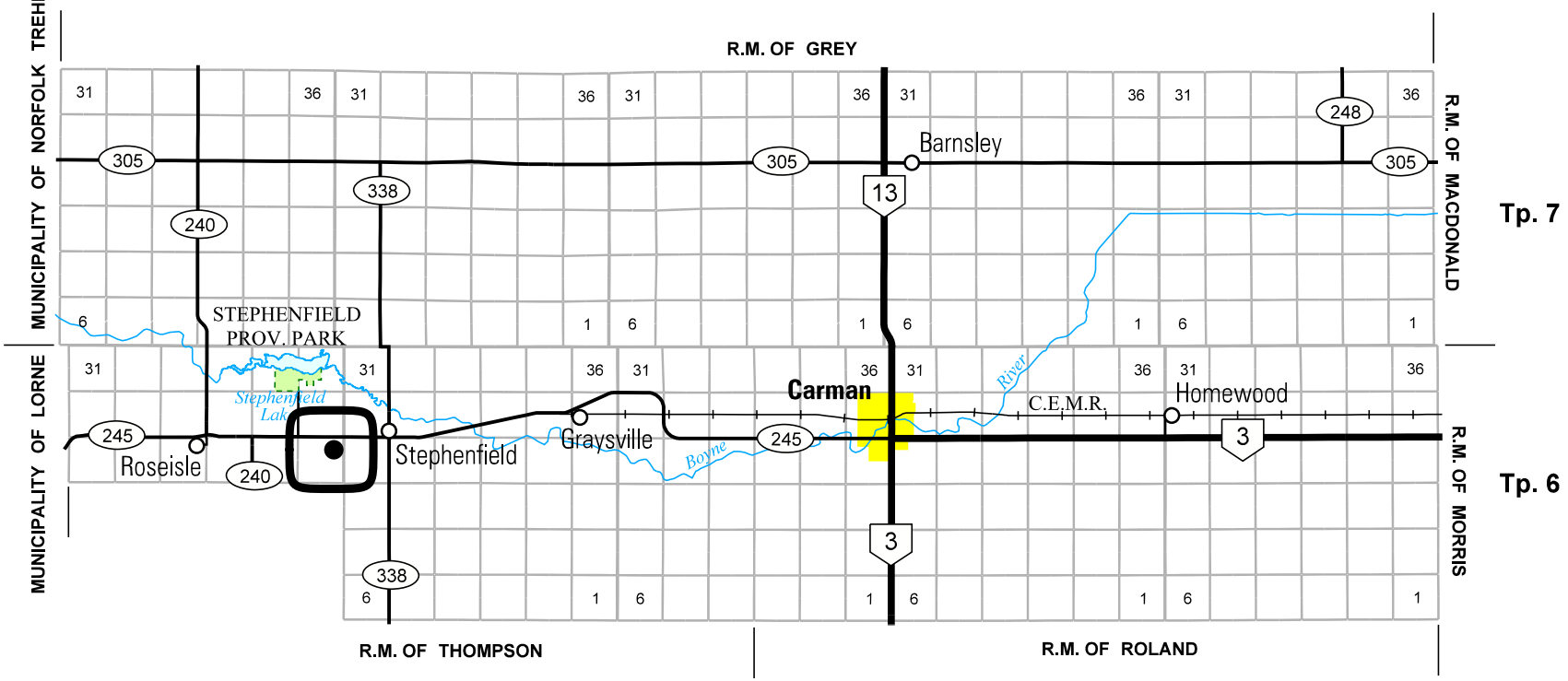
R.M. OF DUFFERIN

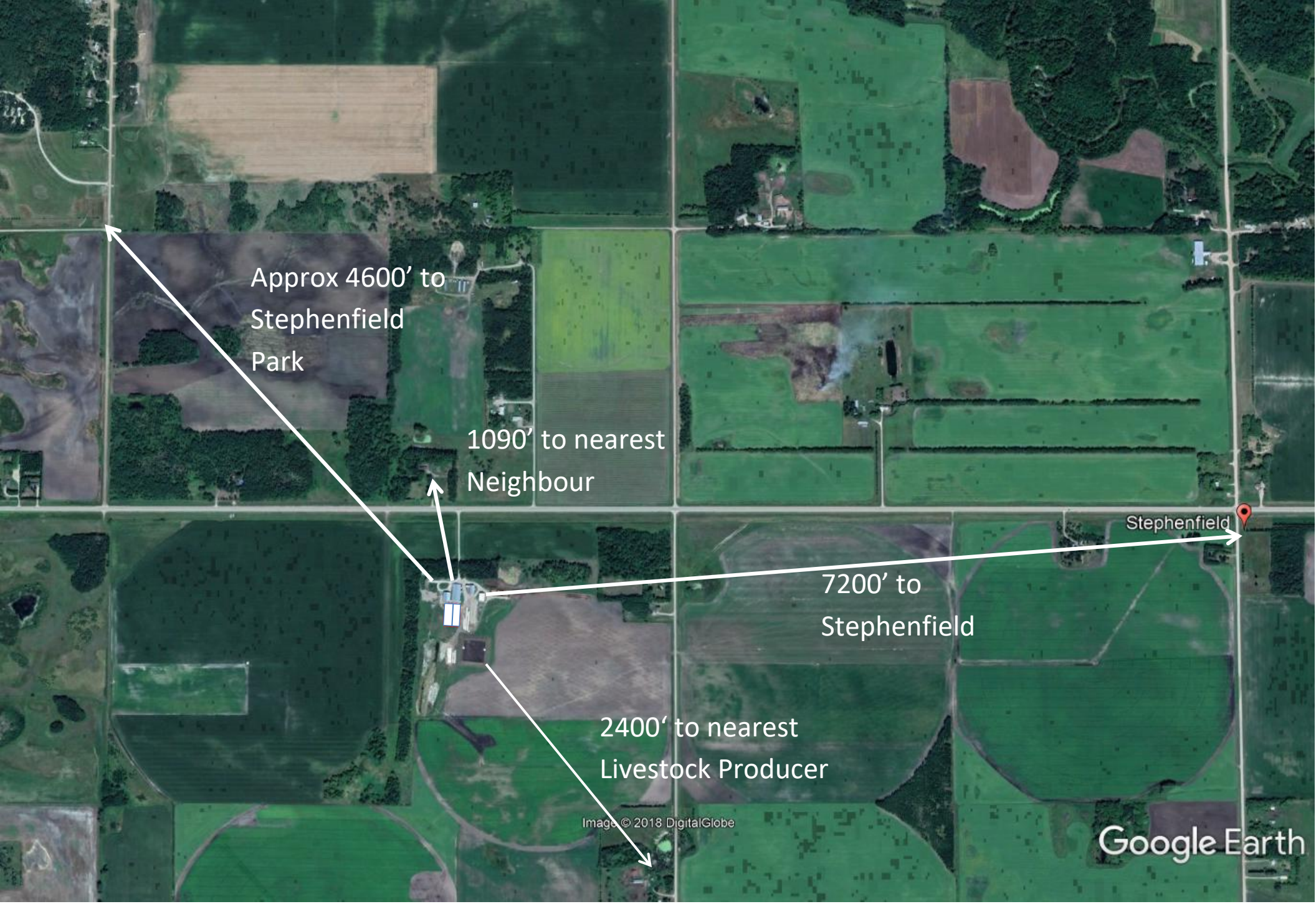
0 5
SCALE IN KILOMETRES

PROVINCE OF MANITOBA
INFRASTRUCTURE
HIGHWAY PLANNING AND DESIGN BRANCH
GEOGRAPHIC & RECORDS MANAGEMENT SECTION
WINNIPEG
JANUARY 1, 2015

LEGEND

PROVINCIAL TRUNK HIGHWAYS 13
PROVINCIAL ROADS 245
ACCESS ROADS .....
RAILWAYS .....





Streamline Dairy Site Location

Streamline Dairy Site Plan

Animal Units Calculator

A	B	C	Current Operation		Proposed Operation	
			D	E	F	G
Operation Type	**Animal Categories**	**Animal Units per Head**	**Current Number of Animals [1]**	**Current Animal Units**	**Proposed Number of Animals [2]**	**Proposed Number of Animal Units**
Dairy [3]	Mature cows (lactating and dry) including associated livestock	2	150	300	235	470
	Mature cows (lactating and dry)	1.35		-		-
	Heifers (0 to 3 months)	0.16		-		-
	Heifers (4 to 13 months)	0.41		-		-
	Heifers (> 13 months)	0.87		-		-
	Bulls	1.35		-		-
	Veal calves	0.13		-		-
Beef	Beef cows including associated livestock	1.25		-		-
	Backgrounder	0.5		-		-
	Summer pasture / replacement heifers	0.625		-		-
	Feeder cattle	0.769		-		-
Pigs	Sows - farrow to finish (234-254 lbs)	1.25		-		-
	Sows - farrow to weanling (up to 11 lbs)	0.25		-		-
	Sows - farrow to nursery (51 lbs)	0.313		-		-
	Boars (artificial insemination units)	0.2		-		-
	Weanlings, Nursery (11-51 lbs)	0.033		-		-
	Growers / Finishers (51-249 lbs)	0.143		-		-
Chickens	Broilers	0.005		-		-
	Roasters	0.01		-		-
	Layers	0.0083		-		-
	Pullets	0.0033		-		-
	Broiler breeder pullets	0.0033		-		-
	Broiler breeder hens	0.01		-		-
Turkeys	Broilers	0.01		-		-
	Heavy Toms	0.02		-		-
	Heavy Hens	0.01		-		-
Horses	Mares	1.333		-		-
Sheep	Ewes	0.2		-		-
	Feeder lambs	0.063		-		-
Other Livestock	Type:			-		-
	Type:			-		-
			Total Current:	300	Total Proposed:	470

Footnotes:

[1] Enter the current number of animals on the farm based on the operation's capacity (animal places) or previous Conditional Use Approval.

[2] Enter the total number of animals associated with the operation post construction or expansion.

[3] There are 2 methods for calculating animal units for dairy (Farm Practices Guidelines for Dairy Producers in Manitoba, 1995). You can enter the total number of mature cows in the milking herd under the "Mature cows (lactating and dry) including associated livestock" category and the animal units will be calculated by multiplying this number by 2. This calculation assumes 85 lactating, 15 dry, 12 heifers (0 to 3 months), 36 heifers (4 to 13 months) and 50 heifers (> 13 months) for an operation with 100 mature cows. "Associated livestock" includes all of the heifer calves and replacement heifers. Alternatively, you can enter animal numbers in the individual categories (mature cows, heifers (0 to 3 months), heifers (4 to 13 months) and heifers (> 13 months)) and they will be summed at the bottom of the table. Bulls and veal calves are always calculated separately.

For all other livestock or operation types please inquire with the Manitoba Agriculture Contacts

Manitoba

Animal Type (A)	Animal Sub-type (B)	Daily Manure Production				Production Period [2] (Days) (G)	Number of Animals [3] (Capacity) (H)	Total Manure Volume (ft^3) (FxGxH)	Total Manure Volume for Semi-Solid and Liquid Manure (Imp Gal)
		References (C)	Manure Type (D)	Default Manure Production (ft^3/animal/day) (E)	Operation Manure Production [1] (ft^3/animal/day) (F)				
Dairy (milking cows[4] and associated livestock)	Free Stall	Table 6, pg 59, FPGs for Dairy 1995	Semi-Solid [5]	3.5				-	0.0
			Solid	3.4				-	
			Liquid [5]	3.5	3	365	200	219,000.00	1,364,370.0
	Tie Stall		Semi-Solid [5]	3.6				-	0.0
			Solid	3.5				-	
			Liquid [5]	3.6				-	0.0
	Loose Housing **(support herd plus dry)**		Solid	3.0	1.5	365	235	128,662.50	
	Milking Parlour Manure and Washwater		Liquid	0.5	0.5	365	200	36,500.00	
Beef	Beef cows including associated livestock	pg 117, FPGs for Hogs 1998	Solid	1.2				-	
	Backgrounder (200 day)		Solid	0.73				-	
	Summer pasture / replacement heifers		Solid	0.85				-	
	Feeder cattle		Solid	1.1				-	
Pigs	Sows - farrow to finish (234 - 254 lbs)	MAFRI website, FPGs for Pigs 2007	Liquid	2.3				-	0.0
	Sows - farrow to wean (up to 11 lbs)		Liquid	0.8				-	0.0
	Sows - farrow to nursery (51 lbs)		Liquid	1				-	0.0
	Weanlings, Nursery (11 - 51 lbs)		Liquid	0.1				-	0.0
	Grower / Finisher (51 - 249 lbs)		Liquid	0.25				-	0.0

Animal Type	Type of Operation		Yearly Manure Production		Production Period [2] (Days)	Number of Birds [3] (Capacity)	Total Manure Volume (ft^3) (F/365xGxH)	Total Manure Volume for Semi-Solid and Liquid Manure (Imp Gal)
			Default Manure Production (ft^3/year/bird space)	Operation Manure Production [1] (ft^3/year/bird space)				
Chickens	Broilers – floor [6]	Table 3, pg 85, FPGs for Poultry 2000	1.23				-	
	Broiler breeder hens [7]		2.3				-	
	Broiler breeder pullets [6]		0.99				-	
	Roasters – floor [6]		1.16				-	
	Layers – cage [8]		2.33				-	0.0
	Layers – floor [7]		1.68				-	
	Layers – solid pack [9]						-	
	Pullets – cage [8]		0.71				-	0.0
	Pullets – floor [6]		0.75				-	
	Pullets – solid pack [9]						-	
Turkeys	Broilers [6]	Table 3, pg 85, FPGs for Poultry 2000	2.83				-	
	Heavy toms [6]		5.58				-	
	Heavy hens [6]		3.32				-	

Sizing of a manure storage facility in accordance with all requirements of the *Livestock Manure and Mortalities Management Regulation* (M.R. 42/98) is the responsibility of the operator.

Instructions and footnotes:

[1] ENTER the manure production estimate for your operation. If no estimate is available, use the default value provided in colum E. References for default daily and yearly manure production are provided in column C.

[2] ENTER the number of days worth of manure that will be produced. For earthen manure storage facilities the minimum storage requirement is 400 days. For steel and concrete manure storage facilities the minimum storage requirement is 250

[3] ENTER the total number of animals or birds that the operation can hold (e.g. barn or feedlot capacity).

[4] Milking cows includes all lactating and dry cows.

[5] Default manure production estimates for semi-solid and liquid dairy manure include manure and washwater from the milking parlour.

[6] 2 inches of wood shavings or 4 inches of straw placed on floor. Manure and litter removed from barn at 25% moisture content, with a density of 20 lb/ft^3

[7] One-third litter floor, two-thirds slatted floor. Manure and litter removed from barn at 40% moisture content, with a density of 25 lb/ft^3

[8] Manure removed from barn at 90% moisture content with a density of 59 lb/ft^3

[9] Poultry operations using litter (solid pack) must provide an estimate of yearly manure production

Existing and Proposed Manure Storage Facility Dimension Table

If applicable, indicate the dimensions of any existing manure storage facility (MSF) that will be used to store manure from the proposed project:

CELL	Existing Manure Storage Facility Dimensions						Storage Capacity (days)
	Width	Length	Depth	Height (Above Grade)	Slope (H:L)		
					Inside	Outside	
Primary	200 ft	200 ft	13 ft	4 ft	3.5	5	408
Secondary	ft	ft	ft	ft			
Tertiary	ft	ft	ft	ft			
Circular Tank		Diameter	Height	Depth (Above Grade)			
		ft	ft	ft			

Permit/Registration # LM 0752

Manitoba

Dairy Barn Water Requirement Estimator*

Enter the following farm data:

Number of lactating/milking cows	200
Average milk production (litres)	33 **
Parlor or tie stall (P/TS)	p
Collection yard if free stall (Y/N)	n
Plate cooler (Y/N)	y
Milkings per day	2
Plate cooler water reused? (Y/N)	y

Total water needs estimate per day:	
Litres	35630
Imperial gallons	7848
Cubic decametres	0.04

Total water needs estimate per year:	
Litres	13004950
Imperial gallons	2864526
Cubic decametres	13.00

*Calculations are based on Manitoba AVERAGES for

- Feed composition

Gary

Thank you for your information request. I completed a search of the Manitoba Conservation Data Centre's rare species database and found no occurrences at this time for your area of interest.

The information provided in this letter is based on existing data known to the Manitoba Conservation Data Centre at the time of the request. These data are dependent on the research and observations of CDC staff and others who have shared their data, and reflect our current state of knowledge. **An absence of data in any particular geographic area does not necessarily mean that species or ecological communities of concern are not present**; in many areas, comprehensive surveys have never been completed. Therefore, this information should be regarded neither as a final statement on the occurrence of any species of concern, nor as a substitute for on-site surveys for species as part of environmental assessments.

Because the Manitoba CDC's Biotics database is continually updated and because information requests are evaluated by type of action, any given response is only appropriate for its respective request. Please contact the Manitoba CDC for an update on this natural heritage information if more than six months pass before it is utilized.

Third party requests for products wholly or partially derived from Biotics must be approved by the Manitoba CDC before information is released. Once approved, the primary user will identify the Manitoba CDC as data contributors on any map or publication using Biotics data, as follows as: Data developed by the Manitoba Conservation Data Centre; Wildlife & Fisheries Branch, Manitoba Sustainable Development.

This letter is for information purposes only - it does not constitute consent or approval of the proposed project or activity, nor does it negate the need for any permits or approvals required by the Province of Manitoba.

We would be interested in receiving a copy of the results of any field surveys that you may undertake, to update our database with the most current knowledge of the area.

If you have any questions or require further information please contact me directly at (204) 945-7747.

Chris Friesen
Coordinator
Manitoba Conservation Data Centre
204-945-7747
chris.friesen@gov.mb.ca
http://www.manitoba.ca/sd/cdc/

From: Gary Plohman [mailto:srossing@mymts.net]
Sent: April-09-18 5:09 PM
To: Friesen, Chris (SD) <Chris.Friesen@gov.mb.ca>
Subject: re: rare species identification - streamline dairy

Hi Chris
I am working with Streamline Dairy in the RM of Dufferin to complete a technical review application and require a rare species identification for the site. I have attached the manure spread fields table outlining all fields that could potentially be used for manure application.
Could you please review the spread fields to identify any rare species that may exist?
Thanks for your help.
Gary Plohman
204 268-3218

Truck Route

Type	Storage Type	Volatilization	Animal Numbers	Weight In (lb)	Weight Out (lb)	Average Animal Wt (lb)	Days on Feed per Cycle (days)	Number of Cycles per Year	N Excreted Per Herd Adjusted for Storage N Loss (lb/yr/herd)	P2O5 Excreted per Herd Per Year (lb/yr/herd)
Lactating Cows	Liquid Uncovered Earthen	30%	0	1400	1440	1420	365	1	0	0
Dry Cows	Liquid Uncovered Earthen	30%	0	1440	1440	1440	365	1	0	0
Calves, 0-3 months	Liquid Uncovered Earthen	30%	0	90	275	183	365	1	0	0
Calves, 4-13 months	Liquid Uncovered Earthen	30%	0	275	810	543	365	1	0	0
Replacements, >13 months	Liquid Uncovered Earthen	30%	0	810	1250	1030	365	1	0	0
Mature Cows, plus associated livestock	Liquid Uncovered Earthen	30%	235	n/a	n/a	n/a	n/a	n/a	61280	32519

Last revised August 20, 2014

Crop	Removal P2O5	Removal N	Uptake N	Units	Yield	Units	Acreage	Removal P2O5 (lb)	Removal N (lb)	Uptake N (lb)
Alfalfa	13.8	58	58	lb/ton	3.639	ton/ac	285	14312	60153	60153
Barley Grain	0.42	0.97	1.39	lb/bu		bu/ac		-	-	-
Barley Silage	11.8	34.4	34.4	lb/ton		ton/ac		-	-	-
Canola	1.04	1.93	3.19	lb/bu	38.2	bu/ac	143	5681	10543	17426
Corn Grain	0.44	0.97	1.53	lb/bu		bu/ac		-	-	-
Corn Silage	12.7	31.2	31.2	lb/ton	4.235	tons/ac	144	7745	19027	19027
Dry Edible Beans	1.39	4.17		lb/cwt		cwt/ac		-	-	-
Fababeans	1.79	5.02	8.4	lb/cwt		cwt/ac		-	-	-
Flax	0.65	2.13	2.88	lb/bu		bu/ac		-	-	-
Grass Hay	10	34.2	34.2	lb/ton		tons/ac		-	-	-
Lentils	1.03	3.39	5.08	lb/cwt		cwt/ac		-	-	-
Oats	0.26	0.62	1.07	lb/bu		bu/ac		-	-	-
Pasture (grazed)	10	34.2	34.2	lb/ton	0.5	ton/ac		-	-	-
Peas	0.69	2.34	3.06	lb/bu		bu/ac		-	-	-
Potatoes	0.09	0.32	0.57	lb/cwt	216.57	cwt/ac	190	3703	13167	23455
Rye	0.45	1.06	1.67	lb/bu		bu/ac		-	-	-
Soybeans	0.84	3.87	5.2	lb/bu	38.7	bu/ac	140	4551	20968	28174
Sunflower	1.1	2.8		lb/cwt		cwt/ac		-	-	-
Wheat - Spring	0.59	1.5	2.11	lb/bu		bu/ac		-	-	-
Wheat - Winter	0.51	1.04	1.35	lb/bu		bu/ac		-	-	-
						Sub Total	902	35993	123858	148234
						Estimated Average Removal/Uptake (lb/ac)		39.9	137.3	164.3
						Additional Acres				
						Crop Planned on Additional Acres				
						Total Acreage	902			

Note: Additional acres include acres for which crop removal or soil data is limited or unavailable.

Last revised August 20, 2014

Species	Animal Category/Operation type	N (lb/year)	P2O5 (lb/year)
Pigs	Gestating Sow	0	0
	Nursing Sow	0	0
	Nursing Litter	0	0
	Live Cull Sows	0	0
	Bred Gilts	0	0
	Gilts	0	0
	Boars	0	0
	Weanlings	0	0
	Growers/finishers	0	0
	Sows, farrow to 5 kg	0	0
	Sows, farrow to 23 kg	0	0
	Sows, farrow to finish	0	0
Beef	Mature Cows (>2 years old)	0	0
	Bred Heifer (14 mo - 2 years)	0	0
	Replacement Heifers (7 mo-14 mo)	0	0
	Unweaned Calves (0-7 mo)	0	0
	Bulls	0	0
	Mature Cows and Bred Heifers, plus associated livestock	0	0
	Feedlot Cattle - long keep	0	0
	Feedlot Cattle - short keep	0	0
	Backgrounders - pasture	0	0
	Backgrounders - confined	0	0
Dairy	Lactating cow	0	0
	Dry cow	0	0
	Calf, 0-3 months	0	0
	Calf, 4-13 months	0	0
	Replacements, >13 months	0	0
	Mature Cows, plus assoc livestock	61280	32519
Sheep	Ewes	0	0
	Replacement Ewes	0	0
	Rams	0	0
	Lambs	0	0
	Ewes, plus assoc livestock	0	0
	Feeder	0	0
Chickens	Broilers	0	0
	Broiler Breeder Pullets	0	0
	Broiler Breeder Hens	0	0
Layers	Layer Pullets	0	0
	Layer Hens	0	0
	Breeder Pullets	0	0
	Breeder Hens	0	0
Turkeys	Broiler Hens (0-9 wks)	0	0
	Hens (0-11 wks)	0	0
	Heavy Hens (0-14 wks)	0	0
	Light Toms (0-12 wks)	0	0
	Toms (0-13 wks)	0	0
	Heavy Toms (0-15 wks)	0	0
	Breeding Hen Growers (0-30 wks)	0	0
	Breeding Hens (30-60 wks)	0	0
	Breeding Tom Grower (0-18 wks)	0	0
	Breeding Tom Grower (0-30 wks)	0	0
	Breeding Tom (30-60 wks)	0	0
	Total	**61280**	**32519**

Note: Be sure all livestock species on your farm are represented in this table, not just the livestock in the proposed expansion.

Nutrients Excreted	lbs
Nitrogen	61280
P2O5	32519
Crop Nutrient Use	**lb/ac**
Nitrogen Uptake	164.3
P2O5 Removal	39.9
Land Base Requirements	**acres**
Acres for Nitrogen Uptake	**373**
Acres for 2 x P2O5 Removal	**407**
Acres for 1 x P2O5 Removal	**815**

CROP ROTATION TABLE

A	B	C	D	E
Expected Crops in the Rotation	**Acreage**	**Historical Yield**	**Units**	**Source of Yield Information**
Alfalfa	285	3.639	ton/acre	MASC: Risk area / Soil zone
Corn Silage	144	4.235	ton/acre	MASC: Risk area / Soil zone
Table Potatoes	190	216.57	cwt/acre	MASC: Risk area / Soil zone
Soybeans	140	38.7	bu/acre	MASC: Risk area / Soil zone
Canola	143	38.2	bu/acre	MASC: Risk area / Soil zone
Total Net Acreage for Manure Application	902			

A. List all of the crop(s) to be grown in the rotation on the acreage that will receive manure.
B. Indicate the average acreage for each crop over the rotation. For example, if there are 720 suitable acres available for manure and approximately 40 these acres will be used to grow canola, enter 288. The total of column B should add up to Total Net Acreage for Manure Application provided in the Manure Application Field Characteristic Table.
C. Enter the historical yield average for each crop. Long-term yield averages can be determined using MASC data (http://www.masc.mb.ca/masc.nsf/index.html?OpenPage) or on-farm yield records. If on-farm yield records are used, please provide copies.
D. Enter the units for the yields provided (e.g. bu/acre, tons/acre).
E. Enter the source of the historical yield average provided.

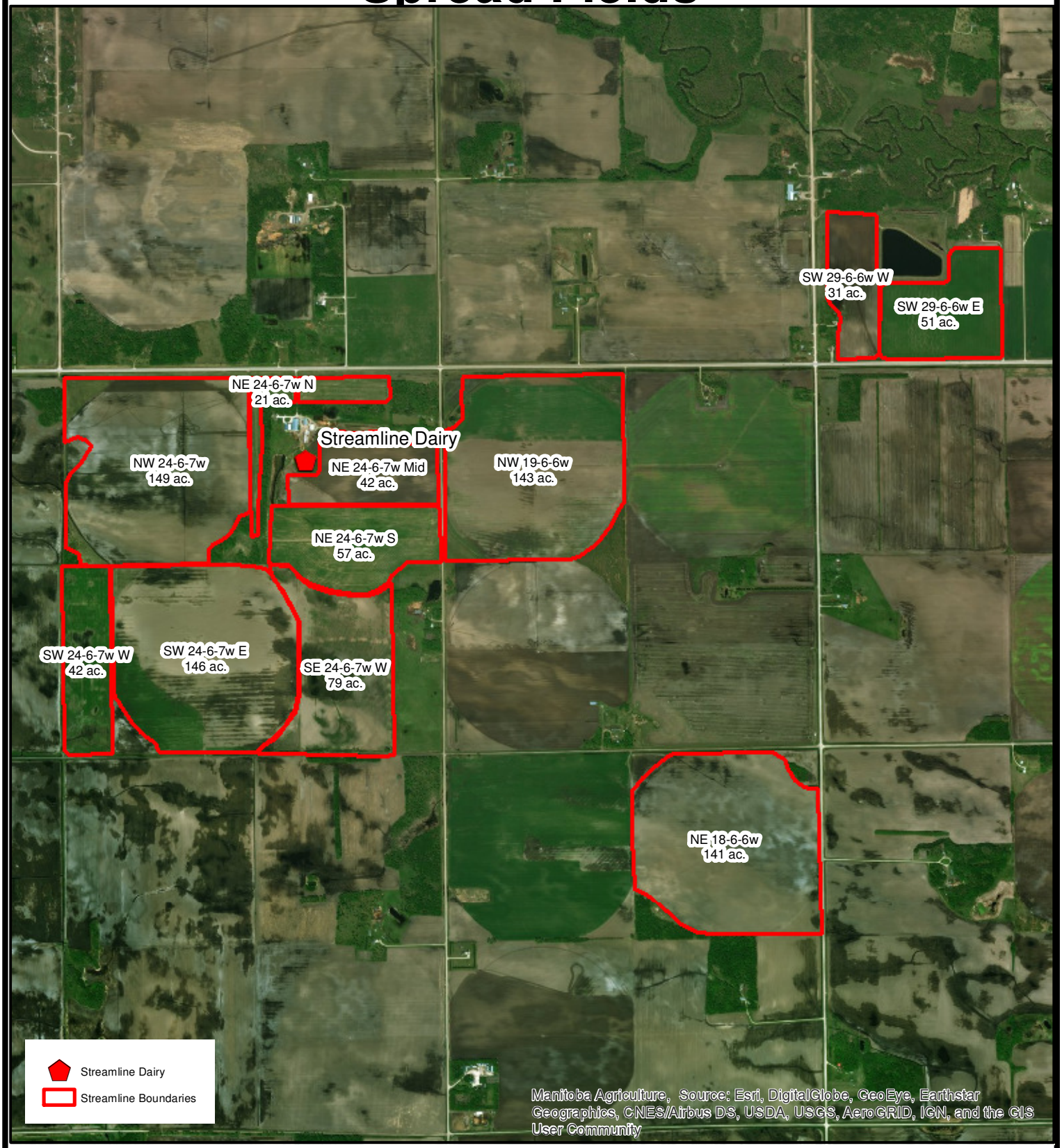
MANURE APPLICATION FIELD CHARACTERISTICS TABLE

	A	B	C	D	E	F	G	H	I	J
Field	Legal Description	Rural Municipality	O/C/L/A	Total Acreage	Setbacks, including features	Net Acreage for Manure Application	Agriculture Capability Class and Subclass	Soil Phosphorus (ppm Olsen P) 0-6 inches	Development Plan Designation	Zoning
1	NE 24-6-7w N	Dufferin	O	21		21	4m, 5w (<20%)	20	03/2014, General Agricultural Policy Area	04/2014, Agriculture General Zone
2	NE 24-6-7w S	Dufferin	O	57		57	3w, 3m, 4m	33	03/2014, General Agricultural Policy Area	04/2014, Agriculture General Zone
3	NE 24-6-7w Mid	Dufferin	O	42		42	4m	33	03/2014, General Agricultural Policy Area	04/2014, Agriculture General Zone
4	SE 24-6-7w W	Dufferin	O	79		79	4m3m, 3w, 4m, 3w3m, 4m	16	03/2014, General Agricultural Policy Area	04/2014, Agriculture General Zone
5	SW 24-6-7w W	Dufferin	A	42		42	3m, 4m	5	03/2014, General Agricultural Policy Area	04/2014, Agriculture General Zone
6	NW 24-6-7w	Dufferin	A	149		149	3m, 3m5w	11	03/2014, General Agricultural Policy Area	04/2014, Agriculture General Zone
7	SW 24-6-7w E	Dufferin	A	146		146	3m, 3w, 4m3m, 5w (<20%)	24	03/2014, General Agricultural Policy Area	04/2014, Agriculture General Zone
8	NW 19-6-6w	Dufferin	A	143		143	3m, 2i, 3w, 5w (<20%)	9	03/2014, General Agricultural Policy Area	04/2014, Agriculture General Zone
9	NE 18-6-6w	Dufferin	A	141		141	3m3m, 3m, 3w	12	03/2014, General Agricultural Policy Area	04/2014, Agriculture General Zone
10	SW 29-6-6w W	Dufferin	A	31		31	3m, 3w	17	03/2014, Restricted Agricultural Policy Area	04/2014, Agriculture Restricted Zone
11	SW 29-6-6w E	Dufferin	A	51		51	3w, 3m, 3m3m	8	03/2014, Restricted Agricultural Policy Area	04/2014, Agriculture Restricted Zone
12										
13										
14										
15										
16										
17										
18										
19										
20										

Total Net Acreage for Manure Application: 902

A. _____ Enter the legal description for each parcel of land that will receive manure: Sec, Twp, Rge or River Lot (including parish).
B. _____ Identify the Rural Municipality in which the parcel is located.
C. _____ Indicate how the land has been secured for manure application: O – Own / C-Crown / L – Lease / A – Agreement. Multiple designations may be used as appropriate (ex. C/A for Crown lands that are under a spread agreement with the producer that holds the agricultural Crown land lease).
D. _____ Enter the total acreage for the parcel.
E. _____ Enter setbacks from surface water or groundwater features that reduce the land available for manure application; include identification of type of feature (ex. 8m, Order 3 drain).
F. _____ Enter the net acreage available for manure application for the parcel after taking into account setbacks and excluding Class 6, 7 and unimproved organic soils.
G. _____ Enter the agriculture capability class and subclass ratings for the acreage available for manure application.
H. _____ Provide soil test results for phosphorus in ppm Olsen P for soil samples taken at the 0-6 inch depth. Soil test results must be no more than 12 months old and must be completed by an accredited soil-testing laboratory.
I. _____ Indicate the Development Plan and its by-law number in addition to the map designation for each field (ex. By-law #1/2008: AG).
J. _____ Indicate the Zoning By-law and its by-law number in addition to the zoning for each field (ex. By-law 12/2009: AG 80).

Streamline Dairy
Spread Fields



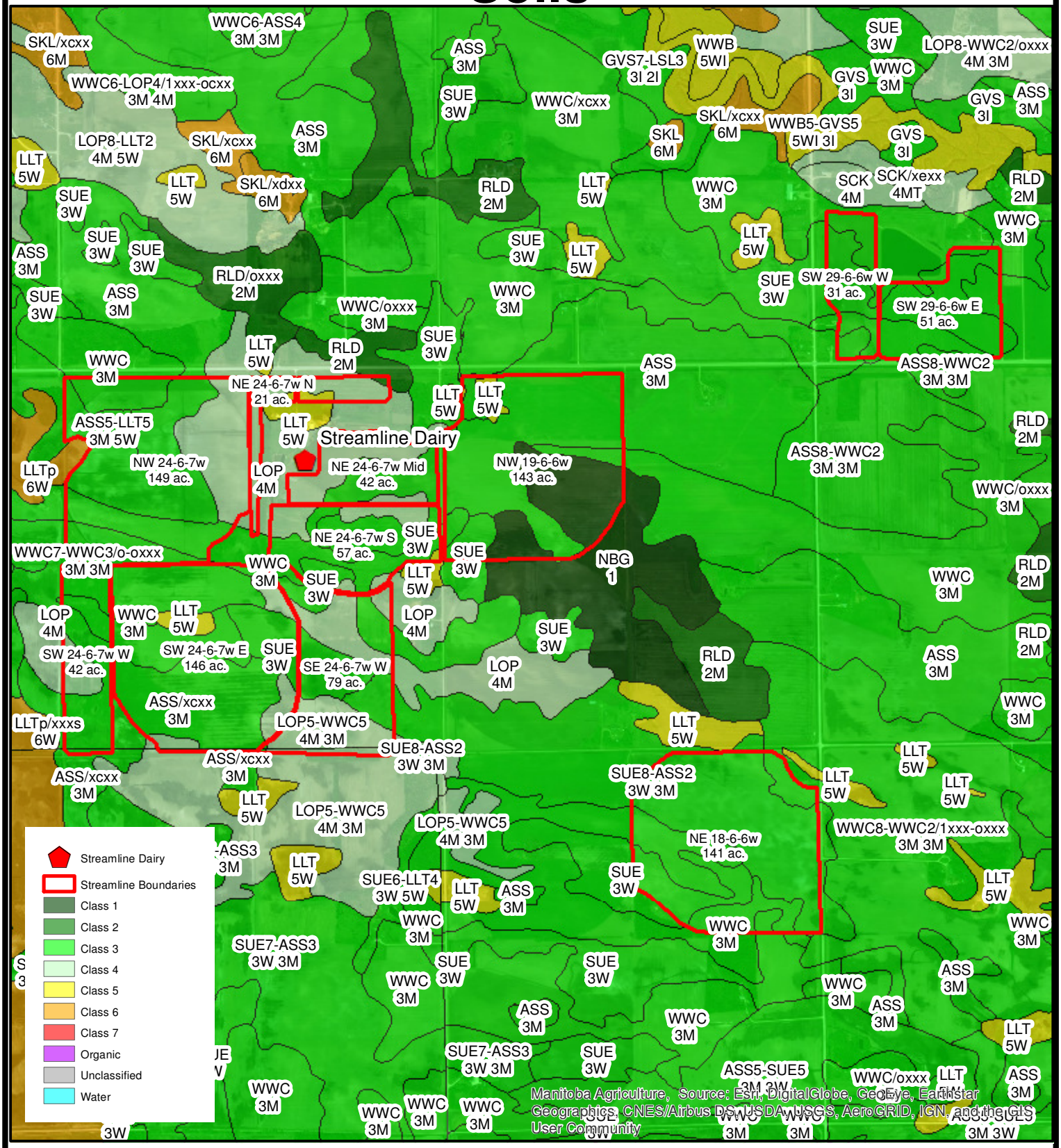
N
W E
S

0 0.175 0.35 0.7 1.05 1.4 Miles

Coordinate System: NAD 1983 UTM Zone 14N
Central Meridian: 99°0'0"W

AGRA - GOLD Consulting Ltd.

Streamline Dairy Soils



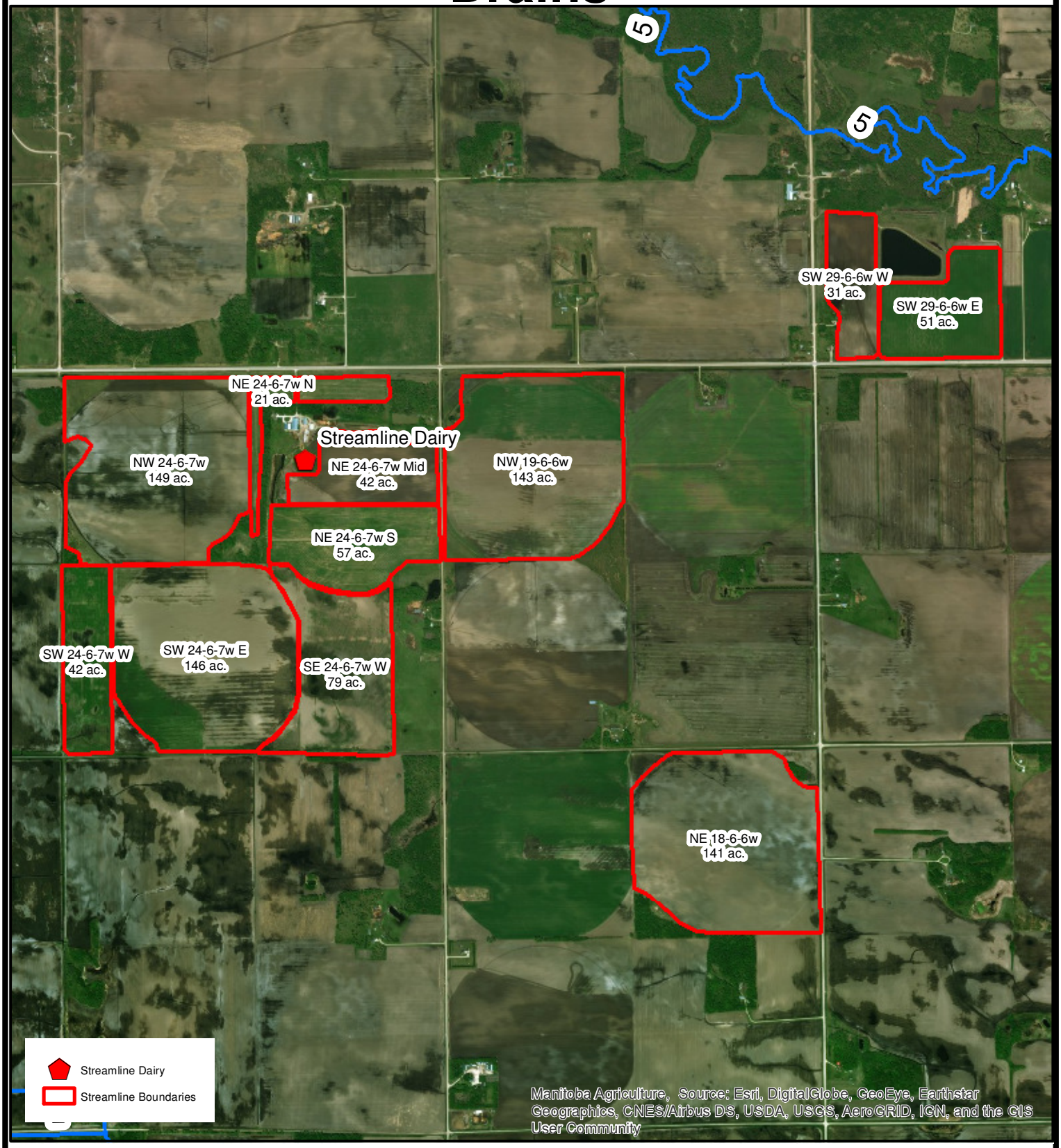
N
W E
S

0 0.175 0.35 0.7 1.05 1.4 Miles

Coordinate System: NAD 1983 UTM Zone 14N
Central Meridian: 99°0'0"W

AGRA - GOLD Consulting Ltd.

Streamline Dairy Drains



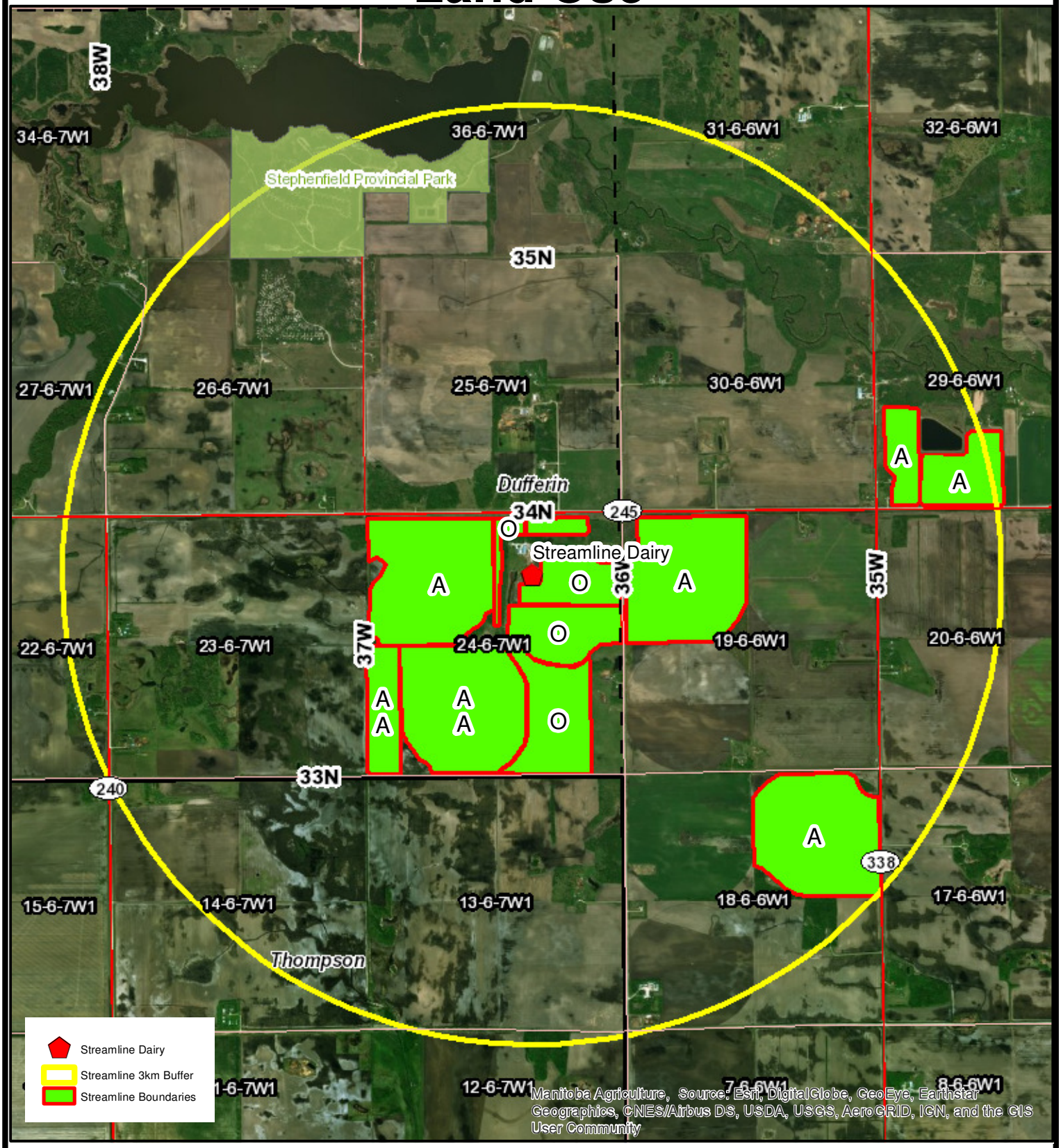
N
W E
S

0 0.175 0.35 0.7 1.05 1.4 Miles

Coordinate System: NAD 1983 UTM Zone 14N
Central Meridian: 99°0'0"W

AGRA - GOLD Consulting Ltd.

Streamline Dairy
Land Use



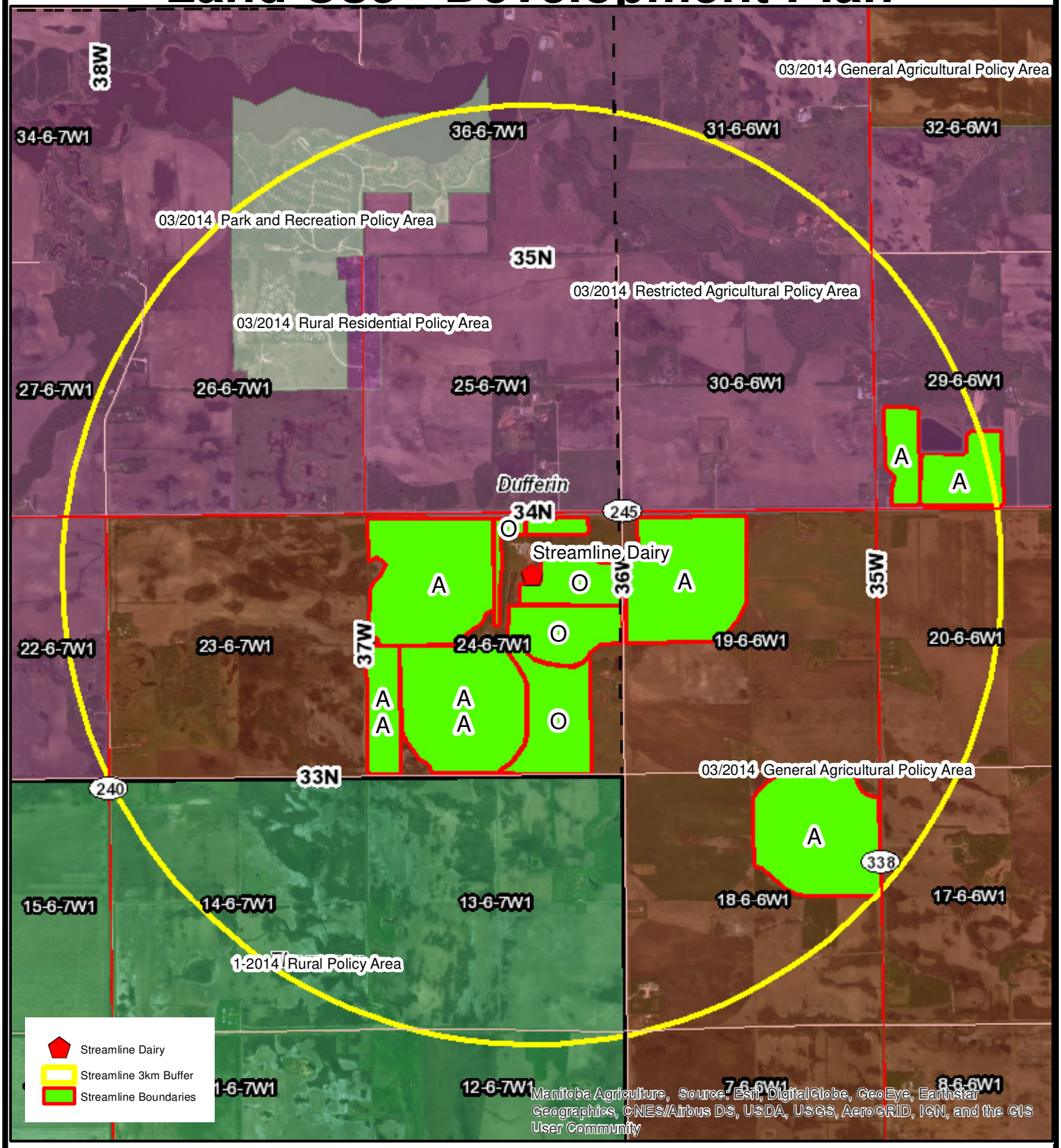
N
W E
S

0 0.275 0.55 1.1 1.65 2.2 Miles

Coordinate System: NAD 1983 UTM Zone 14N
Central Meridian: 99°0'0"W

AGRA - GOLD Consulting Ltd.

Streamline Dairy
Land Use - Development Plan



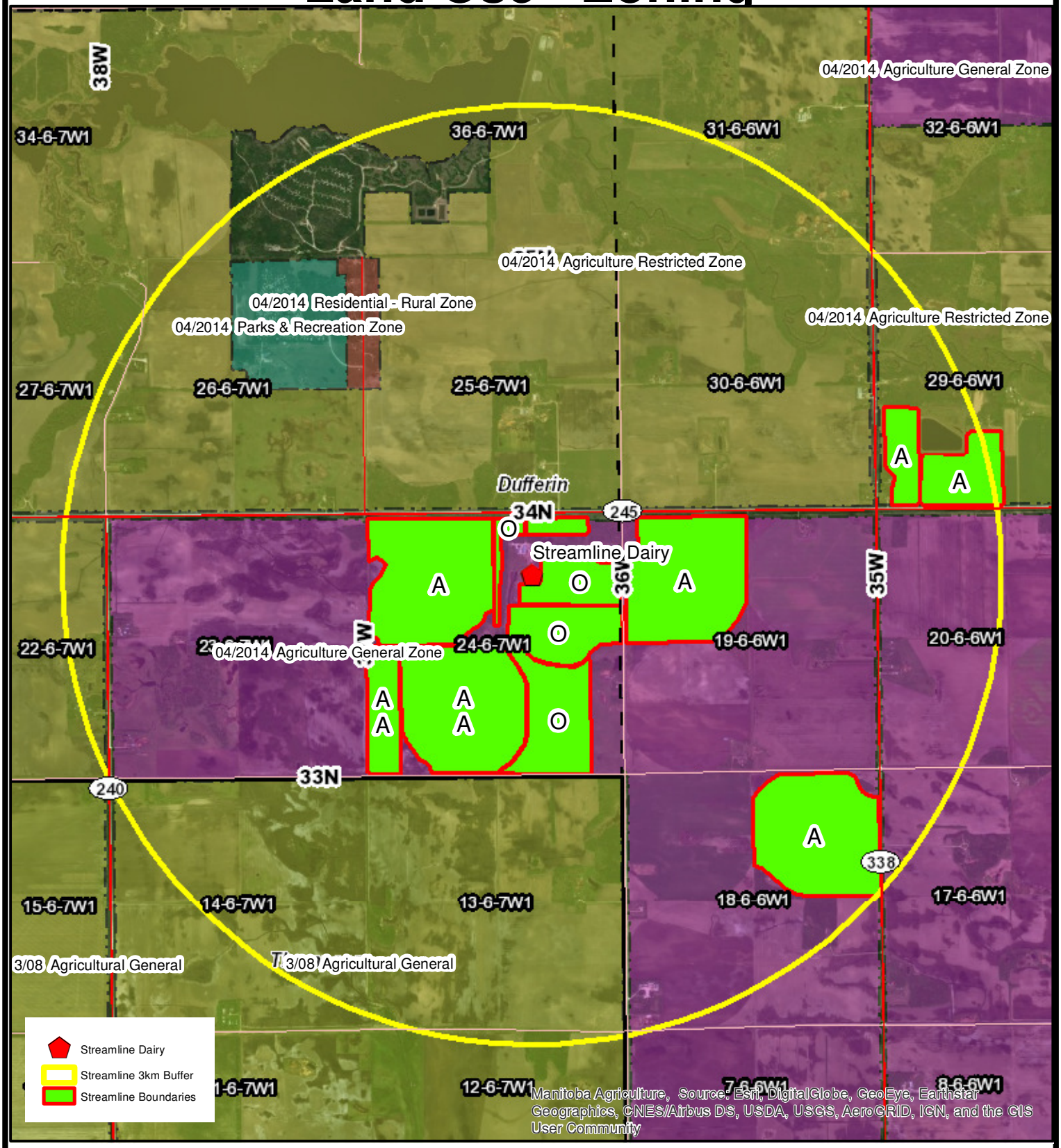
N
W E
S

0 0.275 0.55 1.1 1.65 2.2 Miles

Coordinate System: NAD 1983 UTM Zone 14N
Central Meridian: 99°0'0"W

AGRA - GOLD Consulting Ltd.

Streamline Dairy
Land Use - Zoning



N
W E
S

0 0.275 0.55 1.1 1.65 2.2 Miles

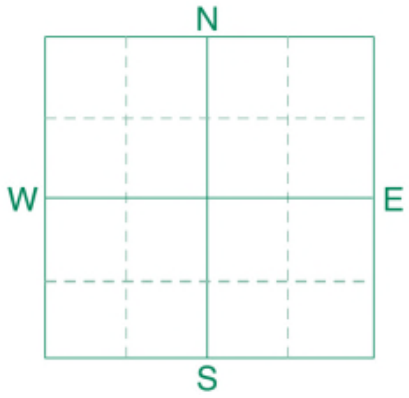
Coordinate System: NAD 1983 UTM Zone 14N
Central Meridian: 99°0'0"W

AGRA - GOLD Consulting Ltd.

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **MH-E**
SAMPLE ID
FIELD NAME Field 1a
COUNTY
TWP **NE 24-6-7** RANGE
SECTION QTR ACRES **10**
PREV. CROP **Corn-Grain**



SUBMITTED FOR:
KROEKER FARMS-WINKLER
777 CIRCLE K DRIVE
WINKLER, MB R6W 4B4

SUBMITTED BY: **KR0320**
KROEKER FARMS-WINKLER
777 CIRCLE K DRIVE
WINKLER, MB R6W 4B4

REF # **17114759** BOX # **0**
LAB # **NW8962**

Date Sampled
Date Received **04/23/2018**
Date Reported **4/23/2018**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
Nitrate					
Phosphorus	**Olsen 20 ppm**	**********	**********	**********	**********
Potassium					
Chloride					
Sulfur					
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
Sol. Salts					

1st Crop Choice		
YIELD GOAL		
SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION
N		
P_2O_5		
K_2O		
Cl		
S		
B		
Zn		
Fe		
Mn		
Cu		
Mg		
Lime		

2nd Crop Choice		
YIELD GOAL		
SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION
N		
P_2O_5		
K_2O		
Cl		
S		
B		
Zn		
Fe		
Mn		
Cu		
Mg		
Lime		

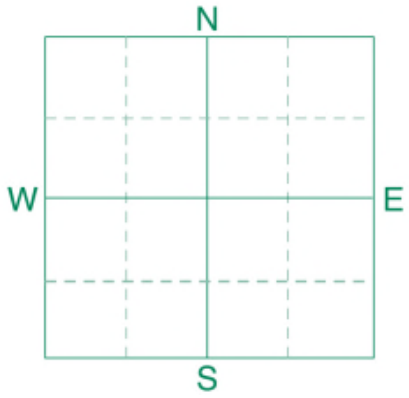
3rd Crop Choice		
YIELD GOAL		
SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION
N		
P_2O_5		
K_2O		
Cl		
S		
B		
Zn		
Fe		
Mn		
Cu		
Mg		
Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **MH-W**
SAMPLE ID
FIELD NAME Field 1b
COUNTY
TWP **NE 24-6-7** RANGE
SECTION QTR ACRES 11
PREV. CROP **Corn-Grain**



SUBMITTED FOR:
KROEKER FARMS-WINKLER
777 CIRCLE K DRIVE
WINKLER, MB R6W 4B4

SUBMITTED BY: **KR0320**
KROEKER FARMS-WINKLER
777 CIRCLE K DRIVE
WINKLER, MB R6W 4B4

REF # **17114760** BOX # **0**
LAB # **NW8963**

Date Sampled | Date Received **04/23/2018** | Date Reported **4/23/2018**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
Nitrate					
Phosphorus	**Olsen 20 ppm**	**********	**********	**********	**********
Potassium					
Chloride					
Sulfur					
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
Sol. Salts					

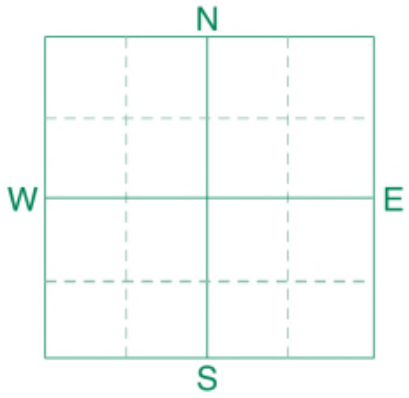
1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H

AGVISE LABORATORIES
Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **748**
SAMPLE ID
FIELD NAME Field 2
COUNTY
TWP **NE 24-6-7** S RANGE
SECTION QTR ACRES 57
PREV. CROP **Rye**



SUBMITTED FOR:
KROEKER FARMS-WINKLER
777 CIRCLE K DRIVE
WINKLER, MB R6W 4B4

SUBMITTED BY: **KR0320**
KROEKER FARMS-WINKLER
777 CIRCLE K DRIVE
WINKLER, MB R6W 4B4

REF # **17114763** BOX # **0**
LAB # **NW8959**

Date Sampled
Date Received **04/23/2018**
Date Reported **4/23/2018**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
Nitrate					
Phosphorus	**Olsen 33 ppm**	**********	**********	**********	**********
Potassium					
Chloride					
Sulfur					
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
Sol. Salts					

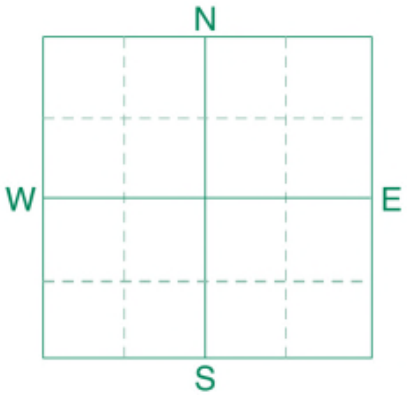
1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H

AGVISE LABORATORIES
Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **749**
SAMPLE ID
FIELD NAME Field 3
COUNTY **7**
TWP **6** RANGE
SECTION **24** QTR **NE** Mid ACRES 42
PREV. CROP



SUBMITTED FOR:
PGF

SUBMITTED BY: **KR0320**
KROEKER FARMS-WINKLER
777 CIRCLE K DRIVE
WINKLER, MB **R6W 4B4**

REF # **19516529** BOX # **0**
LAB # **NW85023**

Date Sampled **09/25/2017** Date Received **09/26/2017** Date Reported **4/23/2018**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
Nitrate	0-6" 11 lb/ac 6-12" 5 lb/ac 12-24" 10 lb/ac 0-24" 26 lb/ac				
Phosphorus	Olsen 33 ppm	******	******	******	******
Potassium	297 ppm	******	******	******	******
Chloride	0-6" 19 lb/ac 6-12" 7 lb/ac	*******			
Sulfur	0-6" 30 lb/ac 6-12" 22 lb/ac	******	******	******	
Boron	0.5 ppm	*******			
Zinc	2.15 ppm	******	******	******	******
Iron	25.0 ppm	******	******	******	******
Manganese	1.6 ppm	******	******	****	
Copper	0.73 ppm	******	******	*****	
Magnesium	254 ppm	******	******	******	
Calcium	2423 ppm	******	******	******	******
Sodium	23 ppm	***			
Org.Matter	1.5 %	******			
Carbonate(CCE)	0.5 %	***			
Sol. Salts	0-6" 0.17 mmho/cm 6-12" 0.13 mmho/cm	**** ***			

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
Potatoes-Irr.			Potatoes-Irr.					
YIELD GOAL			YIELD GOAL			YIELD GOAL		
400 Cwt			400 Cwt					
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
Broadcast			Band					
LB/ACRE		APPLICATION	LB/ACRE		APPLICATION	LB/ACRE		APPLICATION
N	194		N	194		N		
P_2O_5	50	Band (2x2) *	P_2O_5	50	Band (2x2) *	P_2O_5		
K_2O	50	Band (2x2) *	K_2O	50	Band (2x2) *	K_2O		
Cl		Not Available	Cl		Not Available	Cl		
S	15	Broadcast (Trial)	S	7	Band (Trial)	S		
B	1	Broadcast	B	1	Broadcast	B		
Zn	0		Zn	0		Zn		
Fe	0		Fe	0		Fe		
Mn	0		Mn	0		Mn		
Cu	1	Broadcast (Trial)	Cu	1	Band (Trial)	Cu		
Mg	0		Mg	0		Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **7.7** 6-24" **8.1**		**15.1 meq**	(65-75) **80.3**	(15-20) **14.0**	(1-7) **5.0**	(0-5) **0.7**	(0-5)

General Comments: Texture is not estimated on high pH soils.

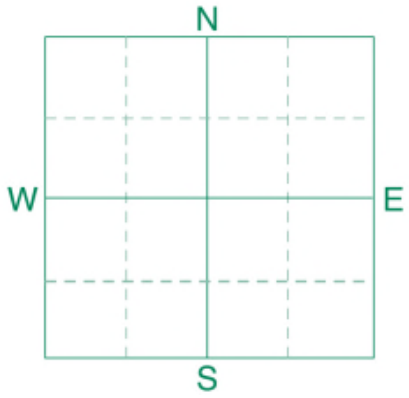
Crop 1: ** Chloride yield data is limited for this crop. * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Phosphorus guidelines for irrigated potatoes have been adjusted based on carbonate levels. Crop Removal: P2O5 = 72 K2O = 200 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: ** Chloride yield data is limited for this crop. * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Phosphorus guidelines for irrigated potatoes have been adjusted based on carbonate levels. Crop Removal: P2O5 = 72 K2O = 200 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **S OF 748**
SAMPLE ID
FIELD NAME Field 4
COUNTY
TWP **SE 24-6-7** W RANGE
SECTION QTR ACRES 79
PREV. CROP **Alfalfa**



SUBMITTED FOR:
KROEKER FARMS-WINKLER
777 CIRCLE K DRIVE
WINKLER, MB R6W 4B4

SUBMITTED BY: **KR0320**
KROEKER FARMS-WINKLER
777 CIRCLE K DRIVE
WINKLER, MB R6W 4B4

REF # **17114762** BOX # **0**
LAB # **NW8961**

Date Sampled | Date Received **04/23/2018** | Date Reported **4/23/2018**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
Nitrate					
Phosphorus	**Olsen 16 ppm**	**********	**********	**********	**********
Potassium					
Chloride					
Sulfur					
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
Sol. Salts					

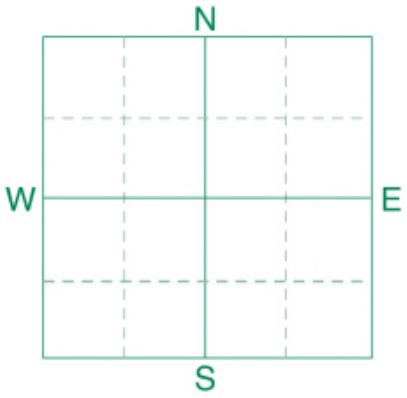
1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H

AGVISE LABORATORIES
Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **E OF 746**
SAMPLE ID
FIELD NAME Field 5
COUNTY
TWP **SW 24-6-7** W RANGE
SECTION QTR ACRES 42
PREV. CROP **Corn-Grain**



SUBMITTED FOR:
KROEKER FARMS-WINKLER
777 CIRCLE K DRIVE
WINKLER, MB R6W 4B4

SUBMITTED BY: **KR0320**
KROEKER FARMS-WINKLER
777 CIRCLE K DRIVE
WINKLER, MB R6W 4B4

REF # **17114761** BOX # **0**
LAB # **NW8960**

Date Sampled | Date Received **04/23/2018** | Date Reported **4/23/2018**

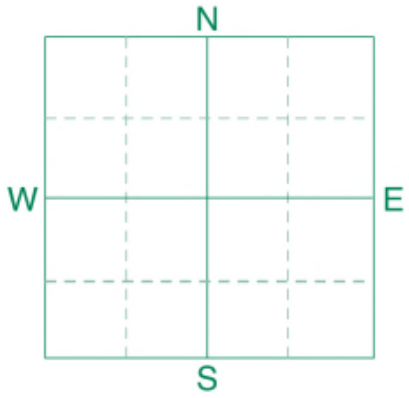
Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		VLow	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL	
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
Nitrate						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Olsen Phosphorus	**5 ppm**	********				N		N		N	
Potassium						P_2O_5		P_2O_5		P_2O_5	
Chloride						K_2O		K_2O		K_2O	
Sulfur						Cl		Cl		Cl	
Boron						S		S		S	
Zinc						B		B		B	
Iron						Zn		Zn		Zn	
Manganese						Fe		Fe		Fe	
Copper						Mn		Mn		Mn	
Magnesium						Cu		Cu		Cu	
Calcium						Mg		Mg		Mg	
Sodium						Lime		Lime		Lime	
Org.Matter											
Carbonate(CCE)											
Sol. Salts											

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **747**
SAMPLE ID
FIELD NAME Field 6
COUNTY
TWP **NW 24-6-7** RANGE
SECTION QTR ACRES 149
PREV. CROP **Corn-Grain**



SUBMITTED FOR:
KROEKER FARMS-WINKLER
777 CIRCLE K DRIVE
WINKLER, MB R6W 4B4

SUBMITTED BY: **KR0320**
KROEKER FARMS-WINKLER
777 CIRCLE K DRIVE
WINKLER, MB R6W 4B4

REF # **17114754** BOX # **0**
LAB # **NW8969**

Date Sampled | Date Received **04/23/2018** | Date Reported **4/23/2018**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
Nitrate					
Olsen Phosphorus	11 ppm			**********	
Potassium					
Chloride					
Sulfur					
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
Sol. Salts					

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

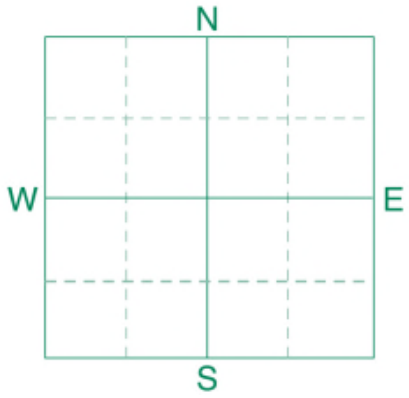
Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **746**
SAMPLE ID
FIELD NAME Field 7
COUNTY
TWP **SW 24-6-7** E RANGE
SECTION QTR ACRES **146**
PREV. CROP **Potatoes**



SUBMITTED FOR:
KROEKER FARMS-WINKLER
777 CIRCLE K DRIVE
WINKLER, MB R6W 4B4

SUBMITTED BY: **KR0320**
KROEKER FARMS-WINKLER
777 CIRCLE K DRIVE
WINKLER, MB R6W 4B4

REF # **17114756** BOX # **0**
LAB # **NW8967**

Date Sampled
Date Received **04/23/2018**
Date Reported **4/23/2018**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
Nitrate					
Phosphorus **Olsen**	**24 ppm**	**********	**********	**********	**********
Potassium					
Chloride					
Sulfur					
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
Sol. Salts					

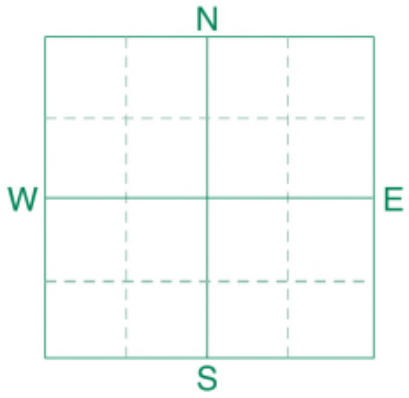
1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **744**
SAMPLE ID
FIELD NAME Field 8
COUNTY
TWP **NW 19-6-6** RANGE
SECTION QTR ACRES **143**
PREV. CROP **Alfalfa**



SUBMITTED FOR:
KROEKER FARMS-WINKLER
777 CIRCLE K DRIVE
WINKLER, MB R6W 4B4

SUBMITTED BY: **KR0320**
KROEKER FARMS-WINKLER
777 CIRCLE K DRIVE
WINKLER, MB R6W 4B4

REF # **17114755** BOX # **0**
LAB # **NW8966**

Date Sampled | Date Received **04/23/2018** | Date Reported **4/23/2018**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
Nitrate					
Olsen Phosphorus	**9 ppm**	**********			
Potassium					
Chloride					
Sulfur					
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
Sol. Salts					

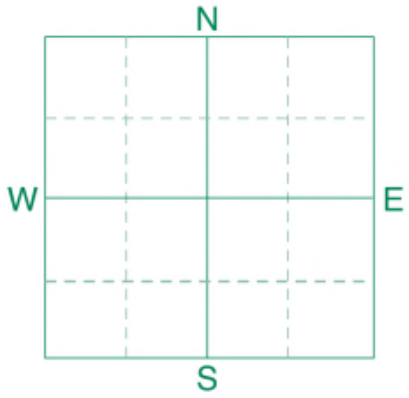
1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **703**
SAMPLE ID
FIELD NAME Field 9
COUNTY
TWP **NE 18-6-6** RANGE
SECTION QTR ACRES **141**
PREV. CROP **Beans-Edible**



SUBMITTED FOR:
KROEKER FARMS-WINKLER
777 CIRCLE K DRIVE
WINKLER, MB R6W 4B4

SUBMITTED BY: **KR0320**
KROEKER FARMS-WINKLER
777 CIRCLE K DRIVE
WINKLER, MB R6W 4B4

REF # **17114753** BOX # **0**
LAB # **NW8968**

Date Sampled Date Received **04/23/2018** Date Reported **4/23/2018**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
Nitrate					
Phosphorus **Olsen**	**12 ppm**	**********	**********	******	
Potassium					
Chloride					
Sulfur					
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
Sol. Salts					

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

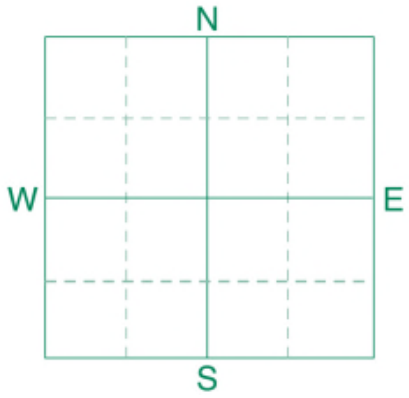
Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **761**
SAMPLE ID
FIELD NAME Field 10
COUNTY
TWP **SW 29-6-6** RANGE
SECTION QTR ACRES **31**
PREV. CROP **Corn-Grain**



SUBMITTED FOR:
KROEKER FARMS-WINKLER
777 CIRCLE K DRIVE
WINKLER, MB R6W 4B4

SUBMITTED BY: **KR0320**
KROEKER FARMS-WINKLER
777 CIRCLE K DRIVE
WINKLER, MB R6W 4B4

REF # **17114757** BOX # **0**
LAB # **NW8964**

Date Sampled | Date Received **04/23/2018** | Date Reported **4/23/2018**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
Nitrate					
Phosphorus (Olsen)	**17 ppm**	**********	**********	**********	**********
Potassium					
Chloride					
Sulfur					
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
Sol. Salts					

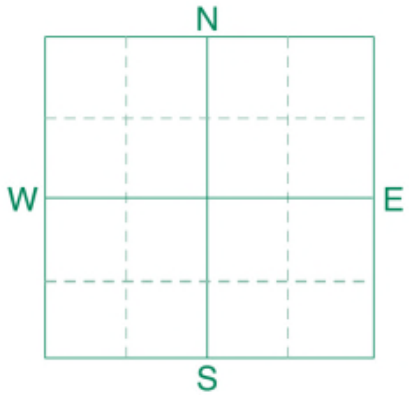
1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **760**
SAMPLE ID
FIELD NAME Field 11
COUNTY
TWP **SW 29-6-6** RANGE
SECTION QTR ACRES **51**
PREV. CROP **Corn-Grain**



SUBMITTED FOR:
KROEKER FARMS-WINKLER
777 CIRCLE K DRIVE
WINKLER, MB R6W 4B4

SUBMITTED BY: **KR0320**
KROEKER FARMS-WINKLER
777 CIRCLE K DRIVE
WINKLER, MB R6W 4B4

REF # **17114758** BOX # **0**
LAB # **NW8965**

Date Sampled | Date Received **04/23/2018** | Date Reported **4/23/2018**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
Nitrate					
Olsen Phosphorus	8 ppm	**********			
Potassium					
Chloride					
Sulfur					
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
Sol. Salts					

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
	LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION
N			N			N		
P_2O_5			P_2O_5			P_2O_5		
K_2O			K_2O			K_2O		
Cl			Cl			Cl		
S			S			S		
B			B			B		
Zn			Zn			Zn		
Fe			Fe			Fe		
Mn			Mn			Mn		
Cu			Cu			Cu		
Mg			Mg			Mg		
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H

MASC
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MMPP - Fertilizer Data Browser

Select Municipalities or MASC Risk Areas

Tip: Click or touch the 'X' (at right) in these tip balloons to hide them permanently.

Tip: Click or touch the button below to select Municipalities or MASC Risk Areas.

Risk Areas

Tip: Click or touch in the select boxes (below) to select at least one item from each list. Click or touch the icon to clear all selected items.

RISK AREA 10

Select Crop(s)

ALFALFA

Select Soil Type(s)

SOIL TYPE G

Warning
Charts unavailable when only one Soil Type is selected. Fertilizer Application Data table will still be displayed.

Select Year Range

1993 1998 2003 2007 2012 2017

2008 to 2017

Search Summary

10 records returned

67 farm varieties grown on **4,257.0** acres

Average Yield

3.302 Tonnes (**3.639** Tons) per acre

Average Fertilizer Application

Nitrogen: **19.1** lbs per acre
Phosphorus: **32.7** lbs per acre
Potassium: **32.2** lbs per acre
Sulphur: **8.7** lbs per acre

Summary includes aggregate data from 'below minimum tolerance' records

Fertilizer Data

'Below Minimum Tolerance' records contain data from fewer than 3 producers or 500 acres, marked as such to retain producer anonymity. Data from these records is included in the Search Summary totals.

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Showing 1 to 10 of 10 entries First Previous Next Last

Year	Risk Area / R.M.	Crop	Soil	Farms	Acres	Yield/acre (Imperial)	Nitrogen (lbs)	Phosphorus (lbs)	Potassium (lbs)	Sulphur (lbs)
2008	RISK AREA 10	ALFALFA	G	11	735.0	4.651 Tons	12.5	31.4	46.4	8.2
2009	RISK AREA 10	ALFALFA	G	8	536.0	4.222 Tons	29.8	29.0	30.5	12.2
2017	RISK AREA 10	ALFALFA	G	7	527.0	3.425 Tons	16.0	30.7	28.0	6.8
2016	RISK AREA 10	ALFALFA	G	9	618.0	3.087 Tons	23.6	33.2	30.5	9.2
2010	RISK AREA 10	ALFALFA	G	Below	Minimum					
2011	RISK AREA 10	ALFALFA	G	Below	Minimum					
2012	RISK AREA 10	ALFALFA	G	Below	Minimum					
2013	RISK AREA 10	ALFALFA	G	Below	Minimum					
2014	RISK AREA 10	ALFALFA	G	Below	Minimum					

Year	Risk Area / R.M.	Crop	Soil	Farms	Acres	Yield/acre (Imperial)	Nitrogen (lbs)	Phosphorus (lbs)	Potassium (lbs)	Sulphur (lbs)
2015	RISK AREA 10	ALFALFA	G	Below	Minimum					

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Risk Areas

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RISK AREA 10 ⊗

Select Crop(s)

ARGENTINE CANOLA ⊗

Select Soil Type(s)

SOIL TYPE G ⊗

Warning
Charts unavailable when only one Soil Type is selected. Fertilizer Application Data table will still be displayed.

Select Year Range

1993 1998 2003 2007 2012 2017

2008 to 2017

Search Summary

10 records returned

1,553 farm varieties grown on **420,539.0** acres

Average Yield

0.867 Tonnes (**38.2** Bushels) per acre

Average Fertilizer Application

Nitrogen: **101.0** lbs per acre
Phosphorus: **30.6** lbs per acre
Potassium: **18.8** lbs per acre
Sulphur: **16.9** lbs per acre

Summary includes aggregate data from 'below minimum tolerance' records

Fertilizer Data

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First Previous Next Last

Year	Risk Area / R.M.	Crop	Soil	Farms	Acres	Yield/acre (Imperial)	Nitrogen (lbs)	Phosphorus (lbs)	Potassium (lbs)	Sulphur (lbs)
2017	RISK AREA 10	ARGENTINE CANOLA	G	129	37,086.0	46.8 Bushels	108.8	35.4	24.2	19.2
2009	RISK AREA 10	ARGENTINE CANOLA	G	167	40,163.0	46.7 Bushels	92.1	28.3	11.6	15.3
2013	RISK AREA 10	ARGENTINE CANOLA	G	151	43,803.0	43.9 Bushels	102.0	31.4	19.3	16.8
2015	RISK AREA 10	ARGENTINE CANOLA	G	163	42,295.0	39.7 Bushels	104.9	33.0	23.6	18.7
2014	RISK AREA 10	ARGENTINE CANOLA	G	149	40,164.7	39.6 Bushels	106.4	31.5	21.1	18.5
2016	RISK AREA 10	ARGENTINE CANOLA	G	130	35,245.0	37.7 Bushels	105.7	33.3	20.8	17.6
2008	RISK AREA 10	ARGENTINE CANOLA	G	152	38,254.0	37.0 Bushels	93.7	27.8	15.9	15.2
2011	RISK AREA 10	ARGENTINE CANOLA	G	149	47,240.0	35.4 Bushels	102.1	27.8	16.1	15.7
2010	RISK AREA 10	ARGENTINE CANOLA	G	188	48,534.9	32.2 Bushels	96.8	28.4	16.0	15.5

Year	Risk Area / R.M.	Crop	Soil	Farms	Acres	Yield/acre (Imperial)	Nitrogen (lbs)	Phosphorus (lbs)	Potassium (lbs)	Sulphur (lbs)
2012	RISK AREA 10	ARGENTINE CANOLA	G	175	47,753.4	27.1 Bushels	99.7	30.5	20.1	17.1

Show 50 entries

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MMPP - Fertilizer Data Browser

Select Municipalities or MASC Risk Areas

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Risk Areas

Tip: Click or touch in the select boxes (below) to select at least one item from each list. Click or touch the icon to clear all selected items.

RISK AREA 10

Select Crop(s)

SILAGE CORN

Select Soil Type(s)

SOIL TYPE G

Warning
Charts unavailable when only one Soil Type is selected. Fertilizer Application Data table will still be displayed.

Select Year Range

1993 1998 2003 2007 2012 2017

2008 to **2017**

Search Summary

10 records returned

151 farm varieties grown on **13,462.0** acres

Average Yield

12.809 Tonnes (**14.115** Tons) per acre

Average Fertilizer Application

Nitrogen: **93.7** lbs per acre
Phosphorus: **30.0** lbs per acre
Potassium: **37.8** lbs per acre
Sulphur: **5.5** lbs per acre

Summary includes aggregate data from 'below minimum tolerance' records

Fertilizer Data

'Below Minimum Tolerance' records contain data from fewer than 3 producers or 500 acres, marked as such to retain producer anonymity. Data from these records is included in the Search Summary totals.

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Showing 1 to 10 of 10 entries First Previous Next Last

Year	Risk Area / R.M.	Crop	Soil	Farms	Acres	Yield/acre (Imperial)	Nitrogen (lbs)	Phosphorus (lbs)	Potassium (lbs)	Sulphur (lbs)
2009	RISK AREA 10	SILAGE CORN	G	15	1,499.0	17.608 Tons	97.0	31.9	25.2	2.2
2017	RISK AREA 10	SILAGE CORN	G	16	1,358.0	16.091 Tons	97.0	36.5	50.1	10.4
2015	RISK AREA 10	SILAGE CORN	G	15	787.0	16.036 Tons	103.8	39.2	32.3	9.7
2016	RISK AREA 10	SILAGE CORN	G	14	996.0	15.816 Tons	92.0	30.0	41.6	9.3
2013	RISK AREA 10	SILAGE CORN	G	19	1,731.0	15.781 Tons	93.1	29.4	27.8	5.0
2008	RISK AREA 10	SILAGE CORN	G	15	1,569.0	15.105 Tons	95.0	23.0	26.1	5.1
2012	RISK AREA 10	SILAGE CORN	G	14	1,646.0	13.097 Tons	85.8	33.3	31.8	3.0
2011	RISK AREA 10	SILAGE CORN	G	7	753.0	12.406 Tons	85.4	26.4	37.3	2.2
2014	RISK AREA 10	SILAGE CORN	G	22	1,592.0	10.206 Tons	95.4	30.1	35.5	7.5

Year	Risk Area / R.M.	Crop	Soil	Farms	Acres	Yield/acre (Imperial)	Nitrogen (lbs)	Phosphorus (lbs)	Potassium (lbs)	Sulphur (lbs)
2010	RISK AREA 10	SILAGE CORN	G	14	1,531.0	9.951 Tons	93.3	23.3	72.3	2.8

Show 50 entries

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Manitoba Agricultural Services Corporation

MMPP - Fertilizer Data Browser

Select Municipalities or MASC Risk Areas

Tip: Click or touch the 'X' (at right) in these tip balloons to hide them permanently.

Tip: Click or touch the button below to select Municipalities or MASC Risk Areas.

Risk Areas

Tip: Click or touch in the select boxes (below) to select at least one item from each list. Click or touch the ⊗ icon to clear all selected items.

RISK AREA 10 ⊗

Select Crop(s)

TABLE POTATOES ⊗

Select Soil Type(s)

SOIL TYPE G ⊗

Warning
Charts unavailable when only one Soil Type is selected. Fertilizer Application Data table will still be displayed.

Select Year Range

1993 1998 2003 2007 2012 2017

2008 to **2017**

Search Summary

10 records returned

27 farm varieties grown on **2,079.0** acres

Average Yield

9.824 Tonnes (**216.57** CWT) per acre

Average Fertilizer Application

Nitrogen: **143.9** lbs per acre
Phosphorus: **57.7** lbs per acre
Potassium: **169.9** lbs per acre
Sulphur: **30.1** lbs per acre

Summary includes aggregate data from 'below minimum tolerance' records

Fertilizer Data

'Below Minimum Tolerance' records contain data from fewer than 3 producers or 500 acres, marked as such to retain producer anonymity. Data from these records is included in the Search Summary totals.

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Showing 1 to 10 of 10 entries First Previous Next Last

Year	Risk Area / R.M.	Crop	Soil	Farms	Acres	Yield/acre (Imperial)	Nitrogen (lbs)	Phosphorus (lbs)	Potassium (lbs)	Sulphur (lbs)
2013	RISK AREA 10	TABLE POTATOES	G	5	525.0	231.14 CWT	155.6	30.9	204.9	32.9
2008	RISK AREA 10	TABLE POTATOES	G	Below	Minimum					
2009	RISK AREA 10	TABLE POTATOES	G	Below	Minimum					
2010	RISK AREA 10	TABLE POTATOES	G	Below	Minimum					
2011	RISK AREA 10	TABLE POTATOES	G	Below	Minimum					
2012	RISK AREA 10	TABLE POTATOES	G	Below	Minimum					
2014	RISK AREA 10	TABLE POTATOES	G	Below	Minimum					
2015	RISK AREA 10	TABLE POTATOES	G	Below	Minimum					
2016	RISK AREA 10	TABLE POTATOES	G	Below	Minimum					

Year	Risk Area / R.M.	Crop	Soil	Farms	Acres	Yield/acre (Imperial)	Nitrogen (lbs)	Phosphorus (lbs)	Potassium (lbs)	Sulphur (lbs)
2017	RISK AREA 10	TABLE POTATOES	G	Below	Minimum					

Show 50 entries

First Previous Next Last

Manitoba Agricultural Services Corporation

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Select Municipalities or MASC Risk Areas

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Tip: Click or touch the button below to select Municipalities or MASC Risk Areas.

Risk Areas

Tip: Click or touch in the select boxes (below) to select at least one item from each list. Click or touch the ⊗ icon to clear all selected items.

RISK AREA 10 ⊗

Select Crop(s)

SOYBEANS ⊗

Select Soil Type(s)

SOIL TYPE G ⊗

Warning
Charts unavailable when only one Soil Type is selected. Fertilizer Application Data table will still be displayed.

Select Year Range

1993 1998 2003 2007 2012 2017

2008 to **2017**

Search Summary

10 records returned

514 farm varieties grown on **143,822.0** acres

Average Yield

1.054 Tonnes (**38.7** Bushels) per acre

Average Fertilizer Application

Nitrogen: **5.4** lbs per acre
Phosphorus: **31.9** lbs per acre
Potassium: **34.2** lbs per acre
Sulphur: **6.1** lbs per acre

Summary includes aggregate data from 'below minimum tolerance' records

Fertilizer Data

'Below Minimum Tolerance' records contain data from fewer than 3 producers or 500 acres, marked as such to retain producer anonymity. Data from these records is included in the Search Summary totals.

Copy to Clipboard | Save as XLS

Showing 1 to 10 of 10 entries

First Previous Next Last

Year	Risk Area / R.M.	Crop	Soil	Farms	Acres	Yield/acre (Imperial)	Nitrogen (lbs)	Phosphorus (lbs)	Potassium (lbs)	Sulphur (lbs)
2016	RISK AREA 10	SOYBEANS	G	85	26,826.0	44.9 Bushels	6.9	34.3	39.7	6.4
2015	RISK AREA 10	SOYBEANS	G	80	22,755.0	40.8 Bushels	5.2	33.7	37.5	5.2
2013	RISK AREA 10	SOYBEANS	G	51	10,796.0	40.1 Bushels	4.0	28.1	30.8	6.0
2017	RISK AREA 10	SOYBEANS	G	121	39,891.0	37.9 Bushels	2.2	35.6	38.4	6.3
2010	RISK AREA 10	SOYBEANS	G	21	4,799.0	37.2 Bushels	7.1	22.6	7.8	2.5
2012	RISK AREA 10	SOYBEANS	G	39	11,913.0	36.3 Bushels	5.9	29.8	27.5	5.5
2009	RISK AREA 10	SOYBEANS	G	19	3,546.0	35.3 Bushels	16.9	23.7	11.2	1.9
2014	RISK AREA 10	SOYBEANS	G	67	18,524.0	33.8 Bushels	6.8	28.2	36.2	8.8
2008	RISK AREA 10	SOYBEANS	G	21	3,397.0	28.1 Bushels	12.8	24.1	10.3	4.9

Year	Risk Area / R.M.	Crop	Soil	Farms	Acres	Yield/acre (Imperial)	Nitrogen (lbs)	Phosphorus (lbs)	Potassium (lbs)	Sulphur (lbs)
2011	RISK AREA 10	SOYBEANS	G	10	1,375.0	25.1 Bushels	7.1	21.6	16.2	4.3

Show 50 entries First Previous Next Last