated, and maintained to prevent overflows and discharges to waters of the state. In order to prevent overflows, the permittee must maintain levels of materials in liquid storage or containment facilities at or below certain levels including a one foot margin of safety that can never be exceeded. If any upgrading or modifications to the storage facilities are necessary, formal engineering plans and specifications must be submitted to the Department for approval.

The permittee currently has approximately 369 days of storage for liquid manure given the current herd size. The permittee must maintain 180 days of storage, unless temporary reductions in required storage are approved by the Department.

Solid Manure Stacking

The operation has proposed to stack solid manure. All stacking of solid manure shall be done in accordance ch. NR 243, Wis. Adm. Code, which includes restrictions from NRCS Standard 313. Stacking of manure is considered to be part of the production area and is subject to the Production Area Discharge Limitations.

Ancillary Service and Storage Areas

The permittee shall take preventative maintenance actions and conduct visual inspections to minimize pollutant discharges from areas of the operation that are not part of the production area or land application areas. These areas are called ancillary service and storage areas and include access roads, shipping and receiving areas, maintenance areas, refuse piles and CAFO outdoor vegetated areas.

Nutrient Management

With 1,377 animal units (963 milking and dry cows), it is estimated that approximately 10,927,042 gallons of manure and process wastewater will be produced per year. The permittee owns *approximately* 118 acres of cropland and rents about 2,116. Given the rotation commonly used by the permittee, approximately 1,200 acres are planned to receive manure and process wastewater on an annual basis. The permit requires all landspreading of manure and process wastewater be completed in accordance with an approved nutrient management plan. The permit will require sampling and analysis of manure and process wastewater that will be landspread. Landspreading rates must be adjusted based on sample analysis. The permit requires the permittee to maintain a daily log that documents landspreading activities. The permit also requires the submittal of an annual report that summarizes all landspreading activities. Plans must be updated annually to reflect cropping plans and other operational changes. Among the requirements, the plans must include detailed landspreading information including field by field nutrient budgets.

The permittee is required to implement a number of practices to address potential water quality impacts associated with the land application of manure and process wastewater. Among the permit conditions are restrictions on manure ponding, restrictions on runoff of manure and process wastewater from cropped fields, and setbacks from wells and direct conduits to groundwater (e.g., sinkholes, fractured bedrock at the surface). In addition, the permittee must implement a phosphorus based nutrient management plan that addresses phosphorus delivery to surface waters by basing manure and process wastewater applications on soil test phosphorus levels or the Wisconsin Phosphorus index. Additional phosphorus application restrictions apply to fields that are high in soil test phosphorus (>100 ppm).

The permittee must also implement conservation practices when applying manure near navigable waters and their conduits, referred to as the Surface Water Quality Management Area (SWQMA). These practices include a 100-foot setback from navigable waters and their conduits, a 35-foot vegetated buffer adjacent to the navigable water or conduit, or a practice that provides equivalent pollutant reductions equivalent to or better than the 100-foot setback.

In addition, the permittee must comply with restrictions on land application of manure and process wastewater on frozen or snow-covered ground. Included in these restrictions is a prohibition on surface applications of solid manure ($\geq 12\%$ solids) on frozen or snow-covered ground during February and March.

Monitoring and Sampling Requirements

The permittee must submit a monitoring and inspection program that outlines how the permittee will conduct self-inspections to determine compliance with permit conditions. These self-inspections include visual inspections of water lines, diversion devices, storage and containment structures and other parts of the production area. The permit requires periodic inspections and calibrations of landspreading equipment. The permittee must take corrective actions to problems identified inspections or otherwise notify the Department. Samples of manure, process wastewater and soils receiving land applied materials from the operation must also be collected and analyzed.

Sampling Points

The permit identifies the different sources of land applied materials (e.g., manure storage facilities, milking centers, egg-washing facilities) as “Sampling Points.” For these Sampling Points, the permittee is required to sample and analyze the different sources for nutrients and other parameters which serve as the basis for determining rates of application for these materials. Other areas are also identified as Sampling Points as a means of identifying them as areas requiring action by the permittee, such as an upgrade or evaluation of a certain system or structure (e.g., runoff control systems), even though sampling is not actually required.

1.1 Liquid Sample Points

Sample Point Number: 001- WSF 1 (Old); 002- WSF 2 (New); 003- WSF 3 (PWW); 004- Under Barn Tank

| Monitoring Requirements and Limitations | | | | | |
|---|------------|-----------------|------------------|-------------|-------|
| Parameter | Limit Type | Limit and Units | Sample Frequency | Sample Type | Notes |
| Nitrogen, Total | | lb/1000gal | 2/Month | Grab | |
| Nitrogen, Available | | lb/1000gal | 2/Month | Calculated | |
| Phosphorus, Total | | lb/1000gal | 2/Month | Grab | |
| Phosphorus, Available | | lb/1000gal | 2/Month | Calculated | |
| Solids, Total | | Percent | 2/Month | Grab | |

1.2 Solid Sample Points

Sample Point Number: 005- Separated Solids; 006- Misc. Solids; 007- Headland Stacking Sites

| Monitoring Requirements and Limitations | | | | | |
|---|------------|-----------------|------------------|-------------|-------|
| Parameter | Limit Type | Limit and Units | Sample Frequency | Sample Type | Notes |
| Nitrogen, Total | | lbs/ton | Quarterly | Grab | |
| Nitrogen, Available | | lbs/ton | Quarterly | Calculated | |
| Phosphorus, Total | | lbs/ton | Quarterly | Grab | |
| Phosphorus, Available | | lbs/ton | Quarterly | Calculated | |
| Solids, Total | | Percent | Quarterly | Grab | |

1.3 Runoff Control Sample Points (No Sampling Required)

Sample Point Number: 008- Feed Storage & Runoff Controls and 009- Storm Water Runoff Controls

1.4 Changes from Previous Permit

Sample Point: 001

No Changes – Sample point 001 is still applicable to the old waste storage facility (WSF 1), to be abandoned in accordance with the schedules section of the proposed permit.

Sample Point: 002

Previous Permit: Under Barn Tank

Proposed Permit: Waste Storage Facility (New)

Explanation: The under barn tank is now covered under sample point 004 and sample point 003 is applicable to the new waste storage facility (WSF 2).

Sample Point: 003

Previous Permit: Solid Manure Stacking Pad

Proposed Permit: Process Wastewater Waste Storage Facility (leachate and feed storage runoff)

Explanation: The area previously used as a solid manure stacking pad has been abandoned and sample point 003 is now applicable to the process wastewater waste storage facility (WSF 3 - PWW) that is used to store leachate and feed storage runoff.

Sample Point: 004

Previous Permit: Removed Solids

Proposed Permit: Under Barn Tank

Explanation: Solids removed from liquid waste storage facilities is now included under miscellaneous sources of solid manure which is covered under sample point 006 and sample point 004 is applicable to the under barn storage tank, to be abandoned in accordance with the schedules section of the permit.

Sample Point: 005

Previous Permit: Miscellaneous Solids

Proposed Permit: Separated Solids

Explanation: Miscellaneous sources of solid manure are now covered under sample point 006 and sample point 005 is applicable to the solid manure separation system and separated manure solids.

Sample Point: 006

Previous Permit: Storm Water Runoff Control System

Proposed Permit: Miscellaneous Solids

Explanation: The storm water runoff control systems are now covered under sample point 009 and sample point 006 is applicable to the Miscellaneous sources of solid manure.

Sample Point: 007

Previous Permit: Feed Storage Area & Associated Runoff Control System

Proposed Permit: Headland Stacking Sites

Explanation: The feed storage area and associated runoff control system is now covered under sample point 008 and sample point 007 is applicable to solid manure stacked within approved headland stacking sites.

Sample Point: 008

Previous Permit: Calf Hutch Area & Associated Runoff Control System

Proposed Permit: Feed Storage Area & Associated Runoff Control System

Explanation: The calf hutch area and associated runoff control system have been abandoned and sample point 008 is now applicable to the feed storage area and the associated runoff control system.

Sample Point: 009

Previous Permit: Outdoor Feedlot & Associated Runoff Control System

Proposed Permit: Storm Water Runoff Control System

Explanation: The outdoor feedlot and associated runoff control system have been abandoned and sample point 009 is now applicable to the storm water runoff control systems.

2 Schedules

2.1 Emergency Response Plan

| Required Action | Due Date |
|--|------------|
| Develop Emergency Response Plan: Develop a written Emergency Response Plan within 30 days of permit coverage, available to the Department upon request. | 12/31/2024 |

2.2 Monitoring & Inspection Program

| Required Action | Due Date |
|--|------------|
| Proposed Monitoring and Inspection Program: Consistent with the Monitoring and Sampling Requirements subsection, the permittee shall submit a proposed monitoring and inspection program within 60 days of the effective date of this permit. | 01/30/2025 |

2.3 Manure Storage Facility - Abandonment

Applicable to the Under Barn Tank (sample point 004).

| Required Action | Due Date |
|--|------------|
| Complete Abandonment: Complete abandonment of the underbarn manure storage tank as approved by the Department. Submit post abandonment documentation within 60 days of completion of the project. | 05/01/2025 |

2.4 Manure Storage Facility - Abandonment

Applicable to WSF 1 (sample point 001).

| Required Action | Due Date |
|--|------------|
| Complete Abandonment: Complete abandonment of the manure storage facility as approved by the Department. Submit post abandonment documentation within 60 days of completion of the project. | 12/01/2025 |

2.5 Waste Storage Facility - Engineering Evaluation

Applicable to WSF 3 (sample point 003).

| Required Action | Due Date |
|---|------------|
| Engineering Evaluation: Submit a written report evaluating the existing manure storage facility's ability to meet the conditions in the Production Area Discharge Limitations and Manure and Process Wastewater Storage subsections and s. NR 243.15, Wis. Adm. Code. (See Standard Requirements for report details.) | 08/31/2025 |
| Plans & Specifications: Submit plans and specifications for Department review and approval in accordance with Chapter 281.41, Wis. Stats., and Chapter NR 243, Wis. Adm. Code to permanently correct any adverse manure storage conditions. (See Standard Requirements for plan content information.) | 08/31/2026 |
| Construction & Post Construction Documentation: Complete construction of the improvements to the manure storage facility that permanently correct any adverse conditions in concurrence with and approval by the Department by the specified date due. Submit post construction documentation within 60 days of completion of the project. | 08/31/2027 |

2.6 Feed Storage - Engineering Evaluation

Applicable to the feed storage and associated runoff control system (sample point 008).

| Required Action | Due Date |
|---|------------|
| Engineering Evaluation: Submit a written report evaluating the existing feed storage area and the associated runoff control system and their ability to meet the conditions in the Production Area Discharge Limitations and Runoff Control subsections and NR 243.15, Wis. Adm. Code. (See Standard Requirements for report details). | 08/31/2025 |
| Plans & Specifications: Submit plans and specifications for Department review and approval in accordance with Chapter 281.41, Wis. Stats., and Chapter NR 243, Wis. Adm. Code to permanently correct any adverse runoff conditions. (See Standard Requirements for plan content information.) | 08/31/2026 |
| Construction & Post Construction Documentation: Complete construction of improvements to permanently correct any adverse conditions in concurrence with and approval by the Department by the specified date due. Submit post construction documentation within 60 days of completion of the project. | 08/31/2027 |

2.7 Annual Reports

Submit Annual Reports by January 31st of each year in accordance with the Annual Reports subsection in Standard Requirements.

| Required Action | Due Date |
|--|------------|
| Submit Annual Report #1: To include monitoring and inspection results from the previous 12 months, consistent with the requirements of department form 3400-025E. | 01/31/2025 |
| Submit Annual Report #2: To include monitoring and inspection results from the previous 12 months, consistent with the requirements of department form 3400-025E. | 01/31/2026 |
| Submit Annual Report #3: To include monitoring and inspection results from the previous 12 months, consistent with the requirements of department form 3400-025E. | 01/31/2027 |

| | |
|--|------------|
| Submit Annual Report #4: To include monitoring and inspection results from the previous 12 months, consistent with the requirements of department form 3400-025E. | 01/31/2028 |
| Submit Annual Report #5: To include monitoring and inspection results from the previous 12 months, consistent with the requirements of department form 3400-025E. | 01/31/2029 |
| Ongoing Annual Reports: Continue to submit Annual Reports until permit reissuance has been completed. | |

2.8 Nutrient Management Plan

Submit annual Nutrient Management Plan (NMP) updates by March 31st of each year. Note, in addition to NMP updates, submit NMP amendments and substantial revisions to the department for written approval prior to the implementation of any changes to the NMP.

| Required Action | Due Date |
|---|------------|
| Submit NMP Update #1: To include actual cropping, tillage, and nutrient application data from the previous calendar or crop year, consistent with the requirements of department form 3400-025D. | 03/31/2025 |
| Submit NMP Update #2: To include actual cropping, tillage, and nutrient application data from the previous calendar or crop year, consistent with the requirements of department form 3400-025D. | 03/31/2026 |
| Submit NMP Update #3: To include actual cropping, tillage, and nutrient application data from the previous calendar or crop year, consistent with the requirements of department form 3400-025D. | 03/31/2027 |
| Submit NMP Update #4: To include actual cropping, tillage, and nutrient application data from the previous calendar or crop year, consistent with the requirements of department form 3400-025D. | 03/31/2028 |
| Submit NMP Update #5: To include actual cropping, tillage, and nutrient application data from the previous calendar or crop year, consistent with the requirements of department form 3400-025D. | 03/31/2029 |
| Ongoing NMP Annual Updates: Continue to submit Annual Updates to the Nutrient Management Plan until permit reissuance has been completed. | |

2.9 Submit Permit Reissuance Application

| Required Action | Due Date |
|---|------------|
| Reissuance Application: Submit a complete permit reissuance application 180 days prior to permit expiration. | 06/01/2029 |

2.10 Manure Storage Facility - Post Construction

Applicable to WSF 2 (sample point 002).

| Required Action | Due Date |
|--|------------|
| Post Construction Documentation: Submit post construction documentation for the manure storage facility and associated waste transfer system (DNR Project # R-2023-0176). | 12/31/2024 |

2.11 Explanation of Schedules

The operation was under different ownership and management at the time the previous permit was issued. The current owners purchased the operation in 2019 and the permit was modified to transfer permit coverage to the current owner. However, the previous owners had not completed many of the schedule requirements in the previous permit in which

many of the associated deadlines had already passed prior to permit coverage being transferred to the current owner. Therefore, the Department provided the new owners of the operation alternative deadlines to address many of the outstanding and upcoming schedules in the previous permit. The operation either fully, or at least partially, addressed all schedule requirements included in the previous permit. The necessary actions needed to address the remaining outstanding schedule requirements have now been included in the schedules section of the proposed permit.

An engineering evaluation of the calf barn underbarn storage tank was required to be completed in accordance with the schedules section of the previous permit. As an alternative, the operation (under the current owners) has cleaned out and discontinued use of the calf barn and the associated underbarn tank and submitted plans and specifications for Department approval to permanently abandon the underbarn tank. The abandonment plans were approved by the Department on August 12, 2021 and abandonment of the underbarn tank has since commenced. However, the underbarn tank has not been fully abandoned to date, and therefore, a scheduled to complete abandonment of the underbarn tank has been included in the schedules section of the proposed permit (permit section 2.3).

The schedules section of the previous permit also required that plans and specifications be submitted for Department approval for upgrades to the existing feed storage runoff control system as well as to complete construction of the runoff control upgrades as approved by the Department. The operation (under the current owners) had implemented interim feed storage runoff controls, and the Department provided an alternative deadline for the operation to submit plans and specifications for permanent upgrades to the feed storage runoff control system. The Department then planned to include a separate schedule in the upcoming permit in which construction of the upgraded runoff control system would be required to be completed as approved by the Department instead. The operation submitted plans and specifications for a new feed storage area and associated runoff control system, which were approved by the Department on December 1, 2021.

However, the operation later discovered significant issues with the liquid waste storage facility (WSF 1). Therefore, plans and specifications were submitted to the Department for approval for the abandonment of the existing waste storage (WSF 1) along with construction of the new waste storage facility (WSF 2) to replace the existing storage. The plans and specifications also included a feed storage area and associated runoff control system with a runoff collection basin, which differed from the plans for the feed storage area and runoff control system that were previously approved by the Department on December 1, 2021. The Department discovered that construction of the feed storage area, associated runoff control system, and the runoff collection basin from the most recent set of plans had already commenced and/or had already been completed prior to the Department approving the new set of plans and specifications. On September 25, 2023 the Department approved the plans and specifications for the abandonment of the existing waste storage facility and for construction of the new waste storage facility and associated transfer system. However, the Department also rejected the plans and specifications for the feed storage area, associated runoff control system, and runoff collection basin, all of which have been constructed to date without Department plan approval. Therefore, a schedule to complete an engineering evaluation of the feed storage area and associated runoff control system along with the runoff collection basin (WSF 3) have been included in the schedules section of the proposed permit (permit section 2.5 & 2.6).

Construction of the new waste storage facility (WSF 2) has also been completed and post construction documentation has been submitted to date. However, the old waste storage facility (WSF 1) has not yet been abandoned to date, and therefore a schedule to complete abandonment as approved by the Department has also been included in the schedules section of the proposed permit (permit section 2.4).

Attachments:

Sample Point Map

Reissuance Inspection Report

Five-Year NMP Conditional Approval Letter

180 Day Liquid Manure Storage Review Letter

Public Notice

PERMIT APPLICATION (*links provided – or search at the following webpage using the codes listed below:*
<https://permits.dnr.wi.gov/water/SitePages/Permit%20Search.aspx>)

- **WPDES Permit Application:** [AG-APP-NO-2022-3-X03-28T15-53-13](#)
- **Five-Year Nutrient Management Plan:** [AG-NMP-NO-2022-3-X03-28T15-53-13](#)
 - **NMP Substantial Revision – New Fields #1:** [AG-NMP-NO-2023-3-X06-28T12-07-48](#)
 - **NMP Substantial Revision – New Fields #2:** [AG-NMP-NO-2024-3-X05-23T12-05-32](#)
- **180 Day Liquid Manure Storage Calculations:** [AG-PNS-NO-2022-3-X03-28T15-53-13](#)
- **Plans & Specifications – Waste Storage Facility Abandonment, New Waste Storage Facility, Feed Storage Area & Associated Runoff Control System With Runoff Collection Basin:**
[AG-PNS-NO-2021-3-X08-05T14-15-43](#)

Expiration Date:

November 30, 2029

Prepared By: Clare Freix, Agricultural Runoff Management Specialist

Date: October 18, 2024



August 9, 2023

FILE REF: R-2022-0130
 WPDES Permit #: WI-0049492

Karl Kragness
 Denmark Dairy LLC Ridgeland
 95 13-1/4 13-1/2 St
 Ridgeland, WI 54763

Subject: Days of Storage Review for Denmark Dairy LLC Ridgeland SW¼ of T32N, R12W, Section 29 in Dallas Township, Barron County – NO ADDITIONAL ACTION REQUIRED

Dear Mr. Kragness:

This letter is to inform you that the Wisconsin Department of Natural Resources (Department) has completed its review of the calculation of days of storage submitted under certification by David McDaniel, Auth Consulting & Associates on March 28, 2022 on behalf of Denmark Dairy LLC Ridgeland.

The Department reviewed the submitted calculations in accordance with ss. NR 243.14(9) and NR 243.15(3)(i) to (k), Wis. Adm. Code. Under s. NR 243.17(3)(c), Wis. Adm. Code, the permittee shall demonstrate compliance with the 180-day design storage capacity requirement at specified times. For the following liquid manure storage calculations, the Department has determined **no additional actions** on your part are required.

Days of Available Liquid Waste Storage: The submitted information states that Denmark Dairy LLC Ridgeland currently has **224 days** of liquid waste storage based on the volumes listed in the table below with respect to s. NR 243.15(3)(i) to (k), Wis. Adm. Code. The current number of animal units provided for the calculation is **1,348 AU**. The farm is planning to build another waste storage facility and increase the feed pad area to 325,000 SF which will bring the liquid waste storage to 237 days with the same animal units (1,348 AU). Both current and proposed volumes are provided below. The liquid waste volumes are based on the NRCS spreadsheet and other estimated or calculated value for a collection period of 365 days. These calculations assume that there is full collection of the 25-yr, 24-hr storm event from the feed storage area for both current and proposed volumes.

Existing Conditions (1,348 AU) – 224 Days of Storage

| Total Annual Liquid Waste Volume (NRCS Table Values) | |
|--|-------------------|
| Liquids Collected/Stored | Annual Gallons |
| Manure and Bedding: | 6,388,914 |
| Parlor Wastewater: | 2,460,465 |
| Total Feed Storage Leachate (30,000 tons): | 112,200 |
| Total Feed Storage Runoff Collected (100,000 SF): | 796,230 |
| Net Precipitation on Storage Surfaces (92,221 SF): | 1,169,233 |
| Total Liquid Waste Stored Below the MOL | 10,927,042 |

| Total Liquid Waste Storage (Gallons) | | | | | | |
|---|-------------------------------|------------------------|---------------------------------|--------------------------------|-----------------------|--------------------------------|
| Waste Storage | Total Vol. from Top to Bottom | -Solids Storage | -25-yr, 24-hr Precip on Storage | -25-yr, 24-hr Collected Runoff | -Freeboard Vol. | Max Operating Level (MOL) Vol. |
| #1 | 8,113,499 | 439,009 ⁽¹⁾ | 293,171 | 0 | 684,151 | 6,697,169 |
| | | | | | Total MOL Vol. | 6,697,169 |

⁽¹⁾ 1 ft of solids

Proposed Construction of WSF2 (1,348 AU) – 237 Days of Storage

| Total Annual Liquid Waste Volume (NRCS Table Values) | |
|--|-----------------------|
| Liquids Collected/Stored | Annual Gallons |
| Manure and Bedding: ⁽²⁾ | 7,098,793 |
| Parlor Wastewater: | 2,460,465 |
| Total Feed Storage Leachate (60,000 tons): | 224,400 |
| Total Feed Storage Runoff Collected (328,000 SF): | 6,516,787 |
| Net Precipitation on Storage Surfaces (92,221 SF +143,504 SF): | 1,169,233 |
| Total Liquid Waste Stored Below the MOL | 19,289,108 |

⁽²⁾ The bedding changes to 0.3 cu.ft./cow

| Total Liquid Waste Storage (Gallons) | | | | | | |
|---|-------------------------------|------------------------|---------------------------------|--------------------------------|-----------------------|--------------------------------|
| Waste Storage | Total Vol. from Top to Bottom | -Solids Storage | -25-yr, 24-hr Precip on Storage | -25-yr, 24-hr Collected Runoff | -Freeboard Vol. | Max Operating Level (MOL) Vol. |
| #1 | 8,113,499 | 439,009 ⁽¹⁾ | 293,171 | 0 | 684,151 | 6,697,169 |
| #2 | 9,163,352 | 794,877 ⁽¹⁾ | 449,938 | 1,028,400 | 1,040,842 | 5,849,295 |
| | | | | | Total MOL Vol. | 12,550,488 |

Should you have any questions, please contact Bernie Michaud, DNR Madison office or your regional CAFO Specialist.

NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that the Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed. For judicial review of a decision pursuant to WIS. STAT. §§ 227.52 and 227.53, you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review must name the Department of Natural Resources as the respondent.

To request a contested case hearing pursuant to WIS. STAT. § 227.42, you have 30 days after the decision is mailed, or otherwise served by the Department, to serve a petition for hearing on the Secretary of the Department of Natural Resources. All requests for contested case hearings must be made in accordance with WIS. ADMIN. CODE § NR 2.05(5), and served on the Secretary in accordance with WIS. ADMIN. CODE § NR 2.03. The filing of a request for a contested case hearing does not extend the 30-day period for filing a petition for judicial review.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES



Bernie Michaud, P.E.
CAFO Engineer Supervisor
Watershed Management Program



Jazmin Lara
Engineering Intern
Watershed Management Program

Email: Karl Kragness; Denmark Dairy
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Jazmin Lara; DNR, Central Office
jazmin.lara@wisconsin.gov



February 10, 2023

Karl Kragness
Denmark Dairy LLC Ridgeland
95 13 ¼ - 13 ½ St.
Ridgeland, WI 54763

Barron County
Approval

SUBJECT: Conditional Approval of Denmark Dairy LLC Ridgeland Nutrient Management Plan,
WPDES Permit No. 0049492-05-0

Dear Mr. Kragness:

After completing a review of the Denmark Dairy LLC Ridgeland 2023-2027 Nutrient Management Plan (NMP), **the Wisconsin Department of Natural Resources (Department) is providing conditional approval that it is consistent with Nutrient Management Requirements in s. NR 243, 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 Denmark Dairy LLC Ridgeland review the NMP with individuals involved with manure applications to ensure all are familiar with the approved manure spreading practices, spreading map restrictions, required field verifications, record keeping requirements, and conditions of this approval. Specifically, some fields in Denmark Dairy LLC Ridgeland NMP may have:

- Soils with bedrock or seasonal perched water conditions within 24 inches of surface,
- Setback requirements due to streams, conduits to streams (such as man-made channels or road ditches), grassed waterways, wetlands, or wells,
- Evidence of soil erosion/flow channels.

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

DENMARK DAIRY LLC RIDGELAND CAFO PERMIT NMP REMARKS SUMMARY

- Field “Parker” **should be soil sampled this spring before making planned manure applications in 2023.** A reminder that several other fields are also due for soil sampling this year.
- Great job of reducing calculated phosphorus losses and soil erosion by using no-till and cover crops.
- Fields “Dairy North”, “Dairy West 2”, and “Jess West” contain large areas of “W” soils that can have seasonal perched groundwater conditions. “W” soil verification procedures are identified in the narrative, but **documentation of test hole diggings should be submitted with Annual NMP Updates.**
- Nitrogen content of liquid manure samples **are approximately 30% higher than the average of other CAFO farms** in western Wisconsin. Take a **minimum** of two liquid manure samples during both spring and fall application times to verify nutrient content of manure. Reconsider the need for commercial Urea applications on soils with lower nitrogen recommendations such as Chetek and Rosholt sandy loams.

FINDINGS OF FACT

The Department confirms that:

1. The farm has a current dairy herd size of 1348.2 animal units (963 milking & dry cows). No expansion in animal units is planned during the next permit term.
2. Reissuance application Days of Storage engineering documents (Sep. 7, 2022) indicate total annual liquid waste volume based on book value estimates for your herd is approximately 10,927,042 gallons of manure/process wastewater. This closely matches the 5-year narrative estimate. Historical volumes provided in past spreading logs are less than the amount planned for field applications in this NMP. Any solid manure is added to existing storage structures and not field applied.
3. Application restrictions for Surface Water Quality Management Areas (SWQMA):
 - Option 1 (tillage in rotation - annual crop) - no manure within 25 feet of navigable water or conduit, inject or immediately incorporate within remaining SWQMA area.
 - Option 2 (no-till) - no manure within 25 feet, surface apply at a maximum rate of 7500 gallons within remaining SWQMA area.
 - Option 5 (tillage in rotation – annual crop) - no surface application within 100 feet of surface water or conduit to surface water.
 - Please note: Dunn County manure application restrictions are also required to be met by the farm.
4. The phosphorus management method to minimize field loss is the P Index.
5. Denmark Dairy LLC Ridgeland currently has 1,571.0 acres (118.0 owned and 1,453.0 controlled through contracts, rental agreements, or leases, or under manure agreements) of which 1,479.0 acres are available for spreading after various restricted areas have been accounted for.
6. Some fields included in the NMP are directly adjacent to or have high potential to deliver nutrients and sediment to a 303(d) impaired water (Lower Pine Creek – WBIC 2085300 – listed in 2014 for “Total Phosphorus”, Spring Creek – WBIC 2085900 – listed in 2014 for “Unknown Pollutant”, Upper Pine Creek – WBIC 2087300 – listed in 2018 for “Unknown Pollutant”).
7. Some fields included in the NMP are directly adjacent to or have high potential to deliver nutrients and sediment to streams classified as an outstanding/exceptional water resource (Upper Pine Creek – WBIC 2087300).
8. No fields included in the NMP are located within a well head protection area.
9. The following fields are known to contain drain tile.

| | | | | | | |
|--------------------------|--|--|--|--|--|--|
| Dairy West 2 (Grover) | | | | | | |
|--------------------------|--|--|--|--|--|--|

10. All fields will be checked for the following features prior to/during manure or process wastewater applications:
 - soil areas with possible perched water conditions within 24 inches of surface (“W” soils) at the time of manure application
 - required setbacks associated with wells, navigable waters, conduits to navigable waters, grassed waterways, and wetlands
 - soil erosion/flow channels.
11. 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 2023-2027 Denmark Dairy LLC Ridgeland 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 in Snap Plus, evaluated for nutrient needs, and approved by the Department.
2. The following fields are prohibited from receiving **mechanical** applications of manure or process wastewater, unless the condition listed is corrected prior to proposed applications:
 - **No soil test, out-of-date soil tests over 8 years old, or out-of-date soil tests taken during last 8 years and soil test phosphorus levels above 50 ppm (as of September 7, 2022)**

| | | | | | | |
|------|--------|--|--|--|--|--|
| Cole | Parker | | | | | |
|------|--------|--|--|--|--|--|

- **Soil test phosphorus levels above 200 ppm (as of September 7, 2022)**

| | | | | | | |
|--------|--|--|--|--|--|--|
| Turkey | | | | | | |
|--------|--|--|--|--|--|--|

If Denmark Dairy LLC Ridgeland wishes to use these fields for mechanical 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 soil test phosphorus levels are equal to or 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. At a minimum, all liquid manure samples collected should be analyzed for percent dry matter, total nitrogen, percent NH₄-N, percent NO₃-N, phosphorus, potassium, and sulfur.

5. If manure sample results have a dry matter (DM) content less than 2.0% and the percent ammonium (NH₄⁺) is greater than 75% of the total N, Denmark Dairy LLC Ridgeland may use the following equation to adjust the first-year available nitrogen when applications are injected or incorporated within 1 hour:

$$\text{First-Year Available N} = \text{NH}_4\text{-N} + [0.25 \times (\text{Total N} - \text{NH}_4\text{-N})]$$
6. Denmark Dairy LLC Ridgeland shall record daily manure applications by using form 3200-123A or other documentation with equivalent information. This information shall be retained at the farm and provided to the department upon request.
7. Denmark Dairy LLC Ridgeland shall annually submit a spreading report that summarizes the land application activities listed under NR 243.19(3)(c)5., Wis. Adm. Code and contained in form 3200-123.

WINTER SPREADING

8. Liquid manure applications during winter conditions, as defined by NR 243.14(7), Wis. Adm. Code, are prohibited except for emergency applications.
9. The following fields have areas determined to have a low risk of runoff and are approved for winter spreading solid manure, emergency applications of liquid manure and frozen liquid manure:

| | | | | | | |
|-----------|--------------|--------------|--------------|--|--|--|
| Bob Lentz | Dairy East 2 | Dairy West 1 | Dairy West 2 | | | |
|-----------|--------------|--------------|--------------|--|--|--|

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.
12. No manure applications may occur during the “high risk runoff period” of February 1 to March 31 pursuant to s. NR 243.14(6)(c) and NR 243.14(7)(c), respectively.

HEADLAND STACKING

13. No headland stacking sites are approved for non-winter and winter headland stacking.

MANURE & PROCESS WASTEWATER IRRIGATION

14. No fields were requested for approval to receive manure or process wastewater from irrigation.

This conditional approval does not limit the Department's regulatory authority to require NMP revisions based upon new information or request additional information 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 715-214-8576 or Todd.Prill@Wisconsin.gov

Sincerely,

A handwritten signature in cursive script that reads "Todd m. Prill".

Todd Prill
Certified Crop Advisor (CCA)
WDNR Agricultural Runoff Specialist

cc: Haily Sand, crop consultant (Haily.Sand@VAS.com)
Tyler Gruetzmacher, Barron County LCD (tyler.gruetzmacher@co.barron.wi.us)
Chase Cummings, Dunn County LCD (chrcummings@co.dunn.wi.us)
Aaron O'Rourke, WDNR Nutrient Management Program Coordinator (Aaron.Orourke@Wisconsin.gov)
Chris Clayton, WDNR Ag Runoff Section Chief (Christopherr.Clayton@Wisconsin.gov)
File



July 14, 2021

WPDES Permit No. WI-0049492-04-1

Karl Kragness
Denmark Dairy LLC (Ridgeland)
E9275 780th Ave
Colfax, WI 54730

Subject: June 24, 2021 Reissuance Inspection – Response Requested

Dear Mr. Kragness:

On June 24, 2021 the Department met with you at your operation, Denmark Dairy LLC (Ridgeland), located at 138 13 ½ Street, Ridgeland, Wisconsin to conduct a full site inspection for permit reissuance. Department observations and a record of our conversation is included in the enclosed report. The Department believes your operation is not currently in substantial compliance with the permit. Please see the enclosed notice of noncompliance dated July 14, 2021.

A complete permit reissuance application must be submitted through the Department's ePermitting System (<https://dnr.wisconsin.gov/permits/water>) no later than **March 31, 2022**. A list of materials required for a complete permit application have been provided within the summary section of the enclosed report. The summary section also includes a list of additional action items to be completed. Please refer to the enclosed report for a complete list of required action items and associated deadlines.

Please do not hesitate to contact me if you have any questions or concerns.

Sincerely,

Clare Freix
Agricultural Runoff Specialist
Phone: (715) 492-4465
Email: Clare.Freix@Wisconsin.gov

Enc: June 24, 2021 Inspection Report
Notice of Noncompliance dated July 14, 2021

Cc: Ben Uvaas, Jill Schoen, Brad Johnson, Tony Salituro – WDNR
Haily Sand – AgSource
Dave McDaniel – Auth Consulting & Associates
Tyler Gruetzmacher – Barron County Land Conservation

CAFO Compliance Report (July 14, 2021)



Inspection Date: June 24, 2021

Inspection Type: Permit Reissuance Inspection

Operation Name: Denmark Dairy LLC (Ridgeland)

WPDES Permit No. 0049492-04-1

Operation Address: 138 13½ Street, Ridgeland, WI 54763

On Site Representatives: Karl Kragness (Denmark Dairy LLC), Haily Sand (AgSource), Dave McDaniel (Auth Consulting & Associates)

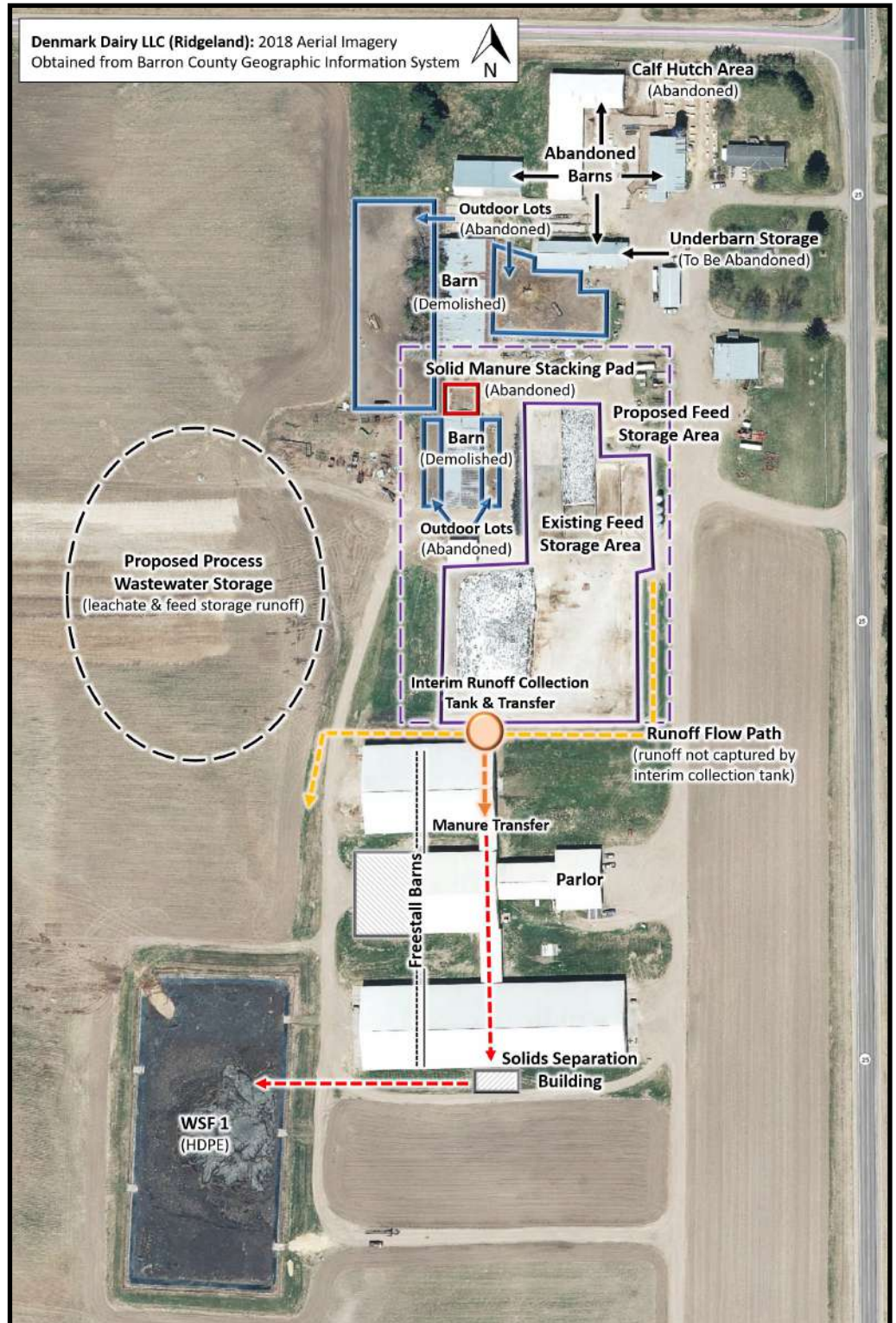
DNR Staff/Report Writer: Clare Freix, Agricultural Runoff Specialist

BACKGROUND

The Denmark Dairy LLC (Ridgeland) operation was previously owned by Knut Sons Inc. The first WPDES permit for the operation was issued to Knut Sons Inc. on October 1, 2000. WPDES permit coverage was reissued to Knut Sons Inc. on October 1, 2005 and again on October 1, 2010. The operation’s fourth and current permit was reissued to Knut Sons Inc. on September 1, 2017. Denmark Dairy LLC purchased the operation from Knut Sons Inc. on June 15, 2019 and permit coverage was transferred to Denmark Dairy LLC on September 1, 2019. The current WPDES permit is set to expire on August 31, 2022.

On June 24, 2021 at approximately 12 PM Freix met with Karl Kragness, Haily Sand, Dave McDaniel and Tyler Gruetzmacher (Barron County Land Conservation) at the Denmark Dairy Ridgeland site. The purpose of the site visit was to conduct a full compliance inspection for permit reissuance. Weather conditions were sunny with temperatures in the high 70s. No significant precipitation had occurred within 72 hours prior to the inspection.

SITE OVERVIEW (right)



SITE OBSERVATIONS

Feedlot Runoff

Several outdoor lots and a calf hutch area were once utilized when the operation was owned by Knut Sons Inc. Since Denmark Dairy has taken over the operation, all outdoor lots and the calf hutch area have been abandoned. All animals are now housed within covered facilities under a roof.

The schedule items outlined under permit section 2.6 of the current permit for the engineering evaluation of the calf hutch area runoff control system have been addressed, as they are no longer relevant.

Waste Storage Facilities

The operation utilizes a single liquid manure waste storage facility (WSF 1). WSF 1 is a HDPE lined liquid manure storage that was constructed in 2000 with an approximate maximum operating level (MOL) capacity of 6,864,078 gallons. Plans and specifications for WSF 1 were approved by the Department on September 7, 2000, however there is no record of post construction documentation being submitted. An engineering evaluation of WSF 1 will be included in the schedules section of the reissued permit.



Photo 1 (left): Looking south east across WSF 1. A safety fence was observed around the entire perimeter of the storage.

Liquid manure generated within the freestall barns and wastewater from the milking parlor is collected within a central transfer flume and is pumped to the solids separation building. Separated manure solids are temporarily staged within the separation building to be used for animal bedding and remaining liquids are transferred to WSF 1. The portion of leachate and feed storage runoff captured by the interim runoff collection tank is directed into the barn transfer flume where it proceeds into WSF 1.



Photo 2 (right): Looking inside the solid separation building. Manure solids are separated using a screw press and are temporarily staged within the corner of the building before being brought back into the barns to be used for bedding.



Photo 3 (left): Looking at the north west corner of WSF 1. Rippling within the HDPE liner was observed in this corner of the storage.



Photo 4 (right): Looking at the south west corner of WSF 1. Some splitting was observed at the seam where the HDPE liner overlaps in this corner of the storage.

The operation has plans to construct an additional liquid waste storage facility as part of a permanent feed storage runoff control system. The proposed waste storage facility will be designated for leachate and feed storage runoff and may be used for back up manure storage as needed. Plans and specifications for the proposed waste storage facility will need to be submitted along with the permit reissuance application and the construction will be included in the schedules section of the reissued permit to be completed within the first year of permit reissuance.

An underbarn manure storage tank was once utilized when the operation was owned by Knut Sons Inc. Since Denmark Dairy has taken over, the operation has depopulated the associated barn and cleared the remaining manure from the underbarn storage. Permit section 2.4 of the current permit requires an engineering evaluation of the underbarn storage. During the Department's midterm compliance inspection on August 1, 2019, Denmark Dairy informed the Department that the operation has no intention of utilizing the underbarn storage. The Department provided deadlines to submit plans and specifications and complete the abandonment of the underbarn storage to address the outstanding schedules under permit section 2.4. Abandonment plans and specifications have not been submitted and abandonment of the underbarn storage has not been completed to date. Therefore, plans and specifications must be submitted for Department approval and abandonment of the underbarn storage must be completed according the approved plans prior to permit reissuance.



Photo 5 (left): Looking inside the barn with an underbarn storage facility. Use of the barn has been discontinued and remaining manure has been removed from the underbarn storage. Full abandonment of the underbarn storage facility is still needed.

A solid manure stacking pad was once utilized when the operation was owned by Knut Sons Inc. Since Denmark Dairy has taken over, the only solid manure generated by the operation are the separated manure solids that are recycled back into the barns to be used for bedding. Therefore, the operation does not have a need for on site solid manure storage and the solid manure stacking pad has been abandoned. Furthermore, the schedule items under permit section 2.5 of the current permit to construct a Department approved solid manure storage facility have been addressed, as they are no longer relevant.



Photo 6 (right): Looking north west across the area where the demolished barns, outdoor lots, and solid manure stacking area were once located.

The operation still intends to have approved headland stacking sites for solid manure to be used on an as needed basis.

Feed Storage Area Runoff

The operation utilizes a feed storage area located at the north end of the site that is approximately two acres in size. Permit section 2.7 of the current permit includes schedule items for the construction a Department approved feed storage runoff control system. The schedule items under permit section 2.7 were already outstanding by the time Denmark Dairy took over the operation. Following the Department's

midterm compliance inspection on August 1, 2019, the Department provided Denmark Dairy alternative deadlines for addressing the schedules under permit section 2.7 provided interim feed storage runoff controls were put in place.

The operation installed an interim feed storage runoff control system fall of 2019. A 1500 gallon tank was installed near the south west corner of the feed pad to collect a portion of leachate and feed storage runoff. The contents of the collection tank are pumped to the flume system within the freestall barns to be transferred to WSF 1. A one foot earthen berm was also installed around the outer perimeter of the feed pad and the concrete area between the feed pad and the feed bunkers was reconstructed to direct leachate and feed storage runoff toward the collection point. A tile line was also installed under the earthen berm which drains into the collection tank.



Photo 7 (left): Looking north along the western edge of the feed storage area. The earthen berm that was installed as part of the interim runoff controls can be seen along this edge of the feed storage area.



Photo 8 (right): Looking at the west end of the concrete area between the feed pad and the feed bunkers that was reconstructed as part of the interim runoff controls. A concrete lip has been installed to prevent runoff from leaving this end of the feed storage.

The operation plans to reconstruct the entire feed storage area and install a permanent feed storage runoff control system that includes a new waste storage facility specifically for leachate and feed storage runoff. Plans and specifications for the proposed feed storage area and associated runoff control system will need to be submitted along with the permit reissuance application. Construction of the approved feed

storage area and associated runoff control system will be included in the schedules section of the reissued permit to completed within the first year of permit reissuance.

The channel running along the eastern and southern edge of the feed pad that was observed during the Department's August 1, 2019 midterm compliance inspection was still present. A considerable amount of contaminated runoff was still observed within the entire length of the channel. Vegetation burn out was also observed toward the end of the channel near the south west corner of the feed pad where the channel flows toward a culvert that runs under an adjacent driveway. Contaminated runoff was observed pooling in a low spot at the culvert outlet along the opposite side of the driveway. The Department recommends the operation regularly remove and properly dispose of the contents within the channel and within the low spot at the culvert outlet until a permanent feed storage runoff control system is in place. Once permanent runoff controls are in place, all remaining contents within the channel and at the culvert outlet should be removed and the channel and the area at the culvert outlet should be filled in/regraded and revegetated.



Photo 9 (left): Looking south at the beginning of the channel that runs south along the eastern edge of the feed pad. Dried debris containing waste feed can be seen accumulating at the beginning of the channel.



Photo 10 (right): Looking north at the point where the channel pictured in photo 9 diverts west along the southern edge of the feed pad. Dark cloudy water can be seen filling the channel.



Photo 11 (top left): Looking west where the channel pictured in photo 10 proceeds west along the southern edge of the feed pad toward a culvert that runs under the adjacent driveway. Dark cloudy water can be seen within the channel along the entire length of the pad.



Photo 12 (right): Looking east at area around the end of the channel pictured in photo 12 just before the culvert inlet. Significant vegetation burn out was observed in this area.



Photo 13 (bottom left): Looking south at the outlet of the culvert located within the flow path of the channel pictured in photo 12. A considerable amount of dark foamy water with a greenish film was observed pooling in a low spot at the culvert outlet.

Animal Mortality Disposal

The operation utilizes a rendering company which picks up all animal mortalities as needed.

Ancillary Service & Storage Areas

A pile a waste feed had been placed on the bare ground in an area just west of WSF 1. The operation will need to properly dispose of the waste feed pile and keep waste feed on the feed storage area in the future.



Photo 14 (left): Looking south west at the western side of WSF 1. A pile of waste feed (pictured right) can be seen on the bare ground just west the storage facility. A permanent MOL marker can also be seen painted in white on the concrete ramp.



Photo 15 (right): Looking at the grassy area surrounding the pump tank for the freestall barns. The pump tank had issues with overflowing in the past which have since been resolved. No evidence of manure overflow was observed in the area surrounding the pump tank.

RECORDS REVIEW

The operation keeps their records at the Denmark Dairy site located in Colfax. The following records for the Denmark Dairy Ridgeland operation need to be kept at the Ridgeland site and available upon Department request.

- Current WPDES Permit
- Production Site Inspection Records – The operation has not been measuring and recording the level of material in all liquid storage and containment structures each week.
- Emergency Response Plan
- Monitoring & Inspection Plan
- NMP & Land Application Records
- Documentation of 180 Days Liquid Manure Storage

PERMIT SCHEDULE STATUS (Remaining Schedules)

Permit Section 2.1 Annual Reports

- Annual Report #1 (Due 01/31/2018) – Completed 01/31/2018
- Annual Report #2 (Due 01/31/2019) – Completed 02/19/2019
- Annual Report #3 (Due 01/31/2020) – Completed 01/23/2020
- Annual Report #4 (Due 01/31/2021) – Completed 01/28/2021
- **Annual Report #5** (Due 01/31/2022) – Upcoming

Permit Section 2.2 Nutrient Management Plan

- NMP Update #1 (Due 03/31/2018) – Completed 04/04/2018
- NMP Update #2 (Due 03/31/2019) – Completed 03/30/2019
- NMP Update #3 (Due 03/31/2020) – Completed 03/30/2020
- NMP Update #4 (Due 03/31/2021) – Completed 03/31/2021
- **NMP Update #5** (Due 03/31/2022) – Upcoming

Permit Section 2.3 Submit Permit Reissuance Application

- **Reissuance Application** (Due 03/31/2022) – Upcoming

Permit Section 2.4 Calf Barn Manure Storage Facility – Engineering Evaluation

- Retain Expert (Due 10/01/2017) – N/A
- Engineering Evaluation (Due 02/01/2018) – N/A
- **Plans & Specifications** (Due 09/01/2018) – plans and specifications for abandonment of the underbarn storage still needed.
- **Corrections & Post Construction** (09/01/2019) – abandonment of underbarn storage according to approved plans and post abandonment documentation within 60 days of completion are still needed.

Permit Section 2.5 Solid Stacking Pad – Installation

The existing solid manure stacking pad has been abandoned and the operation no longer needs on site solid manure storage, therefore the following schedules are no longer necessary:

- Plans & Specifications (Due 09/01/2018) – N/A
- Complete Installation (Due 09/01/2019) – N/A

Permit Section 2.6 Calf Hutch Area Runoff Control System – Engineering Evaluation

The calf hutch area has been abandoned and the following schedules are no longer necessary:

- Retain Expert (Due 10/01/2017) – N/A
- Engineering Evaluation (Due 02/01/2018) – N/A
- Plans & Specifications (Due 09/01/2018) – N/A
- Corrections & Post Construction (Due 09/01/2019) – N/A

Permit Section 2.7 Feed Storage Runoff Control System – Installation

The Department provided the operation with alternatives for addressing the following schedules with the condition that an interim feed storage runoff control system was put in place, which was installed fall of 2019.

- **Plans & Specifications** (Due 09/01/2018) – Deadline extended to 03/31/2022
- **Corrections & Post Construction** (Due 09/01/2019) – The construction schedule will be moved into the schedules section of the reissued permit to be completed within the first year of permit reissuance.

SUMMARY

Areas of Concern

- Waste feed had been piled on the bare ground in an area off the feed storage just west of WSF 1.
- The operation has not been measuring and recording the level of material in all liquid storage and containment structures each week. Weekly measurements must be taken and recorded in feet or inches above or below the Margin of Safety (MOS) level.

Action Items

September 1, 2021 – Please complete the following:

- Submit plans and specifications through the Department's ePermitting system for the abandonment of the underbarn waste storage facility.

- Remove and properly dispose of the contents pooling within the channel around the feed storage area and within the low spot at the culvert outlet where the channel discharges. Submit photo documentation when completed.

Note: The Department recommends the contents accumulating within the channel and at the culvert outlet be removed and disposed of on a regular basis so that these areas can be used as secondary containment in addition to the interim runoff controls already in place. Once a permanent feed storage runoff control system has been constructed the channel and low spot at the culvert outlet should be filled in/regraded and revegetated.

October 31, 2021 – please complete the following:

- Submit an updated Monitoring & Inspection Plan that clearly outlines the liquid storage and containment facilities where weekly measurements are required and specify the person who is responsible for measuring and recording the level in each liquid storage and containment facility each week.
- Submit a copy of the operation's production site inspection records showing the level of material that was measured and recorded in feet or inches above or below the MOS level for each week between August 1, 2021, and October 30, 2021.

Note: The operation must continue measuring and recording the level of material in all liquid storage and containment structures on a weekly basis thereafter.

January 1, 2021 – complete the abandonment of the underbarn storage facility according the Department approved plans and submit post abandonment documentation through the Department's ePermitting System within 60 days of completion.

March 31, 2022 – submit a complete permit reissuance application that contains the following materials through the Department's ePermitting system:

1. 3400-025 Livestock/Poultry Operation WPDES Permit Application
2. 3400-025A Animal Unit Calculation Worksheet
3. 3400-025B Nutrient Management Plan Checklist
4. 3400-025G CAFO Reviewable Facilities and Systems for Livestock/Poultry Operation WPDES Permit
5. Aerial map labelling all the existing and proposed facilities and systems at the production area
6. Soil survey map of the production area
7. Five year nutrient management plan
8. 180 day liquid manure storage calculations & supporting documentation
9. Plans and Specifications for the proposed feed storage area and associated runoff control system

Note: plans and specifications must be submitted through the Department's ePermitting System as a separate engineering submittal prior to, or at the same time as the permit reissuance application.

Items for Next Permit

- Construction of the feed storage area and associated runoff control system will be included in the schedules section of the reissued permit to be completed within the first year of permit reissuance.
- Engineering evaluation of WSF 1 will be included within the schedules section of the reissued permit.
- The Department intends to reissue permit number 006133-01-0 for Denmark Dairy LLC (Colfax) at the same time as permit number 0049492-04-1 for Denmark Dairy LLC (Ridgeland).

Substantial Compliance

Denmark Dairy LLC (Ridgeland) is not currently in substantial compliance with the permit. Please see the notice of noncompliance dated July 14, 2021 (enclosed).

Denmark Dairy LLC (Ridgeland) - Sample Points:
2021 Aerial Imagery Obtained From Google Earth

007
Headland Stacking Sites— Various Locations

004
(Under Barn Tank)

002
*(WSF 2)
approximate
location*

003
*(WSF 3)
approximate
location*

008
*(Feed Storage Area
& Runoff Controls)*

009
(Storm Water Controls— Various Locations)

001
(WSF 1)

005
(Separate Solids)

006
Misc. Solids— Various Locations

- Liquid Sample Point
 - Solid Sample Point
 - Runoff Control Sample Point
- 