

Permit Fact Sheet

General Information

Permit Number:	WI-0053376-07-0
Permittee Name:	Maple Leaf Farms Downy Duck Farm
Address:	24830 Washington Ave
City/State/Zip:	Kansasville WI 53139
Discharge Location:	Unnamed tributaries to the Wind Lake Drainage Canal Watershed and groundwaters of the state

Animal Units					
Animal Type	Current AU		Proposed AU (Note: If all zeroes, expansions are not expected during permit term)		
	Mixed	Individual	Mixed	Individual	Date of Proposed Expansion
Ducks - dry lot (each) (non-liquid manure system)	290	965.7	0	0	
Total	290	965.7	0	0	

Facility Description

Maple Leaf Farms Downy Duck Farm is an existing Concentrated Animal Feeding Operation (CAFO) for Pekin ducks in the Town of Dover in Racine County, Wisconsin. Maple Leaf Farms Downy Duck Farm consists of barns, solid stacking pad, and six liquid waste storage facilities, four of which are planned to be abandoned during the permit term. The current duck flock is 965.7 animal units (29,000 ducks). There is no planned expansion (structures or flock size) during the permit term.

Approximately 1,335,000 gallons of liquid manure and process wastewater, and 6,000 tons of solid manure is produced annually at the current flock size. All liquid waste generated on farm will be transferred to a wastewater treatment plant for disposal. No liquid waste is planned to be land applied. Maple Leaf Farms Downy Duck Farm owns or rents 1,891.7 acres of cropland, of which approximately 1,681.7 acres are spreadable.

Substantial Compliance Determination

Enforcement During Last Permit: None

After a desk top review of all files, a site inspection on August 13, 2020 and October 3, 2023, this facility has been found to be in substantial compliance with their current permit.

Sample Point Designation For Animal Waste		
Sample Point Number	Sample Point Location, WasteType/sample Contents and Treatment Description (as applicable)	
006	WSF 1 (DL 1): Sample point 006 is for liquid waste storage facility 1 (WSF 1), DL 1. WSF 1 is an earthen storage and is the eastern most storage. The facility has a capacity (MOL) of 314,000 gallons and was constructed in 1972. This storage accepts manure and process wastewater from the solid manure stacking pad and stormwater.	
007	WSF 2 (DL 2): Sample point 007 is for liquid waste storage facility 2 (WSF 2), DL 2. WSF 2 is an earthen storage located west of WSF 1. The facility has a capacity (MOL) of 291,000 gallons and was constructed in 1972. This storage accepts manure and process wastewater from WSF 1.	
012	WSF 7: Sample point 012 is for solid waste storage facility 7 (WSF 7). WSF 7 is a solid manure stacking pad located on the southeast side of the facility. The facility has a capacity of 5,300 cubic yards of manure/bedding and was constructed in 2019 with department approved plans and specs. This storage accepts manure from the barns. Runoff from WSF 7 is collected and transferred to WSF 1 (DL 1).	
013	Settled Solids: Sample point 013 is for any manure solids removed from bottom of liquid waste storage facilities. This includes manure-laden sand solids, manure fiber solids, etc. Representative samples shall be taken from each waste storage facility.	
014	Storm Water Runoff Control System: Sample point 014 is for visual monitoring and inspection of all production site storm water conveyance systems. This includes roof gutter and downspout structures, drainage tile systems, grassed waterways and other diversion systems that transport uncontaminated storm water. Proper operation and maintenance is required to keep uncontaminated runoff diverted away from manure and process wastewater handling systems. Weekly inspections are required and shall be recorded according to monitoring program.	

Sample Point Designation For Groundwater Monitoring Systems			
System	Sample Pt Number	Well Name	Comments
Production Area	801	DMW-6	
Production Area	802	DMW-7	
Production Area	803	DMW-8	

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 228 days of storage for liquid manure. 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 with 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 29,000 ducks (965.7 animal units), it is estimated that approximately 1,335,000 gallons of manure and process wastewater will be produced per year. The permittee owns *approximately* 31.8 acres of cropland and rents about 1,859.9 acres. Given the rotation commonly used by the permittee, 1,681.7 acres are available (or open) 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.

Sample Point Number: 006- WSF 1 (DL1); 007- WSF 2 (DL2)

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	

1.1.1 Changes from Previous Permit

Samples points 006 (WSF 1) and 007 (WSF 2) were edited to include a more accurate and up-to-date description.

Samples points 0008 (WSF 3), 009 (WSF 4), 010 (WSF 5), and 011 (WSF 6) were deleted as the storages have been abandoned.

1.1.2 Explanation of Operation and Management Requirements

Wastes shall be stored, and land applied according to permit and nutrient management requirements.

Sample Point Number: 012- WSF 7; 013- Settled Solids

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	

1.1.3 Changes from Previous Permit

Sample points 004 and 005 were removed as Maple Leaf Farms Downy Duck no longer operates the solid stacking pads.

Sample point 012 (WSF 7) was added for the solid stacking pad constructed in 2019.

Sample point 013 (Settled Solids) was added to account for any solids removed from the waste storage facilities.

1.1.4 Explanation of Operation and Management Requirements

Wastes shall be stored, and land applied according to permit and nutrient management requirements.

Sample Point Number: 014- Storm Water Runoff Controls

1.1.5 Changes from Previous Permit

Sample point 014 (Storm Water Runoff Controls) was added to more accurately represent the site.

1.1.6 Explanation of Operation and Management Requirements

There is no required sampling for the runoff controls. Rather, there is required inspection and routine maintenance that should be recorded on a monitoring and inspection form or calendar. A copy of the inspection records shall be submitted with the Annual Report.

2 Groundwater – Proposed Monitoring and Limitations

2.1 Groundwater Monitoring System for Production Area

Location of Monitoring system: The vicinity of the production area.

Wells to be Monitored: DMW-6, DMW-7, DMW-8

Well Used To Calculate PALs: DW-6

Point of Standards Application Well(s): DMW-6, DMW-7, DMW-8

Parameter	Units	Preventative Action Limit	Enforcement Standard	Frequency
Depth To Groundwater	feet	*****	N/A	Annual
Groundwater Elevation	feet MSL	*****	N/A	Annual
Nitrogen, Nitrite + Nitrate Total	mg/L	2.0	10	Annual
Nitrogen, Ammonia (NH ₃ -N) Total	mg/L	0.97	9.7	Annual
Nitrogen, Total Kjeldahl	mg/L	*****	N/A	Annual
Nitrogen, Organic Total	mg/L	2.4	N/A	Annual
Chloride	mg/L	125	250	Annual
pH Lab	su	*****	N/A	Annual
COD	mg/L	*****	N/A	Annual
Solids, Total Dissolved	mg/L	1,900	N/A	Annual
E. coli	#/100 ml	0	0	Annual
Potassium Dissolved	mg/L	10.5	N/A	Annual
Carbon, Total Organic	mg/L	14	N/A	Annual

Changes from Previous Permit:

Groundwater monitoring is included in this permit as a result of an engineering evaluation of the liquid waste storage facilities.

Explanation of Limits and Monitoring Requirements

See attached groundwater memos

3 Schedules

3.1 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.	02/01/2024

3.2 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 30 days of the effective date of this permit.	02/01/2024

3.3 Annual Reports

Submit Annual Reports by January 31st of each year in accordance with the Annual Reports subsection in Standard Requirements. In the annual reports submitted 2024, 2025, and 2026 include the condition on the WSF abandonment area.

Required Action	Due Date
Submit Annual Report #1: Shall include monitoring and inspection results from the previous 12 months, consistent with the requirements of department form 3400-025E.	01/31/2024
Submit Annual Report #2: Shall 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 #3: Shall 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 #4: Shall 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 #5: Shall include monitoring and inspection results from the previous 12 months, consistent with the requirements of department form 3400-025E.	01/31/2028
Ongoing Annual Reports: Continue to submit Annual Reports until permit reissuance has been completed.	

3.4 Nutrient Management Plan

Required Action	Due Date
Management Plan Annual Update #1: Submit an Annual Update to the Nutrient Management Plan by March 31st of each year. To include updated restriction maps, winter spreading restriction maps, and headland stacking sites as described in the NMP Conditional Letter dated September 8, 2023.	03/31/2024
Management Plan Annual Update #2: Submit an Annual Update to the Nutrient Management Plan.	03/31/2025
Management Plan Annual Update #3: Submit an Annual Update to the Nutrient Management Plan.	03/31/2026
Management Plan Annual Update #4: Submit an Annual Update to the Nutrient Management Plan.	03/31/2027
Management Plan Annual Update #5: Submit an Annual Update to the Nutrient Management Plan.	03/31/2028
Ongoing Management Plan Annual Updates: Continue to submit Annual Updates to the Nutrient Management Plan until permit reissuance has been completed.	

3.5 Manure Storage Facility - Abandonment

Implement the abandonment plan approved by the Department June 2022.

Required Action	Due Date
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Complete Abandonment: Complete abandonment as approved by the Department.	04/01/2024
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3.6 Submit Permit Reissuance Application

Required Action	Due Date
Reissuance Application: Submit a complete permit reissuance application 180 days prior to permit expiration.	06/01/2028

3.7 Explanation of Schedules

Schedules are included in the permit to ensure compliance with s. NR 243, Wis. Admin. Code, requirements. Schedules for the following items have been incorporated into the permit:

The schedules contained in 2.1, 2.2, 2.3, 2.4, and 2.6 are standard permit schedules.

Schedules contained in 2.5 is for submitting documentation of abandonment of the waste storage facilities in the department approved plan dated June 2022.

Other Comments:

NA

Attachments:

Conditional NMP Approval Letter: September 2023

Abandonment Plan Approval Letter (R-2022-0078): June 2022

Groundwater Monitoring Review Letter (R-2019-0085): September 2019

Groundwater Monitoring Recommendation: June 2022

Groundwater Monitoring PAL Calculations: September 2023

Proposed Expiration Date:

12/31/2028

Prepared By:

Victoria Ziegler Agricultural Runoff Management Specialist

Date: 10/16/2023



September 8, 2023

Racine County
Approval

Bruce Engelhardt
Maple Leaf Farms Downy Duck Farm
24830 Washington Ave.
Kansasville, WI 53139

SUBJECT: Conditional Approval of Maple Leaf Farms Downy Duck Farm Nutrient Management Plan, WPDES Permit No. 0053376-07-0

Dear Mr. Engelhardt:

After completing a review of Maple Leaf Farms Downy Duck Farm 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 Maple Leaf Farms Downy Duck Farm review the NMP with those individuals involved with manure applications to ensure all remain familiar with the approved manure spreading protocol, spreading maps, field and map verification, record keeping requirements, and all the conditions of this approval. Specifically, some fields in Maple Leaf Farms Downy Duck Farm may have:

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

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

FINDINGS OF FACT

The Department confirms that:

1. A current duck flock size of 965.7 animal units (29,000 ducks). Currently there are no planned expansions in the next permit term.
2. Manure generation and spreading records indicate your herd will annually generate approximately 1,335,000 gallons of manure and process wastewater and 6,000 tons of solid manure in the first year of the permit term.
All liquid waste generated on farm will be transferred to a wastewater treatment plant for disposal. No liquid waste is planned to be land applied with this NMP.
3. The use of application restriction options 1,2 and 5 within surface water quality management areas.

4. The use of phosphorus delivery method P Index.
5. That Maple Leaf Farms Downy Duck Farm currently has 1,891.7 acres (31.8 owned and 1,859.9 controlled through contracts, rental agreements or leases, or under manure agreements) of which 1,681.7 are spreadable acres.
6. That some fields included in the NMP are directly adjacent to or have high potential to deliver nutrients and sediment to Root River Canal (listed 303(d) impaired water by 'Total Suspended Solids and Total Phosphorus'), West Branch Root River Canal (listed 303(d) impaired water by 'Total Suspended Solids and total Phosphorus'), Unnamed 4840 (listed 303(d) impaired water by 'Total Phosphorus'), Des Plaines River (listed 303(d) impaired water by 'Total Phosphorus').
7. That no fields are directly adjacent to or have high potential to deliver nutrients and sediment to outstanding/exceptional waters.
8. That 34 fields are tiled.

- BON 1	- BON 4	- BON 5
- BON 6	- BON 7	- BON 8
- BON 9	- BON 10	- BON 11
- BON 12	- BON 13	- D1E
- D1W	- H1	- H2
- H3	- H4	- JR4
- ROW 3	- ROW 4	- ROW 5
- ROW 6	- ROW 7	- ROW 8
- ROW 11	- SCHM 1	- SCHM 2
- SCHM 3	- SCHM 4	- SCHM 5
- SCHM 6	- W2	- W3
- W5		

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

CONDITIONAL NUTRIENT MANAGEMENT PLAN APPROVAL

The Department hereby approves the 2023-2027 Maple Leaf Farms Downy Duck Farm Nutrient Management Plan subject to the following conditions and the applicable requirements of Ch. NR 243, Wis. Adm. Code:

FIELD AND MANURE MANAGEMENT

1. Fields not included in the NMP and new fields shall not receive manure or process wastewater applications until they have been properly soil sampled, entered into Snap Plus, evaluated for their nutrient needs, and approved by the Department.
2. The following fields are prohibited from receiving applications of manure or process wastewater due to outdated soil tests:

- D1E	- D1W	- GRAS
- H2	- H3	- HEGK 3
- HEGK 4	- HEGT 1W	- JR 4
- MLFD 5	- MLFD 6	- MLFD 8

- | | | |
|-----------|-----------|-----------|
| - SCHM 1 | - SCHM 10 | - SCHM 10 |
| - SCHM 12 | - SCHM 2 | - SCHM 3 |
| - SCHM 4 | - SCHM 5 | - SCHM 7 |
| - SCHM 8 | - SCHM 9 | - W2 |
| - W5 | | |

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

3. If existing fields yield a soil test results 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. All liquid manure samples collected may be analyzed, at a minimum, for percent dry matter, total nitrogen, percent $\text{NH}_4\text{-N}$, percent $\text{NO}_3\text{-N}$, phosphorus, potassium, and sulfur.
5. If manure sample results have a dry matter (DM) content less than 2.0% and the percent ammonium (NH_4^+) is greater than 75% of the total N, Maple Leaf Farms Downy Duck Farm 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. Maple Leaf Farms Downy Duck Farm shall record daily manure applications by using form 'Manure Management- Maple Leaf Farms'. These forms shall be retained at the farm and provided to the department upon request.
7. Maple Leaf Farms Downy Duck Farm shall annually submit a spreading report that summarizes the land application activities listed under NR 243.19(3)(c)5., Wis. Adm. Code by using form 'Sage Environmental & Engineering Inc. Annual Spreading Report'.

WINTER SPREADING

8. Liquid manure applications during winter conditions, as defined by NR 243.14(7), Wis. Adm. Code, are prohibited with the exception of emergency applications.
9. No field s are approved for winter spreading solid manure, emergency applications of liquid manure and frozen liquid manure due to restrictions maps needing to be update (See submittal condition regarding maps):
10. Winter spreading of solid and liquid manure may not occur during the "high risk runoff period" pursuant to s. NR 243.14(6)(c) and NR 243.14(7)(c), respectively.
11. Winter applications of liquid manure shall only occur under emergency situations, after notifying the Department and receiving verbal approval.
12. 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.

HEADLAND STACKING

13. No headland stacking sites are approved. If headland stacking sites wish to be approved, they can be submitted to the department at any time during the permit term.

MANURE & PROCESS WASTEWATER IRRIGATION

14. Irrigation of manure or process wastewater is prohibited.

SUBMITAL AND RECORDKEEPING REQUIREMENTS

15. A copy of this conditional approval shall be included in all future annual Nutrient Management Plan Updates in addition to the NR 243 and NRCS 590 checklists.
16. By **March 31, 2024** Maple Leaf Farms Downy Duck Farm shall resubmit all manure and process wastewater restriction maps including all required restrictions.
17. By **March 31, 2024** Maple Leaf Farms Downy Duck Farm shall resubmit all winter spreading restriction maps for fields that are requesting winter spreading approval along with a list of fields to be approved for emergency winter liquid manure applications (minimum of 2).
18. By **March 31, 2024** Maple Leaf Farms Downy Duck Farm shall resubmit all headland stacking sites requesting approval including maps of the exact locations of the stacking sites, names of the stacking sites, and a list of those sites in the NMP Narrative.

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

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

If you have any questions regarding this approval I can be reached at 715-839-3775 or Aaron.Orourke@Wisconsin.gov.

Sincerely,



Aaron O'Rourke
WDNR Nutrient Management Program Coordinator
Wisconsin Department of Natural Resources

cc: Victoria Ziegler, WDNR Agricultural Runoff Specialist (Victoria.Ziegler@Wisconsin.gov)

Michelle Scott, WDNR Watershed Field Supervisor (Michelle.Scott@Wisconsin.gov)
Chris Clayton, WDNR Ag Runoff Section Chief (Christopherr.Clayton@Wisconsin.gov)
Ashley Scheel, WDNR CAFO NMP Reviewer (Ashley.Scheel@Wisconsin.gov)
Falon French, WDNR Intake Specialist (Falon.French@Wisconsin.gov)
Chad Sampson, Racine County (Chad.Sampson@racinecounty.com)
Robert Wendt, Applied Science Inc. (Robert.Wendt@appliedscienceinc.com)
Rachael Izdepski, Saga Environmental and Engineering Inc (rizdepski@saga-ee.com)
File



June 24, 2022

FILE REF: R-2022-0078
WPDES Permit #: WI-0053376

Mark Jeffrey
Maple Leaf Downy Duck Farm
P.O. Box 167
Leesburg, IN 46538

Subject: Conditional Approval of Plans & Specifications for liquid waste storages and pipeline abandonment and pipeline replacement at, Maple Leaf Downy Duck Farm at T03N, R20E, Section 04 in Dover Township, Racine County

Dear Mr. Jeffrey:

This letter is to inform you that the Wisconsin Department of Natural Resources (Department) has reviewed and conditionally approves the above referenced plans and specifications, submitted under certification by Nicholas Huettl, P.E., Applied Science, Inc. and received on March 29, 2022 with revisions received on June 17, 2022. The review was conducted in accordance with s. 281.41, Wis. Stats., chs. NR 151 and NR 243, Wis. Adm. Code, and applicable NRCS Standards. The attached engineering report describes the project, lists standards that apply and provides compliance analysis. Questions may be directed to the assigned regional staff or the review engineer Bernie Michaud (contact information is at the end of this letter).

Proposed Project: The proposed project includes the following facilities that are reviewable under s. NR 243.15, Wis. Adm. Code: The proposed project includes the abandonment of four liquid waste storage lagoons and associated waste transfer pipes and the replacement of a pipe.

Conditions of Approval: The plans and specifications for project number R-2022-0078 are hereby approved and subject to chs. NR 151 and NR 243, Wis. Adm. Code, and the conditions listed below:

1. **Design, Operation or Practices:** The following conditions are authorized to address potential pollutant discharge, based on the site specific factors listed in s. NR 243.15(1)(d), Wis. Adm. Code, and described in the attached engineering report.
 - a. In addition to the removal of the lagoon solids, the soft upper layer of soil liner/solids must be scraped down and removed until a firm soil liner layer is encountered. After this is achieved, the soil liner is to be systematically investigated for leaks and contaminated soils (soil mixed with waste) beneath them. When contaminated soils are found, they must be removed to the extent necessary with a minimum depth of 6-inches.
 - b. Removed liquid and solid waste and soil liner material from the abandoned lagoons are to be either transferred to a permitted wastewater treatment facility or land applied according to the operation's approved Nutrient Management Plan.
2. **Revisions:** If revisions are made to the approved plans and specifications, revised plans and specifications shall be submitted for approval modification, in accordance with ss. NR 108.03 and NR 108.04, Wis. Adm. Code, and s. 281.41(1)(c), Wis. Stats. Submit revised plans and specifications via the Department's e-Permitting System. **Note:** This includes revisions for local permitting. If a formal approval modification may not be warranted, contact the review engineer to confirm.
3. **Approval Period:** In accordance with ss. NR 243.15(1)(a)1., and NR 108.04(2)d., Wis. Adm. Code, if construction is not commenced within 2 years from the approval date, the approval is void, and a new approval must be obtained prior to commencing construction.
4. **Notification:** Prior to construction and when construction is complete, notify the Department's regional contact and county contact provided a copy of the approval (contact information is at the end of this letter).

5. **Inspection:** During the construction of critical components, inspection shall be performed by a Wisconsin registered professional engineer or other qualified third party (excludes the owner and construction contractor and their employees).
6. **Post-Construction Documentation:** In accordance with the permit, a post-construction report must be submitted to the DNR's e-Permitting website (<http://dnr.wi.gov/permits/water>) within 60 days of completing construction. The report must include documentation specified by s. NR 243.15(10), Wis. Adm. Code.

Limitation of Approval: The Department reserves the right to order changes or additions should conditions arise making this necessary. This approval is not to be construed as a determination on the issuance of a Wisconsin Pollutant Discharge Elimination System Permit or opinion as to the ability of the proposed system to comply with effluent limitations in such a permit, approval of an Environmental Impact Statement that may be prepared, or approval for any activities requiring a permit under chs. 30 or 31, Wis. Stats. Where necessary, plans and specifications should be submitted to the Department of Safety and Professional Services or other state or local agencies to ensure conformance with applicable codes or regulations of such agencies.

Tax Treatment: Tangible personal property, that becomes part of a waste treatment of pollution abatement plant or equipment, may be exempt from sales tax under s. 77.45(26), Wis. Stats. Similarly, property purchased or constructed as a waste treatment facility and used for industrial waste treatment may be exempt from general property taxes under s. 70.11(21), Wis. Stats. A prerequisite to exemption is filing a statement on prescribed forms. To obtain the forms, and information about this sales tax exemption, please contact the Department of Revenue, P.O. Box 8933, Madison, WI 53708, or check their website <http://www.revenue.wi.gov/>.

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
For the Secretary



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

Enclosures: Wisconsin DNR Engineering Report

Email: Nick Huettl; Applied Science Inc (608)278-9933; nicholas.huettl@appliedscienceinc.com Chad Sampson; Racine County Conservationist (262) 886-8479; chad.sampson@goracine.org Bernie Michaud - DNR, Central Office (608) 266-5239; Bernard.Michaud@wisconsin.gov Matt Woodrow, DATCP (920) 427-8505; matthew.woodrow@wisconsin.gov	Victoria Ziegler - DNR, SER (414) 391-8946; Victoria.Ziegler@wisconsin.gov Aaron O'Rourke; DNR, Eau Claire (715) 839-3775; aaron.orourke@wisconsin.gov Ben Benninghoff - DNR, SER, (414)369-9045; Benjamin.Benninghoff@wisconsin.gov Mark Jeffrey; Corporate Project Manager Maple Leaf Farms (574) 658-4121; mjeffrey@mapleleaffarms.com
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WISCONSIN DEPARTMENT OF NATURAL RESOURCES ENGINEERING REPORT**GENERAL INFORMATION****Farm Name:** Maple Leaf Downy Duck Farm**WPDES Permit#:** WI-0053376**Location Address:** 24830 Washington Ave., Kansasville, WI**DNR Project #:** R-2022-0078**Engineering Plans Certified by:****Initial Submittal:****Revised Submittal(s):**

Nicholas Huettl, P.E.

March 29, 2022

June 17, 2022

Site Assessment: The nearest stream is approximately 125 ft to the west and the nearest wetland is approximately 20 ft to the north of the proposed lagoon abandonments. The site has shallow groundwater as determined by adjacent groundwater monitoring wells. The proposed lagoon abandonments are in wetland indicator soils. The filling of the liquid waste lagoons to be abandoned are exempt from wetland fill regulations. If there were to be filling of wetlands outside current pond/berm areas, permitting would likely be needed and the DNR Wetland program should be contacted.

Proposed Facilities:

Abandonment: The proposed plan was submitted to abandon four liquid waste storage lagoons and associated pipelines. The plan is compliant with s. NR 243.17(7), Wis. Adm. Code. The lagoons are located north of Barn 4. The waste storage abandonment is to meet NRCS Standard 360 (6/21) and with s. NR 243.17(7), Wis. Adm. Code.

- The abandonment plan includes the following:
 - After removal of liquid and solid waste, contaminated soil will be removed as determined by color, odor or consistency of the soil indicating permeation or saturation with waste.
 - The abandoned lagoons will be filled so that rainfall will drain away from the lagoon footprints.
 - Five waste transfer pipes which interconnect the abandoned lagoons will also be abandoned.

Waste Transfer System: The proposed design was submitted to meet with NRCS Standard 634 (1/14). The design is compliant with s. NR 243.15(4), Wis. Adm. Code.

- A 6-inch clay waste transfer pipe going from manhole 10 to the pump station will be replaced with a PVC waste transfer pipe.
- A second submersible pump will be installed in the pump station as a back-up. This will not involve new underground piping or changes in pump performance.
- The DNR review letter for evaluation R-2017-0227 identified a lack of documentation of the condition of the clay waste transfer pipe(s). The June 17, 2022 project Addendum includes a summary of the site waste transfer pipes. Two of the existing clay pipes have already been replaced with PVC pipe and the remaining clay pipe is planned to be replaced with this project.

DAYS OF AVAILABLE LIQUID WASTE STORAGE: The submitted information states that Maple Leaf Downy Duck Farm has 228 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 biggest source of liquid manure waste is from the manure solids stacking pad. The liquid waste volumes are based on the NRCS spreadsheet and other estimated or calculated values and based upon a collection period of 365 days.

Total Liquid Waste Storage:	1,113,000 gallons
Total 25-yr, 24-hr Precip. on Storage	119,300 gallons
Total 25-yr, 24-hr Collected Runoff	48,500 gallons
Total Freeboard Vol.	296,000 gallons
Total MOL Liquid Waste Storage:	649,200 gallons

Barn Cleaning Wastewater	182,500 gallons
Net Precipitation on Storage Surfaces:	529,000 gallons
Total Stacking Pad Runoff Collected:	327,000 gallons
Total Liquid Waste Stored Below the MOL	1,038,500 gallons

PURPOSE OF THIS REPORT: This report documents review of plans and specifications for each structure or practice indicated below, including findings regarding the structure or practice's compliance with applicable standards. The reviewer considered if management and site assessment were conducted, documented, and reflected in the final design, and if proper construction and related plans (operation and maintenance, inspection, erosion control if applicable) were provided, and demonstrated compliance with applicable rules standards.

REVIEW COMMENTS: The site currently has a groundwater monitoring system. The operation proposes to continue groundwater monitoring for at least 2-years after the lagoon abandonment.

DECISION RECOMMENDATION: Based on my review completed on June 23, 2022, the proposed plans and specifications meet ch. NR 243, Wis. Adm. Code, and applicable NRCS Standards. Therefore, I recommend the plans and specifications be approved with specific conditions (justification provided). The following condition is recommended to be added to the approval letter:

- The NRCS Standard 360 (6/21) states that when contaminated soils are found in the abandoned lagoon, they must be removed to the extent necessary with a minimum depth of 6-inches. This abandonment plan does not call for a minimum removal of soil liner material of 6-inches across the entire footprint of the lagoon. To clarify the extent of soil liner material removal, the following condition is recommended to be added. In addition to the removal of the lagoon solids, the soft upper layer of soil liner/solids must be scraped down and removed until a firm soil liner layer is encountered. After this is achieved, the soil liner is to be systematically investigated for leaks and contaminated soils (soil mixed with waste) beneath them. When contaminated soils are found, they must be removed to the extent necessary with a minimum depth of 6-inches.

Bernie Michaud, P.E.
Water Resources Engineer

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
PO Box 7185
101 S. Webster Street
Madison WI 53707-7185

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Preston D. Cole, Secretary
Telephone 608-266-2621
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September 19, 2019

FILE REF: R-2019-0085a
WPDES Permit #: WI-0053376

Mark Jeffrey
Maple Leaf Farm
PO Box 167
101 E. Church St.
Leesburg, IN 46538

Subject: Groundwater Monitoring Evaluation Review for Maple Leaf Farm, (24830 Washington Ave., Kansasville, WI), Sec 04, T03N, R20E, Dover Township, Racine County – FURTHER ACTIONS ARE REQUIRED

Dear Mr. Jeffrey:

This letter is to inform you that the Department received on May 29, 2019 the evaluation for the waste storage ponds, submitted under certification by Nicholas Huettl, Applied Sciences, Inc. on behalf of Maple Leaf Farm. Nicholas Huettl evaluated the facilities listed below based on applicable NRCS Standards and ch. NR 243 Wis. Adm. Code.

In accordance with s. 243.16(1), Wis. Adm. Code, when submitting an evaluation for an existing facility the evaluation shall include, at a minimum, the following information:

- (a) A narrative providing general background and operational information on existing facilities and systems.
- (b) Available post-construction documentation including the date and materials of construction.
- (c) For facilities or systems that are part of the production area, an assessment of the ability of the facility or system to meet the production area requirements in s. NR 243.13, the adequate storage requirement under s. NR 243.14 (9), and accepted management practices.
- (d) An assessment of the ability of the facility or system to meet the applicable design requirements identified in s. NR 243.15.
- (e) Any proposed actions to address issues identified as part of the evaluation.

The Department has reviewed the Maple Leaf Farm groundwater monitoring data for the reviewable facilities listed below and finds that they meet the requirements for submission listed above. Nicholas Huettl's conclusion of the evaluation is that the reviewable facilities listed below meet the ch. NR 243 requirements. The Department has found insufficient data to justify the conclusion.

Waste Storage Ponds #DL1 - #DL6: Based on the groundwater (GW) monitoring data, it is unknown if the waste storage facilities meet the applicable requirements of ch. NR 243, Wis. Adm. Code.

- Assessment References: s. NR 243.15(3), Wis. Adm. Code.

Maple Leaf Downy Duck farm located in Kansasville, WI has six (6) earthen lagoons located to the north of the duck housing. Waste storage ponds #1 - #4 were constructed in 1972 and #5 - #6 prior to 1969. Prior to 1990 they were producing around 90,000 gpd of waste water that went to these ponds. From 1990-1994 some improvements were made and a 50% reduction in wastewater was actualized. In 1993-1997 GW monitoring was conducted on the production site, de minimis sampled levels were noted during this period. In June of 2018 three (3) new wells were installed and sampled until February 2019 by Applied Science Inc. Well DMW-6 is upgradient and DMW-7 and DMW-8 are down gradient.

Monitoring results noted slightly higher values of some constituents including dissolved organic carbon (DOC) and reduced values of nitrogen compounds (TKN, ammonia-N, organic-N) were present in DMW-8. Because groundwater elevation was quite shallow during the monitoring period, Applied Science considered these results are influenced by the near surface soil organic matter rather than the ponds. Applied Science recommended and concluded that based on groundwater monitoring results and measured subsoil permeabilities, that Downy Farm waste storage ponds meet the intent of ch. NR 243 in containing manure and wash water while minimizing

potential groundwater impacts. However they still recommend that the monitoring wells be maintained and sampled once annually during the 3rd quarter (July-September months) to demonstrate continued compliance.

The monitoring results indicated elevated dissolved organic carbon (DOC), Chloride, and ammonia in the down gradient monitoring wells. Monitoring results for Total Dissolved Solids (TDS) and Chloride were elevated in the upgradient well (DMW-6) compared to the sample results from 1997. Monitoring results for ammonia are above the Preventive Action Limits (PAL) (0.92mg/L) at DMW-8. The results that were recorded have an average of 1.2 mg/L and max of 1.5 mg/L. The Department's conclusion is that these results are inconclusive, and more sampling is needed. Currently there is a ch. NR 140 PAL exceedance of ammonia and additional sampling is required to determine if there is a release from the waste storage ponds or if this is naturally occurring. Naturally occurring ammonia is unlikely, as it has not been seen in the past but due to the wet spring and where the well is located, it is possible that a contamination slug from the wetland could be giving these results. Of the three wells that were sampled DMW-8 is the only well with elevated results of ammonia.

Conclusion:

The results indicate elevated dissolved organic carbon and elevated ammonia levels down gradient of the waste storage ponds. The elevated ammonia levels in well DMW-8 indicates that there may be leakage from the waste storage ponds, however additional annual sampling would be needed at monitoring wells DMW-6, DMW-7, and DMW-8, as recommended above.


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

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STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES



Mary Anne Lowndes
Chief, Runoff Management Section
Watershed Management Program



Jeff Kreider
Water Resources Engineer
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Ben Benninghoff; DNR, Southeast Region
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Jeff Kreider; DNR, Central Office
(608) 212-6547; Jeff.Kreider@wisconsin.gov

DATE: June 10, 2022

WPDES Permit: 0053376-07-0

TO: Victoria Ziegler, Agricultural Runoff Management Specialist

FROM: Ian Anderson, CAFO Hydrogeologist

SUBJECT: Maple Leaf Downy Duck – Groundwater Monitoring Recommendation

Background

Maple Leaf Downy Duck is a duck hatchery operation located in the Town of Dover, Racine County. They have been required to monitor groundwater in the vicinity of six earthen lagoons since 2018. As part of their Plan & Specification submission (R-2022-0078) proposing to abandon four out of six lagoons (DL-3, DL-4, DL-5 and DL-6), the farm is proposing to continue monitoring groundwater in the three existing monitoring wells (DMW-6, DMW-7 and DMW-8). The ongoing groundwater monitoring will be included as part of permit re-issuance.

Proposal

I will speak only to the groundwater monitoring portion of their submission, as the Plan & Spec review of the lagoon abandonment falls under the purview of the reviewing engineer. The proposal calls for annual monitoring of the three existing monitoring wells for at least two years.

The three existing monitoring wells were sampled monthly for GW elevation, pH, conductivity, dissolved chloride, potassium, TOC, COD, NH₃-N, TKN, NO₂+NO₃, Organic N, and TDS from July 2018 through February 2019 (see attached Table). Following the February 2019 sampling event, sampling frequency was reduced to biannual/annual, and e. Coli was added as a parameter. The proposal does not specify which parameters are to be analyzed moving forward. For more detail, see the Plan & Spec R-2022-0078 document set.

Recommendation

Due to ammonia concentrations exceeding the PAL of 0.97mg/L in DMW-8, and occasional detects of e. Coli in all three existing monitoring wells, continued groundwater monitoring is warranted. Because concentrations of all parameters have been relatively stable, historically, and ammonia remains well below the ES, an annual sampling frequency is justified. Therefore, I recommend Maple Leaf Downy Duck be required to continue sampling the three existing monitoring wells annually with samples taken in the spring months after thaw for the full parameter list above (including e. Coli) for the duration of the upcoming 5-year permit term. The farm can request to discontinue sampling, if they can justify that it is no longer warranted. For example, if concentrations decrease substantially, and remain compliant following lagoon abandonment.



Ian Anderson
CAFO Hydrogeologist

Table 4
GROUNDWATER MONITORING - MAPLE LEAF FARMS
Groundwater Data Summary

	Monitoring Well	Date		Depth to GW (ft)	GW Elev (ft_MSL)	Cl (mg/l)	BOD5 (mg/l)	DOC (mg/l)	COD (s.u.)	NH3-N (mg/l)	TKN (mg/l)	NO3+NO2-N (mg/l)	Organic N (mg/l)	TDS (mg/l)	pH s.u.	Conductivity (mg/l)	K (mg/l)	E.Coli (MPN/100ml)
U P G R A D I E N T	DMW-1 ¹	1993-97	Average	8.54	799.06	6.0	4.78		22	0.13	0.50	0.70	0.41	633		896		
		1993-97	Minimum	3.94	793.78	5.0	1.5		2	<0.05	<0.1	0.09	<0.1	538	6.6	669		
		1993-97	Maximum	13.82	803.66	9.0	10		75	0.34	1.43	1.44	1.43	714	7.3	997		
	DMW-6 ²	7/25/18		10.91	798.83	38.3		10.2	22.5J	<0.25	0.60J	<0.095	0.60J	1150	7.4	1731	8.38	
		8/7/18		12.37	797.37	39.1		11.2	21.3J	<0.25	0.33J	<0.095	0.33J	1380	7.4	1911	7.93	
		9/6/18		14.25	795.49	39.8		3.4	18.1J	<0.25	0.35J	<0.095	0.35J	1450	7.1	2140	7.23	
		10/2/18		13.11	798.63	37.0		3.3	24.7J	<0.25	0.43J	<0.095	0.43J	1230	7.1	1741	6.12	
		11/5/18		11.10	798.64	35.5		3.5	<14.2	<0.25	0.24J	<0.095	0.24J	966	7.3	1280	4.88	
		12/17/18		9.15	800.59	32.0		2.0	<13.4	<0.25	0.23J	<0.095	0.23J	834	7.6	1409	3.78	
		1/16/19		7.60	802.14	31.5		2.5	<14.2	<0.25	0.31J	<0.095	0.31J	854	7.6	1470	3.62	
		2/7/19		7.42	802.32	34.9		2.5	<14.2	<0.25	0.43J	<0.095	0.43J	850	7.6	1465	3.65	
		11/19/19		6.70	803.04	35.3		2.0	<14.7	<0.25	0.25J	<0.095	<0.25	906	7.6	1477	3.54	<1
		8/12/20		10.15	799.59	62.2		5.1	<15.5	<0.26	0.67J	<0.095	0.67J	1620	7.7	1969	4.48	<1
		11/23/20		14.62	795.12	37.1		5.5	21.5J	<0.26	0.79J	<0.095	0.79J	1110	7.6	1623	3.88	91
		8/31/21		17.41	792.33	34.7		3.5	22.6	<0.14	0.33J	<0.095	0.33J	1160	7.7	1731	3.50	<1
			Average	11.23	798.51	37.3		4.6		<0.25				1126		1662	5.08	
			Minimum	6.70	792.33	31.5		2.0						834		1280	3.50	
			Maximum	17.41	803.04	62.2		11.2						1620		2140	8.38	
D O W N G R A D I E N T	DMW-2 ¹	1993-97	Average	4.85	781.05	46	2.10		30	0.17	0.98	0.11	0.74	739	7.0			
		1993-97	Minimum	3.93	778.54	2.0	1.0		8	<0.05	0.22	0.02	0.1	350	6.6			
		1993-97	Maximum	6.36	781.97	64.0	3.8		143	0.45	4.34	0.36	4.06	952	7.5			
	DMW-7 ²	7/25/18		6.76	779.54	17.7		6.9	22.5J	<0.25	0.75	<0.095	0.75	588	7.6	829	3.09	
		8/7/18		7.41	778.89	18.0		6.4	<13.4	<0.25	0.52J	<0.095	0.52J	602	7.6	914	2.79	
		9/6/18		6.57	779.73	16.6		5.1	22.5J	<0.25	0.50J	<0.095	0.050J	470	7.3	689	2.88	
		10/2/18		5.32	780.98	17.3		4.3	24.7J	<0.25	0.65J	<0.095	0.65J	512	7.3	755	2.48	
		11/5/18		6.10	780.20	18.0		4.8	<13.4	<0.25	0.50J	<0.095	0.50J	572	7.4	925	2.74	
		12/17/18		6.31	779.99	18.4		2.9	<13.4	<0.25	0.43J	<0.095	0.43	578	7.6	950	2.47	
		1/16/19		6.07	780.23	16.5		2.9	<13.4	<0.25	0.42J	<0.095	0.42J	578	7.6	1108	2.77	
		2/7/19		5.99	780.31	17.7		2.4	15.4J	<0.25	0.52J	<0.095	0.52J	594	7.7	1120	2.53	
		11/19/19		5.33	780.97	25.6		2.8	<14.7	<0.26	0.42J	<0.095	0.42J	550	7.2	1021	2.56	<1
		8/12/20		5.20	781.10	30.7		9.2	26.9J	<0.26	1.20	<0.095	1.20	574	7.6	964	3.15	1
		11/23/20		8.50	777.80	81.7		6.3	19.3J	<0.26	0.87J	<0.095	0.87J	726	7.8	1226	2.98	<1
		8/31/21		13.81	772.49	42.7		6.4	19.3J	0.19J	0.68J	<0.095	0.87J	588	7.8	1176	2.82	155
			Average	6.95	779.35	26.7		5.0		<0.25		<0.095		578		973	2.77	
			Minimum	5.20	772.49	16.5		2.4						470		689	2.47	
			Maximum	13.81	781.10	81.7		9.2						726		1226	3.15	
D O W N G R A D I E N T	DMW-5 ¹	1993-97	Average	8.27	781.01	25	5.68		31	0.29	1.54	0.44	1.35	974	6.8			
		1993-97	Minimum	7.28	778.47	14	2.9		20	<0.01	0.79	<0.05	0.42	470	6.5			
		1993-97	Maximum	10.81	782.00	81.7	12		59	0.62	2.8	1.05	2.52	1800	7.6			
	DMW-8 ²	7/25/18		4.89	779.49	66.5		18.5	42.3J	0.62	1.9	<0.095	1.28	866	7.2	1213	4.95	
		8/7/18		5.51	778.87	60.6		16.8	37.9J	0.93	1.8	<0.095	0.87	934	7.3	1337	4.25	
		9/6/18		3.43	780.95	73.1		16.5	51.1	1.4	2.6	<0.095	1.2	860	7.1	1448	3.92	
		10/2/18		3.15	781.23	76.2		17.7	48.9	1.5	2.8	<0.095	1.3	930	7.1	1434	4.20	
		11/5/18		3.45	780.93	64.0		17.6	47.8	1.5	2.4	<0.095	0.9	946	7.2	1439	3.70	
		12/17/18		3.68	780.70	64.5		16.3	32.5J	1.2	2.2	<0.095	1.0	944	7.3	1469	3.23	
		1/16/19		3.64	780.74	63.3		15.3	17.5J	1.2	2.2	<0.095	1.0	908	7.4	1481	3.09	
		2/7/19		3.66	780.72	74.5		14.2	56.2	0.99	1.9	0.11J	0.9	864	7.4	1506	3.42	
		11/19/19		3.39	780.99	61.8		14.3	44.1J	1.3	2.2	0.12J	0.9	878	6.8	1548	3.30	1
		8/12/20		3.55	780.83	51.4		23.2	65.6	1.2	3.2	<0.095	2.0	868	7.4	1542	4.02	192
		11/23/20		4.83	779.55	76.3		21.8	57.4	0.90	2.7	<0.095	1.8	734	7.4	1314	4.05	1
		8/31/21		10.44	773.94	58.7		19.7	61.9	2.3	3.2	<0.095	3.2	1190	7.6	1432	2.84	<1
			Average	4.47	779.91	66.1		17.7		1.3	2.4		1.4	914		1430	3.75	
			Minimum	3.15	773.94	51.4		14.2		0.6	1.8		0.9	734		1213	2.94	
			Maximum	10.44	781.23	76.3		23.2		2.3	3.2		3.2	1190		1548	4.95	

J = Estimated, below quantitation limit

¹ Previously installed and subsequently abandoned well

² Installed July 2018

Table 1 – Groundwater Monitoring data from existing wells (DMW-6, DNMW-7 and DMW-8), and previously filled and sealed wells (DMW-1, DMW-2 and DMW-5). Table provided as Table 4 within the Design Calculations portion of the Lagoon abandonment Plan, submitted by Applied Science, Inc. March 29, 2022.

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: September 15, 2023

WPDES Permit 0053376-07-0

TO: Victoria Ziegler, Agricultural Runoff Management Specialist

FROM: Ian Anderson, CAFO Hydrogeologist

SUBJECT: Maple Leaf Downy Duck - Preventative Action Limit Calculation

Below are sampling data from the last 11 sampling events from DMW-6 at Maple Leaf Downy Duck farm. DMW-6 is upgradient from the production area and represents background groundwater quality. The calculations at the bottom of the sheet are to determine PALs for indicator parameters, which is standard practice during re-issuance. Methods are described in detail in NR 140.20(2)(c).

Sample date	Cl	DOC	ammonia	TKN	nitrate	organic N	TDS	pH	K
7/25/2018	38.3	10.2	0.25	0.6	0.095	0.6	1150	7.4	8.38
8/7/2018	39.1	11.2	0.25	0.33	0.095	0.33	1380	7.4	7.93
9/6/2018	39.8	3.4	0.25	0.35	0.095	0.35	1450	7.1	7.23
10/2/2018	37	3.3	0.25	0.43	0.095	0.43	1230	7.1	6.12
11/5/2018	35.5	3.5	0.25	0.24	0.095	0.24	966	7.3	4.86
12/17/2018	32	2	0.25	0.23	0.095	0.23	834	7.6	3.78
1/16/2019	31.5	2.5	0.25	0.31	0.095	0.31	854	7.6	3.62
2/7/2019	34.8	2.5	0.25	0.43	0.095	0.43	850	7.6	3.65
11/19/2019	35.3	2	0.25	0.25	0.059	0.25	906	7.6	3.54
8/12/2020	52.2	5.1	0.25	0.67	0.059	0.67	1620	7.7	4.48
11/23/2020	37.1	5.5	0.25	0.79	0.059	0.79	1110	7.6	3.86
Mean	37.50909	4.65455	0.25	0.42091	0.08518	0.42091	1122.73	7.45455	5.22273
STD Dev	5.28608	3.05446	0	0.17952	0.01603	0.17952	258.401	0.20165	1.77425
3*STD Dev	15.85824	9.16339	0	0.53855	0.0481	0.53855	775.203	0.60494	5.32274
BACK +3STD	53.36733	13.8179	0.25	0.95946	0.13328	0.95946	1897.93	8.05948	10.5455
BACK+TBL3						2.42091	1322.73		10.2227
PAL	125	14	0.97		2	2.4	1900	6.4-8.4	10.5
ES	250		9.7		10				