

STATE OF WISCONSIN DEPARTMENT OF NATURAL RESOURCES

NOTICE OF FINAL DETERMINATION TO REISSUE A WISCONSIN POLLUTANT DISCHARGE  
ELIMINATION SYSTEM (WPDES) PERMIT No. WI-0059315-05-0

Permittee: Emerald Sky Dairy LLC, 2670 D Road, Rising City, NE, 68658

Facility Where Discharge Occurs: Emerald Sky Dairy LLC, 2487 County Highway G Emerald

Receiving Water and Location: Dry Run Creek within Emerald Township, St. Croix County

Brief Facility Description: Emerald Sky Dairy LLC is an existing Concentrated Animal Feeding Operation (CAFO) dairy farm located in Emerald Township in St. Croix County. The dairy is owned by Todd Tuls of Tuls Dairies. The dairy operates with approximately 1,600 milking/dry cows, equivalent to 2,397 animal units. The dairy proposes to expand to approximately 3,300 milking/dry cows, equivalent to 4,620 animal units during the proposed permit term.

At 1,600 cows, the dairy is estimated to produce approximately 17.4 million gallons of liquid manure/process wastewater and 5,861 tons of solid manure per year. After the proposed expansion, the dairy is estimated to produce approximately 42.2 million gallons of liquid manure/process wastewater and 11,378 tons of solid manure per year.

Based on current animal numbers, existing manure storage structures provide the dairy with approximately 409 days of liquid storage. After the proposed expansion, the existing manure storage structures would provide the dairy with approximately 239 days of liquid storage.

Emerald Sky Dairy has a total of 5,371 acres in their nutrient management plan. All acres in the plan are rented or controlled through land contracts. Acres are within the St. Croix County townships of Baldwin, Emerald, Forest, Glenwood, and Springfield. A small number of acres are also located within the Polk County townships of Clear Lake and Black Brook.

Permit Drafter's Name, Address and Phone: Jeffrey Jackson, DNR, 890 Spruce St, , Baldwin, WI, 54002, (715) 210-1415

Date Permit Signed/Issued: February 27, 2024

Date of Effectiveness: March 1, 2024

Date of Expiration: February 28, 2029

Public Informational Hearing Held On: July 25, 2023, at 4pm via Zoom.

Following the public informational hearing the Department has made a final determination to reissue the WPDES permit for Emerald Sky Dairy, LLC for this existing discharge. The permit application information from the WPDES permit file, comments received on the proposed permit and applicable Wis. Adm. Codes were used as a basis for this final determination.

The Department has the authority to issue, modify, suspend, revoke and reissue or terminate WPDES permits and to establish effluent limitations and permit conditions under ch. 283, Stats.

Following is a summary of significant comments and any significant changes which have been made in the terms and conditions set forth in the draft permit:

Comments Received from the Applicant, Individuals or Groups and Any Permit Changes as Applicable

- 1) Cover Page: the permit effective date changed to March 1, 2024. The permit expiration date changed to February 28, 2029.
- 2) Permit Section 2.1: Due date for developing an Emergency Response Plan changed to March 30, 2024.
- 3) Permit Section 2.2: Due date for the development of a monitoring & inspection program changed to March 30, 2024.
- 4) Permit Section 2.3: Due date for the first annual report changed to January 31, 2025.
- 5) Permit Section 2.5: Due date for a permit reissuance application changed to September 1, 2028.

Comments Received from EPA or Other Government Agencies and Any Permit Changes as Applicable

- No comments received from EPA.
- St. Croix County provided background information on their interactions with Emerald Sky Dairy, soil phosphorus levels, Emerald Townhall well, county-led private well sampling program, and DNR grant funding policies within the watershed (see attached).

As provided by s. 283.63, Stats., and ch. 203, Wis. Adm. Code, persons desiring further adjudicative review of this final determination may request a public adjudicatory hearing. A request shall be made by filing a verified petition for review with the Secretary of the Department of Natural Resources within 60 days of the date the permit was signed (see permit signature date above). Further information regarding the conduct and nature of public adjudicatory hearings may be found by reviewing ch. NR 203, Wis. Adm. Code, s. 283.63 Stats., and other applicable law, including s. 227.42, Stats.

Information on file regarding this permit action may be obtained by calling the permit drafter at (715) 210-1415 or by writing to the Department. Reasonable costs (15 cents per page for copies and 7 cents per page for scanning) will be charged for copies of information in the file other than the public notice and fact sheet. Pursuant to the Americans with Disabilities Act, reasonable accommodation, including the provision of informational material in an alternative format, will be made to qualified individuals upon request.

During the Emerald Sky Dairy public comment period the department received a petition signed by 145 people. As part of the petition, organizers called for the following:

1. Monitoring wells surrounding the facility and nearby spreading fields
2. Cover crop and crop rotations yearly
3. Implement a cap of 1,700 animals allowed in this karst bedrock region that is highly susceptible to water contamination from field runoff.
4. Quarterly manure spreading audits.
5. More frequent visits (quarterly) by DNR enforcement personnel due to the history of this producer.

Department response to conditions listed above are addressed within the body of the response to comments below.

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**Comment: The CLEAN WATER ACT, A federal law, SINCE 1948, states THE REGULATION of DISCHARGE of POLLUTIONS into the WATERS of the UNITED STATES OF AMERICA and REGULATING WATER QUALITY STANDARDS FOR SURFACE WATERS. MANURE MANAGEMENT PROHIBITS: no overflow of manure storage facilities. NO STORED MANURE INTO STATE WATERS. Please advise.**

*Response: The DNR is delegated and overseen by the US Environmental Protection Agency (EPA) to implement the NPDES permit program (in Wisconsin, referred to as the WPDES permit program). One of the greatest successes of the adoption of the Clean Water Act was the creation of a "permit" system (the NPDES permit program) to replace the previous regulatory system. That previous system was "order" based, which allowed discharges to occur until and unless an order was issued mandating better pollution control. The cost and difficulty of proving environmental contamination made that approach essentially ineffective.*

*The key advantage of the NPDES/WPDES permit program is that it sets out the terms and conditions under which a facility not only needs to operate but also needs to self-monitor and self-report. There is a significant difference between simply denying or restricting someone's ability to operate or expand and, conversely, allowing one to operate but under precise, legally and technically defensible conditions designed to protect state ground water and surface water standards using the best science available.*

*Regulating water quality impacts associated with agricultural operations is often a cross program effort within the department and relies on the expertise of staff in various programs, including (but not limited to) the CAFO, Drinking and Groundwater, and Water Resources programs.*

*The CAFO program implements the WPDES CAFO permitting system. WPDES permitting regulates CAFO production areas and landspreading activities as they relate to water quality. These permits work to proactively ensure that large CAFOs use proper planning, nutrient management, and structure/system construction to protect Wisconsin's water resources. This is accomplished through department review of application materials, oversight of permitted operations and the WPDES permit reissuance process (which includes site inspections). In addition to the preemptive practices to protect water quality that are afforded by WPDES CAFO permits, there are other programs that further play a role to protect public and environmental health. Among many of their core duties, general surface water quality monitoring is conducted by staff within the Water Resources Program, non-WPDES permitted agricultural operations are regulated by Non-Point Source Coordinators, and the Drinking and Groundwater program regulates private water supply wells and works to determine the source of fecal contamination in private water supply wells.*

**Comment: PUBLIC TRUST DOCTRINE: WISCONSIN'S WATERS BELONG TO EVERYONE!**

*Response: When the Northwest Ordinance was adopted to govern the Wisconsin Territory, the state's navigable waterways have been considered public and for use of all citizens. Article IX of the Wisconsin Constitution declares that all navigable waters are "common highways and forever free" and held in trust by the state of Wisconsin. Wisconsin's Public Trust Doctrine requires the state of Wisconsin to intervene to protect public rights in the commercial and recreational use of navigable waters.*

*The DNR does this through permitting requirements for water projects (such as this permit), court action to stop nuisances in navigable waterways, and statutes authorizing local zoning ordinances that limit development along navigable waterways.*

**Water Quantity:**

**Comment: Wisconsin's Groundwater Protection Act, 2003 Wisconsin Act 310 addresses the environmental impacts of high-capacity wells and recognizes the link between surface water and groundwater and the impact high-capacity wells may have on groundwater quality and quantity. Please advise.**

*Response: The department does not regulate water quantity issues as part of the WPDES CAFO permit. Water quantity issues are addressed by the DNR's Bureau of Drinking Water and Groundwater under the high capacity well permitting program for a well that individually, or wells on the same property that in combination, have the capacity to withdraw more than 100,000 gallons per day. The Bureau of Drinking Water and Groundwater reviews each application for a new high capacity well to determine whether well water withdrawals, along with other wells on the same property, would result in impacts to area groundwater and surface water – which includes all streams, lakes, wetlands and public and private wells.*

**Surface water Quality Comments:**

**Comment(s):**

- **Applying too much manure, or applying manure at the wrong time, or improper handling of manure will release nutrient as pollutants into the air, groundwater and surface water. This combined with extreme weather/precipitation events are a big concern.**
- **We should be reducing the quantities of phosphorus and nitrates introduced in the Willow River and St. Croix River watersheds – not allowing the production and introduction of even more by approving a permit to more than double the size of the CAFO.**
- **Concerns with groundwater and surface water quality, both locally and regionally**
- **Expansion of the Emerald Sky Dairy CAFO from the current 1,600 cows to the proposed 3,300 cows inevitably will further impair the quality of surface and ground waters within the Willow River and St. Croix River watersheds due to periodic manure spills and manure-contaminated runoff.**
- **DNR has a legal, ethical, and moral responsibility to protect the St. Croix River.**

*Response: The department can only enforce existing rules and regulations currently in place. WPDES CAFO permits rely on production area discharge limitations to prevent unlawful pollutant discharges from the production area. This means the waste containment or storage structures are designed and sized to prevent unlawful discharges to navigable waters.*

*The WPDES CAFO permit also rely on nutrient management plans that meet the NRCS 590 Standard and Wis. Adm. Code NR 243 regulations to protect water quality. A CAFO nutrient management plan is intended to minimize the risk of phosphorus and nitrogen delivery to waters of the state (surface water and groundwater). Emerald Sky Dairy has provided the department with a nutrient management plan that complies with the applicable standards and regulations.*

*The permit contains requirements designed to protect water quality. These include:*

- *Manure or process wastewater may not be applied within 100 feet of a direct conduit to groundwater.*
- *Nutrients shall not be spread within 200 feet upslope of direct conduits to groundwater unless the nutrient is effectively incorporated within 72 hours (NRCS 590).*
- *Manure and process wastewater may not cause fecal contamination of water in a well.*
- *No application of manure or process wastewater when snow is actively melting.*

- No application of manure or process wastewater on areas of fields that have less than 24 inches of soil to bedrock.
- In-Field verification procedures include soil depth evaluations on areas of fields that have mapped soils with a seasonally high-water table.
- No application of manure on areas of fields when depth to the water table is 24-inches or less.

*Additionally, Ch. NR 243, Wis. Adm. Code, adopts the NRCS 590 Technical Standard (2005) and imposes more restrictive water quality requirements. These additional restrictions include strict winter spreading requirements, soil depth restrictions over bedrock and groundwater, more stringent phosphorus management, and various setbacks from water resources including wells, streams, wetlands, lakes, etc.*

*Proper implementation of the nutrient management plan and production area discharge preventative actions are required by the WPDES CAFO permit. These actions are intended to prevent the discharge of pollutants to waters of the state.*

**Comment(s):**

- **Emerald Sky Dairy should not be allowed to expand. The farm is located at one of the highest points of the area and includes many streams in the area. It is impossible to control the spreading of this amount of manure.**
- **This expansion threatens the health of the Willow River and St. Croix River. These rivers have already been compromised by farm runoff and this will only make it worse. It threatens the health of all the families that rely on wells as this will likely contaminate groundwater in the area.**
- **DNR has reported that 90% of the phosphorus in surface waters comes from farm field runoff. Emerald Sky Dairy is a significant contributor to the pollution of the Willow and St. Croix Rivers.**

*Response: The department recognizes that impaired waterways exist in the vicinity of Emerald Sky Dairy. The department agrees with commenters that protection of these surface waters is important. The WPDES CAFO permit is intended to protect all types of surface water resources. This is mainly done through the implementation of a nutrient management plan. This plan is designed to reduce the risk of pollutants negatively impacting surface water features. In addition to reviewing annually submitted records, department staff conduct periodic nutrient management-based inspections of cropped fields. These inspections are used to help determine whether the farm is complying with their nutrient management plan and CAFO permit.*

**Groundwater Concerns:**

**Comment: Commenters expressed concern about impacts to water quality from the storage and land application of manure and process wastewater. Specific pollutants of concern include nitrate, phosphorus, and E. coli impacting groundwater. Commenters claim water contamination is being ignored by officials. Commenters are concerned with the costs associated with abating nitrate contamination. Groundwater monitoring wells should be required for land application sites and the production area. Comments further suggested that groundwater quality standards should be developed based on recommendations from the Department of Health Services and that nitrate levels over 10 ppm can cause severe health impacts.**

*Response: The department takes potential water quality violations seriously and disagrees that information about contamination is being ignored. The department conducted follow-up investigations regarding the 2017 spill, and DNR staff investigated potential sinkholes in May 2023. Note: there is not a groundwater standard for phosphorus.*

*Following permit requirements, including production area discharge limitations, implementation of a nutrient management plan, and the development of a site-specific Monitoring & Inspection plan, are designed to prevent exceedances of groundwater quality standards.*

*It is recommended that private well owners sample their well water on an annual basis for nitrate and bacteria. Homeowners with levels of nitrates or other contaminants in exceedance of state drinking water standards or have general questions should contact their local DNR private water supply specialist. If a homeowner suspects their well is contaminated with manure, they should immediately contact a regional DNR Private Water Supply specialist (<https://dnr.wisconsin.gov/topic/Wells/PrivateWaterSupply.html>) or Agricultural Runoff Specialist (<https://dnr.wisconsin.gov/topic/CAFO/contacts.html>) to investigate the source of contamination. Where the source of the contamination can be identified, department staff will determine the appropriate enforcement response. In some cases, the department can provide an emergency source of water, technical assistance for well treatment or replacement options and/or financial assistance for well replacement.*

Groundwater quality standards contained in NR 140, Wis. Adm. Code, are based on recommendations from the Department of Health Services. The department agrees that drinking water that contains nitrate levels over 10 mg/L is not safe for consumption. The enforcement standard for nitrate is 10 mg/L.

Groundwater monitoring wells are not required for Emerald Sky Dairy at this time. Please view the February 23, 2023 memo from the CAFO Program Hydrogeologist for supporting details.

**Comment: The Willow River is a part of the Lake St. Croix TMDL. The New Richmond wastewater treatment plant is being required to reduce phosphorus discharge levels. This permit should also reduce phosphorus levels within the affected watershed.**

*Response: The proposed Emerald Sky Dairy WPDES CAFO permit will no longer include an aggregated phosphorus waste load allocation from the production area. The wastewater treatment system at the site has since been removed. Load allocations for this production area within the Lake St. Croix TMDL are zero.*

**Comment: According to the special well casing spreadsheet I had gotten in 2016 from DNR, the Emerald Townhall was not in the zone for a special well casing and I'm curious when the recommendation to cement all wells in Emerald Township to 250' started. Did that recommendation begin after the Town Hall well was dug in 2007?**

*Response: The townhall well appears to have been constructed in compliance with the code requirements in place at the time. The department revised code requirements on July 1, 2020, to no longer allow grouting with mud and cuttings. The DNR does not have any formal recommendation or requirement for all wells within the Town of Emerald to have cement grouted casing or to have a minimum casing depth of 250 feet. There are however several small special well casing depth areas established within the township that have area-specific requirements.*

### **Farm Expansion**

#### **Comment(s):**

- **I encourage DNR to begin downsizing the herd until improved soil and water quality are demonstrated.**
- **Totally against the farm expansion. Emerald already has water issues. An increased herd size will create more water problems in the region.**
- **No thank you on the Emerald Sky Dairy expansion. There is no way to safely produce 42 million gallons of waste.**
- **This has proven to be a vulnerable landscape that can't handle the current load of animals – more animals will not make things better.**
- **Until Emerald Sky Dairy proves to be a better steward of the environment, they should not be allowed to expand.**
- **Consideration should be given to a reduction in animal units at the operation.**
- **Expansion should not occur. It takes decades for groundwater quality to recover once impacted.**

*Response: The department has not included an animal unit maximum capacity as part of this WPDES CAFO permit action. Instead, the department monitors compliance with permit requirements to maintain adequate storage and land base for storing manure and process wastewater. Department staff also monitor compliance by conducting periodic site inspections of the production area and land application sites to determine compliance with permit discharge limitations and nutrient management requirements.*

#### **Comment(s):**

- **Emerald Sky Dairy has a history of spills at their existing size, doubling will only put all of use, the rivers, and wildlife more at risk.**
- **The farm should not be able to expand due to past history of spills.**
- **The proposed expanded cow numbers would more than double manure generation estimates. We should then expect more than twice as many negative impacts on surface and ground water quality due to manure spills and manure-contaminated runoff.**
- **No expansion should be allowed. Water supply is hard enough to protect. CAFOs are shown to be extensive polluters, regardless of all their attempts to prevent it from happening.**

- **Emerald Sky Dairy should not be allowed to expand until they can demonstrate best operational practices. They have not shown they have the ability to conform to regulations such as reporting manure spills, and they skate close to the edge regarding other rules designed to protect their neighbors from harm.**

*Response: Requirements and conditions of the proposed permit are intended to protect water quality and are enforceable. If the terms of a WPDES CAFO permit are violated, department programs employ a stepped enforcement process. This process is designed to resolve violations at the lowest level appropriate for the circumstances. When non-compliance is identified, the stepped enforcement process is initiated, and parties are held accountable for bringing their operation back into compliance.*

*The department has taken enforcement actions against Emerald Sky Dairy during the current permit-term. The department has worked through the permit violations and conducted several site inspections since the violations occurred. Inspected areas include the production area, cropped fields, and the wetland complex directly south of the dairy. Emerald Sky Dairy is in compliance with their WPDES CAFO permit.*

*The department has reviewed the Emerald Sky Dairy permit reissuance application. Based on the review, the department has determined Emerald Sky Dairy has the available cropland in their nutrient management plan to support the waste generated by their proposed herd size. Emerald Sky Dairy has also displayed they have adequate waste storage to properly store manure and process wastewater generated by their proposed herd size.*

### **Nutrient Management Implementation and Agency Oversight:**

#### **Comment(s):**

- **Implementation of the NMP required inspections, whether it be the DNR or the local land conservationist. Such an inspection needs to ascertain if manure is truly being spread on all NMP designated land and not just those near the farm.**
- **DNR should require more frequent manure spreading and operation visits. Request for DNR to frequently visit this producer to monitor violations of manure management and enforce requirements.**
- **Who monitors what Emerald Sky Dairy or any CAFO claims as to how much manure they are spreading on a field is correct?**

*Response: Self-reporting is key component of the federal NPDES permit program that serves as a basis for Wisconsin's WPDES CAFO permit program. The permit requires the operation complete ongoing self-monitoring and reporting of its production area and nutrient management activities. The permittee is required to report certain types of non-compliance to the department within 24 hours. In addition to self-monitoring/reporting, the department (1) reviews annual reports summarizing self-monitoring activities and Nutrient Management Plan updates, (2) responds to citizen complaints, (3) conducts manure spreading inspections, (4) conducts a compliance inspection at least once every five-year permit term, (5) conducts more frequent inspections where warranted based on compliance issues, and (6) responds to spills should they occur. Documented noncompliance is subject to department compliance and/or stepped enforcement measures.*

*During the last permit-term department regional field staff conducted inspections at Emerald Sky Dairy on 8/30/2016, 11/20/2019, 11/21/2019, 10/6/2020, 3/30/2021, 7/28/2022, and 5/5/2023.*

#### **Comment: Is it even feasible to get liquid manure to acres in Springfield Township or Polk County?**

*Response: The Emerald Sky Dairy nutrient management plan does have manure allocated to many of these fields in later years of the current five-year plan. Since these acres are in the nutrient management plan, commercial fertilizer, tillage practices, crop rotations, etc. must still be reported to the department annually.*

#### **Comment: DNR should require cover crops and a change in what annual crop is grown. This would reduce repeatedly used acreage for manure spreading.**

*Response: The department has the authority to require CAFOs to maintain a nutrient management plan which meets WPDES CAFO permit and NRCS 590 Standard requirements. The Emerald Sky Dairy plan has been showed to meet these requirements.*

#### **Comment: DNR has reported that 90% of the phosphorus in surface waters comes from farm field runoff. Emerald Sky Dairy is a significant contributor to the pollution of the Willow and St. Croix Rivers.**

*Response: CAFOs are required to apply manure and process wastewater in accordance with their nutrient management plan and the General Spreading Restrictions section of the WPDES CAFO permit. Best management practices are also used to reduce the risk of discharges that could cause exceedances of surface water quality standards.*

*As part of a CAFO nutrient management plan special spreading restrictions are required on fields adjacent to lakes, ponds, navigable waterways, and direct conduits of navigable waterways. These areas are called Surface Water Quality Management Areas (SWQMA). A SWQMA zone is an area within 1,000 feet from a lake or pond, and 300 feet from a navigable waterway or a direct conduit to a navigable waterway. When a CAFO is developing a nutrient management plan, individual CAFOs shall select a SWQMA strategy from the acceptable practices listed in NR 243.14(4).*

*The Emerald Sky Dairy nutrient management plan includes SWQMA options 1 and 5.*

*- **Option 1:** When injecting or immediately incorporating, a 25-foot manure spreading setback to navigable waters, direct conduits to navigable waters, and wetlands will be instituted.*

*- **Option 5:** When surface applying on a field not in a long-term no-till rotation, a 100-foot setback to navigable waters and conduits to navigable waters will be instituted.*

*Emerald Sky Dairy immediately incorporates much of their manure using SWQMA Strategy Option 1. This option reduces the risk of manure and phosphorus from entering surface water features by creating a buffer and covering the manure with soil.*

**Comment: Manure from livestock operations and a karst landscape do not mix. There should be special permitting considerations when farms are located within a karst landscape.**

*Response: As part of the nutrient management plan, CAFOs shall identify known direct conduits to groundwater. Examples of these features in St. Croix County are sink holes, known depressional groundwater recharge areas, unabandoned wells, etc. Features considered direct conduits to groundwater shall be identified on the spreading restriction maps and manure application shall institute a 100-foot spreading setback.*

### **Permit Compliance Concerns:**

**Comment: The Contained Animal Feeding Lot in Emerald Township has a catastrophic failure in December, and they did not report it until March. How is that in anyway within compliance? Please advise.**

*Response: The department issued the farm a Notice of Violation in 2017 for the situation you described. The department referred this enforcement case to Wisconsin Department of Justice, where the case was settled for \$80,000. The farm developed a mitigation plan which the department reviewed as part of the enforcement case. The reviewed plan was then implemented by the farm and their consultants.*

*When the department determines a permittee is not complying with their permit, department stepped enforcement process is used to correct the problem. Emerald Sky Dairy is in substantial compliance with its WPDES permit which warrants permit reissuance.*

**Comment: Allowing Emerald Sky Dairy, or any CAFO to continue operating and polluting groundwater despite repeated violations is negligent, therefore the permit should be suspended or revoked.**

*Response: The department has taken several enforcement actions against Emerald Sky Dairy during the current permit-term. Actions include several Notice of Noncompliance enforcement letters and two Notice of Violation actions, which were then referred to the Wisconsin Department of Justice (DOJ). The operation has since come back into compliance with its WPDES CAFO permit, therefore reissuing the permit is warranted.*

**Comment: Based on past history of manure spills, they've shown a disregard for the environment and requirements for reporting rules, therefore expansion should not be allowed.**

*Response: The permittee is responsible for cleanup in the event of a spill, leak, overflow, or any runoff event that occurs. Requirements in the permit are included to ensure that cleanup is prompt and thorough to prevent adverse impacts to the environment. In cases when the department alleges a permit violation, department stepped enforcement process is used to document and correct the issue.*

**Comment: The DNR has regulatory authority under NR 243.31(1) which states "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.**

*Response: The department has taken several enforcement actions against Emerald Sky Dairy during the current permit-term. The operation has since come back into compliance with its WPDES CAFO permit; therefore, the department believes the permit should be reissued.*

### **Department's Mission & Purpose:**

#### **Comment(s):**

- **Allowing this CAFO to continue operating would be contrary to the DNR mission of protecting our air, land, and water, and providing a healthy, sustainable environment.**
- **Citizens support the Department and staff and ask that the Department's mission statement and its vision to "protect and manage natural resources while supporting the economy and the well-being of our citizenry" be implemented by requiring additional operation measures for the permit renewal, and denial of the expansion.**
- **Every verbiage of the WI DNR states, the need to protect our groundwater, and our citizens have the right to safe drinking water. Please advise.**
- **The purpose of the Wisconsin Department of Natural Resources Environmental Management Division is to protect Wisconsin's air, land, water, and public health through compliance support. Two of the six programs are Drinking & Groundwater, as well as Water Quality. How are you upholding that?**
- **Allowing this CAFO to continue operating and to continue rendering significant adverse impacts on the citizens of Emerald Township, our groundwater, the Willow River, and the St. Croix River would be contrary to the DNR stated values of Integrity, Professionalism, and Respect.**
  
- **1983 WISCONSIN ACT 410, WISCONSIN'S COMPREHENSIVE GROUNDWATER PROTECTION ACT, which created Chapter 160, WISCONSIN STATE STATUTE. THIS LAW IS BASED ON THE PREMISE, THAT ALL GROUNDWATER AQUIFERS IN WISCONSIN ARE ENTITLED TO EQUAL PROTECTION. THE FOUNDATION OF WISCONSIN'S GROUNDWATER LAW IS THE BELIEF THAT ALL GROUNDWATER IN WISCONSIN MUST BE PROTECTED EQUALLY TO ASSURE THAT IT CAN BE USED FOR PEOPLE TO DRINK TODAY AND IN THE FUTURE. Please advise.**

*Response: The DNR implements the WPDES CAFO permit program in accordance with the authority provided by the state legislature under ch. 283, Stats., and with oversight by US EPA. Conditions in WPDES CAFO permits are consistent with the authorities given and the requirements outlined in ch. NR 243, Wis. Adm. Code.*

### **General Comments:**

**Comment: Lack of adequate state funding and commitment has resulted in a reduction of DNR staff and excessive, unrealistic workloads for those who remain.**

*Response: A WPDES CAFO permit requires the operation to complete self-monitoring and reporting of its production area and cropland. The permittee is required to report certain types of noncompliance within 24-hours. Permittees provide the department an annual summary of the self-reporting records, which are reviewed by department staff.*

*In addition to self-reporting, department staff will conduct periodic inspections of the production area and cropland/manure spreading activities. Outcomes of these inspections help the department determine whether the permittee is complying with their permit.*

**Comment: Their permit expired over three years ago. Which precise state statute allows them to continue legal operation without a valid permit in place?**

*Response: State statute ch. 227.51(2) Administrative Procedure and Review pertains to expired licenses. In the case of WPDES CAFO permits, the department categorizes these as licenses. This statute allows a licensee to continue operation until the agency has taken a final action on the application renewal.*



**Comment: If the dairy is allowed to remain there needs to be an assurance bond to ensure future clean-up activities are done in a timely and effective manner.**

*Response: The department does not have the authority to include an assurance bond as part of a WPDES CAFO Permit. The following sections of the proposed permit are intended to address reporting and cleanup in the event of a spill or accidental discharge.*

- *Permit section 3.1.7 of the proposed permit outlines a duty to mitigate. This permit section states, “The permittee shall take all reasonable steps to minimize or prevent any adverse impact on the waters of the state resulting from noncompliance with the permit”.*
- *Permit section 3.1.11 of the proposed permit outlines spill reporting. This section requires the permittee to notify the department in the event of a spill or accidental release of any material resulting in the discharge of pollutants to waters of the state.*
- *Permit section 3.1.16 of the proposed permit outlines noncompliance 24-hour reporting. The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided to the department within 24 hours from the time when the permittee becomes aware of the situation.*

**Comment: The animals in a CAFO, although they are fed and provided a spot to ruminate, probably never get to see the sun or taste the grass that they have all evolved to favor.**

*Response: A WPDES CAFO permit regulates waste produced by a livestock operation with more than 1,000 animal units (equivalent to approx. 714 milking cows). The permit does not dictate a farm’s size or chosen business model.*

**Comment: If the DNR fails to revoke the permit of Emerald Sky Dairy then the following comes into play. The DNR only has regulatory authority over CAFOs because the Federal Environmental Protection Agency (EPA) has delegated to them authority for implementation of the Clean Water Act and Federal CAFO permit program. However, with this authority, goes the responsibility for compliance with the National Environmental Policy Act (NEPA). The DNR has assumed this responsibility under NR 150, entitled Environmental Analysis and Review Procedures. Based on 35 years of responsibility for NEPA compliance with the Army Corps of Engineers, Bureau of Land Management, and U.S Fish and Wildlife Service there is no doubt in my mind that issuing a CAFO operating permit would constitute an action that would require preparation of an EIS in order to achieve compliance with NEPA.”**

*Response: This WPDES permit action is an integrated analysis action under s. NR 150.20(2), Wis. Adm. Code, and does not require a separate environmental analysis process. The DNR has complied with ch. NR 150, Wis. Adm. Code.*

**Comment: This permit should take climate change into consideration.**

*Response: Manure and process wastewater storage and transfer systems at Emerald Sky Dairy are designed to comply with a 25-year, 24-hour storm event referenced in s. NR 243. In practice, given the design and operational restrictions associated with WPDES CAFO permits, it is extremely uncommon for allowable production area discharges to occur at operations with proper containment, even given more extreme precipitation events.*

**Comments Received Beyond the Score of This WPDES CAFO Permit:**

**Comment(s):**

- **Do the employees make a living wage with benefits or just bare minimum?**
- **Impacted groundwater and surface water will negatively impact property values**
- **Expanding the dairy will only benefit the owners who do not live here**
- **St. Croix County residents are not well represented about issues that affect individuals in regards to their physical well-being in contrast to the economic well-being of individuals and organizations that have vast monetary resources.**

- Wisconsin used to be a national leader in protecting water resources and the environment. I am hoping that DNR will protect the public against the abusers of Wisconsin resources, including Emerald Sky Dairy.
- Tuls Dairies has owned the dairy site for 7+ years, yet the owners or management have never attended a monthly Plan Commission or Town Board meeting; they are not committed to the community.
- A 4pm Zoom meeting was not in any way conducive to anyone who has any form of employment.
- Because of this CAFO, residents were reduced to the Zoom public hearing call to plead for the DNR to take action to relieve them from the ongoing agony of living in a rural industrial CAFO nightmare.
- There will be an economic loss to cities and towns on the St. Croix River as people will recreate somewhere else in order to avoid the health concerns that pollution would bring to the watershed. This would also have an economic impact to those who rely on the summer months to attract tourists.
- Which does DNR value most? The health and welfare of the good citizens of Emerald Township or the continued operation of a polluting CAFO with out-of-state ownership? Protecting the nationally significant St. Croix River or the continued operation of a polluting CAFO with out-of-state ownership?
- Water is too valuable to risk the expansion, as some area residents cannot even drink their own well water.
- Who is really backing these CAFO's – it almost always comes down to big money.
  
- Local Groundwater Management falls under the Saint Croix County Rules and states that it is to "Encourage the Protection of Groundwater." Please advise.
  
- Why aren't "supply & demand" considerations included in deciding whether or not to approve an expansion?
- concerned regarding their lack of responsibility to the watershed and also their negative influence on public health to the people in their area....especially the 90 families who live within a 2 mile radius of the dairy.
- People want environmentally sound farming, not farming that will pull us deeper into a climate crisis.
- Statistics show that CAFOs are extensive polluters, regardless of all their attempts to prevent it from happening; it takes decades for groundwater to recover.
- No expansion should be allowed. Water supply is hard enough to protect. CAFOs are shown to be extensive polluters, regardless of all their attempts to prevent it from happening.
- Not too many years ago, a DNR official in charge of our natural resources predicted that industrial agriculture in WI would bring widespread contamination of our groundwater; it is indeed happening.

*Response: No specific suggestions to the proposed draft WPDES CAFO permit were made in the comments summarized above; therefore, no changes were made to the permit. Technical staff that review and approve associated permit application and compliance items do verify that all requirements of the law are met.*



## Community Development

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7/27/2023

**TO:** Jeff Jackson, WI DNR

**FROM:** Tim Stieber, Resource Management Administrator, St. Croix County

**RE:** Emerald Sky Dairy Public Hearing Comments – Second Submission

Here are some comments related to reissuance of a WPDES Permit for Emerald Sky Dairy (ESD) that I saw the need for after listening to the public comments.

Several commenters at the hearing brought up groundwater nitrate. They believed Emerald Sky Dairy (ESD) is causing nitrates to increase in their area. St. Croix County has been very active in groundwater monitoring for over 20 years and has amassed a significant number of data sets related to groundwater nitrates. I attached a summary of St. Croix Counties work. Groundwater nitrates are increasing throughout the County as they are in many areas of the state. The increase in corn acres and decrease in pasture and alfalfa explain much of that trend. Six towns meet Tier 1 status for nitrates including the town of Emerald. Two of the highest recorded nitrate samples are located within 1.5 miles of ESD. They are surrounded by continuous corn that receives manure and fertilizer annually according to the NMP. ESD could help reduce nitrates by rotating crops and incorporating cover crops on as many acres as possible. These two measures would make a difference.

One other issue that relates indirectly to ESD is the DNR policy to not allow use of TRM grant funds on lands included in the NMP of a CAFO. St. Croix County has much interest from landowners in the Willow River watershed for cover crops and other practices but can not contract with about 1/3 of the acres because those farms are listed as being in a CAFO NMP. As it turns out the 1/3 of landowners we can not work with in the Willow due to this policy are the watershed leaders so it has been slow going. The County believes the CAFO NMP's achieve the Ag Performance Standards – additional cost share would help achieve a higher level of water quality and be “over and above” current standards. The lands and operations are not owned or directed by ESD – they are just mentioned in the NMP as being eligible to receive manure. If we ask ESD to use more cover crops or rotate crops this would be almost entirely off ESD land and on other lands listed in the NMP. TRM funds would be perfectly situated to help facilitate BMP adoption right where it is most needed – on lands receiving dairy manure. The current policy is making it harder to achieve water quality.

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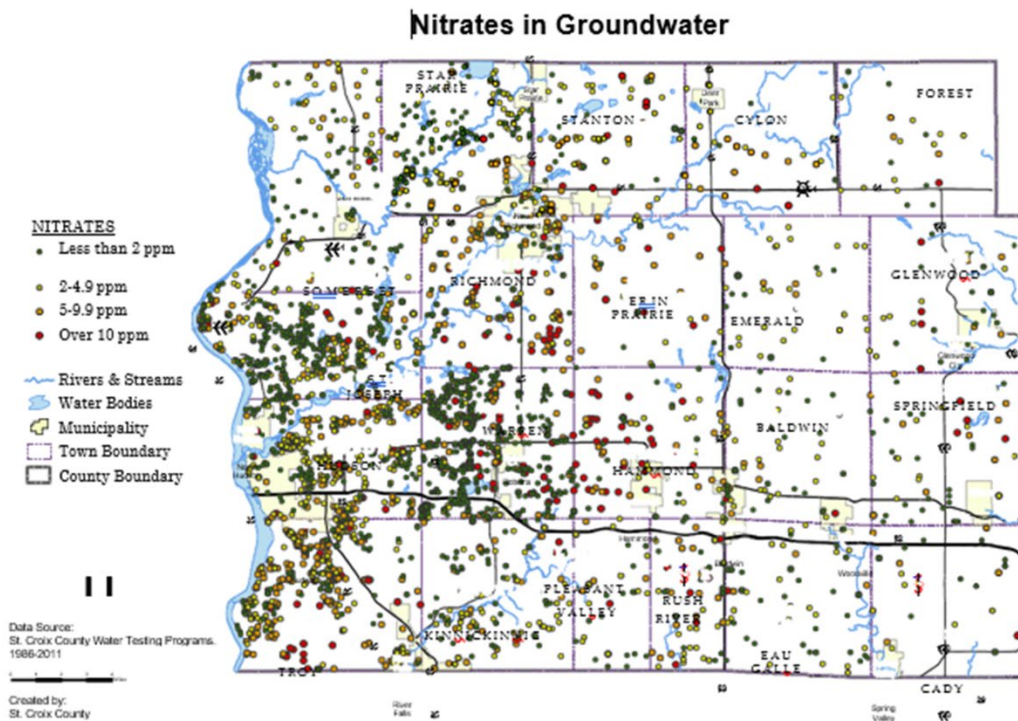
Tim Stieber  
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# Groundwater Nitrate in St. Croix County

**By Tim Stieber, Resource Management Administrator 7/26/23**

Nitrate is a pollutant that is widespread in Wisconsin as a groundwater pollutant (Reports to WI Congress 2020 and 2022). The source of 90% of the nitrate causing water quality problems statewide is agricultural activity according to the WI DNR based on years of work conducted across Wisconsin. Nitrogen is an important crop input for high yield agriculture. According to USGS report 2020-1153 there are 16.5 million lbs of N applied as fertilizer to crops in St. Croix County.

Groundwater nitrates are not a new concern in St. Croix County with staff involved in random sampling of domestic wells since the 1990's. In 2010 County reports indicate that 10% of domestic wells in St. Croix County exceeded the 10 ppm nitrate drinking water standard. The mapped results (below) represent work up through 2010 and show some areas of high nitrate beginning to be defined through sampling.



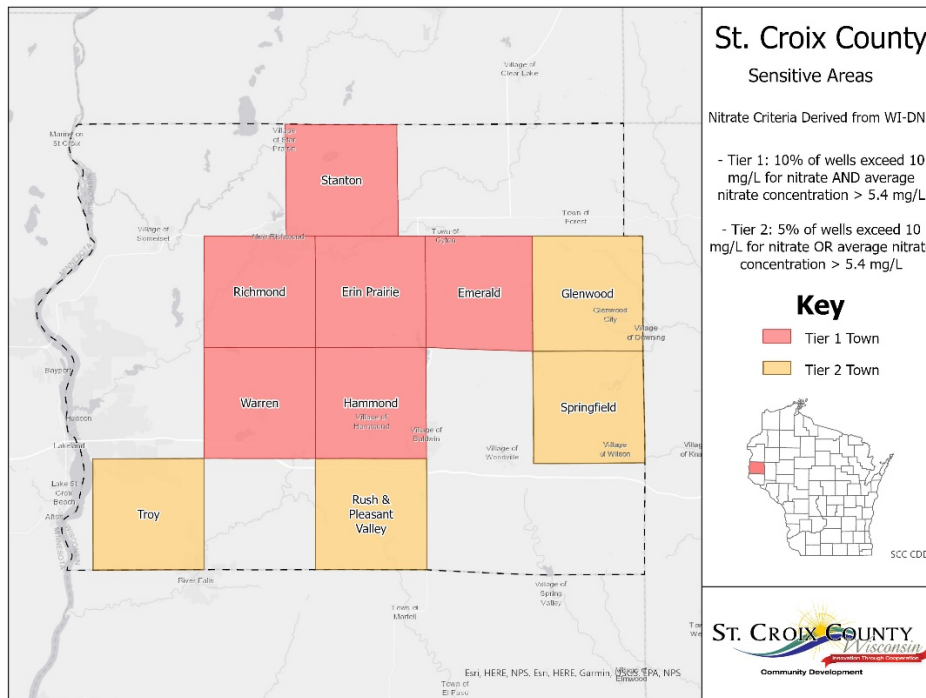
Sampling continued through 2018 at which time a 180 well network was established that was spatially distributed across the county. That network will be monitored for the fifth time in 2023. The number of wells exceeding the nitrate drinking water standard is increasing and now averages 13%.

County exposure to high nitrates is provided in the Table below. St. Croix County ranks third in the state for the number of residents exposed to nitrates above 10 ppm. Also worthy of note is the low percentage of wells (15%) that have "pure" water <1 ppm nitrate.

**County resident exposure to high nitrates.**

<b>Statistics from 2019 – 2022 CGMP Well Nitrate Results</b>		
<b>Nitrate Concentration In Well</b>	<b>Number of Wells County Wide (Based on POWTS Database)</b>	<b>Number of Residents Drinking Water (2.59 residents/household)</b>
> 10 mg/L	2,307 (13%)	5,975
9.99 – 5.00 mg/L	6,211 (35%)	16,087
4.99 – 1.00 mg/L	6,566 (37%)	17,006
<1.0 mg/L	2,662 (15%)	6,894

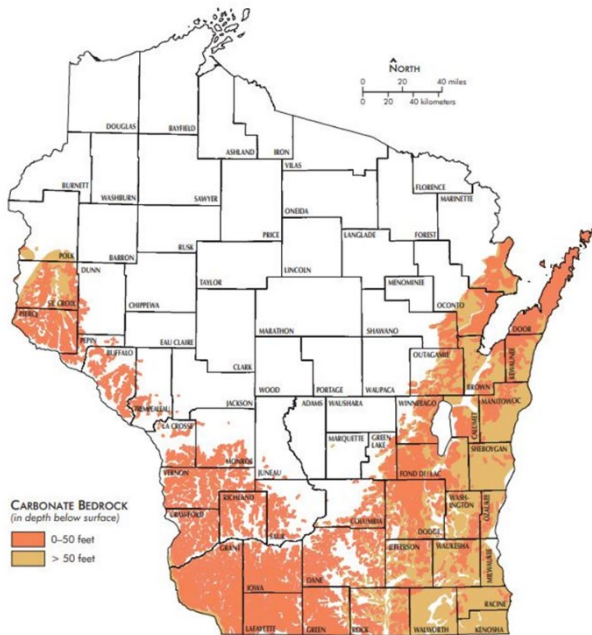
Six Towns meet the WI DNR Tier One definition for nitrates (see map below) with some of those towns having over 20% of wells exceeding 10 ppm nitrate. Best Management Practices to improve nitrates and possibly regulation should concentrate in these six towns to maximize impact.



**Groundwater Vulnerability**

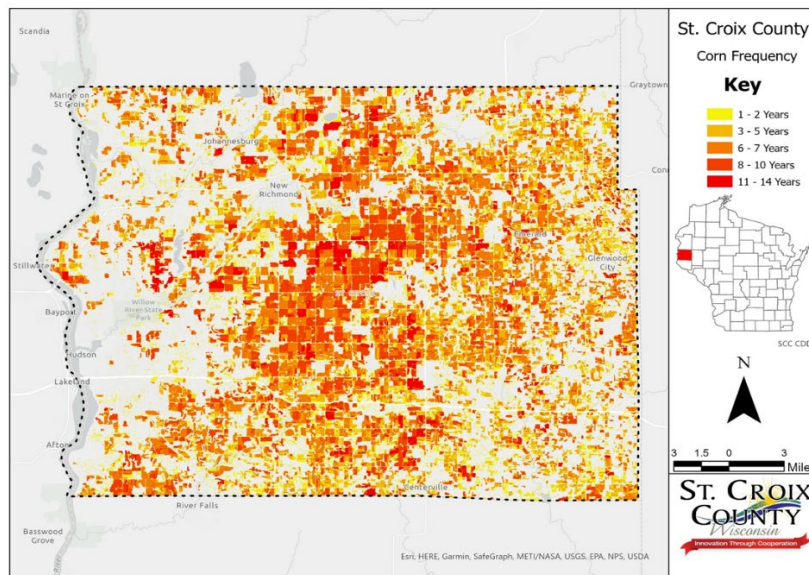
Many factors can contribute to groundwater contamination including intensive cropping, soil permeability, subsoil and bedrock type and geology, groundwater depth, and well construction and depth. These and other factors have been studied using the County’s extensive nitrate results data base and information from Well Logs. In general, well depth and construction do not explain St. Croix County high nitrates. Well location in limestone and sandstone bedrock and frequency of corn agriculture in proximity to a well explain most wells over 10 ppm nitrate.

Most domestic wells in the County are located in vulnerable limestone and sandstone formations classified as Karst (see figure below). Often wells are cased just down to these formations and these wells often show the highest nitrates.



Areas with carbonate bedrock in WI.

St. Croix County has over 95,000 acres of corn grown for grain and silage. This acreage has been increasing as pasture and alfalfa land are taken out of production. Corn requires substantial nitrogen fertilizer additions to obtain high yields. Invariably some of this nitrogen leaches past the root zone and is lost to groundwater. When corn is grown year after year the nitrate leaching potential increases. The USDA Corn Frequency Layer (map below) clearly shows that many of the “high nitrate” areas in St. Croix County are also areas where continuous corn is grown without rotation.



## **Solutions**

### Agriculture:

Substantial nitrate could be kept out of groundwater through wider adoption of basic conservation practices. If nitrate leaching from corn can be reduced by 20 to 30 pounds per acre groundwater nitrates can be kept below 10 ppm in most areas.

Fall Cover Crops – these soak up residual nitrate left in the soil at season’s end.

Improved Nitrogen Fertilizer Management through realistic yield goals, split application, and testing.

Crop rotation needs promotion in areas currently being farmed as continuous corn.

### Homeowners:

Well water testing is being promoted at nitrate clinics conducted 4 to 5 times per year.

Reverse osmosis is being promoted as a method effective at treating drinking water for nitrates and other contaminants.

Well construction can impact resulting water quality. Education on this is needed with landowners.



## Community Development

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7/25/2022

**TO:** Jeff Jackson, WI DNR

**FROM:** Tim Stieber, Resource Management Administrator, St. Croix County

**RE:** **Emerald Sky Dairy Public Hearing Comments**

Here are some comments related to reissuance of a WPDES Permit for Emerald Sky Dairy (ESD) and the County's Resource Management staff's experience working with ESD in recent years.

Since 2019 I have responded to a number of manure spill notifications submitted by ESD to the Spill Response Hotline. The ESD operation was quick to report spills whether they were large or very minor. Farm staff were always easy to work with and have quickly contained and cleaned up manure spills.

In 2022, ESD allowed DNR and County staff to conduct a field investigation to determine if evidence could be found of the big 2016/17 manure spill. The farm allowed full access to the team upon request and the field work was quickly completed.

There are 184 fields covering 5345 acres in ESD's Nutrient Management Plan (NMP). Copies of this plan are submitted to the County annually in a timely basis. There is a favorable distribution of a soil P levels represented in the plan. Thirty seven percent of fields have less than 25 ppm P and crop growth would likely respond to additional P. Another 40.8% of fields range from 25 ppm to 50 ppm soil test P which is favorable for crop growth but do not represent a big risk to producing high P runoff. Sixteen percent of fields have 50 to 100 ppm soil test P and only 5.5% have soil test P over 100 ppm. It seems that manure application can/should be shifted from the small number of fields with high soil test P because there are adequate fields in the plan that actually need phosphorous. There is also some need for more crop rotation of some fields which seem to have been in continuous corn for over 10 years.

One last comment relates to the NMP process being utilized that is NOT unique by any means to ESD. In the statute outlining the Phosphorus Index Performance Standards (NR151.04) – Section 2 outlines at length that NMP's should be based on historical data and that after 8 years of planning a NMP would be entirely based on historical data for yields, rotation, manure, application amount, fertilizers applied, and soil tests. This is almost never done in NMP's I receive because SNAP PLUS software does not accommodate entry of actual data post season. All that is currently available is what was planned each year – not actual. Actual data is what was called for in NR 151.04 and its use would greatly improve all NMP's. Whatever DNR can do to ask for improvements to SNAP PLUS to allow historical data entry and utilization in calculations would be appreciated.

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