

DNR WPDES NUTRIENT MANAGEMENT PLAN

RIDGE BREEZE DAIRY

2024 NMP- 2023-2028

The purpose of this document is to provide written guidance* to CAFO permitted farms for creating or updating a narrative for a Nutrient Management Plan (NMP). This narrative template is written to help CAFO permitted farms demonstrate compliance with the NMP requirements of NR 243, NRCS 590 and WPDES permit conditions and to streamline NMP development and implementation.

NR 243 plan content requires that all NMPs shall contain information necessary to document how the operation's land application activities will comply with the restrictions of NRCS 590, NR 243 and the conditions of the operation's WPDES permit [NR 243.14(1)(b)].

NR 243 contains both general and specific manure and process wastewater land application restrictions. A NMP narrative is an excellent way for a CAFO permitted farm to demonstrate how it will comply with general and specific land application restrictions of NR 243 and some applicable requirements from NRCS 590.

*This document is intended solely as guidance, and does not contain any mandatory requirements except where requirements found in statute or administrative rule are referenced. This guidance does not establish or affect legal rights or obligations, and is not finally determinative of any of the issues addressed. This guidance does not create any rights enforceable by any party in litigation with the State of Wisconsin or the Department of Natural Resources. Any regulatory decisions made by the Department of Natural Resources in any matter addressed by this guidance will be made by applying the governing statutes and administrative rules to the relevant facts.

Farm Sites with Expected Animal Numbers for First Year of Permit and Remaining Permit Term (Next Four Years)

The following tables provide the current and expected animal numbers that will be included for the first year permit term and the remaining permit term (4 years). Current and projected animal numbers are listed by farm (below) and are consistent with the *final* A.U. Calculation Worksheet(s) (form 3400-25A). See Section 3 of plan for this information. Farms included in this NMP are as follows: RIDGE BREEZE DAIRY etc. Please be advised that future years are an estimate of animal numbers and actual numbers may vary from these values. Actual animal numbers will be revised in the NMP Annual Updates.

RIDGE BREEZE DAIRY Number of Animals

Year	Herd Size (Milk+Dry+1000# Heifer+600# Heifer+ Calf)	Total Animal Units
2022	1680 (1300+0+100+0+280)	1936
2023	1680 (1300+0+100+0+280)	1936
2024	1700 (1700+0+0+0+0)	2380
2025	6,500(5400+800+300+0+0+0)	9,010
2026	6,500(5400+800+300+0+0+0)	9,010
2027	6,500(5400+800+300+0+0+0)	9,010
2028	6,500(5400+800+300+0+0+0)	9,010

Expected Amounts and Types of Manure and Process Wastewater Produced on Annual Basis

All sources and correlating manure generation volumes were calculated using the SnapPlus manure production estimator or the Wisconsin Manure Production Estimation worksheet found in **Appendix A** of this narrative.

Manure Liquids and Solids Volumes Generated for all Sites and Sources

Year	Total Liquids	Total Solids
2022	7,932,217 gallons	12,284 tons
2023	7,932,217 gallons	12,284 tons
2024	14,000,000 gallons	13,775 tons
2025	61,210,043 gallons	1,000 tons
2026	61,210,043 gallons	1,000 tons
2027	61,210,043 gallons	1,000 tons
2028	61,210,043 gallons	1,000 tons

Other Nutrient Sources for Land Application (NRCS 590 Requirement)

Other nutrient sources generated, stored or received by this operation include feed storage leachate and runoff, waste feed, solid storage runoff, septic waste, etc. All nutrient sources generated or received by farm have been included in the total manure and process wastewater volume calculations within this NMP. Please refer to the SnapPlus nutrient source and manure production estimator and Section 3 of plan for calculations of other nutrient sources of waste to be land applied to the fields.

Volumes of Other Nutrient Sources to be Land Applied

Liquid Waste Sources	Volume of Waste Collected	Solid Waste Sources	Total Amount
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Feed Storage Leachate	9,816,093 gallons	Waste Feed	0 tons
Solid Storage Runoff	0 gallons		
Septic Waste – Other	0 gallons	N/A	0 tons
Total Liquid Waste Sources	9,816,093 gallons	Total Solid Waste Sources	0 tons

Note: Add additional rows for other sources of waste generated or received by the operation.

Amount of manure, process wastewater and other sources to be land applied.

Please refer to Section 3 of plan for calculations/analysis for table value and Section 3 of plan for land application schedules for specific fields.

Total Amount of Manure, Process Wastewater and Other Sources to be Land Applied

Year	Total Liquids created	Total Liquids applied	Total Solids created	Total Solids applied
2022	10,300,059 gallons	12,949,354 gallons	15,000 tons	5,896 tons*
2023	10,300,059 gallons	25,388,052 gallons	15,000 tons	9,151 tons*
2024	23,816,093 gallons	32,831,612 gallons	15,000 tons	17,721 tons
2025	77,708,899 gallons	79,692,480 gallons	1,000 tons	1,975 tons
2026	77,708,899 gallons	78,012,700 gallons	1,000 tons	1,333 tons
2027	77,708,899 gallons	81,384,000 gallons	1,000 tons	1,370 tons
2028	77,708,899 gallons	80,776,600 gallons	1,000 tons	2,353 tons

*Difference is due to the farm using the separated solids as bedding. This also includes the manure transferred to another CAFO Farm.

Anticipated frequency and method(s) of land application

RIDGE BREEZE DAIRY anticipates applying manure according to the following schedule: approximately twice per month for 3-4 day periods in May, June, July, August, September, October and November. Spreading will occur in spring before planting and in summer/fall after harvest and after harvests of alfalfa, wheat and other crops. There will be no planned winter spreading. Please refer to Section 3 of plan for land application schedules for specific fields. Please also refer to Section 2 of plan for map and field verification procedures that will be followed to verify areas of fields are not prohibited from manure spreading and NR 243 or NRCS 590 setback requirements are followed.

RIDGE BREEZE DAIRY anticipates using the following equipment to spread liquid and solid manure on fields in NM plan:

Surface manure spreaders or liquid incorporation/injectors for liquid manure and process wastewater; surface spreaders for all solid manure. In the fall and spring, liquid manure will be either incorporated/injected as much as possible, or incorporated immediately (SWQMA) or within 48 hours of surface application (non-SWQMA) whichever applies. All liquid or solid manure not injected will be incorporated with a disk till, or in the case of No-Till or alfalfa it will be surface applied in accordance with all NR 243 and NRCS 590 rules. In the summer, liquid manure may be top dressed on some alfalfa fields. Liquid manure spread on RIDGE BREEZE DAIRY is hauled and applied by Anaya Farms LCC and by RIDGE BREEZE DAIRY.

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

RIDGE BREEZE DAIRY does not plan any other methods of use, disposal, or distribution of manure or process wastewater.

Total acreage available (by landowner) for land application owned, rented or in ‘agreements.

The table below summarizes this information. Please refer to Section 3 of plan for more information related to landbase documentation. The farm has a total of approximately 7,359 acres of available after various 25' restricted areas have been removed. The farm has a total of approximately 6665 acres available after various 100' restricted areas have been removed.

Total acres available: 7533.84 acres

Acres owned – 89.7 acres Acres Rented/Agreements – 7444.14 acres

Field Name	Owned Acres	Rented / Agreement Acres	Term	Manure spreadable acres 25ft	Manure spreadable acres 100ft	Winter spreadable acres
04-01-001	46.1			41.9	29.7	5.5
04-01-002	19.5			19.2	14.9	0.5
04-01-003	24.1			23.3	19.4	5.8
04-02-001		4.5	Agreement	4.5	4.5	1.1
04-02-002		7.5	Agreement	7.4	6.2	0.6
04-02-003		7.3	Agreement	6.8	3.8	0.1
04-02-004		0.8	Agreement	0.7	0.3	0
04-02-005		3.3	Agreement	3.2	2.5	0.2
04-02-006		2.9	Agreement	2.7	1.6	0
04-02-007		4.3	Agreement	3.9	1.2	0
04-02-008		9.3	Agreement	8.8	5	0.1
04-02-009		8.9	Agreement	8.7	7.2	2.2
04-02-010		6	Agreement	6	5.5	0.8
04-02-011		46.9	Agreement	43	25.6	1.8
04-02-012		17.2	Agreement	16.7	15.8	6.4
04-02-013		15.2	Agreement	14.1	10.4	0
04-02-014		18.6	Agreement	17.7	12.9	0.1
04-02-015		2.4	Agreement	2.4	1.7	0
04-02-016		3.7	Agreement	3.3	2	0.1
04-02-017		5.1	Agreement	4.6	2.8	0.6
04-02-018		5.8	Agreement	5.2	3.3	0.6
04-02-019		9.2	Agreement	8.5	6.2	0.9
04-02-020		7.8	Agreement	7.7	5.4	0
04-02-021		7.6	Agreement	6.7	3.8	0.1
04-02-022		12.4	Agreement	10.7	4.4	0
04-02-023		12.3	Agreement	12.1	11.3	3.1
04-02-024		56.9	Agreement	51	27.8	0.3
04-02-025		49.9	Agreement	48.1	38.2	6.4
04-02-026		10.6	Agreement	10	6.9	0.7
04-02-027		6.3	Agreement	6	4.4	0.2
04-02-028		1	Agreement	0.9	0.2	0
04-02-029		2.2	Agreement	2.2	1.4	0
04-02-030		7.3	Agreement	6.8	5	0
04-02-031		9	Agreement	8.4	4.7	0
04-02-032		8.9	Agreement	8.1	4.3	0
04-02-033		9.2	Agreement	8.5	4.3	0.1

04-02-034		5.2	Agreement	5.1	3.6	0.6
04-02-035		5.2	Agreement	5.2	4.8	0.8
04-02-036		8.8	Agreement	8.8	7.6	0.7
04-02-037		6.4	Agreement	6.4	5.6	3.1
04-02-038		15.3	Agreement	14.4	11.1	3.8
04-02-039		25.7	Agreement	24.2	18.7	0.9
04-02-040		67.5	Agreement	62.1	43	5.8
04-02-041		35.4	Agreement	32.9	22.4	6.5
04-02-042		8.9	Agreement	8.4	6.3	0.1
04-02-043		16.6	Agreement	16.1	12.8	0
04-02-044		8.4	Agreement	7.8	5.2	0.6
04-02-045		8.1	Agreement	7.4	4.8	0
04-02-046		14.9	Agreement	14.6	13	3.3
04-02-047		17.2	Agreement	16.5	13	0.5
04-02-049		10.8	Agreement	10.3	7.9	0.8
04-02-050		10.9	Agreement	10.3	7.2	0
04-02-051		3.9	Agreement	3.3	1.3	0
04-02-052		3.6	Agreement	3.6	2.3	0
04-02-053		3	Agreement	3	2.8	0
04-02-054		23.5	Agreement	22.6	18.9	3.5
04-02-055		19.2	Agreement	18.2	14.3	1.1
04-02-056		2	Agreement	2	1.8	0.2
04-02-057		6.8	Agreement	6	3.7	0
04-02-058		8.3	Agreement	7.5	5.4	0.1
04-02-059		20.9	Agreement	18.8	13.3	4.5
04-02-060		5.5	Agreement	5.4	4.5	0
04-02-061		3.2	Agreement	3.2	3.2	0
04-02-062		5.5	Agreement	5.5	5.5	0
04-02-063		63.9	Agreement	58.5	42.1	4
04-02-064		54.2	Agreement	50.5	33.3	5.5
04-02-065		36.9	Agreement	34.9	23.2	1.9
04-02-066		6.6	Agreement	5.8	3.9	0
04-02-067		12.6	Agreement	11.8	8.9	0
04-02-068		19.4	Agreement	19.2	17.7	2.2
04-02-069		8.6	Agreement	8.4	7.7	0.1
04-02-070		4.9	Agreement	4.8	4	0.1
04-02-071		7.6	Agreement	7.6	7.6	0.1
04-02-072		8.9	Agreement	8	5	0
04-02-073		14.94	Agreement	14	12.8	5.5
04-02-074		9.7	Agreement	8.8	5.2	0
04-02-075		5.9	Agreement	5.7	4.2	0.2
04-02-076		25.8	Agreement	25.6	23.8	1.9
04-02-077		19.9	Agreement	18.8	13.6	0
04-02-078		19.9	Agreement	18.2	13.3	0
04-02-079		40.2	Agreement	37.2	25.6	0.2
04-02-080		25.5	Agreement	24.8	20.2	2.1
04-02-081		1.8	Agreement	1.5	0.2	0

04-02-082		15.7	Agreement	14	9.2	0.3
04-02-083		18	Agreement	18	17.4	5.8
04-02-084		10.1	Agreement	9.9	7.8	1.2
04-02-085		51.2	Agreement	48.7	40.5	18.6
04-02-086		100.5	Agreement	91.8	61.5	1.9
04-02-088		38.9	Agreement	35.9	25	1
04-02-089		8.8	Agreement	8.5	7	3.4
04-02-090		44	Agreement	42.7	37.8	10.8
04-02-091		19.5	Agreement	19	16.3	0.6
04-02-092		34.5	Agreement	34.3	33	0.6
04-02-093		32.7	Agreement	32.6	31.2	17.8
04-02-094		80.3	Agreement	80.3	80.3	14.5
04-02-095		33.8	Agreement	32.8	25.1	7.2
04-02-096		42.7	Agreement	39.5	28.7	4.1
04-02-097		9	Agreement	7.8	4.3	0
04-02-098		7.5	Agreement	7.3	5.9	0
04-02-099		34.1	Agreement	34.1	33.5	13.4
04-02-100		41.3	Agreement	41.3	40.8	17
04-02-101		14.4	Agreement	14.4	14.4	8.7
04-03-001		9.6	Verbal - Annual	9.6	9.6	6.5
04-03-002		27.3	Verbal - Annual	27.2	26.3	17.2
04-03-003		9.7	Verbal - Annual	9.6	7	0.6
04-03-004		15	Verbal - Annual	14.5	11.5	1.1
04-03-005		5.9	Verbal - Annual	5.5	4.4	0.2
04-03-006		10.2	Verbal - Annual	9.8	7.3	0.5
04-03-007		6.7	Verbal - Annual	6.1	3.3	0
04-03-008		9	Verbal - Annual	8.2	2.9	0
04-03-009		22.5	Verbal - Annual	20.7	16.7	7.2
04-03-010		32.9	Verbal - Annual	32.3	26.8	8.6
04-03-011		4.9	Verbal - Annual	4.3	1.5	0
04-03-012		5.5	Verbal - Annual	4.9	2.1	0
04-03-013		16.9	Verbal - Annual	16	11.9	1.3
04-03-014		6.5	Verbal - Annual	6.1	4.8	0.3
04-03-015		13.2	Verbal - Annual	12.3	8.5	1.4
04-03-016		5.5	Verbal - Annual	4.9	1.6	0
04-03-017		6	Verbal - Annual	5.1	1.4	0
04-03-018		9.8	Verbal - Annual	9.4	7.4	4
04-03-019		8.4	Verbal - Annual	8.2	6.3	2
04-03-020		12.8	Verbal - Annual	12.7	12.2	4.8
04-03-021		9.5	Verbal - Annual	9.2	7.2	2.5
04-03-022		12.9	Verbal - Annual	12.8	12.2	8.6
04-03-023		15.1	Verbal - Annual	15.1	13.9	7.5
04-03-024		18.9	Verbal - Annual	18.9	18.9	11.3
04-03-025		8.1	Verbal - Annual	8.1	8	2.9
04-03-026		4.9	Verbal - Annual	4.7	3.7	0.2
04-03-027		14	Verbal - Annual	12.5	8.6	0
04-03-028		10.8	Verbal - Annual	10.4	9.3	3

04-03-029		7.2	Verbal - Annual	6.4	3.9	0
04-03-030		12.9	Verbal - Annual	12.9	12	1.3
04-03-031		5.4	Verbal - Annual	5.2	4.6	0
04-03-032		6.4	Verbal - Annual	6.2	4.8	0.3
04-03-033		7.1	Verbal - Annual	6.6	5.2	1.1
04-03-034		4.4	Verbal - Annual	4.1	3.1	0
04-03-035		13.7	Verbal - Annual	13.5	11.9	1.1
04-03-036		9.1	Verbal - Annual	7.8	4.4	0
04-03-037		8	Verbal - Annual	7	4	0
04-03-038		9.4	Verbal - Annual	8.3	5.3	0
04-03-039		1.5	Verbal - Annual	1.2	0.4	0
04-04-001		102.6	3yr	101.3	97.2	39.3
04-04-002		110.8	3yr	110.3	105.8	73.7
04-04-003		77	3yr	76.9	75.6	12.3
04-04-004		53.5	3yr	51	41.6	6.9
04-04-005		56.7	3yr	54.3	45.1	7.5
04-04-006		70	3yr	70	69.8	35.1
04-04-007		47.3	3yr	47.3	47.3	3.9
04-04-008		83.6	3yr	82.4	77	26.6
04-04-009		18.3	3yr	18.3	18.3	9.8
04-04-010		185.8	3yr	185.8	185.8	82.4
04-04-011		119.9	3yr	117.5	110.2	44
04-04-012		43.5	3yr	41.7	34.6	1
04-04-013		32.8	3yr	32.4	27.9	2.5
04-04-014		44.5	3yr	44.5	44.5	7.5
04-04-015		20.7	3yr	20.6	19.8	0
04-04-016		22.3	3yr	22.3	22.1	7.1
04-05-001		9.4	Verbal	9.4	9.4	4.2
04-05-002		15.8	Verbal	15.8	15	1.2
04-05-003		53.7	Verbal	53.7	53.7	23.6
04-06-001		66.7	Verbal	66.7	66.7	11.2
04-06-002		33.6	Verbal	33.6	33.6	1.4
04-06-003		12.5	Verbal	12.5	11.9	3.5
04-06-004		38.1	Verbal	38.1	37.3	15.8
04-07-001		14.1	Verbal	14.1	14.1	10.9
04-07-002		17	Verbal	17	17	11.6
04-07-003		33.1	Verbal	33.1	33.1	30.3
04-07-004		38.3	Verbal	35.7	29.1	5.4
04-07-005		14.2	Verbal	14.2	14.2	1.7
04-07-006		56.8	Verbal	56.8	56.8	27.3
04-07-007		5.9	Verbal	5.9	5.9	0
04-08-001		209.1	Verbal	207	203.6	61.8
04-08-002		55.2	Verbal	54.8	52.8	9.5
04-08-003		132.3	Verbal	130.7	126.4	54.6
04-08-004		6.9	Verbal	6.9	6.9	1.1
04-08-005		13.8	Verbal	13.8	13.8	0
04-08-006		75.7	Verbal	75.7	75.7	16.3

04-08-007		21.2	Verbal	21.2	19.7	3.1
04-08-008		34.7	Verbal	34.5	33.7	5.2
04-08-009		8.1	Verbal	8.1	8.1	2.5
04-08-010		6.5	Verbal	6.5	6.5	3.1
04-08-011		11.5	Verbal	11.5	11.5	2.3
04-08-012		34.2	Verbal	34.1	34.1	6.6
04-08-013		64	Verbal	63.5	62.3	7
04-08-014		21.4	Verbal	21.4	21.4	7.9
04-08-015		16.2	Verbal	15.7	13.4	2.7
04-08-016		9.2	Verbal	8	5.6	0
04-08-017		14	Verbal	13.9	12.6	0
04-08-019		118.1	Verbal	118	116.6	40.8
04-08-020		74.6	Verbal	74.4	74.4	24.9
04-08-021		108	Verbal	104.9	97.9	36.2
04-08-022		16.8	Verbal	16.8	16.8	6.6
04-08-023		36.6	Verbal	36.6	36.6	12.9
04-08-024		137	Verbal	136.8	136.1	35.9
04-08-025		50.1	Verbal	46.1	38.1	1.9
04-08-026		127.6	Verbal	123.3	114.2	41.2
04-08-027		103.3	Verbal	103.3	103.3	40.9
04-09-001		8.7	Verbal	8.7	8	1
04-09-002		12	Verbal	12	11.8	0.2
04-10-001		123.5	Verbal	122.2	117.8	30.1
04-10-002		28.6	Verbal	28.6	28.6	5.1
04-10-003		17.1	Verbal	17.1	17.1	7.7
04-10-004		7.4	Verbal	7.4	6.5	0
04-10-005		5.5	Verbal	5.3	3.8	0
04-10-006		43.9	Verbal	43.2	38.6	0.2
04-10-007		9.4	Verbal	9.4	9.4	1.1
04-10-008		26.5	Verbal	26.3	26.3	0
04-10-009		53.5	Verbal	53.5	53.5	26
04-10-010		20.7	Verbal	20.4	18.1	5.8
04-10-011		7	Verbal	7	5.7	1.4
04-10-012		19.5	Verbal	19	16.3	5.5
04-10-013		15.6	Verbal	15	12.7	0.3
04-10-014		19.9	Verbal	19.9	19.9	8.8
04-10-015		18.5	Verbal	18.5	18.5	10.8
04-10-016		8.2	Verbal	8.2	8.2	0
04-10-017		8	Verbal	7.9	7.4	0.4
04-10-018		19.1	Verbal	18.3	15.1	0.9
04-10-019		8.6	Verbal	8.5	7.8	0.3
04-10-020		2.5	Verbal	2.1	0.9	0
04-10-021		1.8	Verbal	1.5	0.6	0
04-10-022		1.2	Verbal	1	0.4	0
04-10-023		20.5	Verbal	20.5	20.5	5.3
04-10-024		16.4	Verbal	16.4	16.4	7.6
04-10-025		10.7	Verbal	10.7	10.7	1.2

04-10-026		7.2	Verbal	7.2	7.2	0.9
04-10-027		13.7	Verbal	13.7	13.7	0.6
04-10-028		55.9	Verbal	55.9	55.9	22.1
04-10-029		49.3	Verbal	49.3	49.3	0.2
04-10-030		5.4	Verbal	5.4	4.5	0.6
04-10-031		19.8	Verbal	19.8	19.8	6.8
04-10-032		14.1	Verbal	14.1	14.1	6
04-10-033		13.4	Verbal	13.4	13.4	4.4
04-10-034		36	Verbal	35.9	35.7	11.4
04-10-035		16	Verbal	16	15.7	0
04-10-036		21	Verbal	21	21	4.3
04-10-037		39.2	Verbal	37.3	31.8	11.6
04-10-038		25.7	Verbal	25.6	21.9	6.3
04-10-039		12.1	Verbal	12.1	12.1	4.5
04-10-040		39.2	Verbal	39.1	38.1	5.1
04-15-001		97.3	Verbal	95.6	88	14.2
04-15-002		3.9	Verbal	3.8	2.8	0.5
04-15-003		8.8	Verbal	8.8	8.8	0
04-15-004		74.1	Verbal	73.2	69.9	21.9
04-15-005		9.1	Verbal	9.1	8.8	0.4
04-16-001		36.1	Verbal	36.1	36.1	14.1
04-16-002		17.4	Verbal	17.3	17.1	7.3
04-16-003		14.5	Verbal	14.5	14.2	9.6
04-16-004		25.3	Verbal	25.3	24.4	3
04-16-005		19.9	Verbal	19.9	19.4	4.7
04-16-006		23.9	Verbal	22.9	19.6	11.2
04-16-007		31.2	Verbal	31.2	31.2	26.5
04-16-008		126	Verbal	122.4	112	50.6
04-16-009		86.7	Verbal	86	83.4	15.1
04-16-010		137.7	Verbal	134.4	123.5	64.9
04-16-011		91.6	Verbal	89.2	82.5	53
04-16-012		19.8	Verbal	19.8	19.8	15.5
04-17-001		55.8	Verbal	55.8	55.8	14.8
04-17-002		141.4	Verbal	140.6	132.9	14.8
04-17-003		10.2	Verbal	10.2	10.2	0.9
04-17-004		13.6	Verbal	13.6	13.6	5.7
04-17-005		58.9	Verbal	58.6	57.2	5.9
04-17-006		41.5	Verbal	41.5	41.5	16.2
04-17-007		39.2	Verbal	39.2	39.2	6.2
04-17-008		74.6	Verbal	74.6	74.6	33
04-17-009		85.9	Verbal	85.9	85.7	14.2
Σ Totals	89.7	7444.14		7359.3	6665	1882.8

NOTE: Shared land means fields that receive nutrients from more than one farm or nutrient source (e.g., manure, industrial wastewater, commercial fertilizer, septage, etc). These fields must be carefully tracked within the NMP.

Fields Removed or Added through SharePoint

Field 04-04-018 was removed because it was found to be duplicated in two CAFO NMPs.

Tillage and crop rotation information for all fields owned or rented or in ‘agreements’

Please refer to Section 3 of plan for tillage, crop rotation and land application schedules for specific fields.

Nutrient crediting requirements - NR 243.14(3)

When selecting manure and process wastewater application rates for all fields, RIDGE BREEZE DAIRY has taken into account:

1. soil nutrient levels prior to land spreading
2. known nutrient applications from other sources, including:
 - a. commercial fertilizers
 - b. bio-solids
 - c. **first and second year** manure and legume credits
 - d. other sources of nutrients that are expected to be applied or have already been applied to fields.

Adjustments will be made to assumed nutrient credits based upon actual crop yields.

SWQMA application restriction option for each field AND procedures- NR 243.14(4)

For all fields, except those with alfalfa crop in rotation, RIDGE BREEZE DAIRY will follow SWQMA option 1 - no application of manure or process wastewater within 25 feet of a navigable water, conduit to navigable water or wetland; and inject or immediately incorporate manure and process wastewater in all other areas within the SWQMA and nd option 2 – No applications within 25 ft, Long term no till: surface apply in the rest of SWQMA

For fields with alfalfa crops in rotation, RIDGE BREEZE DAIRY will follow SWQMA option 5 – No application of manure or process wastewater within 100 feet of navigable water or conduit to navigable water.

-

Phosphorus delivery method (Soil Test P or P Index) and P management procedures for each field- NR 243.14(5)

RIDGE BREEZE DAIRY will use the P Index for all fields within the NMP. Please refer to Sections 4 and 5 of plan for this information. The soil test report outlines these fields and the management that will be used for these fields. Both the STP and PI index are being used to manage new fields and fields over 100 ppm P.

RIDGE BREEZE DAIRY will follow the P Management procedures listed below when applying manure and process wastewater to fields to demonstrate compliance with NR 243.14(5)(b) and applicable NRCS 590 requirements:

Fields with less than 50 ppm:

- N application rates allowed up to the N needs of the following crop or the N removal of the following legume crop.

OR

- Rotational average PI values for each field shall be 6 or lower. PI is calculated using up to 8 year rotation using current Wisconsin P Index calculations. P applications on fields with PI > 6 may be made only if additional P is needed according to UWEX soil fertility recommendations.

Fields with soil test P between 50-100 ppm:

- P application shall not exceed the total crop P removal for crops to be grown over maximum 8 year rotation.

OR

- Rotational average PI values for each field shall be 6 or lower. PI is calculated using up to 8 year rotation using current Wisconsin P Index calculations. P applications on fields with PI > 6 may be made only if additional P is needed according to UWEX soil fertility recommendations.

Fields with soil test P between 100-200 ppm:

- The rotational average P Index value for the crop rotation or for the next 4 year period, whichever time period is less, will be calculated.
- When P Index is > 6, manure application(s) to field are prohibited.
- When P index is < 6, manure applications allowed with P drawdown by 50% cumulative crop removal over a maximum 4 year rotation will be implemented.

Fields with soil test P greater than 200 ppm:

- P applications from manure and process wastewater prohibited, unless approved by DNR.
- The planned average WI P Index value for the crop rotation or for the next 4 year period, whichever time period is less, will be calculated.
- P drawdown by 50% cumulative crop removal over a maximum 4 year rotation will be implemented.

Soil Test P fields

All fields using soil test P will be included within a **current** conservation plan for RIDGE BREEZE DAIRY or use the erosion assessment tools included with the P Index model. RIDGE BREEZE DAIRY conservation plan meets the NRCS 590 criteria (V.C.2.b) below and addresses all soil erosion consistent with **current crops and management** or uses the erosion assessment tools included within the WI P Index model.

NRCS 590 Conservation Plan Criteria - (V.C.2.b)

The plan must be developed by and field verified by a conservation planner to document crop management and the conservation practices used to control sheet and rill erosion to tolerable levels (T) and to provide treatment of ephemeral soil erosion.

- The conservation plan must be signed by the land operator and approved by the county land conservation committee or their representative.
- A conservation planner must develop conservation plans using the minimum criteria found in the USDA, NRCS National Planning Procedures Handbook and the WI Field Office Technical Guide.
- In crop fields where ephemeral erosion is an identified problem, a minimum of one of the following run-off reducing practices shall be implemented:
 - Install/maintain contour strips and/or contour buffer strips.
 - Install/maintain filter strips along surface waters and concentrated flow channels that empty into surface waters that are within or adjoin areas where manure will be applied.
 - Maintain > 30% crop residue or vegetative cover on the soil surface after planting.
 - Establish fall cover crops.

All fields using soil test P that have a high potential to deliver phosphorus to 303(d) listed waters impaired by nutrients or outstanding and exceptional resource waters, shall be managed by RIDGE BREEZE DAIRY to ensure:

- (1) soil test P levels shall not increase over a crop rotation unless DNR provides written approval.
- (2) Same fields that have soil test phosphorus below optimum levels, soil test P levels shall not increase over a rotation above the optimum level for the highest demanding phosphorus crop in a rotation.

Field proximity to nutrient impaired or outstanding/ exceptional waters - NR 243.14(5)

Please refer to Section 2 of plan for maps showing locations of fields in proximity to these types of waters. To complete these maps, RIDGE BREEZE DAIRY used the following tools:

DNR 2010 proposed impaired waters list:

DNR impaired, outstanding or exceptional waters search tool:

<http://dnr.wi.gov/water/impairedSearch.aspx> .

Identification of sites for winter (frozen or snow covered ground) spreading – NR 243.14(8)

RIDGE BREEZE DAIRY does not plan to spread manure onto fields during winter (frozen or snow covered ground) conditions.

For compliance with NR 243.14(8) winter spreading sites requirement, all fields have been reviewed for winter applications with maps included in section 3 of this plan.

These fields have been selected for winter application(s) if application(s) of liquid or solid manure become necessary. Fields 04-02-085, 04-02-090, 04-02-093, 04-02-094, 04-03-002, 04-02-024, 04-04-001,002, 006,008,010 and 011 have been evaluated by RIDGE BREEZE DAIRY to meet the NR 243 criteria in Tables 4 and 5 for manure and criteria in 214.17(2) and (6) for process wastewater. RIDGE BREEZE DAIRY has also determined these fields represent the lowest pollutant delivery to waters of the state and have winter acute loss index value of 4 or less using the Wisconsin Phosphorus Index. In addition, RIDGE BREEZE DAIRY will evaluate these same fields at time of manure application to determine if conditions are suitable for applying manure and complying with the requirements of NR 243.14(8).

Manure Stacking – NR 243.141

All manure stacking sites used by RIDGE BREEZE DAIRY shall be included in this NMP and must receive DNR review and approval before use. Stacking of manure will occur in the bunkers, in the storage structure or behind the bunkers on a preapproved stacking site. All manure stacking sites shall be selected for compliance with all requirements of NR 243.141. Please refer to Section 2 of plan for additional manure stacking site(s) information. Fields 04-02-046, 04-02-068, 04-02-085, and 04-03-032/04-03-033 have field sites identified for headland stacking if required.

Documentation of 180 days storage and methods for maintaining storage - NR 243.14(9) and NR 243.17(3)

Please refer to section 3 of plan for manure storage capacity calculations. Please refer to Section 3 of plan for land application schedules for specific fields – this schedule demonstrates how RIDGE BREEZE DAIRY will maintain 180 days storage capacity over time.

General Manure and process wastewater application requirements – NR 243.14(2)(b)(1-13)&(c-f)

RIDGE BREEZE DAIRY will take several actions to ensure all manure and process wastewater is land applied in compliance following general landspreading requirements of NR 243.14:

- No ponding on application site
- During dry weather, no runoff from the application site, nor discharge to waters of the state through subsurface drains
- No causing fecal contamination of water in a well
- Unless rain event is greater than 25 yr/24 hr event and farm complies with NMP and WPDES permit, no runoff from the application site, nor discharge to waters of the state through subsurface drains due to precipitation or snowmelt
- No application on saturated soils
- Maximize use of available nutrients, prevent delivery of manure and process wastewater to waters of the state, and minimize the loss of nutrients and other contaminants to waters of the state to prevent exceedances of groundwater and surface water quality standards and to prevent impairment of wetland functional values
- Retain nutrients in the soil with minimal movement.
- No application within 100 feet of direct conduits to groundwater
- No applications within 100 feet of private well and 1000 feet of commercial well

- No application on fields with soils that are 60 inch thick or less over fractured bedrock when ground is frozen or where snow is present.
- No application when snow is actively melting such that water is flowing off a field.
-

Please refer to section 3 of plan for spreading maps that visually describe how the farm will meet many of these general spreading requirements.

To demonstrate compliance with the NR 243.14 general land application requirements above, RIDGE BREEZE DAIRY will complete, on an ongoing basis, map and field verification procedures (listed below) to ensure spreading maps are accurate (including soil types, slopes and slope lengths), SWQMA or well setback distances are followed and prohibited conditions/features on fields are identified and avoided when spreading manure or process wastewater to NMP fields. The procedures demonstrate how land application activities will be in compliance with NR 243.14 or NRCS 590 restrictions throughout the permit term.

The prohibited conditions/features that RIDGE BREEZE DAIRY will evaluate for on each field include: ephemeral erosion or concentrated flow channels, saturated soils, intermittent and perennial streams, grassed waterways, wetlands, lakes, drinking wells, areas of field with bedrock or groundwater within 24 inches of field surface, wells and other direct conduits to groundwater - NR 243.14(2)(b)(3),(5),(6), (7-12). These areas have been inventoried and marked on restriction maps (see Section X of plan).

RIDGE BREEZE DAIRY will maintain written and/or visual records of ongoing field and map verification actions to demonstrate compliance with NR 243.14 requirements. Please refer to Appendix D and Section 5 of plan for this information.

Field and Map Verification Procedures

Prior to spreading manure onto fields, RIDGE BREEZE DAIRY (include custom hauler name if applicable) will complete the following map and field verification procedures to ensure all manure spreading will be in compliance with NR 243 and 590 criteria:

- Spreading maps will be reviewed by RIDGE BREEZE DAIRY and the custom manure hauler to identify all restricted or prohibited features and setback distances on field
- Fields will be inspected for restricted or prohibited features; any new conditions/features will be identified.
- Once identified, prohibited field features will be avoided and setback distances (as depicted on spreading maps or in NR 243 or NRCS 590) will be measured and followed during manure spreading.
- Spreading maps will be updated with any new prohibited/restricted field features or conditions.
- A log will be kept with the NMP to track the map and field verification procedures listed above. The log will track:
 - (a) date(s) review took place
 - (b) person(s) involved.
 - (c) fields verified
 - (d) any new field features or conditions identified on fields
 - (e) photos or other documentation of field features or conditions reviewed

Avoiding manure or process wastewater field runoff or ponding– NR 243.14(2)(b)(1), (2)&(6).

Please refer to field and map verification procedures and NRCS 590 requirements for runoff and ponding.

Surface applications & precipitation forecast for runoff within 24 hours – NR 243.14(2)(b)(13)

For this NMP, *surface* applications of manure will not be completed when rain events above 1.5 inches are forecasted within 24 hours of the time of planned applications. Surface application means manure that is applied

and left on the surface of the field. Surface application does not mean manure that is surface applied and then incorporated into the soil.

Prior to manure applications to fields, www.accuweather.com will be used to track weather forecast data. This information will be used determine the risk for forecasted precipitation to cause run-off from fields. Weather forecast data will be printed or saved to disc and kept with the NMP. All weather forecast data will be submitted with annual reports as an attachment.

Drain tile fields & tile discharges to surface waters -NR 243.14(2)(b)(2),(4)&(6) and NRCS 590 (V.A.1.k)

Drain tile discharges of manure and process wastewater from fields to surface waters under are not allowed under NR 243. The following fields have been identified to have drain tiles: N/A.

Please see Section 3 of plan for additional drain tile field information. Drain tile discharges of manure and process wastewater to surface waters will be prevented or responded to by RIDGE BREEZE DAIRY via the following procedures:

Prior to spreading manure onto fields with drain tiles:

- UW extension Guidelines for Preferential Flow of Manure in Tile Drainage will be reviewed by RIDGE BREEZE DAIRY:
http://www.extension.org/pages/Preferential_Flow_of_Manure_in_Tile_Drainage
- The following UW Discovery Farms Drain Tiles documents will be reviewed by RIDGE BREEZE DAIRY :
 1. Maintaining Tile Drainage Systems
 2. Understanding and Locating Drain Tiles
 3. And any other tile drainage fact sheets currently available on the UW Discovery Farms site at <http://www.uwdiscoveryfarms.org/OurResearch/AgriculturalTileDrainage.aspx>
- Spreading maps will be reviewed to identify know drain tile locations
- Fields will be inspected for drain tile presence or outlets; any new tile outlets/subsurface drainage systems will be identified
- All tile outlets will be visually checked for flow and water conditions (e.g., clear, colored, foam, odor, etc).
- Results of all visual tile monitoring will be tracked – using form in Appendix B - and kept with NMP
- Planned manure spreading (rates and locations) on fields will be evaluated and then limited or adjusted, as necessary, according to the following criteria:
 1. Available water holding capacity of the soil
 2. Depth of injection
 3. Clay soil considerations
 4. Concentration of Application from spreading equipment type used
 5. Are known tile drains flowing?
 6. Shallow tillage (3 to 5 inch depth) used or not used prior to application to disrupt the continuity of worm holes, macropores and root channels (preferential pathways) to reduce the risk of manure reaching drain lines.
 7. Perennial Crop and No Till precautions

During and after manure spreading on fields with drain tiles, best management practices will be followed:

- Visual inspection of tile outlets for flow and water conditions (e.g., clear, colored, foam, odor, etc.)
- Containing manure or process wastewater tile discharges from release into waterway(s)
- Notifying DNR of any spills/discharges to waterways from tiles
- Reducing application rates or delaying application(s) to tiled fields
- Setbacks from tiled areas
- Immediate tillage/ incorporation of applied manure
- Use of other manure application equipment (e.g., sweeps)
- Update NMP spreading maps or narrative.
- Results of visual inspections of tiles will be tracked – using form in Appendix B of this narrative and kept with NMP.

Please also refer to NRCS 590 requirements for field runoff, ponding and drainage to subsurface tiles.

Manure applications to areas of fields with shallow groundwater or bedrock – NR 243.14(2)(b)(7).

NR 243 prohibits manure applications on areas of fields that have groundwater or bedrock within 24 inches of the field surface *at time of application*. RIDGE BREEZE DAIRY will demonstrate compliance with this prohibition by:

- Implementing DNR guidance, dated March 2009. Please refer to Appendix C of this narrative for the DNR guidance.

OR

- Implementing alternative to DNR guidance. Please refer to Section 5 of plan this information.

Daily Spreading Log and Annual Reports for DNR – NR 243.19

RIDGE BREEZE DAIRY will maintain daily spreading log for all manure or process wastewater applications to NMP fields for compliance with NR 243.19. The daily spreading log will also be used to complete required annual reports for DNR. RIDGE BREEZE DAIRY recognizes the daily spreading log and annual reports are essential to document actual management practices used by RIDGE BREEZE DAIRY and the resulting soil erosion and water quality impacts on specific fields. RIDGE BREEZE DAIRY will use DNR Forms 3200-123 and 3200-123A (MS excel spreadsheets) to complete Daily spreading and annual reports. These forms will be obtained from DNR. Please refer to section 5 of plan for this information.

Please also refer to NRCS 590 requirements for Annual Updates to NMP

Manure spreading equipment calibration and Manure concentration testing – NR 243.19

RIDGE BREEZE DAIRY employee or the custom manure hauler employees shall conduct or require periodic inspections and ongoing calibration of landspreading equipment to detect leaks and ensure accurate application rates for manure and process wastewater. Initial calibrations shall be followed by additional calibration after any equipment modification or after changes in manure or process wastewater consistency and/or source. At a minimum, calibration of all manure spreading equipment used by RIDGE BREEZE DAIRY shall be completed annually and recorded. RIDGE BREEZE DAIRY will follow UW extension web page guidance for Calibration of Manure Application Equipment: http://www.extension.org/pages/Calibration_of_Manure_Application_Equipment Please refer to section 5 of plan for manure spreading equipment calibration records.

RIDGE BREEZE DAIRY shall analyze all manure and process wastewater sources applied to fields in accordance with WPDES permit conditions. Samples shall be collected so they are representative of all manure or process wastewater sources applied to fields. All manure and process wastewater sources shall be analyzed for Nitrogen, Phosphorus, and percent solids in years where manure and process wastewater is applied. RIDGE BREEZE DAIRY will follow sampling methods found in UW publication A3769, Recommended Methods of Manure Analysis: <http://learningstore.uwex.edu/Assets/pdfs/A3769.pdf> . Please refer to section 4 of plan for manure and process wastewater sampling records and related information.

Wisconsin NRCS 590 Requirements

Dominant Critical Soil

Each field in this NMP is managed to meet NRCS dominant critical soil criteria

<http://datcp.wi.gov/uploads/Farms/pdf/ChoosingCriticalSoilType.pdf>. The dominant critical soil is the most erosive soil that covers at least 10% of the field area. The dominant critical soil type was selected for all fields listed in the NMP to ensure corresponding rotational T – tolerable soil loss - values for each field are accurate for compliance with NRCS 590 requirements. Please refer to section 3 of plan for this information.

T – Tolerable soil loss

Each field in this NMP is managed to meet T – tolerable soil loss - over the crop rotation. T values were calculated using NRCS RUSLE 2 model. No nutrient applications (manure, fertilizer) are allowed on fields that fail to meet T. Erosion controls shall be implemented so that tolerable soil loss (T) over crop rotation will not be exceeded on fields that receive nutrients. Please refer to section 3 of plan for information showing each field's tolerable and actual soil loss.

Soil Testing

Each field in the NMP is managed for compliance with NRCS A2100 soil testing criteria:

<http://datcp.wi.gov/uploads/Farms/pdf/uwex-a2100.pdf>. Accordingly, all fields in this NMP either meet or are managed to meet A2100 criteria over time. Please refer to section 3 of plan for this information. For fields in this NMP that do not currently meet A2100, one of the following management options will be implemented by RIDGE BREEZE DAIRY until soil testing can be completed:

1. Manure will not be applied to field;
2. Field will be managed as if P levels are greater than 100 ppm P according to NR 243.14(5) criteria for all manure applications to field.

Application and budgeting of nutrients – consistent with NRCS 590 standard and soil fertility recommendations found in A2809.

Each field in the NMP is managed to address the source, rate, timing, form and method of application and budgeting *of all* nutrient sources (i.e., including soil reserves, commercial fertilizer, manure, organic byproducts – animal mortality and composting materials - legume crops and crop residues) generated or accepted by the farm and applied to fields. Please refer to section 3 and 4 of plan for this information.

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

Please refer to section 3 of plan for calculations/analysis for table values and section 3 of plan for specific fields land application amounts and schedules (e.g., spring, summer or fall). Refer to the tables on pages 2 and 3 for this information.

Crop Yield Goals

Each field in the NMP is managed according to yield goals that are attainable by the farm under average growing conditions and established using multi year documented yields kept by the farm. Farm yield goals in this NMP shall not be set higher than 15% above the previous 3-5 year average. Absent field/farm specific yield goals data, yield goals in this NM plan will be set using Wisconsin county average crop yields found at National Agricultural Statistics Service: http://www.nass.usda.gov/Data_and_Statistics/index.asp Please refer to sections 3 and 5 of plan for this information.

Records of soil and manure testing results

RIDGE BREEZE DAIRY has completed and retained records showing recent soil testing and manure testing results. Please refer to section 4 of plan for this information. RIDGE BREEZE DAIRY acknowledges that soil testing of some fields or manure analyses is out of date and needs to be completed. RIDGE BREEZE DAIRY will follow the following schedule to ensure manure analysis or soil testing for fields will be completed and then the NMP will be updated with this information.

Schedule for soil testing or manure analysis and then NMP update: Refer to section 3.

Fields with concentrated flow channels resulting in reoccurring gullies or ephemeral erosion

RIDGE BREEZE DAIRY will evaluate fields on an ongoing basis each year for presence or flow channels or other types of ephemeral soil erosion. If fields show evidence of concentrated flow channels resulting in re-occurring gullies or ephemeral erosion, the following actions will be taken by the farm:

- Spreading maps will be updated to reflect areas with concentrated flow channels;
- Manure will not be spread on fields with concentrated flow channels, until perennial vegetative cover is established in all areas of concentrated flow;
- A schedule for establishing perennial vegetative cover in all areas of concentrated flow as well as implementation dates will be recorded and kept with this NMP.
- One or more NRCS 590 runoff reducing practices for crop fields with ephemeral erosion will be selected and implemented. Practices selected and implementation dates will be recorded and kept with this NMP.

Once vegetated flow channels/grassed waterways established within fields, such areas will be maintained to perform their intended function and manure will not be applied within these areas.

Schedule for stabilizing soil erosion areas with perennial vegetative cover: Fall of 2016 and spring of 2017. This will occur as a maintenance practice as new areas are identified or observed.

Fields with high potential for N leaching to groundwater - soil temperature, application rate and timing restrictions

Fields in this NMP have been evaluated for soils with high potential for N leaching to groundwater for compliance with NRCS 590 requirements. Please refer to section 3 and 5 of plan for this information. When manure is applied fields with soils classified as having a high potential for N leaching to groundwater and the soils are > 50 degrees F, the potential exists for rapid N mineralization. The risk for N mineralization and loss (via leaching to groundwater) is a concern the farm will manage for. As such, RIDGE BREEZE DAIRY will measure soil temperatures prior to field applications in late summer or fall. Soil temperature logs will be kept with manure spreading records/reports and maintained over time for compliance recordkeeping requirements. The farm will follow the following procedures for compliance with NRCS 590 soil temperature, application rate and timing restrictions:

- If any fields are found to be > 50 degrees F, RIDGE BREEZE DAIRY will strictly follow section V, B, 2 of NRCS 590 standard.
- If any fields are found to be < 50 degrees F, RIDGE BREEZE DAIRY will strictly follow section V, B, 3 of NRCS 590 standard.

Field Inspection and Response Procedures for manure ponding, runoff from fields or drainage to subsurface tiles.

RIDGE BREEZE DAIRY will evaluate field and weather conditions prior to and during mechanical applications of **manures, organic byproducts and fertilizer** to ensure that applied material(s) do not cause ponding, runoff, or drainage to subsurface tiles.

The following response procedures will be followed by RIDGE BREEZE DAIRY if/when ponding, runoff or drainage to subsurface tiles occurs during and/or after applications to fields:

1. Stop application immediately (if field application not finished)
2. Containment measures (e.g., earth berms, pumps, temporary pits, tillage, or incorporation) will be implemented immediately to prevent off-site movement from field.
3. Changes in application rate, method, depth of injection or timing to the field shall be implemented during any future application to eliminate ponding, runoff or drainage to subsurface tiles.
4. Farm shall notify DNR of any spills or accidental release to comply with Ag Spill Law (289.11) or term of WPDES permit.

Annual Updates

This NMP will be updated annually. Each NMP annual update for RIDGE BREEZE DAIRY shall include records/documentation of all soil or manure analyses as well as crops, tillage, nutrient application rates, and methods actually implemented on each field that receives nutrients. Annual updates are essential to document actual management practices and resulting soil erosion and water quality impacts on specific fields.

243 Monitoring and Inspections Program

Monitoring and Inspections Program for RIDGE BREEZE DAIRY

To comply with the DNR inspection requirements, the following monitoring and inspection plan will be completed. RIDGE BREEZE DAIRY will record and monitor with a monitoring program that includes information on the use of models, visual inspections, rainfall records, or other proposed methods to determine compliance with the effluent limitation specified in the General Discharge Limitations and Performance Standards

subsection of a WPDES permit. Visual inspections shall be completed by RIDGE BREEZE DAIRY or designee in accordance with the following agreed frequencies:

- Daily inspections for leakage of all water lines that potentially come into contact with pollutants or drain to storage or containment structures or runoff control systems, including drinking or cooling water lines. This data is recorded in a calendar format that the DNR has provided the farm.
- Weekly inspections to ensure proper operation of storm water diversions and devices that channel contaminated runoff to storage or containment structures. This data is documented in worksheets included in the NMP.
- Weekly inspections of storage and containment structures (e.g., composting and leachate containment systems and manure storage structures). For liquid storage and containment facilities, the berms must be inspected for leakage, seepage, erosion, cracks and corrosion, rodent damage, excessive vegetation and other signs of structural weakness. In addition, the level of material in liquid storage and containment facilities shall be measured and recorded in feet or inches above or below the freeboard level. This measurement shall be based on a depth gauge, if available, or estimated if a depth gauge is not available. RIDGE BREEZE DAIRY shall also record the date, time and estimated volume of any overflows of liquid storage or containment facilities. This data is documented in worksheets included in the NMP. RIDGE BREEZE DAIRY will collect all process wastewater created at the feed site using a leachate collection system.
- Weekly inspections of raw material storage areas, manure and process wastewater handling devices and practices. This data is documented in worksheets included in the NMP.
- Weekly Inspections of leachate collection systems and the feed storage area. This data is documented in worksheets included in the NMP.
- Periodic inspections of land application equipment for leaks. Frequency of land application equipment inspections shall be specified in the monitoring program. This data is documented in worksheets provided.

Corrective Actions: Corrective actions shall be taken as soon as practicable to address any equipment, structure or system malfunction, failure or other problem identified as a result of monitoring or inspections.

Records: RIDGE BREEZE DAIRY shall maintain records on site of all completed monitoring and inspections for DNR or EPA review upon receiving a call. Any discharges to surface water shall be reported to the proper officials as needed based on the severity.

RIDGE BREEZE DAIRY will utilize their own proprietary weekly and quarterly inspection forms that meet NR 243 Standards. These documents will be kept in the main office area and will be available upon request.

Other Record Keeping

RIDGE BREEZE DAIRY is required to keep other records which include:

- Manure Spill Logs
- Field Verification Logs
- Tile Outlet monitoring

Appendix A

Wisconsin Manure Quantity Estimation

V 09/01/03

Name: _____ Date: _____

Animal	Size	Daily Manure Production To Apply						Annual Manure Production To Apply					
		Solid		Liquid				Number x	Daily x	365 Day x	%	=	Total
	Lbs	Lbs/day	ft ³ /day	MWPS ft ³ /day x WI dairy & beef dilution factor	ft ³ /day & WI dilution	MWPS gal./day x WI dairy & beef dilution factor	gal./day & WI dilution	of Head	Total Tons or Gal.	Total	Collected	=	Collected Tons or Gal.
Dairy													
Calf	150	13	0.200	.21*1.8=	.37	1.53*1.8=	2.80						
Calf	250	21	0.320	.33*1.8=	.60	2.47*1.8=	4.50						
Heifer	750	65	1.000	1.03*1.8=	1.85	7.70*1.8=	13.8						
Lact. Cows	1000	106	1.700	1.71*1.8=	3.07	12.7*1.8=	23.0						
	1400	148	2.400	2.38*1.8=	4.28	17.7*1.8=	32.0						
Dry Cows	1000	82	1.300	1.30*1.8=	2.35	9.7*1.8=	18.0						
	1400	115	1.820	1.82*1.8=	3.33	13.6*1.8=	25.0						
Beef													
Calf	450	26	0.420	.415*3.2=	1.3	3.1*3.2=	9.9						
High Forage	750	62	1.000	1.00*3.2=	3.2	7.5*3.2=	24.0						
High Forage	1100	92	1.400	1.48*3.2=	4.8	11*3.2=	35.0						
High Energy	750	54	0.870	.87*3.2=	2.7	6.5*3.2=	20.8						
High Energy	1100	80	1.260	1.27*3.2=	4.1	9.5*3.2=	30.5						
Beef Cow	1000	63	1.000	1.00*3.2=	3.2	7.5*3.2=	24.0						
Swine													
Nursery Pig	25	2.7	0.040		.04		.30						
Grow-Finish Pig	150	9.5	0.150		.17		1.20						
Gestating Sow	275	7.5	0.120		.14		1.00						
Sow & Litter	375	22.5	0.360		.42		3.00						
Boar	350	7.2	0.120		.14		1.00						
Poultry / Other													
Layers	4	0.26	0.004		.004		.03						
Broilers	2	0.18	0.003		.003		.02						
Turkeys	20	0.9	0.014		.015		.11						
Duck	6	0.33	0.005		.006		.04						
Sheep	100	4	0.060		.055		.40						
Horse	1000	50	0.800		.827		5.98						

Source: Midwest Plan Service publication number MWPS-18 "Manure Characteristics" Section 1, copyright 2000. Solid volumes are as excreted. The liquid dairy and beef values are computed from the MWPS daily production and have approximately equal nutrient values annually as solid manure. MWPS liquid dairy and beef factors are multiplied by 1.8 and 3.2 respectively. Dilution on your operation may be substantially different. Use manure analysis and manure storage volumes to determine manure production whenever possible.

Manure quantities are likely to be more accurate estimated from storage size:
 What is the manure storage pit size? _____ gallons or tons?
 Multiply pit size x Number of times emptied/yr? _____ = Total annual manure collection

Available Manure Nutrients

V 09/01/03

Manure analysis testing for available nutrients in (lbs./ton or lbs./1000 gallons) N P₂O₅ K₂O

Manure book values for available nutrients in (lbs./ton or lbs./1000 gallons)									
Species/ Management	Total Available Nutrients from Solid Manure lbs./ton				Species/ Management	Total Available Nutrients from Liquid Manure lbs./ 1,000 gallons			
	N		P ₂ O ₅	K ₂ O		N		P ₂ O ₅	K ₂ O
	Surface applied	Incorporated by 3 rd day				Surface applied	Incorporated by 3 rd day		
One Year of Application									
Dairy	3	4	3	7	Dairy	7	10	5	16
Beef	4	5	5	9	Veal calf	6	8	6	20
Swine	7	9	6	7	Beef	5	7	5	16
Duck	9	10	13	24	Swine indoor pit	25	33	25	24
Chicken	20	24	30	24	Swine outdoor pit	17	22	10	16
Turkey	20	24	24	24	Swine farrow nursery indoor pit	13	16	14	18
Sheep	7	9	11	32	Poultry	8	10	6	10
Horse	3	4	4	8					
Two Consecutive Years of Application									
Dairy	4	5	4	8	Dairy	10	12	6	18
Beef	5	6	6	10	Veal calf	8	9	7	23
Swine	8	11	7	8	Beef	7	9	6	18
Duck	10	12	15	27	Swine indoor pit	30	38	29	27
Chicken	24	28	35	27	Swine outdoor pit	20	26	11	18
Turkey	24	28	28	27	Swine farrow nursery indoor pit	15	19	16	20
Sheep	9	12	13	36	Poultry	10	11	7	11
Horse	4	5	4	9					
Three or More Consecutive Years of Application									
Dairy	5	6	4	9	Dairy	11	13	7	19
Beef	6	7	7	10	Veal calf	8	10	8	24
Swine	9	11	8	9	Beef	8	10	7	19
Duck	11	13	16	29	Swine indoor pit	33	40	32	29
Chicken	26	30	38	29	Swine outdoor pit	22	27	12	19
Turkey	26	30	30	29	Swine farrow nursery indoor pit	16	20	17	21
Sheep	10	13	14	38	Poultry	10	12	8	11
Horse	4	5	5	10					

Figures are rounded to the nearest whole pound. Manure book values table replaces UWEX Publication A-2809 (1998)

Wisconsin Certified Laboratories

A Wisconsin nutrient management plan must be based on soil tests conducted at the soil testing laboratory certified by the Department of Agriculture, Trade and Consumer Protection. This requirement ensures soil test results and recommendations will be generated through analytical procedures approved by the University of Wisconsin. The results are consistent. Laboratories must perform with a certain level of success, to remain certified.

The following soil testing laboratories are Wisconsin DATCP certified. The laboratories participating in the Manure Analysis Proficiency (MAP) program are indicated below to provide quality control to the Laboratory Analysis Industry. You can learn more about the MAP program and find other participating laboratories at <http://ghex.colostate.edu/map/>.

UW Soil & Plant Analysis Laboratory
5711 Mineral Point Rd
Madison, WI 53705
(608)262-4364
soil-lab@uwmadmail.services.wisc.edu

UW Soil & Forage Lab
8396 Yellowstone Dr.
Marshfield, WI 54449
(715)387-2523
jbpeter1@facstaff.wisc.edu
MAP participant

Agsourc Soil & Forage Lab
106 N. Cecil Street
Bondue1, WI 54107
(715)758-2178
aglab@agsource.com
MAP participant

Rock River Laboratory
PO Box 169
Watertown, WI 53904
(920)261-0446
rrllab@execpc.com
MAP participant

Dairyland Laboratories
217 E. Main Street
Arcadia, WI 54612
(608)323-2123
info@dairylandlabs.com
MAP participant

A&L Great Lakes
Laboratories
3505 Conestoga Dr.
Fort Wayne, IN 46808
(219)483-4759
lparker@algreatlakes.com
MAP participant

Mowers Soil Testing Plus, Inc.
117 E Main St
Toulon, IL 61483
(309)286-2761
swiedman@mowersplus.com

Logan Labs
P.O. Box 1455
184 West Main Street
Russells Point, OH 43348
Ph: (937) 842-6100

Appendix B Drain Tile Inspection Log

Date	Field Name	Acres	Tile Out-let ID	Outlet flow <i>before</i> manure application				Outlet flow <i>during/after</i> manure application				Response Actions Taken?		
				Flow? Check Time?	Describe flow, rate, color, odor	Manure Source	Manure spread method	Start & End Time for Application	Amt. Per acre	Soil Conditions	Weather Conditions		Flow? Check Time?	Describe flow, rate, color, odor

Nutrient Sources

- 001 = Pit 1 Liquid
- 002 = Separated Solids
- 003 = Bunker Waste

W = Windy

Soil Conditions

- D = Dry SN=Snow Covered
- W = Wet
- FZ = Frozen
- SN = Snow

Application Method

- SA = Surface Applied
- IJ = Injected
- IC = Incorporated

Weather

- S = Sunny LR = Light Rain
- C = Cloudy HR = Heavy Rain

Actions Taken in Response to Tile Discharges

Date	Actions Taken

Appendix C



BUREAU OF WATERSHED MANAGEMENT

INTERIM GUIDANCE

NUTRIENT MANAGEMENT - CAFO APPLICATIONS ON SHALLOW GROUNDWATER SOILS

March 2009

Description: Ch. NR 243, Wis. Adm. Code, restrictions CAFO manure and process wastewater applications to fields that have less than 24 inches of soil over groundwater or bedrock.

This guidance describes how permittees and their consultants can identify and determine whether to use these fields as well as how Department staff can review fields for compliance with this requirement.

This document is intended solely as guidance, and does not contain any mandatory requirements except where requirements found in statute or administrative rule are referenced. This guidance does not establish or affect legal rights or obligations, and is not finally determinative of any of the issues addressed. This guidance does not create any rights enforceable by any party in litigation with the State of Wisconsin or the Department of Natural Resources. Any regulatory decisions made by the Department of Natural Resources in any matter addressed by this guidance will be made by applying the governing statutes and administrative rules to the relevant facts.

NR 243.14(2)(b)(7) requires CAFO manure or process wastewater applications may not be applied on areas of a field with a depth to groundwater or bedrock of less than 24 inches.

This restriction applies only to those portions of field that have less than 24 inches of separation to groundwater. If portions of a field have at least 24” of soil, these portions of the field are not subject to the prohibition (i.e., there is no de minimus amount of field that falls into/out of a prohibition area that would allow the entire field to be determined to not meet/meet the restriction).

NRCS Conservation Planning Technical Note WI-1

This document (Appendix 1) identifies soils with high potential for groundwater contamination. It places restrictions on ‘w’ type soils. The ‘w’ symbol indicates the soil is very poorly and poorly drained has an apparent water table that is less than 12 inches from the surface for any duration at any time of the year. Accordingly, ‘w’ soils indicate, by definition, where the depth to groundwater may also be within 24 inches of the field surface for any duration at any time of the year.

Tech Note WI-1 link (Sept 2007):<http://www.wi.nrcs.usda.gov/technical/technotes.html>

NRCS Soil Description for ‘w’ soils

NRCS soil descriptions provide more detailed information for individual soils, including ‘w’ soils. Each description contains a category entitled DRAINAGE AND SATURATED HYDRAULIC CONDUCTIVITY. This category describes the depth to water table (groundwater) for specific time periods. Here are two examples:

Example 1 - Poorly drained. An apparent seasonal high water table is at 15 cm (0.5 foot) above the surface to 31 cm (1.0 foot) below the surface at some time during spring in most years.

Example 2 - Very poorly drained. Depth to the seasonal high water table ranges from 2 foot above the surface in ponded phases to 1 foot below the surface from September to June.

For specific NRCS soil descriptions, use NRCS Soil Description Search link (click on soil series name search):

<http://soils.usda.gov/technical/classification/osd/index.html>

NRCS soil description, groundwater depth factors and NR 243 compliance

The NRCS soil descriptions, however, are not regulatory. They are general guidance provided by NRCS for general nutrient management purposes. *The actual depth to groundwater on a specific day or under specific conditions may vary from the NRCS narrative soil descriptions.*

The following factors influence groundwater depth:

- Soil type(s) and moisture content.
- Field topography.
- Weather patterns (wet or dry seasons).
- Drainage systems (ditches and drain tiles).
- Crop and Tillage types.

NR 243.14 requires manure applications to fields meet the depth to groundwater requirement **on a field by field basis at the time of application**. The steps described below provide permitted CAFO farms some methods to demonstrate compliance with the NR243 depth to groundwater requirement. **Please note, this guidance does not preclude a CAFO farm from submitting or implementing alternative methods to this guidance*.**

* = Alternative methods do not become effective until the department has reviewed and approved the method.

Interim guidance for shallow groundwater soils

- (1) For each field listed in farm's Nutrient Management Plan (NMP), identify and map all 'w' soil units using tools below. Keep with NMP.**

Web Soil Survey - <http://websoilsurvey.nrcs.usda.gov/app/>

Tech Note WI-1 (Appx 1)- <http://www.wi.nrcs.usda.gov/technical/technotes.html>

- (2) For each field, document the NRCS Soil Series description for all 'w' soil units using link below. Keep with NMP.** Use DRAINAGE AND SATURATED HYDRAULIC CONDUCTIVITY description to determine depth to water table time period(s).

NRCS Soil Description - <http://soils.usda.gov/technical/classification/osd/index.html>

- (3) If possible, avoid applying manure or process wastewater to areas of fields with 'w' soils during shallow groundwater time periods listed in NRCS soil description(s). If avoidance is not possible, follow steps 4-6 below.**

- (4) Before any application, inspect the 'w' soil section(s) of the field and answer the following question: Are 'w' soil sections of field 'idle' - Y or N?**

For purposes of this guidance, "idle" means: the 'w' soil section(s) of field show evidence of hydric soils and exhibit: (1) Wetland vegetation (woody vegetation, shrubs, grasses) or (2) Abandoned condition (e.g., no crops or evidence of recent crops for at least two years).

- i. If Y – no application; locate alternative acreage.
- ii. If N – go to Step 5.

- (5) Before any application, demonstrate 'w' soil sections of field do not have a groundwater depth of less than 24 inches.**

- i. If Y– apply manure and follow all other NR243.14 manure spreading requirements.
- ii. If N– no application; locate alternative acreage; or apply at time when groundwater depth is greater than 24 inches.

For purposes of this guidance, 'demonstrate' means one of the following options:

- (1) Locate drain tile(s) on the field with 'w' soils units. Determine drain tile(s) are functioning and tile depth is 24 inches or greater from the surface of the field. If drain tile(s) meet criteria above, complete application and follow all other NR243 spreading requirements (e.g., preventing drain tile discharges to surface waters).
- (2) Excavate at least two "representative" soil pits within at least one 'w' soil area on the field that is five acres or less in size* (using mechanical soil auger or manual hand tools) to a depth of at least 30 inches. After at least one hour, observe if the water table is below 24 inches of surface. If both pits (for each five acre area) meet the criteria above, refill each pit, complete application and follow all other NR243 spreading requirements.

*= When 'w' soil area on field is greater than five acres in size, excavate additional soil pits so a ratio of two pits for each 5 acre sized 'w' soil unit is met.

For purposes of this guidance, "representative" means choosing locations within a 'w' soil area of field that reflects the overall structure and characteristics of the 'w' soil unit.

- (6) Document steps taken at each field with 'w' soil units in WPDES permit daily and annual spreading reports.**

Appendix D: Field and Map Verification Log

Date	Field Name	Person	Existing Field or Map Feature(s) checked?	Photos? ID #	New Field Features Identified?	Action(s) Taken?