

## CNM4: Nutrient Mass Balance Report

Starting Year	2023
Reported For	Ridge Breeze Dairy
Printed	2024-01-19
Plan Completion/Update Date:	2023-03-20
SnapPlus Version	20.4 built on 2021-06-03
C:\Users\nathen\Documents\Snap Plus\Ridge Breeze Dairy.snapDb	

**Prepared for:**  
 Ridge Breeze Dairy  
 attn:Brad Gerrits  
 2686 390th Ave  
 Maiden Rock, 54750

**Prepared by:** Tilth Agronomy Group  
 W7684 Hillwood Court  
 Hortonville, 54944  
 920-858-5756, nathen@tilthag.com

Acres/ Crop Year	2023	2024	2025	2026	2027	2028
Spreadable Acres in plan*	7,335.4	7,335.4	7,335.4	7,335.4	7,335.4	7,335.4
Acres receiving manure**	1,575.6	2,753.1	4,844.7	4,813.7	5,120.6	4,961.1

\* Calculated using SWQMA manure applications strategy of no application within 25 ft.

\*\* Assumes all manure spreading restrictions are followed. Non-spreadable acres not included.

### Nutrient Source Summary for 2024

SourceName	Type	First Year Available Nutrients in lb/ton or lb/1000 gallons								Volumes are in tons or gallons					
		N	N Inc.	N Inj	P2O5	K2O	S	DM %	Volume	Amount Applied	Amount Remaining	Fall	Winter	Spring	Summer
Dairy solid	Dairy, solid	3.3	3.7	4.4	4.9	6.0	0.9	35	0	1,027	-1,027	946	0	81	0
Main Pit	Dairy, slurry	3.3	4.4	5.5	6.3	16.7	1.0	4	10,000,000	29,753,139	-19,753,139	14,419,619	0	11,298,400	4,035,120
Pen Pack	Dairy, solid	3.1	3.7	4.4	4.9	5.9	0.9	24	0	0	0	0	0	0	0
Seperated Solids Average 2023	Dairy, solid	2.3	2.8	3.2	3.6	5.0	0.7	31	15,000	18,249	-3,249	7,623	0	10,626	0
Small Pit	Dairy, liquid	4.6	6.1	7.6	7.2	17.0	1.3	5	2,000,000	3,078,473	-1,078,473	2,325,473	0	753,000	0
<b>Total Solid:</b>									15,000	19,276	-4,276				
<b>Total Liquid:</b>									12,000,000	32,831,612	-20,831,612				

**Annual Pounds of Available N, P2O5 and K2O Applied from Manure and Fertilizer**

		2023	2024	2025	2026	2027	2028
Produced from Manure (lb)	N inj	157,500	118,200	403,400	403,400	403,400	403,400
	P2O5	126,900	131,400	461,100	459,000	459,000	461,100
	K2O	323,100	276,000	1,208,000	1,208,000	1,208,000	1,208,000
Total Available Manure Nutrients Applied (lb)	N inj*	141,124	249,954	449,074	439,814	457,858	457,773
	P2O5	143,263	280,338	513,405	499,055	520,163	522,613
	K2O	370,031	646,618	1,341,375	1,310,403	1,366,800	1,361,951
Total Fertilizer Nutrients Applied (lb)	N	381,680	379,442	170,227	159,706	134,546	148,010
	P2O5	37,130	28,764	17,949	14,342	11,646	9,351
	K2O	495,307	374,762	322,923	273,393	291,697	124,249
Total Crop Removal (lb)	P2O5	472,966	488,038	470,294	511,430	501,825	515,752
	K2O	903,503	914,152	1,145,373	1,197,514	1,333,877	1,244,526
Nutrient Balance (Applied - Crop removal, lb)	P2O5	-292,573	-178,935	61,060	1,967	29,984	16,213
	K2O	-38,165	107,228	518,925	386,282	324,620	241,674

\* This is the first year available N if all manure applied was injected or incorporated within 1 hour, which may not be the case.

**Annual Manure Production and Use by Source**

Total Value = \$ Value of all nutrients, incorporated including S.

Source		2023	2024	2025	2026	2027	2028
Dairy solid	Production (Tons)	0	0	0	0	0	0
	Used (Tons)	0	1,027	0	0	0	439
	Analysis Date	2024-01-18	2014-01-24	2014-01-24	2014-01-24	2014-01-24	2014-01-24
	Analysis (N/Ninc/Ninj-P2O5-K2O)	2/3/3-4-5	3/4/4-5-6	3/4/4-5-6	3/4/4-5-6	3/4/4-5-6	3/4/4-5-6
	Dry Matter (%)	31	35	35	35	35	35
	Total Value	0.00	0.00	0.00	0.00	0.00	0.00
Main Pit	Production (Gallons)	10,000,000	10,000,000	70,000,000	70,000,000	70,000,000	70,000,000
	Used (Gallons)	16,668,572	29,753,139	77,575,480	74,927,600	78,592,800	78,183,500
	Analysis Date	2024-01-18	2024-01-18	2024-01-18	2024-01-18	2024-01-18	2024-01-21
	Analysis (N/Ninc/Ninj-P2O5-K2O)	3/4/6-6-17	3/4/6-6-17	3/4/6-6-17	3/4/6-6-17	3/4/6-6-17	3/4/6-6-17
	Dry Matter (%)	4	4	4	4	4	4
	Total Value	0.00	0.00	0.00	0.00	0.00	0.00

Source		2023	2024	2025	2026	2027	2028
Pen Pack	Production (Tons)	0	0	0	0	0	0
	Used (Tons)	0	0	0	0	0	0
	Analysis Date	2019-08-19	2019-08-19	2019-08-19	2019-08-19	2019-08-19	2019-08-19
	Analysis (N/Ninc/Ninj-P2O5-K2O)	3/4/4-5-6	3/4/4-5-6	3/4/4-5-6	3/4/4-5-6	3/4/4-5-6	3/4/4-5-6
Dry Matter (%)		24	24	24	24	24	24
	Total Value	0.00	0.00	0.00	0.00	0.00	0.00
Seperated Solids Average 2023	Production (Tons)	15,000	15,000	1,000	1,000	1,000	1,000
	Used (Tons)	3,882	18,249	1,975	1,333	1,370	1,914
	Analysis Date	2022-10-19	2024-01-18	2024-01-18	2024-01-18	2024-01-18	2024-01-18
	Analysis (N/Ninc/Ninj-P2O5-K2O)	4/5/6-3-8	2/3/3-4-5	2/3/3-4-5	2/3/3-4-5	2/3/3-4-5	2/3/3-4-5
Dry Matter (%)		58	31	31	31	31	31
	Total Value	0.00	0.00	0.00	0.00	0.00	0.00
Small Pit	Production (Gallons)	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
	Used (Gallons)	3,533,320	3,078,473	2,117,000	3,085,100	2,791,200	2,593,100
	Analysis Date	-	-	-	-	-	-
	Analysis (N/Ninc/Ninj-P2O5-K2O)	5/6/8-7-17	5/6/8-7-17	5/6/8-7-17	5/6/8-7-17	5/6/8-7-17	5/6/8-7-17
Dry Matter (%)		5	5	5	5	5	5
	Total Value	0.00	0.00	0.00	0.00	0.00	0.00

**Estimated Livestock Manure Production for 2024**

Animal Type	# of animals	Total No. of days	% Collected as Solid	% Collected as Liquid	Yearly Tons	Yearly Gallons
Dairy Youngstock 500 lbs	100	365	100	0	767	0
Dairy Dry Cows 1400 lbs	50	365	30	70	315	319,375
Dairy Lactating Cows 1400 lbs	1,250	365	30	70	10,129	10,220,000
Dairy Calf 250 lbs	280	365	100	0	1,073	0
<b>Farm Totals</b>					12,284	10,539,375

**Manure Storage Pits for 2024**

Pit Name	Volume	Number of Times Emptied per Year	Total Collected Annually
Main Pit	6,261,404	2	12,522,808

Pit Name	Volume	Number of Times Emptied per Year	Total Collected Annually
Pen Pack	165,956	1	165,956
Small Pit	2,419,676	2	4,839,352
<b>Total Pit Tons 165,956</b>		<b>Total Pit Gallons 17,362,160</b>	

**Spreaders for 2024**

No Rows Found