

**Concentrated Animal Feeding Operation
NPDES PERMIT – Annual Report
Skyridge Farms
December 2021**

**Index
&
Department of Ecology Contact Information**

This packet includes:

Index and Contact Information

Concentrated Animal Feeding Operation NPDES Annual Report

2021 Field Nutrient Budgets (Spring, Summer, Fall)

Department of Ecology Contact Information:

Washington Department of Ecology
Water Quality Program
Attn: Cafo Permit Administrator – (360)407-6600
cafopermit@ecy.wa.gov
PO Box 47600
Olympia, WA 98504-7600

RECEIVED

DEC 29 2021

**Dept of Ecology
Central Regional Office**



APPENDIX B: ANNUAL REPORT FORM **Concentrated Animal Feeding Operation** **(CAFO) General Permit**

Reporting Year: 2021	Reporting Period: January 1 to December 31
-----------------------------	---

I. Permit Information

Permit Number: WAG 0-15020B	Facility Name: Skyridge Farms, LLC
Permittee Name: Dan DeGroot	

II. Contact Information (fill out if different from I. Permittee Information above)

Name: Dan DeGroot	Email: skyridgefarms@hotmail.com
Phone: (509)839-4123	Cell Phone (optional):

III. Operation Information

Provide the maximum number of each type of animals at your facility for the year.

<input checked="" type="checkbox"/> Dairy Cows: 3250	<input type="checkbox"/> Sheep or Lambs: _____
<input type="checkbox"/> Dairy Heifers: _____	<input type="checkbox"/> Turkeys: _____
<input type="checkbox"/> Veal Calves: _____	<input type="checkbox"/> Ducks: _____
<input type="checkbox"/> Beef: _____	<input type="checkbox"/> Horses: _____
<input type="checkbox"/> Swine	<input type="checkbox"/> Chickens
≥55 pounds: _____	Broilers: _____
< 55pounds: _____	Layers: _____
<input type="checkbox"/> Other: _____	

Generated by CAFO (Specify units: tons, gallons, or ft ³)	<input checked="" type="checkbox"/> Manure: Liquid: 34,000,000 gallons Solid: 12,400 tons
	<input type="checkbox"/> Poultry Litter: _____
	<input type="checkbox"/> Other Organic By-Products: _____
	<input type="checkbox"/> Process Wastewater: _____
	<input type="checkbox"/> Digestate: _____
Exported by CAFO (Specify units: tons, gallons, or ft ³)	<input checked="" type="checkbox"/> Manure: Liquid: 10,803,800 gallons Solid: 21,470 tons
	<input type="checkbox"/> Poultry Litter: _____
	<input type="checkbox"/> Other Organic By-Products: _____
	<input type="checkbox"/> Process Wastewater: _____
	<input type="checkbox"/> Digestate: _____
Total number of acres available for land application included in your MPPP: 545	
Total acres you control used for land application in the past year: 385	

Discharges

During the year, has manure, litter, process waste, or process wastewater discharged from your production area or land application fields? ☐ Yes / ☒ No

(NOTE: if you are covered by the Combined Permit, do not include discharges of agricultural stormwater here.)

If **YES**, provide a summary of the approximate date, time, volume and duration of the discharge(s). Summarize your response to the discharge(s). If necessary, attach a separate sheet of paper for additional space.

Adaptive Management Risk Level High or Very High

Document the reason(s) a land application field fall soil nitrate tests for a single year result in the field being at a risk level or high or very high. Identify which field the documentation applies to. If necessary, attach a separate sheet of paper for additional space.

IV. Nutrient Source Content Analysis (Print additional copies of this page if you have more nutrient sources than space provided)

Nutrient Source Name	Nutrient Content				Units		% OM
	(NH ₃ /NH ₄)	(NO ₃ /NO ₂)	Phosphorus				
Spring Lagoon	1 st Analysis	1442	8	185	<input checked="" type="checkbox"/> PPM <input type="checkbox"/> (fill in)		
	2 nd Analysis				<input type="checkbox"/> PPM <input type="checkbox"/> (fill in)		
	3 rd Analysis				<input type="checkbox"/> PPM <input type="checkbox"/> (fill in)		
Summer Lagoon	1 st Analysis	393	664	190	<input type="checkbox"/> PPM <input type="checkbox"/> (fill in)		
	2 nd Analysis				<input type="checkbox"/> PPM <input type="checkbox"/> (fill in)		
	3 rd Analysis				<input type="checkbox"/> PPM <input type="checkbox"/> (fill in)		
Fall Lagoon	1 st Analysis	310	500	59	<input checked="" type="checkbox"/> PPM <input type="checkbox"/> (fill in)		
	2 nd Analysis				<input type="checkbox"/> PPM <input type="checkbox"/> (fill in)		
	3 rd Analysis				<input type="checkbox"/> PPM <input type="checkbox"/> (fill in)		
	1 st Analysis				<input type="checkbox"/> PPM <input type="checkbox"/> (fill in)		
	2 nd Analysis				<input type="checkbox"/> PPM <input type="checkbox"/> (fill in)		
	3 rd Analysis				<input type="checkbox"/> PPM <input type="checkbox"/> (fill in)		
	1 st Analysis				<input type="checkbox"/> PPM <input type="checkbox"/> (fill in)		
	2 nd Analysis				<input type="checkbox"/> PPM <input type="checkbox"/> (fill in)		
	3 rd Analysis				<input type="checkbox"/> PPM <input type="checkbox"/> (fill in)		
	1 st Analysis				<input type="checkbox"/> PPM <input type="checkbox"/> (fill in)		
	2 nd Analysis				<input type="checkbox"/> PPM <input type="checkbox"/> (fill in)		
	3 rd Analysis				<input type="checkbox"/> PPM <input type="checkbox"/> (fill in)		
	1 st Analysis				<input type="checkbox"/> PPM <input type="checkbox"/> (fill in)		
	2 nd Analysis				<input type="checkbox"/> PPM <input type="checkbox"/> (fill in)		
	3 rd Analysis				<input type="checkbox"/> PPM <input type="checkbox"/> (fill in)		

V. Field Land Application Information (Print one copy of this page for each of your fields)

Field ID: Pivot #1,2&3		Action Level:		Crop Grown: Corn Silage		Crop Yield (provide units): 29 tons	
Field Soil Sample Nutrient Analysis							
		NH ₃ /NH ₄ as N		NO ₃ /NO ₂ as N		Phosphorus as P	
		Spring	Fall	Spring	Fall	Units	% OM
Soil Profile Depth							
1 st Foot	2.2	3.6		13	27	<input checked="" type="checkbox"/> PPM <input type="checkbox"/> Lbs/Acre	<input type="checkbox"/> PPM <input type="checkbox"/> Lbs/Acre
2 nd Foot (if required)		2.6			18	<input checked="" type="checkbox"/> PPM <input type="checkbox"/> Lbs/Acre	<input type="checkbox"/> PPM <input type="checkbox"/> Lbs/Acre
3 rd Foot (if required)		2.6			7	<input checked="" type="checkbox"/> PPM <input type="checkbox"/> Lbs/Acre	<input type="checkbox"/> PPM <input type="checkbox"/> Lbs/Acre
Date of last Organic Matter (OM) Analysis: 11/7/19		Date of last Phosphorus Analysis: 11/7/19					
Nutrient Sources Applied to Field							
Nutrient Source Applied (List all sources of nutrients including commercial fertilizer that were applied to this field. Source name must match Nutrient Source Name from section IV)				Total Amount Applied			
Spring Lagoon				1,629,000 <input checked="" type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³			
				<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³			
				<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³			
				<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³			
				<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³			
				<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³			
				<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³			

V. Field Land Application Information (Print one copy of this page for each of your fields)

Field ID: Pivot #1,2&3	Action Level:	Crop Grown: Corn Silage				Crop Yield (provide units): 29 tons			
Field Soil Sample Nutrient Analysis									
Soil Profile Depth	NH ₃ /NH ₄ as N		NO ₃ /NO ₂ as N		Phosphorus as P		Units		% OM
	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Fall
1 st Foot	2.2	3.6	13	27			<input checked="" type="checkbox"/> PPM	<input type="checkbox"/> Lbs/Acre	
2 nd Foot (if required)		2.6		18			<input checked="" type="checkbox"/> PPM	<input type="checkbox"/> Lbs/Acre	
3 rd Foot (if required)		2.6		7			<input checked="" type="checkbox"/> PPM	<input type="checkbox"/> Lbs/Acre	
Date of last Organic Matter (OM) Analysis: 11/7/19									
Date of last Phosphorus Analysis: 11/7/19									
Nutrient Sources Applied to Field									
Nutrient Source Applied (List all sources of nutrients including commercial fertilizer that were applied to this field. Source name must match Nutrient Source Name from section IV)						Total Amount Applied			
Summer Lagoon						1,086,000	<input checked="" type="checkbox"/> Gallons	<input type="checkbox"/> Tons	<input type="checkbox"/> Ft ³
							<input type="checkbox"/> Gallons	<input type="checkbox"/> Tons	<input type="checkbox"/> Ft ³
							<input type="checkbox"/> Gallons	<input type="checkbox"/> Tons	<input type="checkbox"/> Ft ³
							<input type="checkbox"/> Gallons	<input type="checkbox"/> Tons	<input type="checkbox"/> Ft ³
							<input type="checkbox"/> Gallons	<input type="checkbox"/> Tons	<input type="checkbox"/> Ft ³
							<input type="checkbox"/> Gallons	<input type="checkbox"/> Tons	<input type="checkbox"/> Ft ³
							<input type="checkbox"/> Gallons	<input type="checkbox"/> Tons	<input type="checkbox"/> Ft ³
							<input type="checkbox"/> Gallons	<input type="checkbox"/> Tons	<input type="checkbox"/> Ft ³

V. Field Land Application Information (Print one copy of this page for each of your fields)

Field ID: Pivot #1, 2&3	Action Level:	Crop Grown: Corn Silage	Crop Yield (provide units): 29 tons
Field Soil Sample Nutrient Analysis			
	NH ₃ /NH ₄ as N	NO ₃ /NO ₂ as N	Phosphorus as P
Soil Profile Depth	Spring	Fall	Units
1 st Foot	2.2	3.6	27
2 nd Foot (if required)		2.6	18
3 rd Foot (if required)		2.6	7
Date of last Organic Matter (OM) Analysis: 11/7/19		Date of last Phosphorus Analysis: 11/7/19	
Nutrient Sources Applied to Field			
Nutrient Source Applied (List all sources of nutrients including commercial fertilizer that were applied to this field. Source name must match Nutrient Source Name from section IV)			Total Amount Applied
Fall Lagoon			1,086,000
			<input checked="" type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³

FIELD/CROP NUTRIENT MANAGEMENT PLAN

Date:	3/12/21		
Field Name:	#Pivot #1,2 & 3	Acres:	100
Current Crop:	Triticale	Average Yield: (3 to 5 years)	9 Ton
Previous Crop:	Corn Silage	Average Yield: (3 to 5 years)	30 Ton
Irrigation Type:	Pivot	Dominant Soil:	Silt Loam 2% slope
NUTRIENT BUDGET		CURRENT SOIL TEST LEVELS	
	N	P ₂ O ₅	K ₂ O
Recommended Nutrient Needs (lb/ac)	266	112	266
Nutrient Credits (Soil Analysis)		38.93	200.86
A. Soil Test (NH ₄) Ammonium N	7		
B. Soil Test (NO ₃) Nitrate Nitrogen	42.9		
C. Organic Matter (20 lbs per1%)	22.4		
D. Crop Residue	0		
E. Commerical Fertilizer	0		
F. Manure	0		
G. Other	0		
Total Credits (lb/ac) *	72	39	201
Net Nutrient Required (lb/ac) **	194	73	65
Estimated Manure Nutrients	N	P ₂ O ₅	K ₂ O
Liquid Manure Value (lbs/1000 gal) ***	12.08	1.54	9.73
Solid Manure Value (Lbs/ton)	0.00	0.00	0.00
1,000 Gallons Liquids Needed/AC	16.0	47.4	6.7
Tons Solids Needed/AC	#DIV/0!	#DIV/0!	#DIV/0!

Make sure the Phosphorus and Potassium is the "fertilizer equivalent"

$$P \text{ PPM} \times 2.29 = P_2O_5$$

$$K \text{ PPM} \times 1.21 = K_2O$$

$$A. \text{ NH}_4 \text{ PPM} \times 3.11 = \#/\text{AC}$$

$$B. \text{ NO}_3 \text{ PPM} \times \text{Soil Type Factor} = \#/\text{AC} \quad \text{Soil Type Factor: (Sandy} = 4.0 \text{ Silt Loam} = 3.3 \text{ Clay} = 3.5)$$

* Equals A through G

** Equals Nutrient needs minus total credits

*** Manure Values for manure analysis

If "Total Credits" are larger than the recommend nutrient needs-**DO NOT APPLY**

Do not fill in the yellow highlighted cells.

FIELD/CROP NUTRIENT MANAGEMENT PLAN

Date:	6/21/21		
Field Name:	#1,2 &3	Acres:	100
Current Crop:	Corn Silage	Average Yield: (3 to 5 years)	32 Ton
Previous Crop:	Triticale	Average Yield: (3 to 5 years)	9 Ton
Irrigation Type:	Pivot	Dominant Soil:	Silt Loam 2% slope
NUTRIENT BUDGET		CURRENT SOIL TEST LEVELS	
	N	P ₂ O ₅	K ₂ O
Recommended Nutrient Needs (lb/a)	266	112	266
Nutrient Credits (Soil Analysis)		107.63	415
A. Soil Test (NH ₄) Ammonium N	11		
B. Soil Test (NO ₃) Nitrate Nitrogen	112.2		
C. Organic Matter (20 lbs per1%)	36		
D. Crop Residue	0		
E. Commerical Fertilizer	0		
F. Manure	0		
G. Other	0		
Total Credits (lb/ac) *	159	108	415
Net Nutrient Required (lb/ac) **	107	4	-149
Estimated Manure Nutrients	N	P ₂ O ₅	K ₂ O
Liquid Manure Value (lbs/1000 gal) ***	8.80	1.58	8.80
Solid Manure Value (Lbs/ton)	0.00	0.00	0.00
1,000 Gallons Liquids Needed/AC	12.1	2.8	-16.9
Tons Solids Needed/AC	#DIV/0!	#DIV/0!	#DIV/0!

Make sure the Phosphorus and Potassium is the "fertilizer equivalent"

$$P \text{ PPM} \times 2.29 = P_2O_5$$

$$K \text{ PPM} \times 1.21 = K_2O$$

$$A. \text{ NH}_4 \text{ PPM} \times 3.11 = \#/\text{AC}$$

$$B. \text{ NO}_3 \text{ PPM} \times \text{Soil Type Factor} = \#/\text{AC} \text{ Soil Type Factor: (Sandy} = 4.0 \text{ Silt Loam} = 3.3 \text{ Clay} = 3.5)$$

* Equals A through G

** Equals Nutrient needs minus total credits

*** Manure Values for manure analysis

If "Total Credits" are larger than the recommend nutrient needs-**DO NOT APPLY**

Do not fill in the yellow highlighted cells.

FIELD/CROP NUTRIENT MANAGEMENT PLAN

Date:	11/3/21		
Field Name:	Pivot #1, 2 & 3	Acres:	100
Current Crop:	Triticale	Average Yield: (3 to 5 years)	9 Ton
Previous Crop:	Corn Silage	Average Yield: (3 to 5 years)	32 Ton
Irrigation Type:	Pivot	Dominant Soil:	Silt Loam 2% slope
NUTRIENT BUDGET		CURRENT SOIL TEST LEVELS	
	N	P ₂ O ₅	K ₂ O
Recommended Nutrient Needs (lb/ac)	266	112	266
Nutrient Credits (Soil Analysis)		121.37	405.35
A. Soil Test (NH ₄) Ammonium N	11		
B. Soil Test (NO ₃) Nitrate Nitrogen	89.1		
C. Organic Matter (20 lbs per 1%)	38		
D. Crop Residue	0		
E. Commercial Fertilizer	0		
F. Manure	0		
G. Other	0		
Total Credits (lb/ac) *	138	121	405
Net Nutrient Required (lb/ac) **	128	-9	-139
Estimated Manure Nutrients	N	P ₂ O ₅	K ₂ O
Liquid Manure Value (lbs/1000 gal) ***	6.75	0.49	7.14
Solid Manure Value (Lbs/ton)	0.00	0.00	0.00
1,000 Gallons Liquids Needed/AC	18.9	-19.1	-19.5
Tons Solids Needed/AC	#DIV/0!	#DIV/0!	#DIV/0!

Make sure the Phosphorus and Potassium is the "fertilizer equivalent"

$$P \text{ PPM} \times 2.29 = P_2O_5$$

$$K \text{ PPM} \times 1.21 = K_2O$$

$$A. \text{ NH}_4 \text{ PPM} \times 3.11 = \#/\text{AC}$$

$$B. \text{ NO}_3 \text{ PPM} \times \text{Soil Type Factor} = \#/\text{AC} \quad \text{Soil Type Factor: (Sandy} = 4.0 \text{ Silt Loam} = 3.3 \text{ Clay} = 3.5)$$

* Equals A through G

** Equals Nutrient needs minus total credits

*** Manure Values for manure analysis

If "Total Credits" are larger than the recommend nutrient needs-DO NOT APPLY

Do not fill in the yellow highlighted cells.

V. Field Land and Application Information (Print one copy of this page for each of your fields)

Field ID: Pivot #4	Action Level:	Crop Grown: Corn Silage	Crop Yield (provide units): 29 tons
Field Soil Sample Nutrient Analysis			
	NH ₃ /NH ₄ as N	NO ₃ /NO ₂ as N	Phosphorus as P
	Spring	Spring	Fall
Soil Profile Depth	Fall	Fall	Units
1 st Foot	2.4	27	28
2 nd Foot (if required)	2.6	18	18
3 rd Foot (if required)	2.2	7	7
Date of last Organic Matter (OM) Analysis: 11/7/19			
Date of last Phosphorus Analysis: 11/7/19			
Nutrient Sources Applied to Field			
Nutrient Source Applied (List all sources of nutrients including commercial fertilizer that were applies to this field. Source name must match Nutrient Source Name from section IV)			Total Amount Applied
Spring Lagoon	2,691,000		<input checked="" type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³

V. Field Land Application Information (Print one copy of this page for each of your fields)

Field ID: Pivot #4	Action Level:	Crop Grown: Corn Silage				Crop Yield (provide units): 29 tons			
Field Soil Sample Nutrient Analysis									
Soil Profile Depth	NH ₃ /NH ₄ as N		NO ₃ /NO ₂ as N		Phosphorus as P	Units	% OM		
	Spring	Fall	Spring	Fall				Spring	Fall
1 st Foot	2.4	3.6		27	28	<input checked="" type="checkbox"/> PPM <input type="checkbox"/> Lbs/Acre			
2 nd Foot (if required)		2.6			18	<input checked="" type="checkbox"/> PPM <input type="checkbox"/> Lbs/Acre			
3 rd Foot (if required)		2.2			7	<input checked="" type="checkbox"/> PPM <input type="checkbox"/> Lbs/Acre			
Date of last Organic Matter (OM) Analysis: 11/7/19		Date of last Phosphorus Analysis: 11/7/19							
Nutrient Sources Applied to Field									
Nutrient Source Applied (List all sources of nutrients including commercial fertilizer that were applied to this field. Source name must match Nutrient Source Name from section IV)						Total Amount Applied			
Summer Lagoon						1,345,000	<input checked="" type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³		
						<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³			
						<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³			
						<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³			
						<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³			
						<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³			
						<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³			

V. Field Land Application Information (Print one copy of this page for each of your fields)

Field ID: Pivot #4	Action Level:	Crop Grown: Corn Silage	Crop Yield (provide units): 29 tons
Field Soil Sample Nutrient Analysis			
	NH ₃ /NH ₄ as N	NO ₃ /NO ₂ as N	Phosphorus as P
	Spring	Spring	Fall
Soil Profile Depth	Fall	Fall	Fall
1 st Foot	2.4	27	28
2 nd Foot (if required)			18
3 rd Foot (if required)			7
Date of last Organic Matter (OM) Analysis: 11/7/19		Date of last Phosphorus Analysis: 11/7/19	
Nutrient Sources Applied to Field			
Nutrient Source Applied (List all sources of nutrients including commercial fertilizer that were applied to this field. Source name must match Nutrient Source Name from section IV)		Total Amount Applied	
Fall Lagoon		1,794,000	<input checked="" type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³

FIELD/CROP NUTRIENT MANAGEMENT PLAN

Date:	3/12/21		
Field Name:	#Pivot 4	Acres:	165
Current Crop:	Triticale	Average Yield: (3 to 5 years)	9 Ton
Previous Crop:	Corn Silage	Average Yield: (3 to 5 years)	32 Ton
Irrigation Type:	Pivot	Dominant Soil:	Silt Loam 2% slope
NUTRIENT BUDGET		CURRENT SOIL TEST LEVELS	
	N	P ₂ O ₅	K ₂ O
Recommended Nutrient Needs (lb/ac)	266	112	266
Nutrient Credits (Soil Analysis)		91.6	301.29
A. Soil Test (NH ₄) Ammonium N	7		
B. Soil Test (NO ₃) Nitrate Nitrogen	89.1		
C. Organic Matter (20 lbs per 1%)	26		
D. Crop Residue	0		
E. Commercial Fertilizer	0		
F. Manure	0		
G. Other	0		
Total Credits (lb/ac) *	123	92	301
Net Nutrient Required (lb/ac) **	143	20	-35
Estimated Manure Nutrients	N	P ₂ O ₅	K ₂ O
Liquid Manure Value (lbs/1000 gal) ***	12.08	1.54	9.73
Solid Manure Value (Lbs/ton)	0.00	0.00	0.00
1,000 Gallons Liquids Needed/AC	11.9	13.2	-3.6
Tons Solids Needed/AC	#DIV/0!	#DIV/0!	#DIV/0!

Make sure the Phosphorus and Potassium is the "fertilizer equivalent"

$$P \text{ PPM} \times 2.29 = P_2O_5$$

$$K \text{ PPM} \times 1.21 = K_2O$$

$$A. \text{ NH}_4 \text{ PPM} \times 3.11 = \#/\text{AC}$$

$$B. \text{ NO}_3 \text{ PPM} \times \text{Soil Type Factor} = \#/\text{AC} \quad \text{Soil Type Factor: (Sandy} = 4.0 \text{ Silt Loam} = 3.3 \text{ Clay} = 3.5)$$

* Equals A through G

** Equals Nutrient needs minus total credits

*** Manure Values for manure analysis

If "Total Credits" are larger than the recommend nutrient needs-**DO NOT APPLY**

Do not fill in the yellow highlighted cells.

FIELD/CROP NUTRIENT MANAGEMENT PLAN

Date:	6/21/21		
Field Name:	#4	Acres:	165
Current Crop:	Corn Silage	Average Yield: (3 to 5 years)	32 Ton
Previous Crop:	Triticale	Average Yield: (3 to 5 years)	9 Ton
Irrigation Type:	Pivot	Dominant Soil:	Silt Loam 2% slope
NUTRIENT BUDGET		CURRENT SOIL TEST LEVELS	
	N	P ₂ O ₅	K ₂ O
Recommended Nutrient Needs (lb/ac)	266	112	266
Nutrient Credits (Soil Analysis)		146.56	486
A. Soil Test (NH ₄) Ammonium N	7		
B. Soil Test (NO ₃) Nitrate Nitrogen	128.7		
C. Organic Matter (20 lbs per 1%)	37.2		
D. Crop Residue	0		
E. Commercial Fertilizer	0		
F. Manure	0		
G. Other	0		
Total Credits (lb/ac) *	173	147	486
Net Nutrient Required (lb/ac) **	93	-35	-220
Estimated Manure Nutrients	N	P ₂ O ₅	K ₂ O
Liquid Manure Value (lbs/1000 gal) ***	8.80	1.58	8.80
Solid Manure Value (Lbs/ton)	0.00	0.00	0.00
1,000 Gallons Liquids Needed/AC	10.6	-21.9	-25.0
Tons Solids Needed/AC	#DIV/0!	#DIV/0!	#DIV/0!

Make sure the Phosphorus and Potassium is the "fertilizer equivalent"

$$P \text{ PPM} \times 2.29 = P_2O_5$$

$$K \text{ PPM} \times 1.21 = K_2O$$

$$A. \text{ NH}_4 \text{ PPM} \times 3.11 = \#/\text{AC}$$

$$B. \text{ NO}_3 \text{ PPM} \times \text{Soil Type Factor} = \#/\text{AC} \quad \text{Soil Type Factor: (Sandy} = 4.0 \text{ Silt Loam} = 3.3 \text{ Clay} = 3.5)$$

* Equals A through G

** Equals Nutrient needs minus total credits

*** Manure Values for manure analysis

If "Total Credits" are larger than the recommend nutrient needs-**DO NOT APPLY**

Do not fill in the yellow highlighted cells.

FIELD/CROP NUTRIENT MANAGEMENT PLAN

Date:	11/3/21		
Field Name:	Pivot #4	Acres:	165
Current Crop:	Triticale	Average Yield: (3 to 5 years)	9 Ton
Previous Crop:	Corn Silage	Average Yield: (3 to 5 years)	32 Ton
Irrigation Type:	Pivot	Dominant Soil:	Silt Loam 2% slope

JDGET CURRENT SOIL TEST LEVELS			
	N	P ₂ O ₅	K ₂ O
Recommended Nutrient Needs (lb/ac)	266	112	266
Nutrient Credits (Soil Analysis)		100.76	402.93
A. Soil Test (NH ₄) Ammonium N	11		
B. Soil Test (NO ₃) Nitrate Nitrogen	92.4		
C. Organic Matter (20 lbs per 1%)	33.2		
D. Crop Residue	0		
E. Commercial Fertilizer	0		
F. Manure	0		
G. Other	0		
Total Credits (lb/ac) *	137	101	403
Net Nutrient Required (lb/ac) **	129	11	-137
Estimated Manure Nutrients	N	P ₂ O ₅	K ₂ O
Liquid Manure Value (lbs/1000 gal) ***	6.75	0.49	7.14
Solid Manure Value (Lbs/ton)	0.00	0.00	0.00
1,000 Gallons Liquids Needed/AC	19.1	22.9	-19.2
Tons Solids Needed/AC	#DIV/0!	#DIV/0!	#DIV/0!

Make sure the Phosphorus and Potassium is the "fertilizer equivalent"

$$P \text{ PPM} \times 2.29 = P_2O_5$$

$$K \text{ PPM} \times 1.21 = K_2O$$

$$A. \text{ NH}_4 \text{ PPM} \times 3.11 = \#/\text{AC}$$

$$B. \text{ NO}_3 \text{ PPM} \times \text{Soil Type Factor} = \#/\text{AC} \quad \text{Soil Type Factor: (Sandy} = 4.0 \text{ Silt Loam} = 3.3 \text{ Clay} = 3.5)$$

* Equals A through G

** Equals Nutrient needs minus total credits

*** Manure Values for manure analysis

If "Total Credits" are larger than the recommend nutrient needs-DO NOT APPLY

Do not fill in the yellow highlighted cells.

V. Field Land Application Information (Print one copy of this page for each of your fields)

Field ID: Pivot #5	Action Level:	Crop Grown: Corn Silage	Crop Yield (provide units): 29 tons
Field Soil Sample Nutrient Analysis			
	NH ₃ /NH ₄ as N	NO ₃ /NO ₂ as N	Phosphorus as P
	Spring	Spring	Fall
Soil Profile Depth	Fall	Fall	Fall
1 st Foot	2.3	3.4	19
2 nd Foot (if required)		2.8	28
3 rd Foot (if required)		2.4	16
			11
Date of last Phosphorus Analysis: 11/7/19			
Nutrient Sources Applied to Field			
Nutrient Source Applied (List all sources of nutrients including commercial fertilizer that were applied to this field. Source name must match Nutrient Source Name from section IV)			
Spring Lagoon	1,956,000		<input checked="" type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³

V. Field Land Application Information (Print one copy of this page for each of your fields)

Field ID: Pivot #5	Action Level:	Crop Grown: Corn Silage	Crop Yield (provide units): 29 tons
Field Soil Sample Nutrient Analysis			
	NH ₃ /NH ₄ as N	NO ₃ /NO ₂ as N	Phosphorus as P
	Spring	Spring	Fall
Soil Profile Depth	Fall		
1 st Foot	2.3	3.4	19
2 nd Foot (if required)		2.8	16
3 rd Foot (if required)		2.4	11
Date of last Organic Matter (OM) Analysis: 11/7/19		Date of last Phosphorus Analysis: 11/7/19	
Nutrient Sources Applied to Field			
Nutrient Source Applied (List all sources of nutrients including commercial fertilizer that were applied to this field. Source name must match Nutrient Source Name from section IV)		Total Amount Applied	
SummerLagoon		326,000	<input checked="" type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³
			<input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Ft ³

V. Field Land Application Information (Print one copy of this page for each of your fields)

[illegible]

FIELD/CROP NUTRIENT MANAGEMENT PLAN

Date:	3/12/21		
Field Name:	#Pivot 5	Acres:	120
Current Crop:	Triticale	Average Yield: (3 to 5 years)	9 Ton
Previous Crop:	Corn Silage	Average Yield: (3 to 5 years)	30 Ton
Irrigation Type:	Pivot	Dominant Soil:	Silt Loam 2% slope
NUTRIENT BUDGET		CURRENT SOIL TEST LEVELS	
	N	P ₂ O ₅	K ₂ O
Recommended Nutrient Needs (lb/ac)	266	112	266
Nutrient Credits (Soil Analysis)		70.99	254.1
A. Soil Test (NH ₄) Ammonium N	7		
B. Soil Test (NO ₃) Nitrate Nitrogen	62.7		
C. Organic Matter (20 lbs per1%)	25		
D. Crop Residue	0		
E. Commerical Fertilizer	0		
F. Manure	0		
G. Other	0		
Total Credits (lb/ac) *	95	71	254
Net Nutrient Required (lb/ac) **	171	41	12
Estimated Manure Nutrients	N	P ₂ O ₅	K ₂ O
Liquid Manure Value (lbs/1000 gal) ***	12.08	1.54	9.73
Solid Manure Value (Lbs/ton)	0.00	0.00	0.00
1,000 Gallons Liquids Needed/AC	14.2	26.6	1.2
Tons Solids Needed/AC	#DIV/0!	#DIV/0!	#DIV/0!

Make sure the Phosphorus and Potassium is the "fertilizer equivalent"

$$P \text{ PPM} \times 2.29 = P_2O_5$$

$$K \text{ PPM} \times 1.21 = K_2O$$

$$A. \text{ NH}_4 \text{ PPM} \times 3.11 = \#/\text{AC}$$

$$B. \text{ NO}_3 \text{ PPM} \times \text{Soil Type Factor} = \#/\text{AC} \quad \text{Soil Type Factor: (Sandy} = 4.0 \text{ Silt Loam} = 3.3 \text{ Clay} = 3.5)$$

* Equals A through G

** Equals Nutrient needs minus total credits

*** Manure Values for manure analysis

If "Total Credits" are larger than the recommend nutrient needs-**DO NOT APPLY**

Do not fill in the yellow highlighted cells.

FIELD/CROP NUTRIENT MANAGEMENT PLAN

Date:	6/21/21		
Field Name:	#Pivot 5	Acres:	120
Current Crop:	Corn Silage	Average Yield: (3 to 5 years)	32 Ton
Previous Crop:	Triticale	Average Yield: (3 to 5 years)	9 Ton
Irrigation Type:	Pivot	Dominant Soil:	Silt Loam 2% slope
NUTRIENT BUDGET		CURRENT SOIL TEST LEVELS	
	N	P ₂ O ₅	K ₂ O
Recommended Nutrient Needs (lb/ac)	266	112	266
Nutrient Credits (Soil Analysis)		91.6	397
A. Soil Test (NH ₄) Ammonium N	5		
B. Soil Test (NO ₃) Nitrate Nitrogen	174.9		
C. Organic Matter (20 lbs per 1%)	35.2		
D. Crop Residue	0		
E. Commercial Fertilizer	0		
F. Manure	0		
G. Other	0		
Total Credits (lb/ac) *	215	92	397
Net Nutrient Required (lb/ac) **	51	20	-131
Estimated Manure Nutrients	N	P ₂ O ₅	K ₂ O
Liquid Manure Value (lbs/1000 gal) ***	8.80	1.58	8.80
Solid Manure Value (Lbs/ton)	0.00	0.00	0.00
1,000 Gallons Liquids Needed/AC	5.8	12.9	-14.9
Tons Solids Needed/AC	#DIV/0!	#DIV/0!	#DIV/0!

Make sure the Phosphorus and Potassium is the "fertilizer equivalent"

$$P \text{ PPM} \times 2.29 = P_2O_5$$

$$K \text{ PPM} \times 1.21 = K_2O$$

$$A. \text{ NH}_4 \text{ PPM} \times 3.11 = \#/\text{AC}$$

$$B. \text{ NO}_3 \text{ PPM} \times \text{Soil Type Factor} = \#/\text{AC} \quad \text{Soil Type Factor: (Sandy} = 4.0 \text{ Silt Loam} = 3.3 \text{ Clay} = 3.5)$$

* Equals A through G

** Equals Nutrient needs minus total credits

*** Manure Values for manure analysis

If "Total Credits" are larger than the recommend nutrient needs-DO NOT APPLY

Do not fill in the yellow highlighted cells.

FIELD/CROP NUTRIENT MANAGEMENT PLAN

Date:	11/3/21		
Field Name:	#Pivot 5	Acres:	120
Current Crop:	Triticale	Average Yield: (3 to 5 years)	9 Ton
Previous Crop:	Corn Silage	Average Yield: (3 to 5 years)	32 Ton
Irrigation Type:	Pivot	Dominant Soil:	Silt Loam 2% slope
NUTRIENT BUDGET		CURRENT SOIL TEST LEVELS	
	N	P ₂ O ₅	K ₂ O
Recommended Nutrient Needs (lb/ac)	266	112	266
Nutrient Credits (Soil Analysis)		64.12	336.38
A. Soil Test (NH ₄) Ammonium N	11		
B. Soil Test (NO ₃) Nitrate Nitrogen	89.1		
C. Organic Matter (20 lbs per 1%)	34		
D. Crop Residue	0		
E. Commercial Fertilizer	0		
F. Manure	0		
G. Other	0		
Total Credits (lb/ac) *	134	64	336
Net Nutrient Required (lb/ac) **	132	48	-70
Estimated Manure Nutrients	N	P ₂ O ₅	K ₂ O
Liquid Manure Value (lbs/1000 gal) ***	6.75	0.49	7.14
Solid Manure Value (Lbs/ton)	0.00	0.00	0.00
1,000 Gallons Liquids Needed/AC	19.6	97.7	-9.9
Tons Solids Needed/AC	#DIV/0!	#DIV/0!	#DIV/0!

Make sure the Phosphorus and Potassium is the "fertilizer equivalent"

$$P \text{ PPM} \times 2.29 = P_2O_5$$

$$K \text{ PPM} \times 1.21 = K_2O$$

$$A. \text{ NH}_4 \text{ PPM} \times 3.11 = \#/\text{AC}$$

$$B. \text{ NO}_3 \text{ PPM} \times \text{Soil Type Factor} = \#/\text{AC} \quad \text{Soil Type Factor: (Sandy} = 4.0 \text{ Silt Loam} = 3.3 \text{ Clay} = 3.5)$$

* Equals A through G

** Equals Nutrient needs minus total credits

*** Manure Values for manure analysis

If "Total Credits" are larger than the recommend nutrient needs-DO NOT APPLY

Do not fill in the yellow highlighted cells.

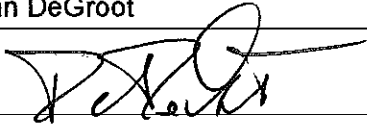
VI. Certification

"I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Printed Name: Dan DeGroot

Date: December 27, 2021

Signature:



NOTE: Be sure to include your yearly nutrient budget for each of your fields including the budget for a double crop or winter cover crop (if applicable) **with your completed Annual Report Form.**