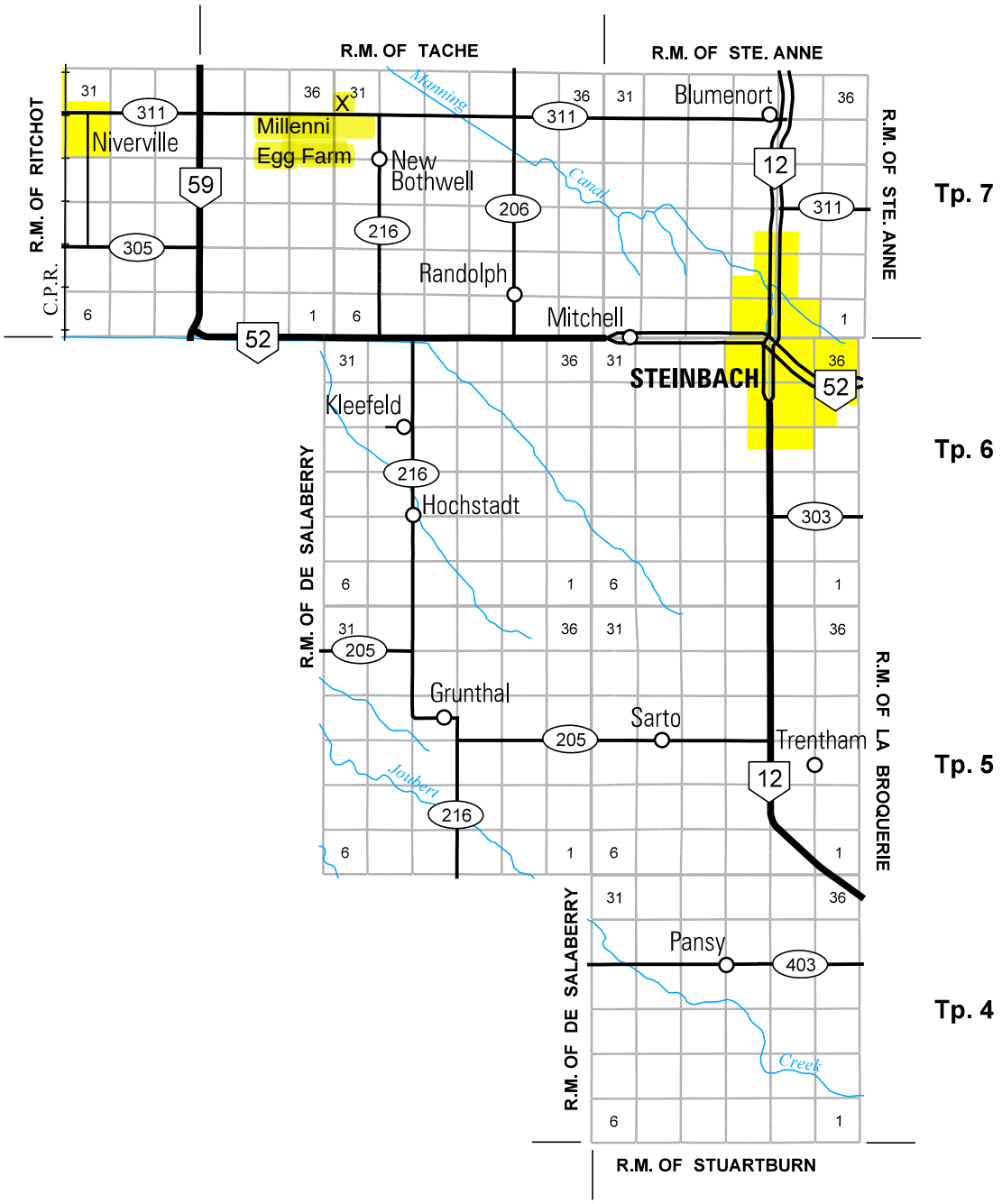
R.M. OF HANOVER

0 5
SCALE IN KILOMETRES

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

LEGEND

PROVINCIAL TRUNK HIGHWAYS 12
PROVINCIAL ROADS 311
ACCESS ROADS .....
RAILWAYS .....



Millenni Egg Farm Site Location

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		-		-
	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		-	135,000	1,121
	Pullets	0.0033	166,000	548	45,000	149
	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:	548	Total Proposed:	1,269

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
Manitoba Agriculture and Resource Development

Millenni Egg Farm Site Plan

2606'-2"

1958'-7"

Existing Pullet Barn

575'-2"±

210'-1"±

1319'-3"

Existing manure storage

Proposed solid manure storage

165'-0"

New Pullet Barn

552'-5"

Proposed solid manure storage

2001'-4"

848'-8"

New Layer Barns

261'-4"

388'-7"

385'-7"

North

Water Requirement Calculation Table

Livestock	Number	IG/day per animal in winter	IG/day per animal in summer	IG/day (Imperial gallons per day)
Beef/Dairy/Bison *				
Feeder/heifer/steer (600 lb.)		5	9	-
Feeder (900 lb.)		7	12	-
Feeder (1250 lb.)		10	15	-
Cow/calf pair		12	15	-
Dry milking cow **		10	12	-
Lactating cow **		25	30	-
Bison		8	10	-
Horses				
Horses		8	11	-
Hogs				
Sow (Farrow/wean)		5.5		-
Dry Sow/Boar		4		-
Feeder		2		-
Nursery (33 lb.)		1		-
Chickens				
Broilers		0.035		-
Roasters/Pullets	45,000	0.04		1,800
Layers	135,000	0.055		7,425
Breeders		0.07		-
Turkeys				
Turkey Growers		0.13		-
Turkey Heavies		0.16		-
Sheep/Goats				
Sheep/Goats		2		-
Ewes/Does		3		-
Lambs/Kids (90 lb.)		1.6		-
		TOTAL (IG/day)		**9,225**
	***	**TOTAL with 10% wash water**		**10,148**

* For beef, dairy, bison and horse enterprises:
Use summer numbers if appropriate for the operation.
Otherwise base projections on winter values.
Always use the greater of the two values.

** For intensive Dairy operations, please use the Dairy Barn Water Requirement Calculator found on separate sheet.

***** 10% of the total is added to allow for wash water**

Unit Conversions		
Total per day	**Total per year**	**Unit**
10,148	**3,703,838**	**IG**
41,937	**15,306,950**	**litres**
0.042	**15**	**cubic decametres (dam^3)**

Other consumption:

Normal household consumption:
60-75 IG/day per person or
(272-340 l/day/person)

Conversion Factor: 1 IGPM = 4.546 l/m

Please note that the Water Requirement Calculator is an estimation only.

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				-	0.0
	Tie Stall		Semi-Solid [5]	3.6				-	0.0
			Solid	3.5				-	
			Liquid [5]	3.6				-	0.0
	Loose Housing		Solid	3.0				-	
	Milking Parlour Manure and Washwater		Liquid	0.5					
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	1.68	365	135,000	226,800	
	Layers – solid pack [9]						-	
	Pullets – cage [8]		0.71				-	0.0
	Pullets – floor [6]		0.75	0.75	365	45,000	33,750	
	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.

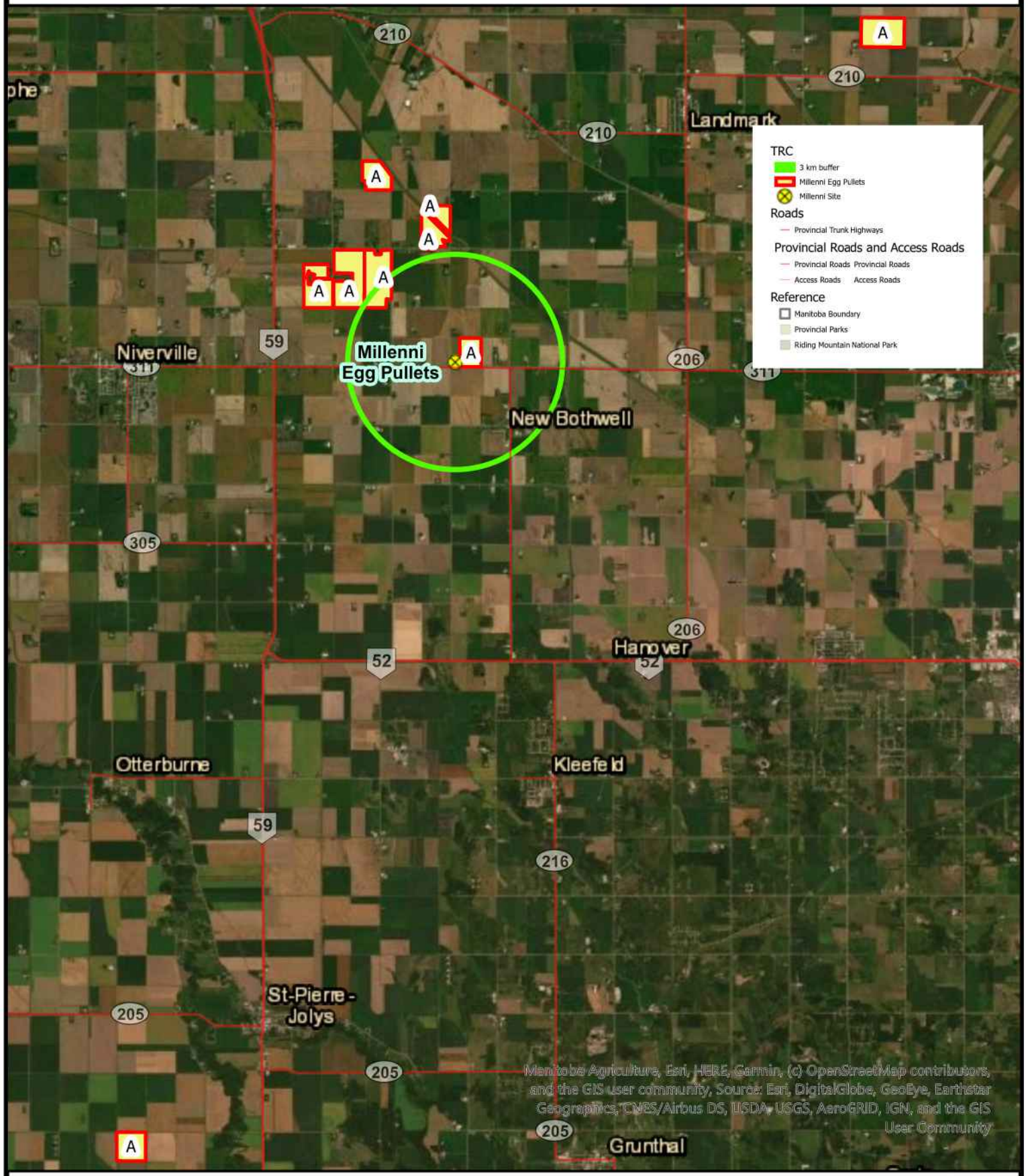
[6] 2 inches of wood shavings or 4 inches of straw placed on floor. Manure and litter removed from barn at 25% moisture content, with a density of 20 lb/ft^3

[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

Millenni Egg Pullets: Land Use

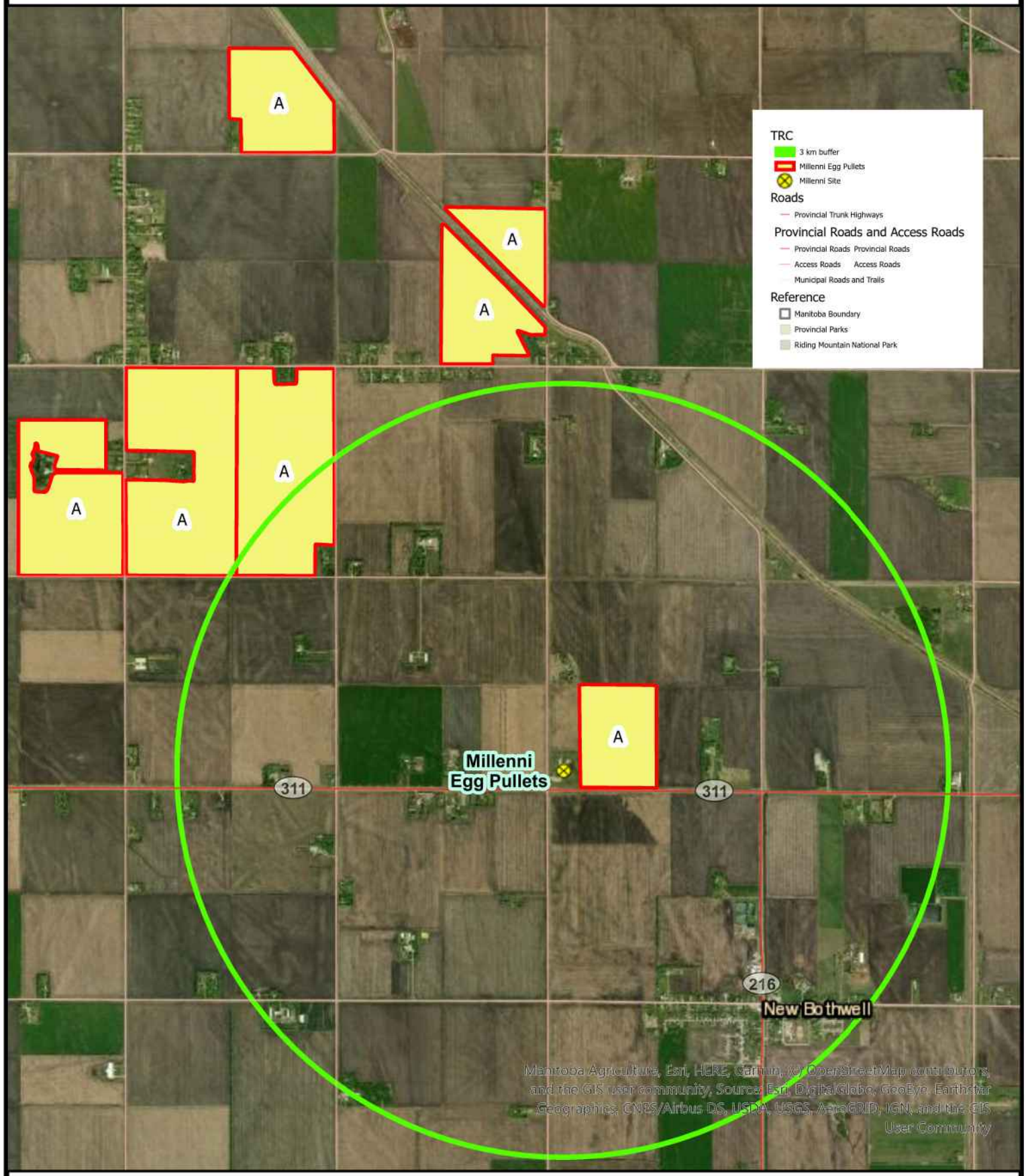


N W E S

0 0.5 1 2 3 4 5 6 7 8 9 10 11 12 13 Miles

AGRA-GOLD NUTRIENT MANAGEMENT

Millenni Egg Pullets: Land Use

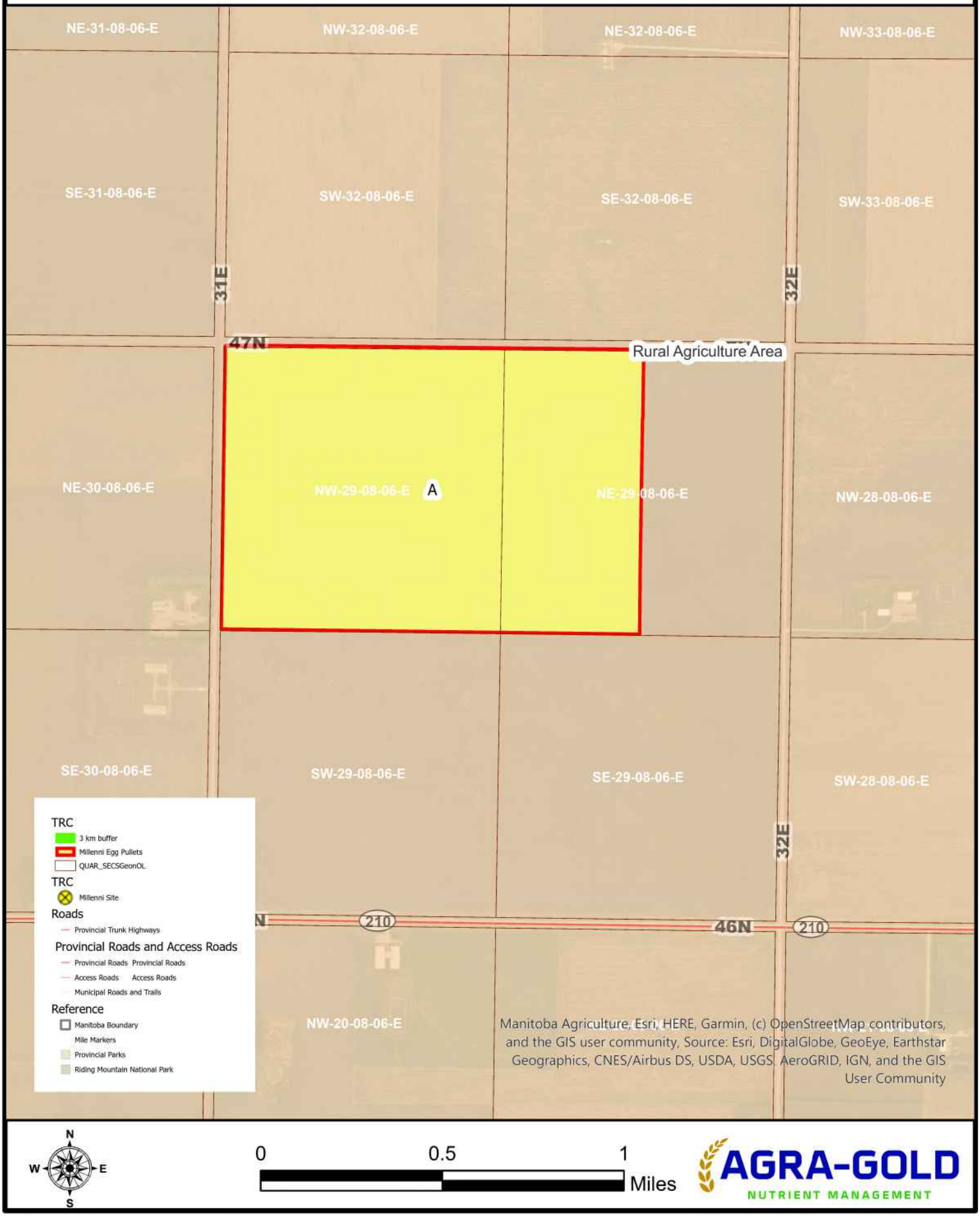


N W E S

0 0.5 1 2 3 Miles

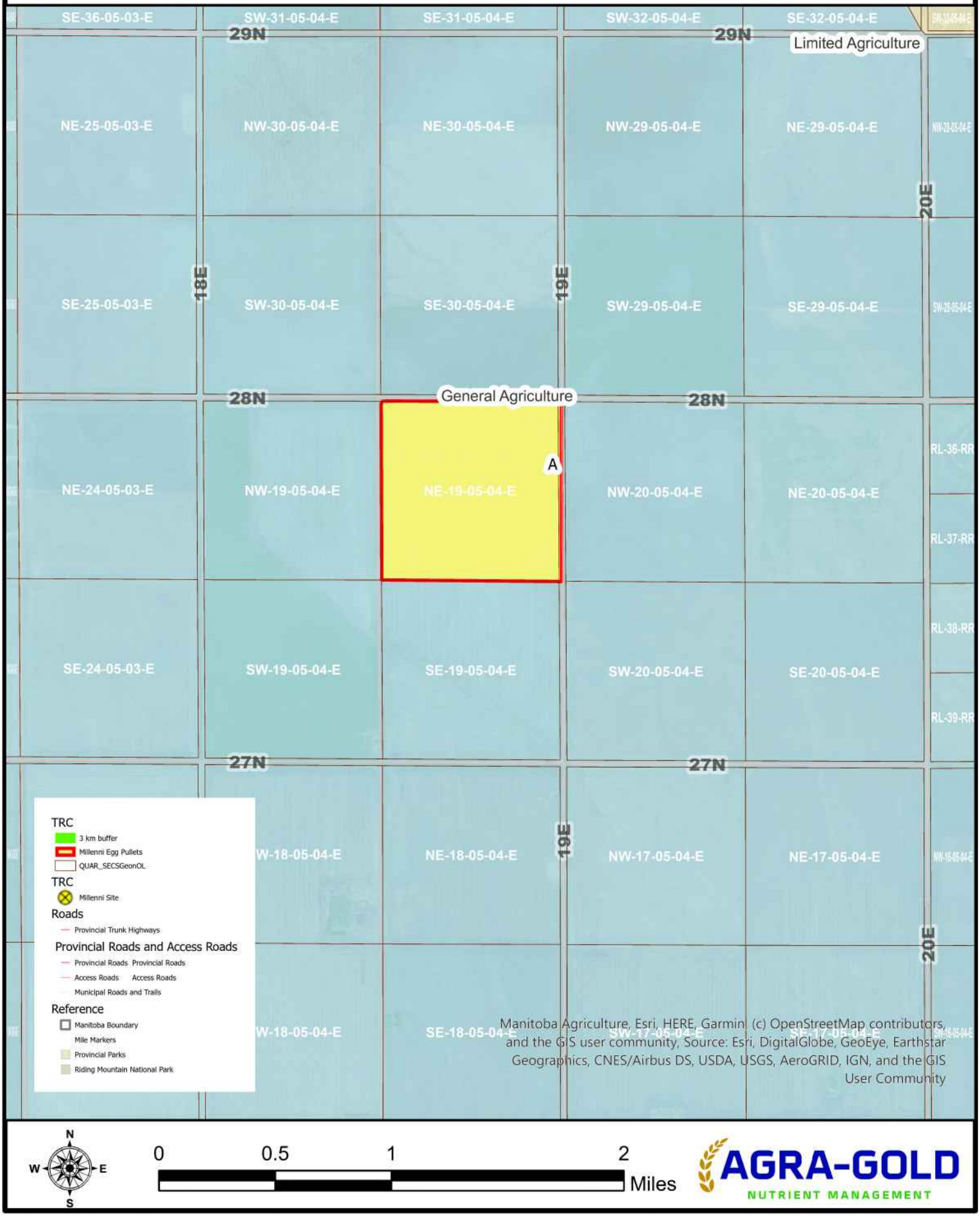
AGRA-GOLD NUTRIENT MANAGEMENT

Millenni Egg Pullets: Land Use - Dev. Plan

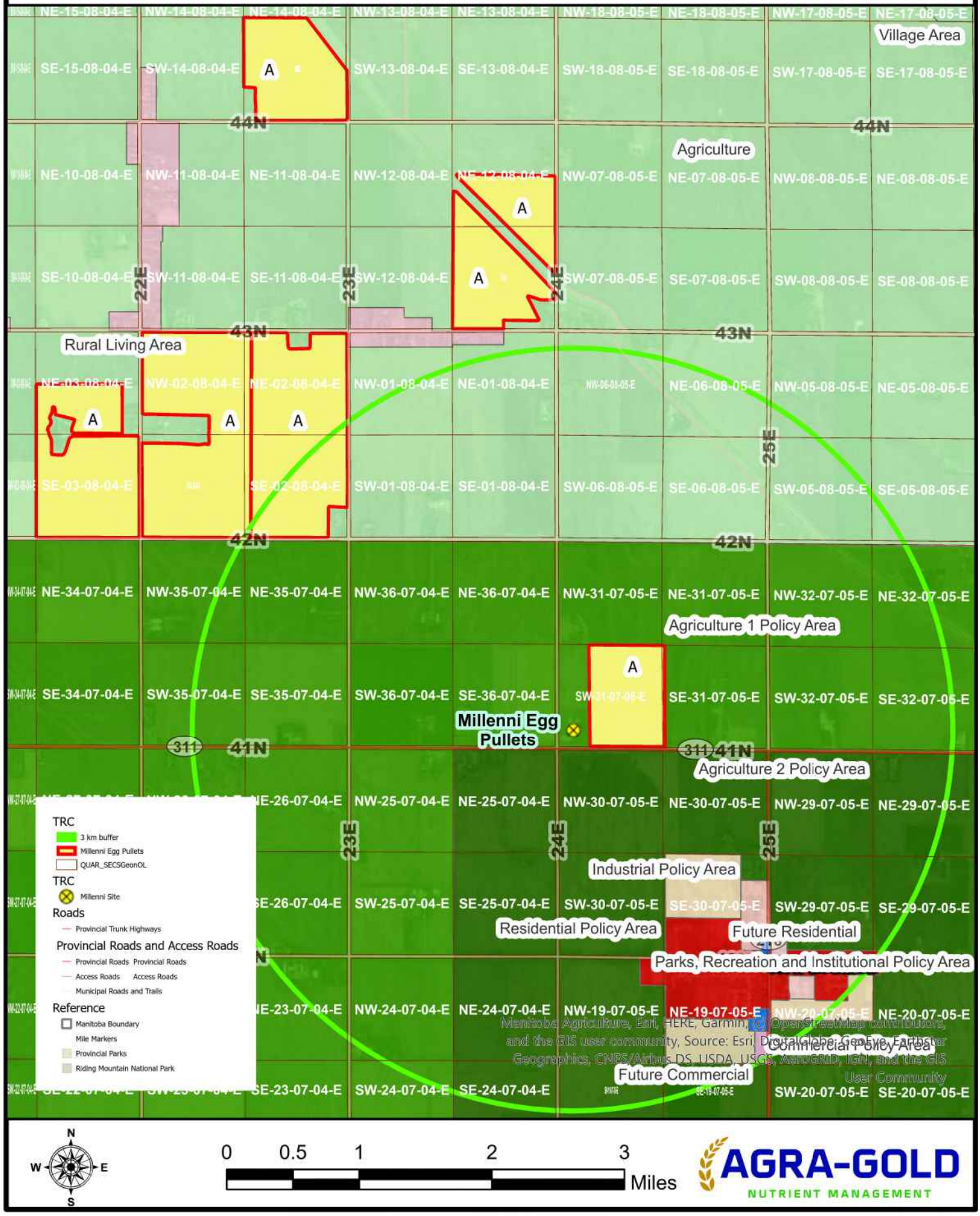


AGRA-GOLD
NUTRIENT MANAGEMENT

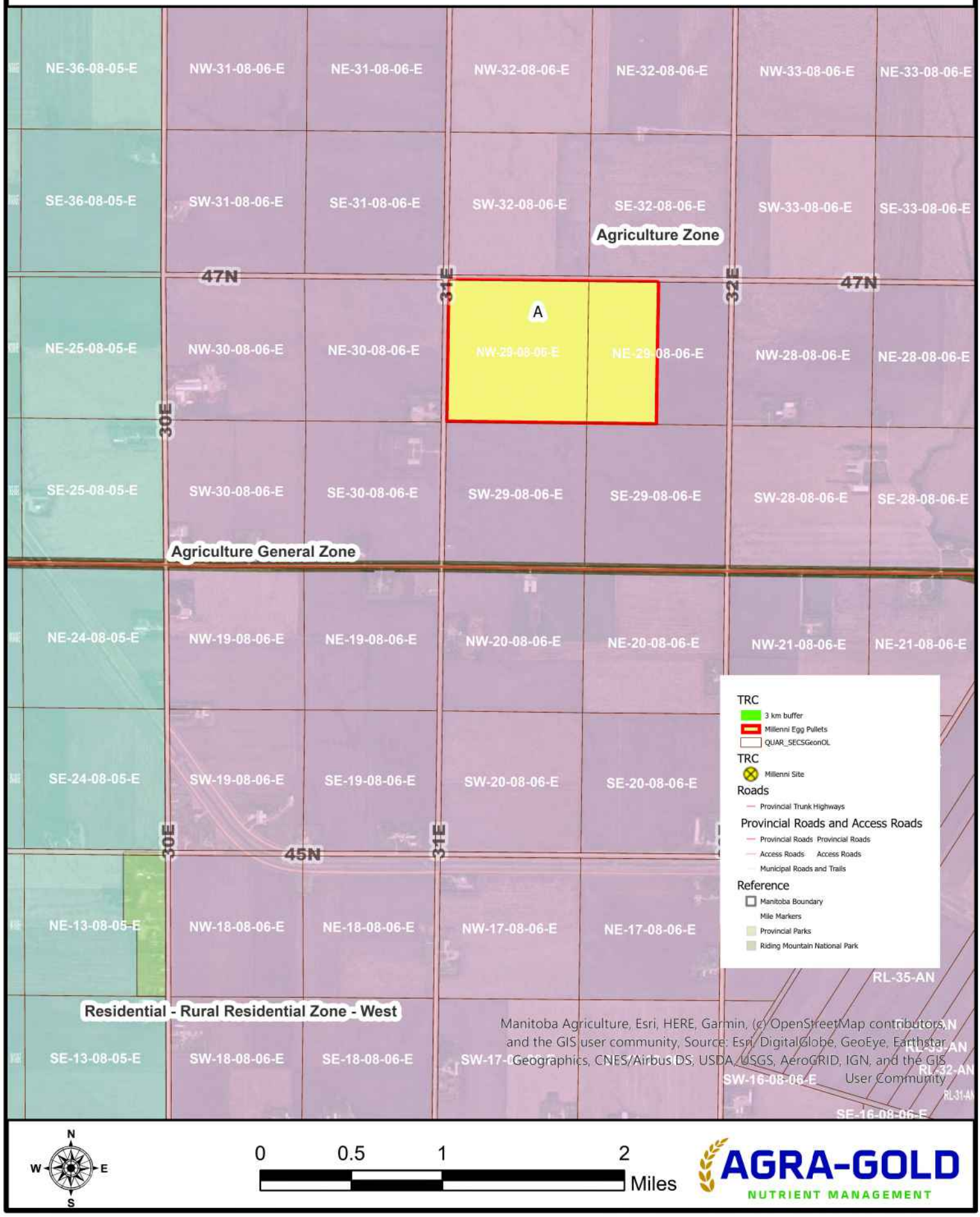
Millenni Egg Pullets: Land Use - Dev. Plan



Millenni Egg Pullets: Land Use - Dev. Plan

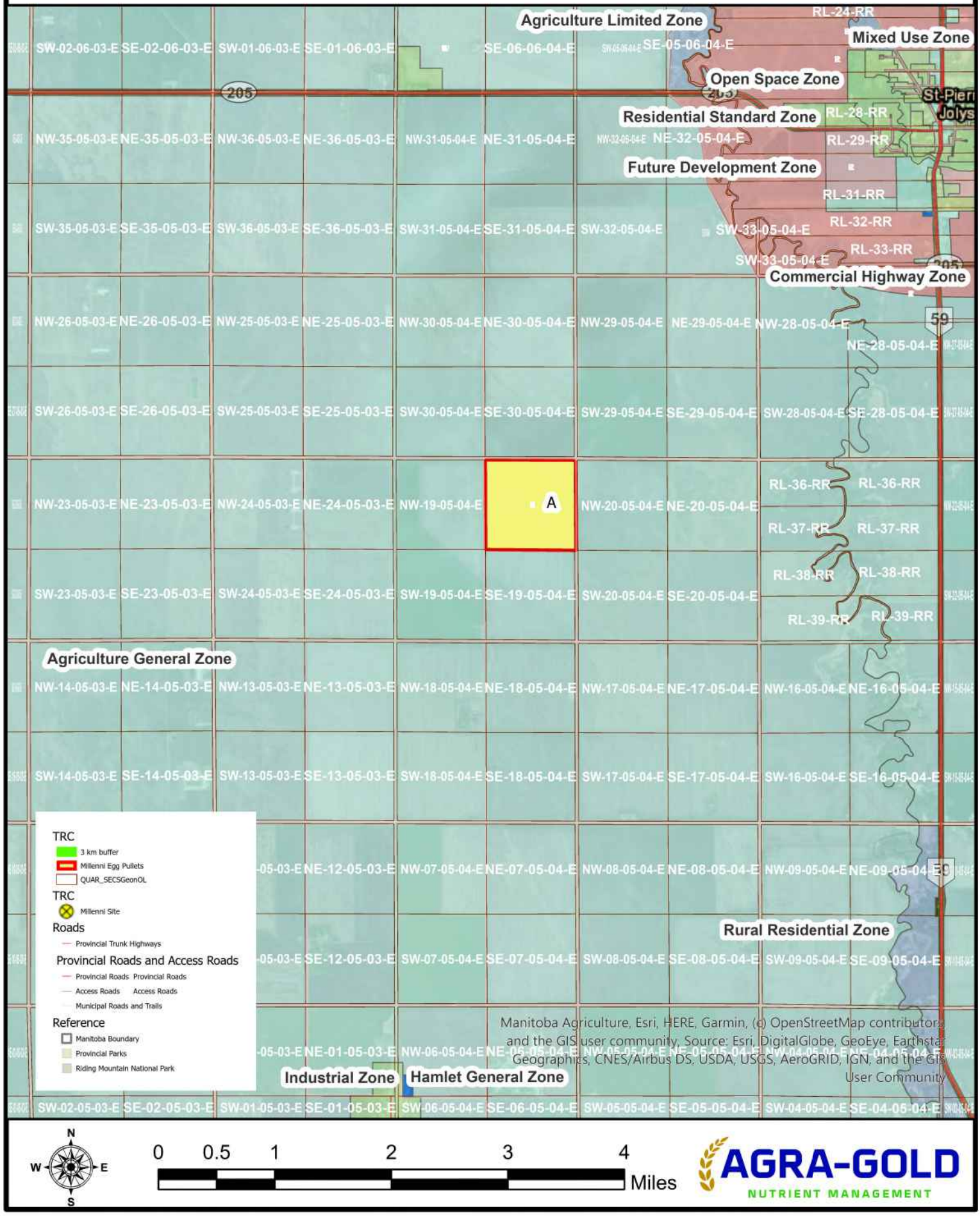


Millenni Egg Pullets: Land Use - Zoning

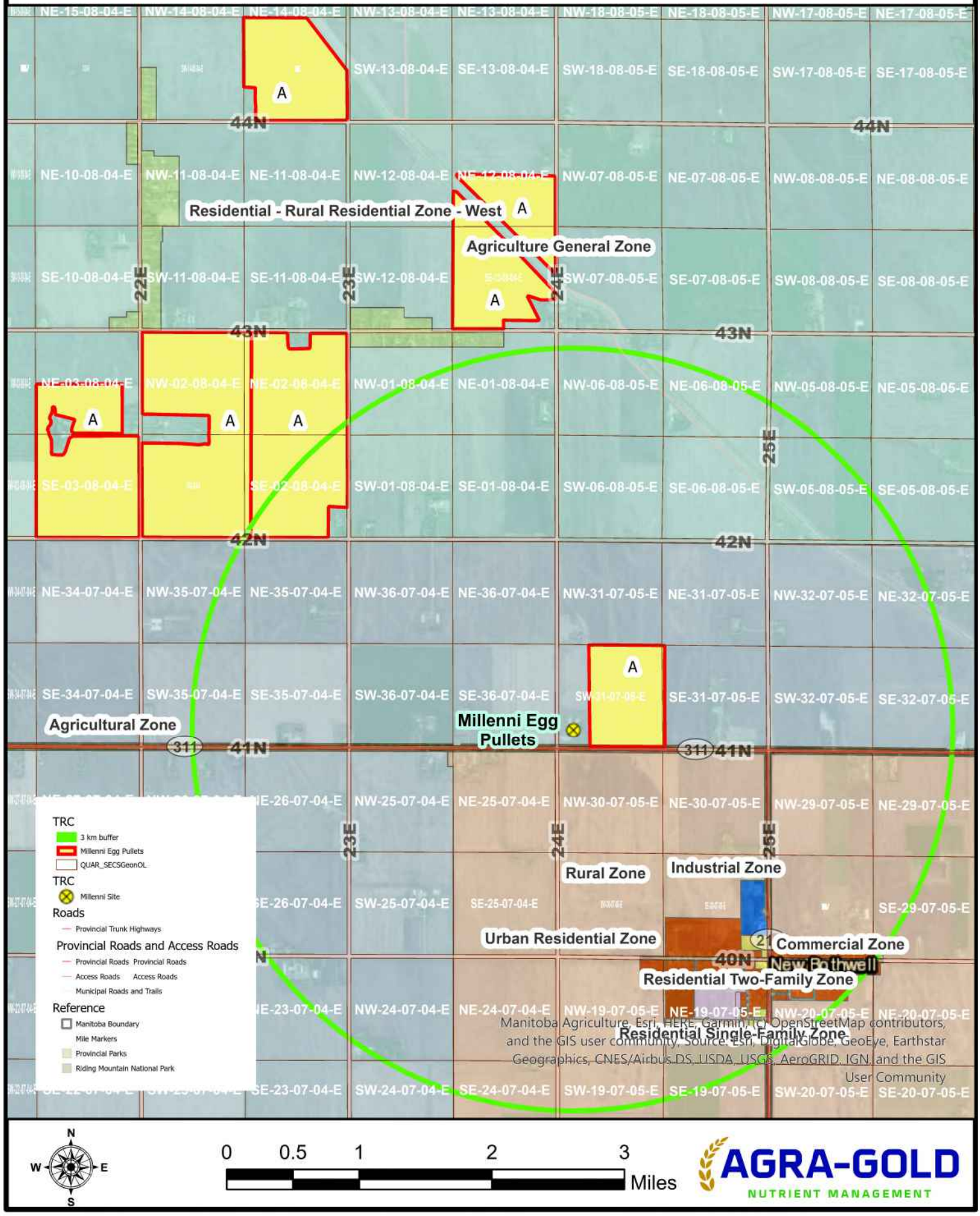


AGRA-GOLD
NUTRIENT MANAGEMENT

Millenni Egg Pullets: Land Use - Zoning



Millenni Egg Pullets: Land Use - Zoning

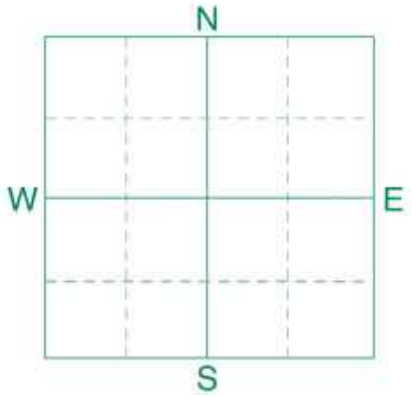


SHUR-GRO Farm Services

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

SOIL TEST REPORT

FIELD ID 1
SAMPLE ID **UGCB19**
FIELD NAME **Chicken Barn**
COUNTY
TWP RANGE **SW-**
SECTION QTR **31-7-5E** ACRES **150**



SUBMITTED FOR:
Uli Gehrer

SUBMITTED BY: **SO7394**
SHUR-GRO-NIVERVILLE
21039 PREFONTAINE RD
PO BOX 642
NIVERVILLE, MB R0A 1E0

REF # **2704612** BOX # **1380**
LAB # **NW72164**

Date Sampled
Date Received **09/19/2019**
Date Reported **9/30/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" 6-24" Nitrate		**********	**********	**********	****
0-24" Phosphorus	Olsen 21 ppm	**********	**********	**********	**********
Potassium	340 ppm	**********	**********	**********	**********
0-24" Chloride	540 lb/ac	**********	**********	**********	**********
0-6" Sulfur	46 lb/ac	**********	**********	**********	**********
6-24" Sulfur	360 +lb/ac	**********	**********	**********	**********
Boron	2.4 ppm	**********	**********	**********	**********
Zinc	1.09 ppm	**********	**********	**********	
Iron	19.5 ppm	**********	**********	**********	**********
Manganese	1.9 ppm	**********	**********	**********	
Copper	1.88 ppm	**********	**********	**********	**
Magnesium	2036 ppm	**********	**********	**********	**********
Calcium	5841 ppm	**********	**********	**********	**********
Sodium	214 ppm	**********	**********	**********	**********
Org.Matter	4.9 %	**********	**********	**********	*
Carbonate(CCE)	8.0 %	**********	**********	**********	****
0-6" Sol. Salts	0.58 mmho/cm	**********	**********	**	
6-24" Sol. Salts	1.31 mmho/cm	**********	**********	**********	***

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
Canola-bu			Soybeans			Corn-Grain		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
40 BU			40 BU			160 BU		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
Band/Maint.			Band/Maint.			Band/Maint.		
LB/ACRE		APPLICATION	LB/ACRE		APPLICATION	LB/ACRE		APPLICATION
N	29		N	***		N	81	
P_2O_5	36	Band *	P_2O_5	30	Band *	P_2O_5	59	Band *
K_2O	0		K_2O	0		K_2O	10	Band (2x2) *
Cl		Not Available	Cl	0		Cl		Not Available
S	10	Band	S	0		S	0	
B	0		B	0		B	0	
Zn	0		Zn	0		Zn	0	
Fe	0		Fe	0		Fe	0	
Mn	0		Mn	0		Mn	0	
Cu	0		Cu	0		Cu	0	
Mg	0		Mg	0		Mg	0	
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" 8.5 6-24" 8.6		48.0 meq	(65-75) 60.9	(15-20) 35.4	(1-7) 1.8	(0-5) 1.9	(0-5) 0.0

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. Crop Removal: P2O5 = 36 K2O = 18 AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.

Crop 2: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. The risk of the development of iron chlorosis on soybeans on this field is very high based on the salt and carbonate levels. Crop Removal: P2O5 = 30 K2O = 47 AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.

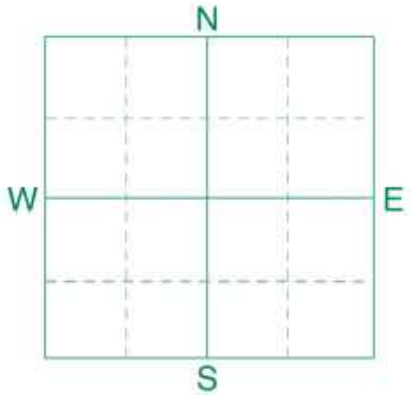
Crop 3: ** Chloride yield data is limited for this crop. * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 59 K2O = 37 AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.

SHUR-GRO Farm Services

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

SOIL TEST REPORT

FIELD ID 2
SAMPLE ID **UGNB919**
FIELD NAME **Neufeld**
COUNTY
TWP RANGE
SECTION QTR **E-2-8-4E** ACRES **285**
PREV. CROP **Wheat-Spring**



SUBMITTED FOR:
Uli Gehrer

SUBMITTED BY: **SO7394**
SHUR-GRO-NIVERVILLE
21039 PREFONTAINE RD
PO BOX 642
NIVERVILLE, MB **R0A 1E0**

REF # **2704678** BOX # **1324**
LAB # **NW72177**

Date Sampled
Date Received **09/19/2019**
Date Reported **9/30/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" 6-24" Nitrate	18 lb/ac 54 lb/ac	**********	**********	**	
0-24'' Nitrate	72 lb/ac				
Olsen Phosphorus	11 ppm	**********	**********	******	
Potassium	282 ppm	**********	**********	**********	**********
0-24'' Chloride	264 lb/ac	**********	**********	**********	**********
0-6" Sulfur	52 lb/ac	**********	**********	**********	**********
6-24" Sulfur	360 +lb/ac	**********	**********	**********	**********
Boron	1.9 ppm	**********	**********	**********	**********
Zinc	2.05 ppm	**********	**********	**********	**********
Iron	17.0 ppm	**********	**********	**********	**********
Manganese	2.0 ppm	**********	**********	******	
Copper	1.93 ppm	**********	**********	********	**
Magnesium	1764 ppm	**********	**********	**********	**********
Calcium	5567 ppm	**********	**********	**********	**********
Sodium	91 ppm	**********	**********	**	
Org.Matter	4.6 %	**********	**********	******	
Carbonate(CCE)	7.4 %	**********	**********	**********	***
0-6" Sol. Salts	0.65 mmho/cm	**********	**********	****	
6-24" Sol. Salts	1.55 mmho/cm	**********	**********	**********	****

1st Crop Choice		
Canola-bu		
YIELD GOAL		
40 BU		
SUGGESTED GUIDELINES		
Band/Maint.		
LB/ACRE		APPLICATION
N	68	
P_2O_5	36	Band *
K_2O	0	
Cl		Not Available
S	10	Band
B	0	
Zn	0	
Fe	0	
Mn	0	
Cu	0	
Mg	0	
Lime		

2nd Crop Choice		
Soybeans		
YIELD GOAL		
40 BU		
SUGGESTED GUIDELINES		
Band/Maint.		
LB/ACRE		APPLICATION
N	***	
P_2O_5	30	Band *
K_2O	0	
Cl	0	
S	0	
B	0	
Zn	0	
Fe	0	
Mn	0	
Cu	0	
Mg	0	
Lime		

3rd Crop Choice		
Corn-Grain		
YIELD GOAL		
160 BU		
SUGGESTED GUIDELINES		
Band/Maint.		
LB/ACRE		APPLICATION
N	120	
P_2O_5	59	Band *
K_2O	10	Band (2x2) *
Cl		Not Available
S	0	
B	0	
Zn	0	
Fe	0	
Mn	0	
Cu	0	
Mg	0	
Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" 8.3 6-24" 8.3		43.7 meq	(65-75) 63.8	(15-20) 33.7	(1-7) 1.7	(0-5) 0.9	(0-5) 0.0

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. Crop Removal: P2O5 = 36 K2O = 18 AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.

Crop 2: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. The risk of the development of iron chlorosis on soybeans on this field is very high based on the salt and carbonate levels. Crop Removal: P2O5 = 30 K2O = 47 AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.

Crop 3: ** 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. Crop Removal: P2O5 = 59 K2O = 37 AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.

SHUR-GRO Farm Services

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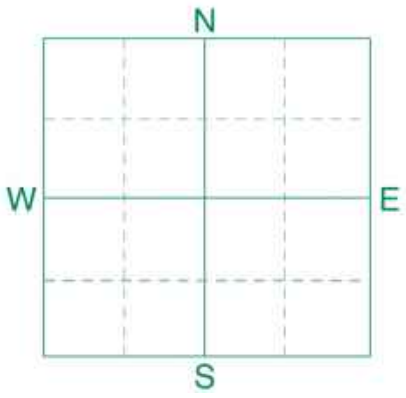
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID 3
SAMPLE ID **UGNB82019**
FIELD NAME **West 284**
COUNTY
TWP RANGE
SECTION QTR **W-2-8-4E** ACRES **310**
PREV. CROP **Soybeans**



SUBMITTED FOR:
Uli Gehrer

SUBMITTED BY: **SO7394**
SHUR-GRO-NIVERVILLE
21039 PREFONTAINE RD
PO BOX 642
NIVERVILLE, MB R0A 1E0

REF # **2756934** BOX # **4096**
LAB # **NW101796**

Date Sampled | Date Received **10/18/2019** | Date Reported **10/28/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" 6-24"		******	******	******	******
0-24'' Nitrate					
Olsen Phosphorus	35 ppm	******	******	******	******
Potassium	334 ppm	******	******	******	******
0-24'' Chloride	44 lb/ac	******	******	*******	
0-6" 6-24" Sulfur	10 lb/ac 60 lb/ac	******** ******	*** ******	******	******
Boron	2.1 ppm	******	******	******	******
Zinc	1.70 ppm	******	******	******	****
Iron	18.8 ppm	******	******	******	******
Manganese	2.4 ppm	******	******	*******	
Copper	1.78 ppm	******	******	*******	
Magnesium	1698 ppm	******	******	******	******
Calcium	6492 ppm	******	******	******	******
Sodium	58 ppm	********	***		
Org.Matter	5.5 %	******	******	******	****
Carbonate(CCE)	4.7 %	******	******	*****	
0-6" 6-24" Sol. Salts	0.65 mmho/cm 0.55 mmho/cm	****** ******	****** *******	**** *	

1st Crop Choice		
Canola-bu		
YIELD GOAL		
40 BU		
SUGGESTED GUIDELINES		
Band/Maint.		
LB/ACRE		APPLICATION
N	0	
P_2O_5	36	Band *
K_2O	0	
Cl		Not Available
S	17	Band
B	0	
Zn	0	
Fe	0	
Mn	0	
Cu	0	
Mg	0	
Lime		

2nd Crop Choice		
Corn-Grain		
YIELD GOAL		
160 BU		
SUGGESTED GUIDELINES		
Band/Maint.		
LB/ACRE		APPLICATION
N	10	
P_2O_5	59	Band *
K_2O	10	Band (2x2) *
Cl		Not Available
S	7	Band (Trial)
B	0	
Zn	0	
Fe	0	
Mn	0	
Cu	0	
Mg	0	
Lime		

3rd Crop Choice		
Wheat-Spring		
YIELD GOAL		
60 BU		
SUGGESTED GUIDELINES		
Band/Maint.		
LB/ACRE		APPLICATION
N	10	
P_2O_5	38	Band *
K_2O	10	Band (Starter)*
Cl	0	
S	7	Band (Trial)
B	0	
Zn	0	
Fe	0	
Mn	0	
Cu	0	
Mg	0	
Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" 8.1 6-24" 8.4		47.7 meq	(65-75) 68.0	(15-20) 29.7	(1-7) 1.8	(0-5) 0.5	(0-5) 0.0

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 * Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 36 K2O = 18 AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.

Crop 2: ** Chloride yield data is limited for this crop. * Caution: Seed Placed Fertilizer Can Cause Injury * Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 59 K2O = 37 AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.

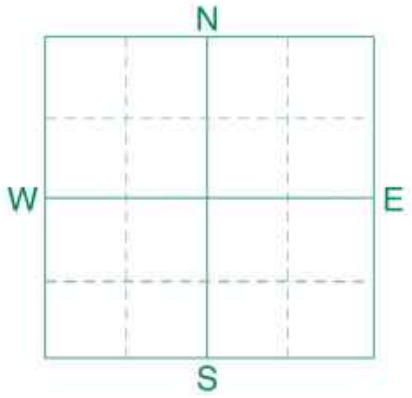
Crop 3: * Caution: Seed Placed Fertilizer Can Cause Injury * Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.

SHUR-GRO Farm Services

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

SOIL TEST REPORT

FIELD ID 4
SAMPLE ID **UGNB72019**
FIELD NAME **Walter Yard**
COUNTY
TWP RANGE
SECTION QTR **SE-3-8-4E** ACRES **210**
PREV. CROP **Soybeans**



SUBMITTED FOR:
Uli Gehrer

SUBMITTED BY: **SO7394**
SHUR-GRO-NIVERVILLE
21039 PREFONTAINE RD
PO BOX 642
NIVERVILLE, MB R0A 1E0

REF # **2786534** BOX # **5353**
LAB # **NW117686**

Date Sampled
Date Received **10/31/2019**
Date Reported **11/4/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" 12 lb/ac 6-24" 18 lb/ac 0-24'' 30 lb/ac Nitrate		******			
Olsen Phosphorus	11 ppm	**********	**********	**********	
Potassium	241 ppm	**********	**********	**********	**********
0-24'' 24 lb/ac Chloride		**********	**********		
0-6" 56 lb/ac 6-24" 216 lb/ac Sulfur		**********	**********	**********	**********
Boron	2.3 ppm	**********	**********	**********	**********
Zinc	0.53 ppm	**********	**********		
Iron	13.8 ppm	**********	**********	**********	**********
Manganese	1.6 ppm	**********	**********	**********	
Copper	1.39 ppm	**********	**********	**********	**********
Magnesium	2015 ppm	**********	**********	**********	**********
Calcium	6176 ppm	**********	**********	**********	**********
Sodium	65 ppm	**********	**********		
Org.Matter	5.1 %	**********	**********	**********	**********
Carbonate(CCE)	10.2 %	**********	**********	**********	**********
0-6" 0.48 mmho/cm 6-24" 0.57 mmho/cm Sol. Salts		**********	**********		

1st Crop Choice		
Canola-bu		
YIELD GOAL		
40 BU		
SUGGESTED GUIDELINES		
Band/Maint.		
LB/ACRE		APPLICATION
N	95	
P_2O_5	36	Band *
K_2O	18	Band *
Cl		Not Available
S	10	Band
B	0	
Zn	1	Band
Fe	0	
Mn	0	
Cu	0	
Mg	0	
Lime		

2nd Crop Choice		
Soybeans		
YIELD GOAL		
40 BU		
SUGGESTED GUIDELINES		
Band/Maint.		
LB/ACRE		APPLICATION
N	***	
P_2O_5	30	Band *
K_2O	47	Band *
Cl	0	
S	0	
B	0	
Zn	1	Band
Fe	0	
Mn	0	
Cu	0	
Mg	0	
Lime		

3rd Crop Choice		
Wheat-Spring		
YIELD GOAL		
60 BU		
SUGGESTED GUIDELINES		
Band/Maint.		
LB/ACRE		APPLICATION
N	117	
P_2O_5	38	Band *
K_2O	23	Band *
Cl	16	Broadcast
S	0	
B	0	
Zn	0	
Fe	0	
Mn	0	
Cu	0	
Mg	0	
Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" 8.3 6-24" 8.7		48.6 meq	(65-75) 63.6	(15-20) 34.6	(1-7) 1.3	(0-5) 0.6	(0-5) 0.0

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 * Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 36 K2O = 18 AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.

Crop 2: * Caution: Seed Placed Fertilizer Can Cause Injury * Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Many crops may respond to a starter application of P & K even on high soil tests. The risk of the development of iron chlorosis on soybeans on this field is high based on the salt and carbonate levels. Crop Removal: P2O5 = 30 K2O = 47 AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them. Soybeans may respond to nitrogen on fields testing less than 60 lb/ac with a limited soybean history.

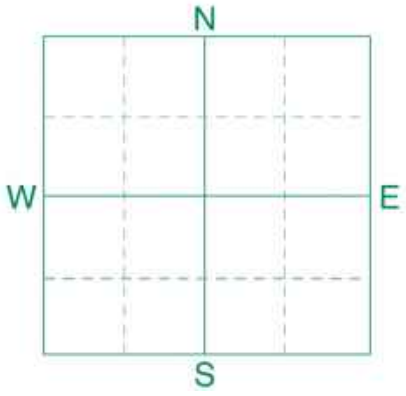
Crop 3: 35 lbs of 0-0-60 = 16 lbs of Chloride" * Caution: Seed Placed Fertilizer Can Cause Injury * Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.

SHUR-GRO Farm Services

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

SOIL TEST REPORT

FIELD ID 5
SAMPLE ID **SVS2019**
FIELD NAME **Voth South**
COUNTY
TWP RANGE
SECTION QTR **SE-12-8-4E** ACRES **130**
PREV. CROP **Soybeans**



SUBMITTED FOR:
Steve Voth

SUBMITTED BY: **SO7394**
SHUR-GRO-NIVERVILLE
21039 PREFONTAINE RD
PO BOX 642
NIVERVILLE, MB R0A 1E0

REF # **2804415** BOX # **1102**
LAB # **NW135818**

Date Sampled | Date Received **11/07/2019** | Date Reported **11/12/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" 6-24"	10 lb/ac 21 lb/ac	******			
0-24'' Nitrate	31 lb/ac				
Olsen Phosphorus	4 ppm	******			
Potassium	270 ppm	******	******	******	******
0-24'' Chloride	20 lb/ac	********	**		
0-6" 6-24" Sulfur	10 lb/ac 120 lb/ac	******** ******	*** ******	******	******
Boron	1.5 ppm	******	******	******	******
Zinc	0.53 ppm	******	******		
Iron	18.3 ppm	******	******	******	******
Manganese	1.4 ppm	******	********	**	
Copper	1.85 ppm	******	******	*******	*
Magnesium	1783 ppm	******	******	******	******
Calcium	5861 ppm	******	******	******	******
Sodium	87 ppm	******	*******	*	
Org.Matter	3.6 %	******	********	**	
Carbonate(CCE)	7.4 %	******	******	********	***
0-6" 6-24" Sol. Salts	0.3 mmho/cm 0.33 mmho/cm	******* ********	* **		

1st Crop Choice		
Canola-bu		
YIELD GOAL		
44 BU		
SUGGESTED GUIDELINES		
Band/Maint.		
LB/ACRE		APPLICATION
N	108	
P_2O_5	46	Band *
K_2O	0	
Cl		Not Available
S	17	Band
B	0	
Zn	1	Band
Fe	0	
Mn	0	
Cu	0	
Mg	0	
Lime		

2nd Crop Choice		
Corn-Grain		
YIELD GOAL		
160 BU		
SUGGESTED GUIDELINES		
Band/Maint.		
LB/ACRE		APPLICATION
N	131	
P_2O_5	73	Band *
K_2O	10	Band (2x2) *
Cl		Not Available
S	0	
B	0	
Zn	2	Band
Fe	0	
Mn	0	
Cu	0	
Mg	0	
Lime		

3rd Crop Choice		
Wheat-Spring		
YIELD GOAL		
70 BU		
SUGGESTED GUIDELINES		
Band/Maint.		
LB/ACRE		APPLICATION
N	143	
P_2O_5	50	Band *
K_2O	10	Band (Starter)*
Cl	20	Broadcast
S	0	
B	0	
Zn	0	
Fe	0	
Mn	0	
Cu	0	
Mg	0	
Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" 8.4 6-24" 8.6		45.2 meq	(65-75) 64.8	(15-20) 32.8	(1-7) 1.5	(0-5) 0.8	(0-5) 0.0

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 * Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 40 K2O = 20 AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.

Crop 2: ** Chloride yield data is limited for this crop. * Caution: Seed Placed Fertilizer Can Cause Injury * Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 59 K2O = 37 AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.

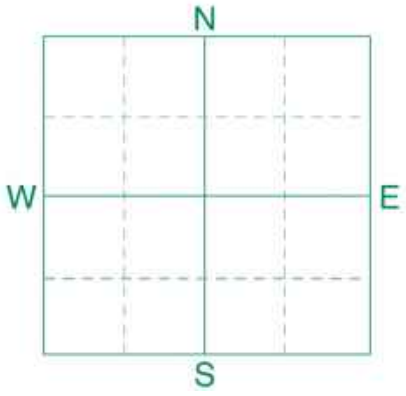
Crop 3: 44 lbs of 0-0-60 = 20 lbs of Chloride" * Caution: Seed Placed Fertilizer Can Cause Injury * Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 44 K2O = 26 AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.

SHUR-GRO Farm Services

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

SOIL TEST REPORT

FIELD ID 6
SAMPLE ID **SVN2019**
FIELD NAME **Voth North**
COUNTY
TWP RANGE
SECTION QTR **NE-12-8-4E** ACRES **75**
PREV. CROP **Soybeans**



SUBMITTED FOR:
Steve Voth

SUBMITTED BY: **SO7394**
SHUR-GRO-NIVERVILLE
21039 PREFONTAINE RD
PO BOX 642
NIVERVILLE, MB R0A 1E0

REF # **2804416** BOX # **1138**
LAB # **NW135819**

Date Sampled | Date Received **11/07/2019** | Date Reported **11/12/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" 13 lb/ac 6-24" 18 lb/ac 0-24'' 31 lb/ac Nitrate		******			
Olsen Phosphorus	4 ppm	******			
Potassium	223 ppm	******	******	******	******
0-24'' Chloride	4 lb/ac	*			
0-6" 10 lb/ac 6-24" 24 lb/ac Sulfur		******** ******	*** ********	*****	
Boron	1.6 ppm	******	******	******	******
Zinc	0.32 ppm	******			
Iron	9.4 ppm	******	******	******	******
Manganese	1.1 ppm	******	******		
Copper	1.16 ppm	******	******	*******	*
Magnesium	1677 ppm	******	******	******	******
Calcium	6314 ppm	******	******	******	******
Sodium	46 ppm	*******	*		
Org.Matter	4.4 %	******	******	******	
Carbonate(CCE)	8.1 %	******	******	******	*****
0-6" 0.51 mmho/cm 6-24" 0.64 mmho/cm Sol. Salts		******** ********	****** *********	***	

1st Crop Choice		
Canola-bu		
YIELD GOAL		
44 BU		
SUGGESTED GUIDELINES		
Band/Maint.		
LB/ACRE		APPLICATION
N	108	
P_2O_5	46	Band *
K_2O	20	Band *
Cl		Not Available
S	17	Band
B	0	
Zn	1	Band
Fe	0	
Mn	0	
Cu	0	
Mg	0	
Lime		

2nd Crop Choice		
Corn-Grain		
YIELD GOAL		
160 BU		
SUGGESTED GUIDELINES		
Band/Maint.		
LB/ACRE		APPLICATION
N	131	
P_2O_5	73	Band *
K_2O	37	Band *
Cl		Not Available
S	7	Band (Trial)
B	0	
Zn	2	Band
Fe	0	
Mn	0	
Cu	0	
Mg	0	
Lime		

3rd Crop Choice		
Wheat-Spring		
YIELD GOAL		
70 BU		
SUGGESTED GUIDELINES		
Band/Maint.		
LB/ACRE		APPLICATION
N	143	
P_2O_5	50	Band *
K_2O	26	Band *
Cl	36	Broadcast
S	7	Band (Trial)
B	0	
Zn	0	
Fe	0	
Mn	0	
Cu	0	
Mg	0	
Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" 8.4 6-24" 8.6		46.3 meq	(65-75) 68.2	(15-20) 30.2	(1-7) 1.2	(0-5) 0.4	(0-5) 0.0

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 * Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 40 K2O = 20 AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.

Crop 2: ** Chloride yield data is limited for this crop. * Caution: Seed Placed Fertilizer Can Cause Injury * Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 59 K2O = 37 AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.

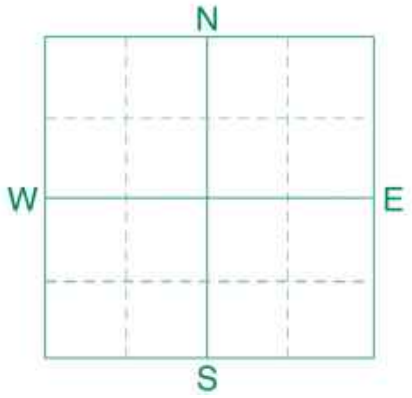
Crop 3: 79 lbs of 0-0-60 = 36 lbs of Chloride" * Caution: Seed Placed Fertilizer Can Cause Injury * Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 44 K2O = 26 AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.

SHUR-GRO Farm Services

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

SOIL TEST REPORT

FIELD ID 7
SAMPLE ID **UGNB102019**
FIELD NAME **Plett**
COUNTY
TWP RANGE
SECTION QTR **SE-14-8-4E** ACRES **140**
PREV. CROP **Soybeans**



SUBMITTED FOR:
Uli Gehrer

SUBMITTED BY: **SO7394**
SHUR-GRO-NIVERVILLE
21039 PREFONTAINE RD
PO BOX 642
NIVERVILLE, MB **R0A 1E0**

REF # **2786538** BOX # **5322**
LAB # **NW117687**

Date Sampled
Date Received **10/31/2019**
Date Reported **11/4/2019**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" 6-24" Nitrate	25 lb/ac 18 lb/ac	********			
0-24'' Nitrate	43 lb/ac				
Olsen Phosphorus	9 ppm	**********			
Potassium	324 ppm	**********	**********	**********	**********
0-24'' Chloride	68 lb/ac	**********	**********	**********	**********
0-6" Sulfur	26 lb/ac	**********	**********		
6-24" Sulfur	360 +lb/ac	**********	**********	**********	**********
Boron	1.7 ppm	**********	**********	**********	**********
Zinc	0.64 ppm	**********	**********		
Iron	15.9 ppm	**********	**********	**********	**********
Manganese	1.4 ppm	**********	**********		
Copper	1.36 ppm	**********	**********	**********	
Magnesium	1904 ppm	**********	**********	**********	**********
Calcium	6147 ppm	**********	**********	**********	**********
Sodium	70 ppm	**********	**********		
Org.Matter	5.1 %	**********	**********	**********	**********
Carbonate(CCE)	5.7 %	**********	**********	**********	**********
0-6" Sol. Salts	0.46 mmho/cm	**********	**********		
6-24" Sol. Salts	0.87 mmho/cm	**********	**********	**********	**********

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
Canola-bu			Soybeans			Wheat-Spring		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
40 BU			40 BU			60 BU		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
Band/Maint.			Band/Maint.			Band/Maint.		
LB/ACRE		APPLICATION	LB/ACRE		APPLICATION	LB/ACRE		APPLICATION
N	82		N	***		N	104	
P_2O_5	36	Band *	P_2O_5	30	Band *	P_2O_5	38	Band *
K_2O	0		K_2O	0		K_2O	10	Band (Starter)*
Cl		Not Available	Cl	0		Cl	0	
S	15	Band	S	5	Band (Trial)	S	0	
B	0		B	0		B	0	
Zn	0		Zn	0		Zn	0	
Fe	0		Fe	0		Fe	0	
Mn	0		Mn	0		Mn	0	
Cu	0		Cu	0		Cu	0	
Mg	0		Mg	0		Mg	0	
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" 8.4 6-24" 8.5		47.7 meq	(65-75) 64.4	(15-20) 33.2	(1-7) 1.7	(0-5) 0.6	(0-5) 0.0

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 * Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 36 K2O = 18 AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.

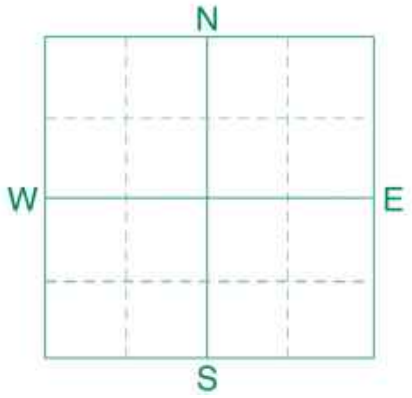
Crop 2: * Caution: Seed Placed Fertilizer Can Cause Injury * Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Many crops may respond to a starter application of P & K even on high soil tests. The risk of the development of iron chlorosis on soybeans on this field is high based on the salt and carbonate levels. Crop Removal: P2O5 = 30 K2O = 47 AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them. Soybeans may respond to nitrogen on fields testing less than 60 lb/ac with a limited soybean history.

Crop 3: * Caution: Seed Placed Fertilizer Can Cause Injury * Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.

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

SOIL TEST REPORT

FIELD ID 8
SAMPLE ID **UGL118**
FIELD NAME **Landmark**
COUNTY
TWP RANGE **NW-**
SECTION QTR **29-8-6E** ACRES **250**



SUBMITTED FOR:
Uli Gehrer

SUBMITTED BY: **SO7394**
SHUR-GRO-NIVERVILLE
21039 PREFONTAINE RD
PO BOX 642
NIVERVILLE, MB R0A 1E0

REF # **2345195** BOX # **1639**
LAB # **NW52688**

Date Sampled
Date Received **08/31/2018**
Date Reported **9/6/2018**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" 6-24" Nitrate	12 lb/ac 21 lb/ac	******			
0-24'' Nitrate	33 lb/ac	******			
Olsen Phosphorus	15 ppm	******	******	******	******
Potassium	301 ppm	******	******	******	******
0-24'' Chloride	16 lb/ac	******			
0-6" Sulfur	112 lb/ac	******	******	******	******
6-24" Sulfur	222 lb/ac	******	******	******	******
Boron	1.5 ppm	******	******	******	*****
Zinc	0.77 ppm	******	******	**	
Iron	27.0 ppm	******	******	******	******
Manganese	1.0 ppm	******	******		
Copper	1.54 ppm	******	******	******	*
Magnesium	1223 ppm	******	******	******	******
Calcium	7783 ppm	******	******	******	******
Sodium	41 ppm	******			
Org.Matter	8.0 %	******	******	******	******
Carbonate(CCE)	2.4 %	******	******		
0-6" Sol. Salts	0.81 mmho/cm	******	******	******	
6-24" Sol. Salts	0.77 mmho/cm	******	******	******	

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
Canola-bu			Soybeans			Corn-Grain		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
40 BU			40 BU			180 BU		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
Broadcast			Broadcast			Broadcast		
LB/ACRE		APPLICATION	LB/ACRE		APPLICATION	LB/ACRE		APPLICATION
N	107		N	***		N	183	
P_2O_5	44	Broadcast	P_2O_5	32	Broadcast	P_2O_5	74	Broadcast
K_2O	0		K_2O	0		K_2O	10	Band (2x2) *
Cl		Not Available	Cl	0		Cl		Not Available
S	10	Broadcast	S	0		S	0	
B	0		B	0		B	0	
Zn	2	Broadcast	Zn	2	Broadcast	Zn	5	Broadcast
Fe	0		Fe	0		Fe	0	
Mn	0		Mn	0		Mn	0	
Cu	0		Cu	0		Cu	0	
Mg	0		Mg	0		Mg	0	
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" 8.0 6-24" 8.2		50.1 meq	(65-75) 77.7	(15-20) 20.4	(1-7) 1.5	(0-5) 0.4	(0-5)

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

Crop 1: ** Chloride yield data is limited for this crop. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 36 K2O = 18 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: Many crops may respond to a starter application of P & K even on high soil tests. The risk of the development of iron chlorosis on soybeans on this field is moderate based on the salt and carbonate levels. Crop Removal: P2O5 = 35 K2O = 60 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years. Soybeans may respond to nitrogen on fields testing less than 60 lb/ac with a limited soybean history.

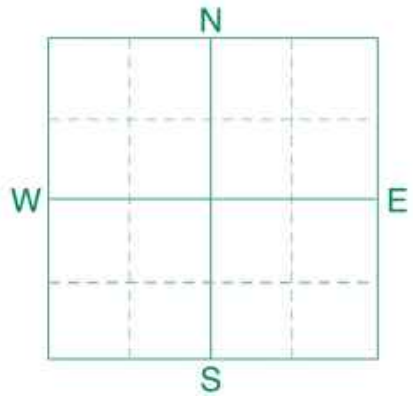
Crop 3: ** Chloride yield data is limited for this crop. * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 72 K2O = 49 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

AGVISE LABORATORIES

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

SOIL TEST REPORT

FIELD ID **VINCENT 260**
SAMPLE ID
FIELD NAME Field # 9
COUNTY **4 e**
TWP **5** RANGE
SECTION **19** QTR NE ACRES 162
PREV. CROP **Oats**



SUBMITTED FOR:
HONEYLAND FARMS
BOX 51
DUFROST, MB R0A 0K0

SUBMITTED BY: **HO4200**
HONEYLAND FARMS
BOX 51
DUFROST, MB R0A 0K0

REF # **19424627** BOX # **2036**
LAB # **NW168257**

Date Sampled **11/18/2019** Date Received **12/03/2019** Date Reported **1/31/2020**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" 6-24" Nitrate	19 lb/ac 36 lb/ac	**********			
0-24'' Nitrate	55 lb/ac				
Olsen Phosphorus	45 ppm	**********	**********	**********	**********
Potassium	546 ppm	**********	**********	**********	**********
0-24'' Chloride	104 lb/ac	**********	**********	**********	**********
0-6" Sulfur	22 lb/ac	**********	**********	***	
6-24" Sulfur	36 lb/ac	**********	**********	**********	**
Boron	0.8 ppm	**********	**********		
Zinc	4.11 ppm	**********	**********	**********	**********
Iron	66.7 ppm	**********	**********	**********	**********
Manganese	4.0 ppm	**********	**********	**********	****
Copper	1.77 ppm	**********	**********	*******	
Magnesium	1367 ppm	**********	**********	**********	**********
Calcium	4417 ppm	**********	**********	**********	**********
Sodium	62 ppm	*********			
Org.Matter	8.5 %	**********	**********	**********	**********
Carbonate(CCE)	0.6 %	****			
0-6" Sol. Salts	0.56 mmho/cm	**********	*******		
6-24" Sol. Salts	0.5 mmho/cm	**********	**********		

1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
Canola-bu			Wheat-High Pro.			Soybeans		
YIELD GOAL			YIELD GOAL			YIELD GOAL		
65 BU			80 Bu			50 BU		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
Band/Maint.			Band/Maint.			Band/Maint.		
LB/ACRE		APPLICATION	LB/ACRE		APPLICATION	LB/ACRE		APPLICATION
N	173		N	185		N	***	
P_2O_5	10	Band (Starter)*	P_2O_5	15	Band (Starter)*	P_2O_5	10	Band (Starter)*
K_2O	0		K_2O	10	Band (Starter)*	K_2O	0	
Cl		Not Available	Cl	0		Cl	0	
S	15	Band	S	5	Band (Trial)	S	5	Band (Trial)
B	1	Broadcast	B	0		B	0	
Zn	0		Zn	0		Zn	0	
Fe	0		Fe	0		Fe	0	
Mn	0		Mn	0		Mn	0	
Cu	0		Cu	0		Cu	0	
Mg	0		Mg	0		Mg	0	
Lime			Lime			Lime		

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **7.1** 6-24" **7.9**		**35.5 meq**	(65-75) **62.3**	(15-20) **32.1**	(1-7) **3.9**	(0-5) **0.8**	(0-5) **0.9**

General Comments: Clays/Clay Loams (CEC range = 30+) (Fine)
Percent hydrogen is estimated from water pH, CEC corrected for exchangeable acidity.

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. Crop Removal: P2O5 = 59 K2O = 29 AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.

Crop 2: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 50 K2O = 30 AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.

Crop 3: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. The risk of the development of iron chlorosis on soybeans on this field is moderate based on the salt and carbonate levels. Crop Removal: P2O5 = 38 K2O = 59 AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them. Soybeans may respond to nitrogen on fields testing less than 60 lb/ac with a limited soybean history.

Manitoba Agricultural Services Corporation

MMPP - Variety Yield 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.

Municipalities

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.

DESALABERRY ⊗

Select Crop(s)

Tip: If more than one crop is selected, the Yield Variety Data will be returned, but 'Top Varieties by Acres' and 'Top Varieties by Yield' charts won't be generated.

ALFALFA ⊗

Select Varieties

All Varieties ⊗

Select Year Range

1993 1998 2002 2007 2012 2017

2010 **to** **2019**

Search Summary

41 records returned

185 farm varieties grown on **30,802.0** acres

Average Yield

3.308 Tonnes (**3.645** Tons) per acre

Summary includes aggregate data from 'below minimum tolerance' records

Variety Yield 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 41 of 41 entries First Previous Next Last

Year	Risk Area / R.M.	Crop	Variety	Farms	Acres	Yield/acre (Metric)	Yield/acre (Imperial)
2016	DESALABERRY	ALFALFA	NO VAR	14	2,822.0	4.785 Tonnes	5.273 Tons
2014	DESALABERRY	ALFALFA	NO VAR	17	2,964.0	4.650 Tonnes	5.124 Tons
2015	DESALABERRY	ALFALFA	NO VAR	15	3,134.0	4.265 Tonnes	4.701 Tons
2013	DESALABERRY	ALFALFA	NO VAR	17	3,476.0	3.067 Tonnes	3.379 Tons
2017	DESALABERRY	ALFALFA	NO VAR	14	2,590.0	2.878 Tonnes	3.171 Tons
2010	DESALABERRY	ALFALFA	NO VAR	16	2,958.0	2.849 Tonnes	3.140 Tons
2011	DESALABERRY	ALFALFA	NO VAR	17	2,979.0	2.711 Tonnes	2.987 Tons
2018	DESALABERRY	ALFALFA	NO VAR	11	1,319.0	2.678 Tonnes	2.951 Tons
2019	DESALABERRY	ALFALFA	PIONEER 55Q27	3	931.0	2.626 Tonnes	2.894 Tons
2019	DESALABERRY	ALFALFA	NO VAR	11	1,211.0	2.589 Tonnes	2.853 Tons
2012	DESALABERRY	ALFALFA	NO VAR	18	2,999.0	1.842 Tonnes	2.030 Tons

Year	Risk Area / R.M.	Crop	Variety	Farms	Acres	Yield/acre (Metric)	Yield/acre (Imperial)
2010	DESALABERRY	ALFALFA	AC CARIBOU	Below	Minimum	Tolerance	
2010	DESALABERRY	ALFALFA	PROFIT	Below	Minimum	Tolerance	
2010	DESALABERRY	ALFALFA	22-20 BLEND	Below	Minimum	Tolerance	
2010	DESALABERRY	ALFALFA	53Q60 (Y53Q60)	Below	Minimum	Tolerance	
2011	DESALABERRY	ALFALFA	AC CARIBOU	Below	Minimum	Tolerance	
2011	DESALABERRY	ALFALFA	MAGNUM 3801 WET	Below	Minimum	Tolerance	
2011	DESALABERRY	ALFALFA	PROFIT	Below	Minimum	Tolerance	
2011	DESALABERRY	ALFALFA	22-20 BLEND	Below	Minimum	Tolerance	
2011	DESALABERRY	ALFALFA	53Q60 (Y53Q60)	Below	Minimum	Tolerance	
2012	DESALABERRY	ALFALFA	MAGNUM 3801 WET	Below	Minimum	Tolerance	
2012	DESALABERRY	ALFALFA	PROFIT	Below	Minimum	Tolerance	
2012	DESALABERRY	ALFALFA	53Q30	Below	Minimum	Tolerance	
2012	DESALABERRY	ALFALFA	53Q60 (Y53Q60)	Below	Minimum	Tolerance	
2013	DESALABERRY	ALFALFA	53Q30	Below	Minimum	Tolerance	
2013	DESALABERRY	ALFALFA	53Q60 (Y53Q60)	Below	Minimum	Tolerance	
2013	DESALABERRY	ALFALFA	54Q25	Below	Minimum	Tolerance	
2013	DESALABERRY	ALFALFA	54Q32	Below	Minimum	Tolerance	
2014	DESALABERRY	ALFALFA	53Q60 (Y53Q60)	Below	Minimum	Tolerance	
2014	DESALABERRY	ALFALFA	54Q25	Below	Minimum	Tolerance	
2014	DESALABERRY	ALFALFA	54Q32	Below	Minimum	Tolerance	
2015	DESALABERRY	ALFALFA	54Q32	Below	Minimum	Tolerance	
2016	DESALABERRY	ALFALFA	5311	Below	Minimum	Tolerance	
2016	DESALABERRY	ALFALFA	54Q32	Below	Minimum	Tolerance	

Year	Risk Area / R.M.	Crop	Variety	Farms	Acres	Yield/acre (Metric)	Yield/acre (Imperial)
2017	DESALABERRY	ALFALFA	5311	Below	Minimum	Tolerance	
2018	DESALABERRY	ALFALFA	PIONEER 55Q27	Below	Minimum	Tolerance	
2018	DESALABERRY	ALFALFA	5311	Below	Minimum	Tolerance	
2018	DESALABERRY	ALFALFA	54Q25	Below	Minimum	Tolerance	
2019	DESALABERRY	ALFALFA	HPS BRAND REGULAR BLEND	Below	Minimum	Tolerance	
2019	DESALABERRY	ALFALFA	5311	Below	Minimum	Tolerance	
2019	DESALABERRY	ALFALFA	54Q25	Below	Minimum	Tolerance	

Show 50 entries First Previous Next Last

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 12 ⊗

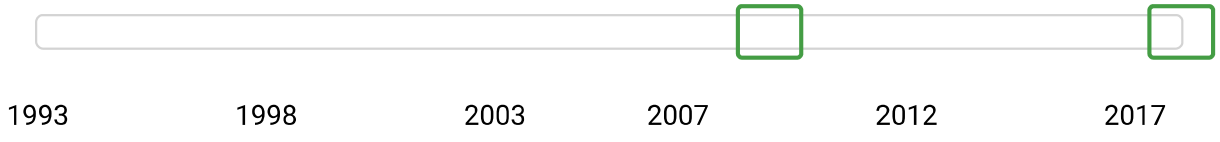
Select Crop(s)

ARGENTINE CANOLA ⊗

Select Soil Type(s)

3 selected ⊗

Select Year Range



2009 to 2018

Search Summary

30 records returned

4,163 farm varieties grown on **816,413.3** acres

Average Yield

0.972 Tonnes (**42.9** Bushels) per acre

Average Fertilizer Application

Nitrogen: **114.1** lbs per acre
Phosphorus: **34.2** lbs per acre
Potassium: **5.7** lbs per acre
Sulphur: **13.5** 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 30 of 30 entries First Previous Next Last

Year	Risk Area / R.M.	Crop	Soil	Farms	Acres	Yield/acre (Imperial)	Nitrogen (lbs)	Phosphorus (lbs)
2017	RISK AREA 12	ARGENTINE CANOLA	D	115	22,836.0	54.5 Bushels	124.7	39.7
2017	RISK AREA 12	ARGENTINE CANOLA	C	133	26,562.0	54.4 Bushels	124.5	38.3
2018	RISK AREA 12	ARGENTINE CANOLA	D	146	30,378.0	51.4 Bushels	123.0	40.1

Year	Risk Area / R.M.	Crop	Soil	Farms	Acres	Yield/acre (Imperial)	Nitrogen (lbs)	Phosphorus (lbs)
2014	RISK AREA 12	ARGENTINE CANOLA	C	153	28,577.0	51.1 Bushels	119.1	36.9
2017	RISK AREA 12	ARGENTINE CANOLA	E	68	16,363.0	51.1 Bushels	115.8	40.2
2018	RISK AREA 12	ARGENTINE CANOLA	C	145	32,348.0	51.1 Bushels	126.7	40.4
2014	RISK AREA 12	ARGENTINE CANOLA	D	138	24,328.0	49.8 Bushels	119.6	37.6
2013	RISK AREA 12	ARGENTINE CANOLA	C	172	31,472.0	49.3 Bushels	118.0	33.6
2014	RISK AREA 12	ARGENTINE CANOLA	E	78	14,411.0	48.4 Bushels	109.1	31.6
2018	RISK AREA 12	ARGENTINE CANOLA	E	83	16,465.0	48.1 Bushels	112.3	35.1
2013	RISK AREA 12	ARGENTINE CANOLA	D	164	29,602.5	47.5 Bushels	113.6	34.8
2009	RISK AREA 12	ARGENTINE CANOLA	E	111	18,111.0	45.4 Bushels	96.7	26.4
2015	RISK AREA 12	ARGENTINE CANOLA	C	159	31,804.0	45.1 Bushels	125.6	38.2
2013	RISK AREA 12	ARGENTINE CANOLA	E	115	22,205.0	43.9 Bushels	106.7	29.8
2009	RISK AREA 12	ARGENTINE CANOLA	D	178	34,981.0	43.8 Bushels	100.8	30.9
2015	RISK AREA 12	ARGENTINE CANOLA	D	138	25,990.0	43.8 Bushels	118.7	39.9
2010	RISK AREA 12	ARGENTINE CANOLA	D	174	32,581.0	43.4 Bushels	109.1	32.5
2016	RISK AREA 12	ARGENTINE CANOLA	E	76	15,187.0	42.6 Bushels	111.6	31.6
2010	RISK AREA 12	ARGENTINE CANOLA	E	125	21,360.0	42.1 Bushels	104.4	30.1
2009	RISK AREA 12	ARGENTINE CANOLA	C	186	37,929.0	41.7 Bushels	105.8	29.6
2015	RISK AREA 12	ARGENTINE CANOLA	E	93	15,542.0	39.2 Bushels	110.4	32.1

Year	Risk Area / R.M.	Crop	Soil	Farms	Acres	Yield/acre (Imperial)	Nitrogen (lbs)	Phosphorus (lbs)
2010	RISK AREA 12	ARGENTINE CANOLA	C	192	40,011.6	38.9 Bushels	111.1	31.2
2016	RISK AREA 12	ARGENTINE CANOLA	D	135	26,375.0	38.7 Bushels	120.2	38.8
2016	RISK AREA 12	ARGENTINE CANOLA	C	128	24,522.0	36.4 Bushels	122.6	36.6
2011	RISK AREA 12	ARGENTINE CANOLA	D	204	44,320.2	36.3 Bushels	110.2	32.4
2011	RISK AREA 12	ARGENTINE CANOLA	C	197	45,700.0	33.8 Bushels	113.9	31.7
2012	RISK AREA 12	ARGENTINE CANOLA	C	157	31,355.0	33.1 Bushels	113.8	32.3
2012	RISK AREA 12	ARGENTINE CANOLA	D	159	29,581.0	32.6 Bushels	115.7	34.3
2011	RISK AREA 12	ARGENTINE CANOLA	E	129	27,857.0	31.7 Bushels	103.3	29.2
2012	RISK AREA 12	ARGENTINE CANOLA	E	112	17,659.0	31.5 Bushels	107.9	29.0

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 12 ⊗

Select Crop(s)

GRAIN CORN ⊗

Select Soil Type(s)

3 selected ⊗

Select Year Range

2009 to 2018

Search Summary

30 records returned

2,999 farm varieties grown on **582,358.9** acres

Average Yield

3.333 Tonnes (**131.2** Bushels) per acre

Average Fertilizer Application

Nitrogen: **122.1** lbs per acre
Phosphorus: **38.3** lbs per acre
Potassium: **15.2** 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.

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Showing 1 to 30 of 30 entries First Previous Next Last

Year	Risk Area / R.M.	Crop	Soil	Farms	Acres	Yield/acre (Imperial)	Nitrogen (lbs)	Phosphorus (lbs)
2016	RISK AREA 12	GRAIN CORN	C	111	26,380.8	160.5 Bushels	133.3	41.6
2016	RISK AREA 12	GRAIN CORN	E	83	14,097.0	158.1 Bushels	125.3	41.6
2016	RISK AREA 12	GRAIN CORN	D	122	22,299.0	154.4 Bushels	132.4	46.2

Year	Risk Area / R.M.	Crop	Soil	Farms	Acres	Yield/acre (Imperial)	Nitrogen (lbs)	Phosphorus (lbs)
2013	RISK AREA 12	GRAIN CORN	D	142	26,165.0	153.7 Bushels	121.7	38.7
2017	RISK AREA 12	GRAIN CORN	D	124	25,054.0	151.6 Bushels	130.2	43.3
2017	RISK AREA 12	GRAIN CORN	C	108	26,245.0	151.0 Bushels	138.2	41.4
2017	RISK AREA 12	GRAIN CORN	E	81	16,033.0	151.0 Bushels	128.6	41.2
2015	RISK AREA 12	GRAIN CORN	C	79	16,752.0	149.9 Bushels	132.4	38.6
2015	RISK AREA 12	GRAIN CORN	D	99	16,989.0	149.8 Bushels	124.0	42.1
2013	RISK AREA 12	GRAIN CORN	C	122	27,048.0	149.0 Bushels	125.0	35.9
2018	RISK AREA 12	GRAIN CORN	E	73	14,485.0	146.3 Bushels	126.3	41.1
2013	RISK AREA 12	GRAIN CORN	E	92	15,614.0	144.7 Bushels	117.0	36.9
2015	RISK AREA 12	GRAIN CORN	E	79	12,406.0	140.7 Bushels	121.5	37.0
2012	RISK AREA 12	GRAIN CORN	C	109	25,016.0	136.4 Bushels	120.5	34.5
2012	RISK AREA 12	GRAIN CORN	E	99	16,587.0	135.6 Bushels	114.3	33.7
2014	RISK AREA 12	GRAIN CORN	C	104	21,285.0	135.0 Bushels	126.5	42.0
2010	RISK AREA 12	GRAIN CORN	D	91	15,765.0	134.9 Bushels	105.9	34.4
2012	RISK AREA 12	GRAIN CORN	D	134	25,498.0	134.2 Bushels	117.2	37.9
2018	RISK AREA 12	GRAIN CORN	D	129	27,677.0	134.1 Bushels	137.9	45.8
2010	RISK AREA 12	GRAIN CORN	C	96	20,743.0	132.1 Bushels	110.9	32.0
2018	RISK AREA 12	GRAIN CORN	C	109	26,138.0	131.4 Bushels	135.9	44.1

Year	Risk Area / R.M.	Crop	Soil	Farms	Acres	Yield/acre (Imperial)	Nitrogen (lbs)	Phosphorus (lbs)
2014	RISK AREA 12	GRAIN CORN	D	113	21,584.0	129.0 Bushels	123.4	40.8
2014	RISK AREA 12	GRAIN CORN	E	79	12,958.0	127.3 Bushels	117.0	37.2
2010	RISK AREA 12	GRAIN CORN	E	62	10,834.0	127.2 Bushels	110.1	30.5
2011	RISK AREA 12	GRAIN CORN	E	74	10,329.0	117.1 Bushels	110.9	32.4
2011	RISK AREA 12	GRAIN CORN	D	117	21,329.0	110.1 Bushels	112.5	33.5
2011	RISK AREA 12	GRAIN CORN	C	94	19,529.1	108.1 Bushels	112.3	31.9
2009	RISK AREA 12	GRAIN CORN	E	73	10,025.0	60.6 Bushels	98.0	31.3
2009	RISK AREA 12	GRAIN CORN	D	107	17,146.0	30.3 Bushels	103.6	32.5
2009	RISK AREA 12	GRAIN CORN	C	94	20,348.0	24.9 Bushels	101.6	31.0

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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 12 ⊗

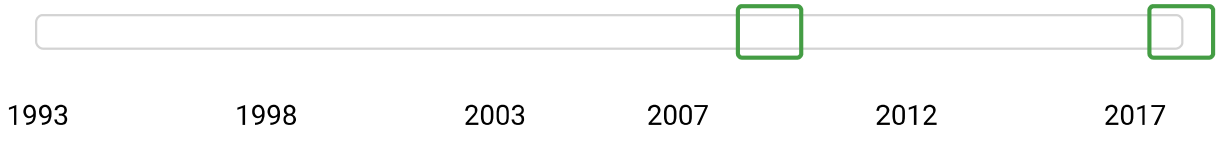
Select Crop(s)

RED SPRING WHEAT ⊗

Select Soil Type(s)

3 selected ⊗

Select Year Range



2009 to 2018

Search Summary

30 records returned

3,496 farm varieties grown on **593,648.6** acres

Average Yield

1.643 Tonnes (**60.4** Bushels) per acre

Average Fertilizer Application

Nitrogen: **102.1** lbs per acre
Phosphorus: **34.1** lbs per acre
Potassium: **7.4** lbs per acre
Sulphur: **3.4** 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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Year	Risk Area / R.M.	Crop	Soil	Farms	Acres	Yield/acre (Imperial)	Nitrogen (lbs)	Phosphorus (lbs)
2017	RISK AREA 12	RED SPRING WHEAT	D	92	16,821.0	78.2 Bushels	112.5	41.1
2017	RISK AREA 12	RED SPRING WHEAT	C	97	17,468.0	77.9 Bushels	116.3	38.8

Year	Risk Area / R.M.	Crop	Soil	Farms	Acres	Yield/acre (Imperial)	Nitrogen (lbs)	Phosphorus (lbs)
2017	RISK AREA 12	RED SPRING WHEAT	E	57	9,185.0	73.8 Bushels	102.6	37.6
2018	RISK AREA 12	RED SPRING WHEAT	C	128	21,880.0	69.6 Bushels	116.3	38.5
2014	RISK AREA 12	RED SPRING WHEAT	C	114	21,138.0	68.5 Bushels	110.3	38.1
2018	RISK AREA 12	RED SPRING WHEAT	D	123	19,084.0	67.8 Bushels	113.2	40.7
2014	RISK AREA 12	RED SPRING WHEAT	D	120	19,057.0	67.7 Bushels	105.3	38.1
2018	RISK AREA 12	RED SPRING WHEAT	E	78	14,826.0	66.9 Bushels	106.8	37.6
2013	RISK AREA 12	RED SPRING WHEAT	D	135	26,265.0	65.6 Bushels	102.2	38.3
2013	RISK AREA 12	RED SPRING WHEAT	C	131	22,333.0	65.1 Bushels	102.6	32.7
2012	RISK AREA 12	RED SPRING WHEAT	C	130	22,154.8	63.3 Bushels	105.1	33.3
2015	RISK AREA 12	RED SPRING WHEAT	C	146	24,434.0	62.5 Bushels	110.7	36.0
2009	RISK AREA 12	RED SPRING WHEAT	E	104	14,509.0	62.3 Bushels	83.8	27.2
2015	RISK AREA 12	RED SPRING WHEAT	D	138	24,279.0	61.8 Bushels	112.0	38.0
2014	RISK AREA 12	RED SPRING WHEAT	E	80	12,640.0	61.7 Bushels	95.7	32.4
2012	RISK AREA 12	RED SPRING WHEAT	D	131	23,117.0	61.4 Bushels	100.4	32.4

Year	Risk Area / R.M.	Crop	Soil	Farms	Acres	Yield/acre (Imperial)	Nitrogen (lbs)	Phosphorus (lbs)
2013	RISK AREA 12	RED SPRING WHEAT	E	86	11,335.0	61.4 Bushels	95.6	30.0
2009	RISK AREA 12	RED SPRING WHEAT	C	149	27,267.0	60.5 Bushels	93.7	30.2
2009	RISK AREA 12	RED SPRING WHEAT	D	159	25,824.5	60.3 Bushels	85.9	30.3
2012	RISK AREA 12	RED SPRING WHEAT	E	71	12,539.0	58.3 Bushels	92.4	28.2
2016	RISK AREA 12	RED SPRING WHEAT	E	76	11,755.0	56.4 Bushels	101.0	35.1
2015	RISK AREA 12	RED SPRING WHEAT	E	86	13,335.0	55.9 Bushels	103.2	32.8
2016	RISK AREA 12	RED SPRING WHEAT	C	114	20,548.0	55.6 Bushels	114.0	37.5
2010	RISK AREA 12	RED SPRING WHEAT	D	162	29,979.2	54.3 Bushels	94.8	33.4
2016	RISK AREA 12	RED SPRING WHEAT	D	124	18,725.0	54.0 Bushels	109.6	38.9
2010	RISK AREA 12	RED SPRING WHEAT	C	149	28,587.0	52.5 Bushels	99.7	31.4
2010	RISK AREA 12	RED SPRING WHEAT	E	104	16,348.0	51.6 Bushels	88.0	27.5
2011	RISK AREA 12	RED SPRING WHEAT	D	152	24,386.0	46.5 Bushels	92.1	30.3
2011	RISK AREA 12	RED SPRING WHEAT	C	147	29,885.1	45.1 Bushels	101.9	30.7
2011	RISK AREA 12	RED SPRING WHEAT	E	113	13,944.0	41.2 Bushels	89.3	26.3

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Manitoba Agricultural Services Corporation

MMPP - Fertilizer Data Browser

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 12 ⊗

Select Crop(s)

SOYBEANS ⊗

Select Soil Type(s)

3 selected ⊗

Select Year Range

2009 to 2018

Search Summary

30 records returned

1,798 farm varieties grown on **316,786.0** acres

Average Yield

1.047 Tonnes (**38.5** Bushels) per acre

Average Fertilizer Application

Nitrogen: **6.0** lbs per acre
Phosphorus: **34.3** lbs per acre
Potassium: **5.7** lbs per acre
Sulphur: **1.8** 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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Year	Risk Area / R.M.	Crop	Soil	Farms	Acres	Yield/acre (Imperial)	Nitrogen (lbs)	Phosphorus (lbs)
2016	RISK AREA 12	SOYBEANS	C	105	20,433.0	46.3 Bushels	7.5	34.6
2016	RISK AREA 12	SOYBEANS	E	45	6,915.0	46.3 Bushels	4.4	33.6
2013	RISK AREA 12	SOYBEANS	C	72	14,210.0	43.5 Bushels	6.0	32.4

Year	Risk Area / R.M.	Crop	Soil	Farms	Acres	Yield/acre (Imperial)	Nitrogen (lbs)	Phosphorus (lbs)
2013	RISK AREA 12	SOYBEANS	D	63	10,287.0	43.5 Bushels	5.5	32.7
2016	RISK AREA 12	SOYBEANS	D	103	18,776.0	42.9 Bushels	5.1	38.3
2010	RISK AREA 12	SOYBEANS	E	14	1,625.0	41.5 Bushels	10.5	17.7
2010	RISK AREA 12	SOYBEANS	C	38	6,406.0	40.3 Bushels	9.1	25.3
2015	RISK AREA 12	SOYBEANS	D	105	18,090.0	39.4 Bushels	2.7	37.8
2014	RISK AREA 12	SOYBEANS	C	108	22,812.0	39.0 Bushels	4.0	34.3
2010	RISK AREA 12	SOYBEANS	D	43	7,240.0	38.9 Bushels	6.9	24.7
2014	RISK AREA 12	SOYBEANS	D	93	16,441.0	38.9 Bushels	5.2	35.7
2015	RISK AREA 12	SOYBEANS	C	106	19,924.0	38.9 Bushels	4.3	34.8
2012	RISK AREA 12	SOYBEANS	E	24	2,820.0	38.7 Bushels	8.2	23.5
2012	RISK AREA 12	SOYBEANS	C	47	7,442.0	38.6 Bushels	10.2	26.8
2013	RISK AREA 12	SOYBEANS	E	28	3,431.0	38.5 Bushels	6.2	24.7
2009	RISK AREA 12	SOYBEANS	C	23	3,136.0	38.1 Bushels	11.6	24.0
2017	RISK AREA 12	SOYBEANS	C	105	24,359.0	37.9 Bushels	7.5	36.5
2018	RISK AREA 12	SOYBEANS	E	38	5,228.0	37.6 Bushels	4.8	41.6
2017	RISK AREA 12	SOYBEANS	D	100	19,137.0	36.9 Bushels	4.0	38.1
2012	RISK AREA 12	SOYBEANS	D	63	9,071.0	36.8 Bushels	3.9	29.1
2017	RISK AREA 12	SOYBEANS	E	60	8,966.0	36.6 Bushels	4.1	37.4

Year	Risk Area / R.M.	Crop	Soil	Farms	Acres	Yield/acre (Imperial)	Nitrogen (lbs)	Phosphorus (lbs)
2015	RISK AREA 12	SOYBEANS	E	38	5,382.0	36.4 Bushels	5.3	31.3
2009	RISK AREA 12	SOYBEANS	E	20	2,109.0	35.8 Bushels	18.3	20.1
2014	RISK AREA 12	SOYBEANS	E	55	6,521.0	35.4 Bushels	4.7	30.4
2009	RISK AREA 12	SOYBEANS	D	26	3,643.0	35.0 Bushels	11.9	22.7
2011	RISK AREA 12	SOYBEANS	D	45	5,033.0	33.6 Bushels	6.3	27.7
2011	RISK AREA 12	SOYBEANS	C	33	5,033.0	33.2 Bushels	11.9	23.3
2011	RISK AREA 12	SOYBEANS	E	13	1,678.0	31.9 Bushels	21.9	22.9
2018	RISK AREA 12	SOYBEANS	C	100	22,782.0	31.4 Bushels	8.5	38.9
2018	RISK AREA 12	SOYBEANS	D	85	17,856.0	31.0 Bushels	4.3	42.4

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1e - Poultry
Operation Name:

Species / Commodity	Type of Operation	Storage Type	Volatilization	Bird Places	Weight in kg	Weight out kg	Days on Feed	Cycles per Year	N Excreted Adjusted for N Loss lb/flock/yr	P2O5 Excreted lb/flock/yr
Chickens	Light Broilers	Solid Manure Shed	20%		0.043	1.8	30	7	0	0
Chickens	Broilers	Solid Manure Shed	20%		0.043	2.275	35	7	0	0
Chickens	Broiler Breeder Pullets	Solid Manure Shed	20%		0.040	2.975	168	2	0	0
Chickens	Broiler Breeder Hens	Solid Manure Shed	20%		2.975	3.950	245	1	0	0
Eggs	White Layer Pullets	Solid Manure Shed	20%	45000	0.040	1.355	133	2	15450	11157
Eggs	White Layer Hens	Solid Manure Shed	20%	135000	1.355	1.875	357	1	142878	118180
Eggs	White Breeder Pullets	Solid Manure Shed	20%		0.040	1.240	119	2	0	0
Eggs	White Breeder Hens	Solid Manure Shed	20%		1.240	1.670	350	1	0	0
Eggs	Brown Layer Pullets	Solid Manure Shed	20%		0.040	1.630	133	2	0	0
Eggs	Brown Layer Hens	Solid Manure Shed	20%		1.630	2.025	357	1	0	0
Eggs	Brown Breeder Pullets	Solid Manure Shed	20%		0.040	1.407	119	2	0	0
Eggs	Brown Breeder Hens	Solid Manure Shed	20%		1.407	1.950	350	1	0	0
Turkey	Broiler Turkey (0-9 wks)	Solid Manure Shed	20%		0.070	4.950	63	5	0	0
Turkey	Hen Turkey (0-11 wks)	Solid Manure Shed	20%		0.070	6.650	77	4	0	0
Turkey	Heavy Hens (0-14 wks)	Solid Manure Shed	20%		0.070	9.750	98	3	0	0
Turkey	Toms (0-14 wks)	Solid Manure Shed	20%		0.070	13.000	98	3	0	0
Turkey	Breeding Hen Growers (0-30 wks)	Solid Manure Shed	20%		0.070	12.900	210	1	0	0
Turkey	Breeding Hens (31-End of Lay)	Solid Manure Shed	20%		12.900	12.400	252	1	0	0
Turkey	Breeding Tom Grower (0-17 wks)	Solid Manure Shed	20%		0.070	15.770	119	1	0	0
Turkey	Breeding Tom Grower (17-30 wks)	Solid Manure Shed	20%		15.770	25.000	91	1	0	0
Turkey	Breeding Tom (31-End of Lay)	Solid Manure Shed	20%		25.000	28.180	252	1	0	0

Last Revised November 26, 2019

2 - Crop Rotation

Operation Name: **Enter the operation name on the livestock tab(s)**

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	4.017	ton/ac	162	8980	37744	37744
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	42.9	bu/ac	379	16909	31380	51867
Corn Grain	0.44	0.97	1.53	lb/bu	132	bu/ac	379	22012	48527	76543
Corn Silage	12.7	31.2	31.2	lb/ton		tons/ac		-	-	-
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		cwt/ac		-	-	-
Rye	0.45	1.06	1.67	lb/bu		bu/ac		-	-	-
Soybeans	0.84	3.87	5.2	lb/bu	38.1	bu/ac	378	12098	55735	74889
Sunflower	1.1	2.8		lb/cwt		cwt/ac		-	-	-
Wheat - Spring	0.59	1.5	2.11	lb/bu	60.4	bu/ac	378	13470	34247	48174
Wheat - Winter	0.51	1.04	1.35	lb/bu		bu/ac		-	-	-
						Total Acres	1676	73470	207633	289216
						Estimated Average Removal/Uptake (lb/ac)		43.8	123.9	172.6
						Acres in Hanover and La Broquerie	117			
						Proportion in Hanover or La Broquerie	7%			
						Additional Acres				
						Crop Planned on Additional Acres				
						Total Acreage	1676			

***Notes:** Enter the number of acres that are in the RM's of Hanover or La Broquerie in cell H26.
Additional acres include acres for which crop removal or soil data is limited or unavailable.

Last revised December 18, 2017

3 - Farm Excretion

Operation Name: **Enter the operation name on the livestock tab(s)**

Species	Animal Category/Operation type	N (lb/year)	P2O5 (lb/year)
Pigs	Boars	0	0
	Weanlings/Nursery	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 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
	Lactating First Calf Heifer	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	0	0
Sheep	Ewes	0	0
	Replacement Ewes	0	0
	Rams	0	0
	Lambs	0	0
	Ewes, plus assoc livestock	0	0
	Feeder	0	0
Chickens	Light Broilers	0	0
	Broilers	0	0
	Broiler Breeder Pullets	0	0
	Broiler Breeder Hens	0	0
Layers	White Layer Pullets	15450	11157
	White Layer Hens	142878	118180
	White Breeder Pullets	0	0
	White Breeder Hens	0	0
	Brown Layer Pullets	0	0
	Brown Layer Hens	0	0
	Brown Breeder Pullets	0	0
	Brown Breeder Hens	0	0
Turkeys	Broiler Turkey (0-9 wks)	0	0
	Hen Turkey (0-11 wks)	0	0
	Heavy Hens (0-14 wks)	0	0
	Toms (0-14 wks)	0	0
	Breeding Hen Growers (0-30 wks)	0	0
	Breeding Hens (31-End of Lay)	0	0
	Breeding Tom Grower (0-17 wks)	0	0
	Breeding Tom Grower (17-30 wks)	0	0
	Breeding Tom (31-End of Lay)	0	0
	Total	**158328**	**129337**

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

4 - Land Base Summary	
Operation Name:	**Enter the operation name on the livestock tab(s)**
Nutrients Excreted	**lbs**
Nitrogen	158328
Phosphorus (P2O5)	129337
Crop Nutrient Use	**lb/ac**
Average Crop N Uptake	172.6
Average Crop Phosphorus (P2O5) Removal	43.8
Operation-specific Phosphorus (P2O5) Allowance	84.6
Land Available	1676
Land Base Required	**acres**
Acres for Nitrogen	**918**
Acres for Phosphorus (P2O5)	**1529**
Phosphorus Balance	**acres**
Acres for Phosphorus Balance (1X)	**2950**

Note: For lands located in Hanover and/or La Broquerie, the acres required for phosphorus are based on phosphorus balance (1X). For other lands, the acres required for phosphorus are based on twice crop phosphorus removal (2X). Land requirements for operations with lands inside and outside Hanover and/or La Broquerie are based on a weighted average.

Last revised November 26, 2019

CROP ROTATION TABLE

A	B	C	D	E
Expected Crops in the Rotation	**Acreage**	**Historical Yield**	**Units**	**Source of Yield Information**
Argentine Canola	379	42.9	Bu./Acre	MASC Fertilizer Data Browser
Grain Corn	379	131.2	Bu./Acre	MASC Fertilizer Data Browser
Soybeans	378	38.5	Bu./Acre	MASC Fertilizer Data Browser
Red Spring Wheat	378	60.4	Bu./acre plus straw removal	MASC Fertilizer Data Browser
Alfalfa	162	4.017	ton/Acre	MASC Variety Data Browser
Total Net Acreage for Manure Application	1676			

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	SW 31-7-5e	Hanover	A	117	Accounted For	117	2w	21	2417-18, Agriculture 1 Policy Area	2171, Agricultural Zone
2	E 2-8-4e	Tache	A	287	Accounted For	287	2w2w, 3w2w2w	11	5-2016, Agriculture	10-2017, Agriculture General Zone
3	W 2-8-4e	Tache	A	312	Accounted For	312	2w2w, 3w2w2w	35	5-2016, Agriculture	10-2017, Agriculture General Zone
4	SENE 3-8-4e	Tache	A	215	Accounted For	215	2w2w, 3w2w2w	11	5-2016, Agriculture	10-2017, Agriculture General Zone
5	SE 12-8-4e	Tache	A	126	Accounted For	126	3w, 2w	4	5-2016, Agriculture	10-2017, Agriculture General Zone
6	NE 12-8-4eS	Tache	A	75	Accounted For	75	3w, 2w	4	5-2016, Agriculture	10-2017, Agriculture General Zone
7	SE 14-8-4e	Tache	A	140	Accounted For	140	3w	9	5-2016, Agriculture	10-2017, Agriculture General Zone
8	NWNE 29-8-6e	Ste. Anne	A	242	Accounted For	242	3w2w	15	13-2007, Rural Agriculture Area	10-2010, Agriculture Zone
9	NE 19-5-4e	DeSalaberry	A	162	Accounted For	162	3w3w, 2w	45	2362-18, General Agriculture	2369-18, Agriculture General Zone
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

Total Net Acreage for Manure Application: 1676

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).

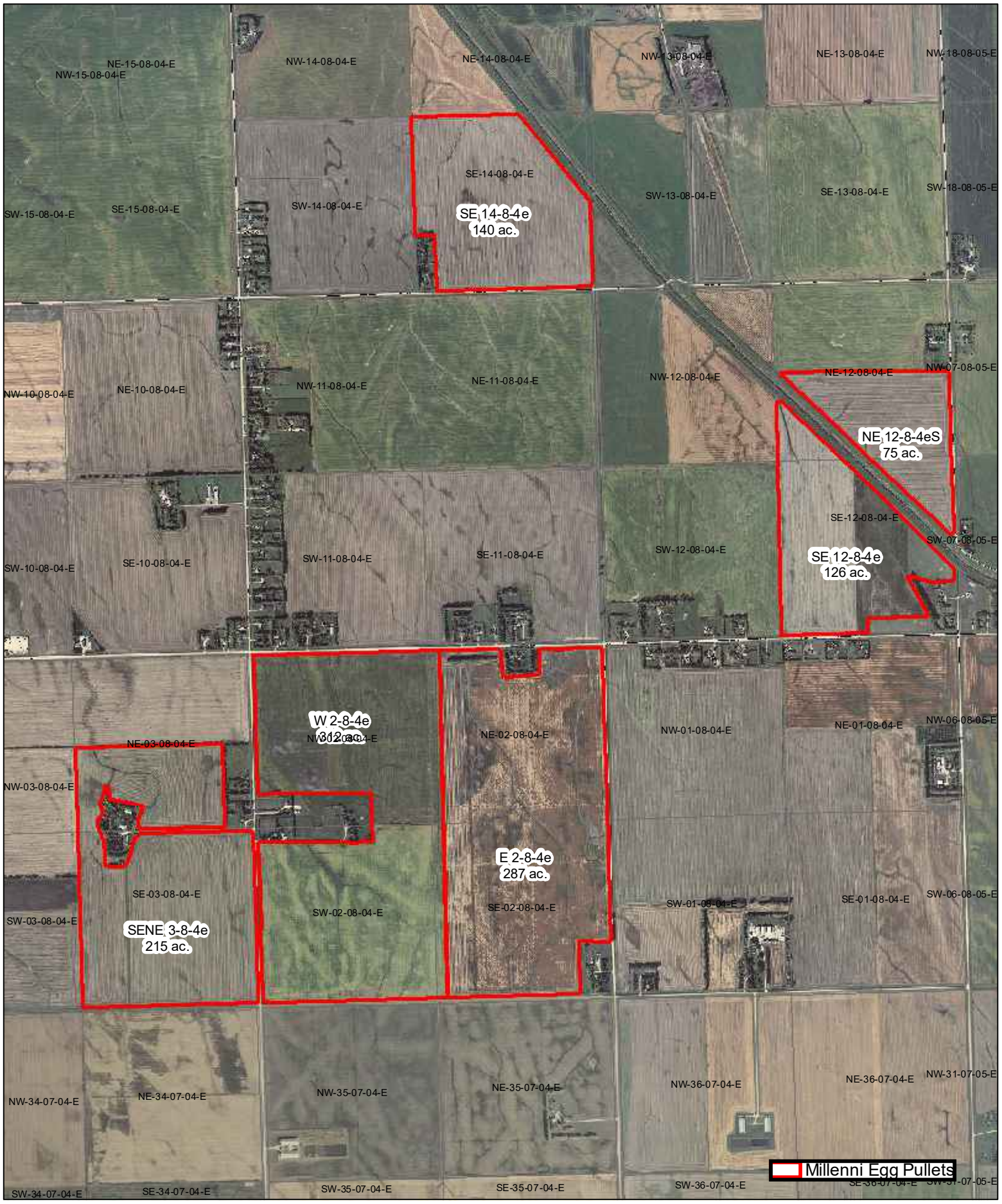
Millenni Egg Spread Fields A, June 8, 2020

N
W E
S

0 0.06 0.12 Miles

AGRA-GOLD
NUTRIENT MANAGEMENT

Millenni Egg Spread Fields B, March 24, 2020

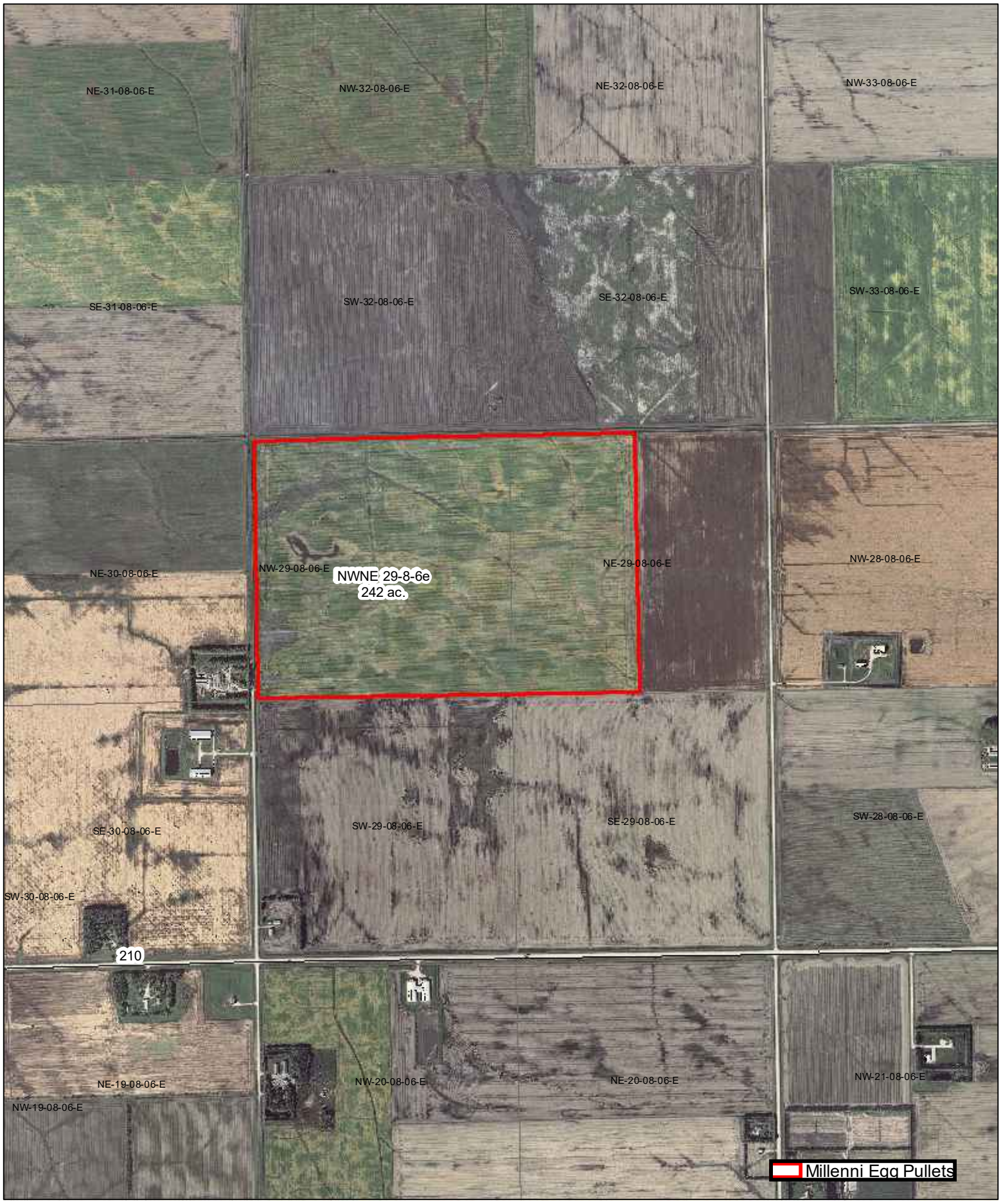


N
W E
S

0 0.3 0.6 1.2 Miles

AGRA-GOLD
NUTRIENT MANAGEMENT

Millenni Egg Spread Fields C, March 24, 2020



N
W E
S

0 0.2 0.4 0.8 Miles

AGRA-GOLD
NUTRIENT MANAGEMENT

Millenni Egg Spread Fields D, June 8, 2020

N
W E
S

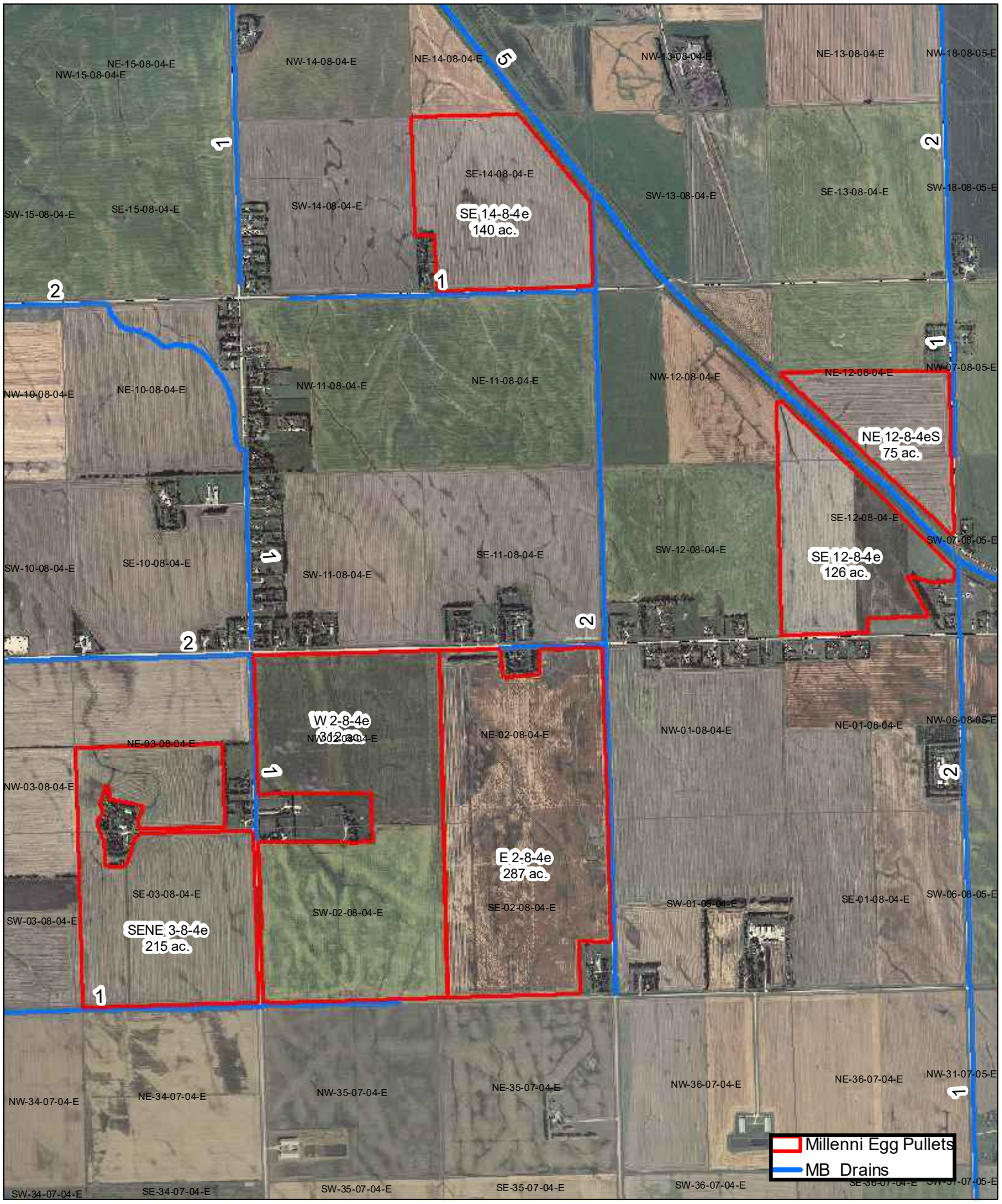
0 0.03 0.06 0.12 Miles

AGRA-GOLD
NUTRIENT MANAGEMENT

Millenni Egg Drains Map A, June 8, 2020

AGRA-GOLD
NUTRIENT MANAGEMENT

Millenni Egg Drains Map B, March 24, 2020

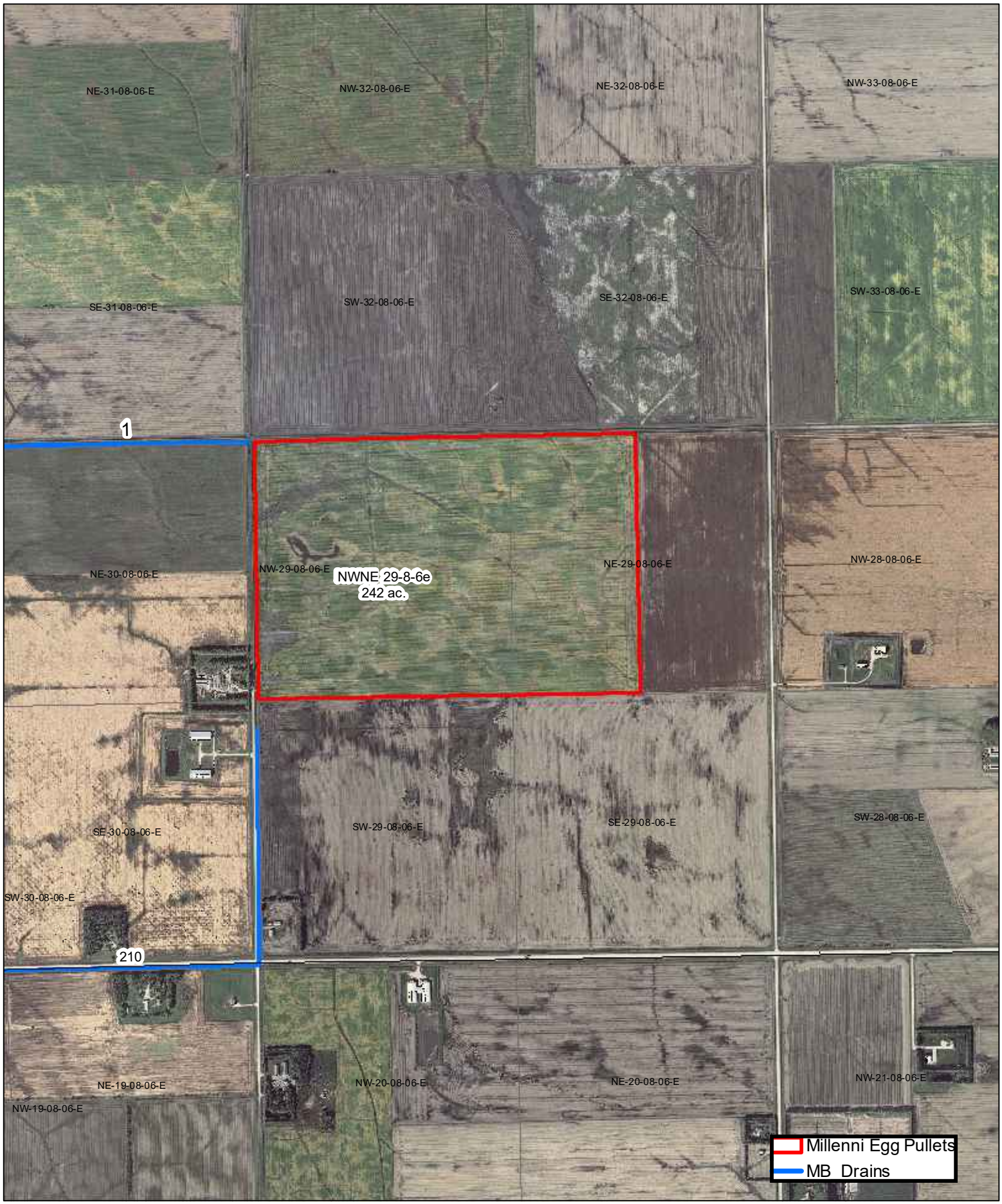


N
W E
S

0 0.3 0.6 1.2 Miles

AGRA-GOLD
NUTRIENT MANAGEMENT

Millenni Egg Drains Map C, March 24, 2020

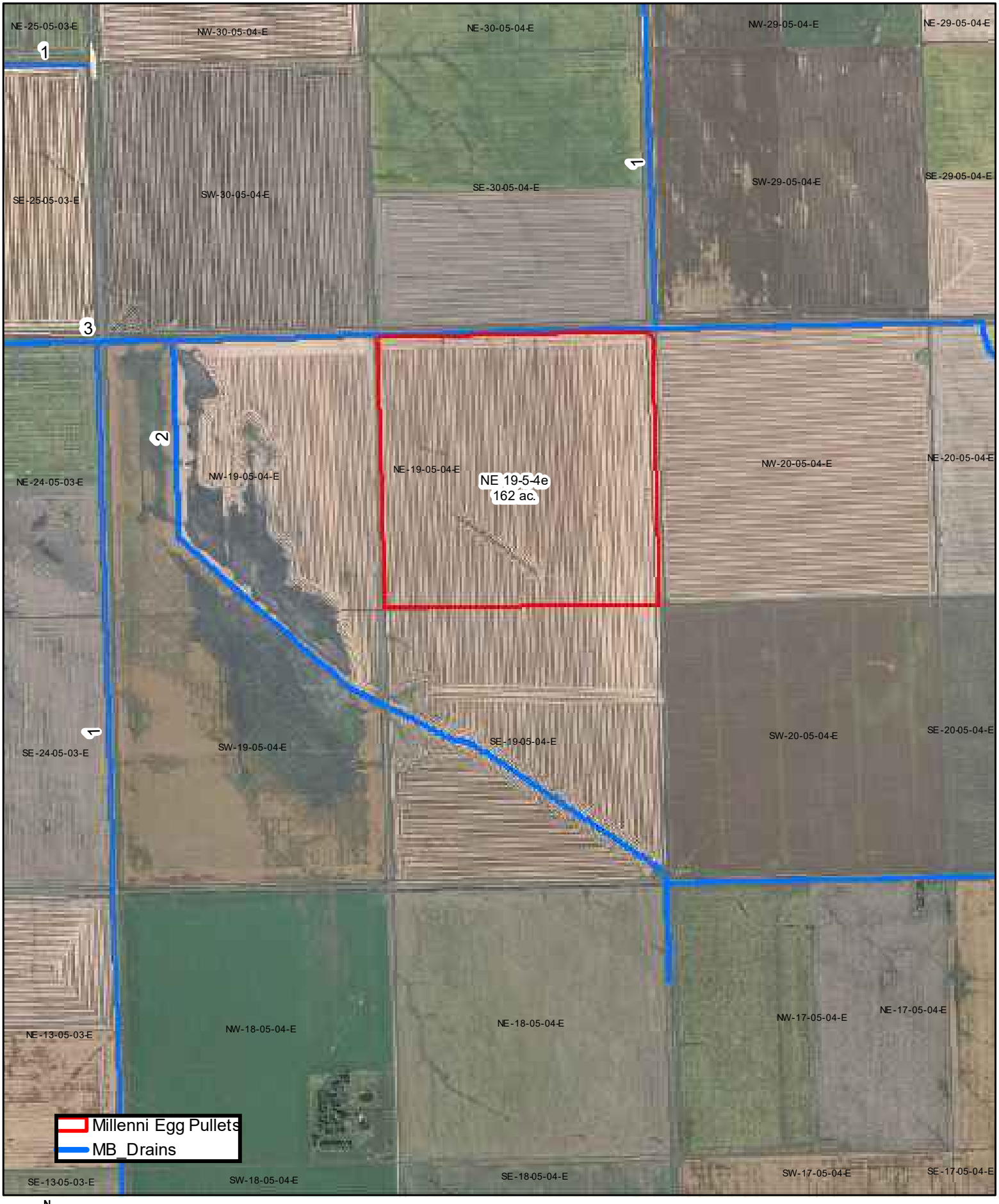


N
W E
S

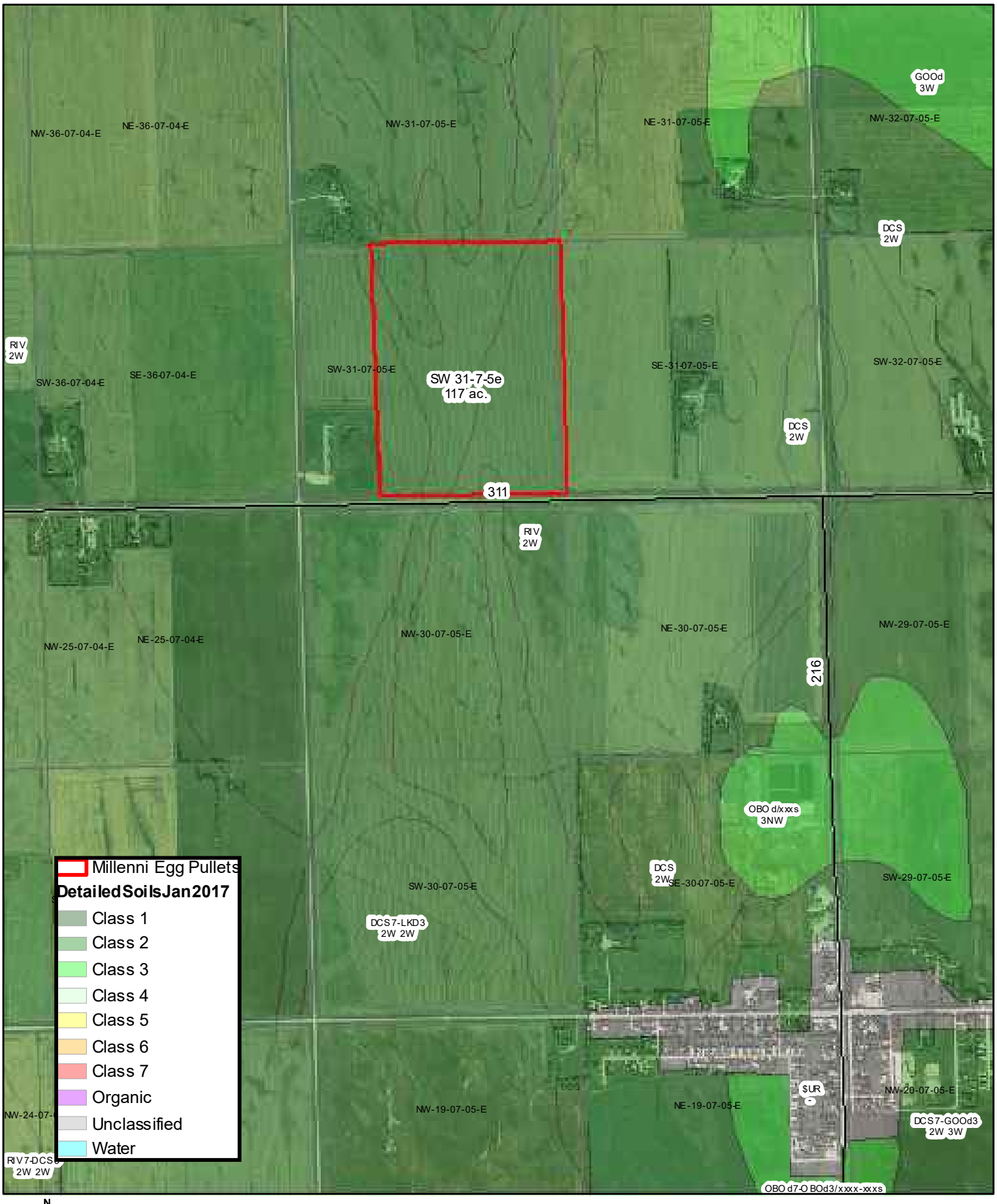
0 0.2 0.4 0.8 Miles

AGRA-GOLD
NUTRIENT MANAGEMENT

Millenni Egg Drains Map D, June 8, 2020

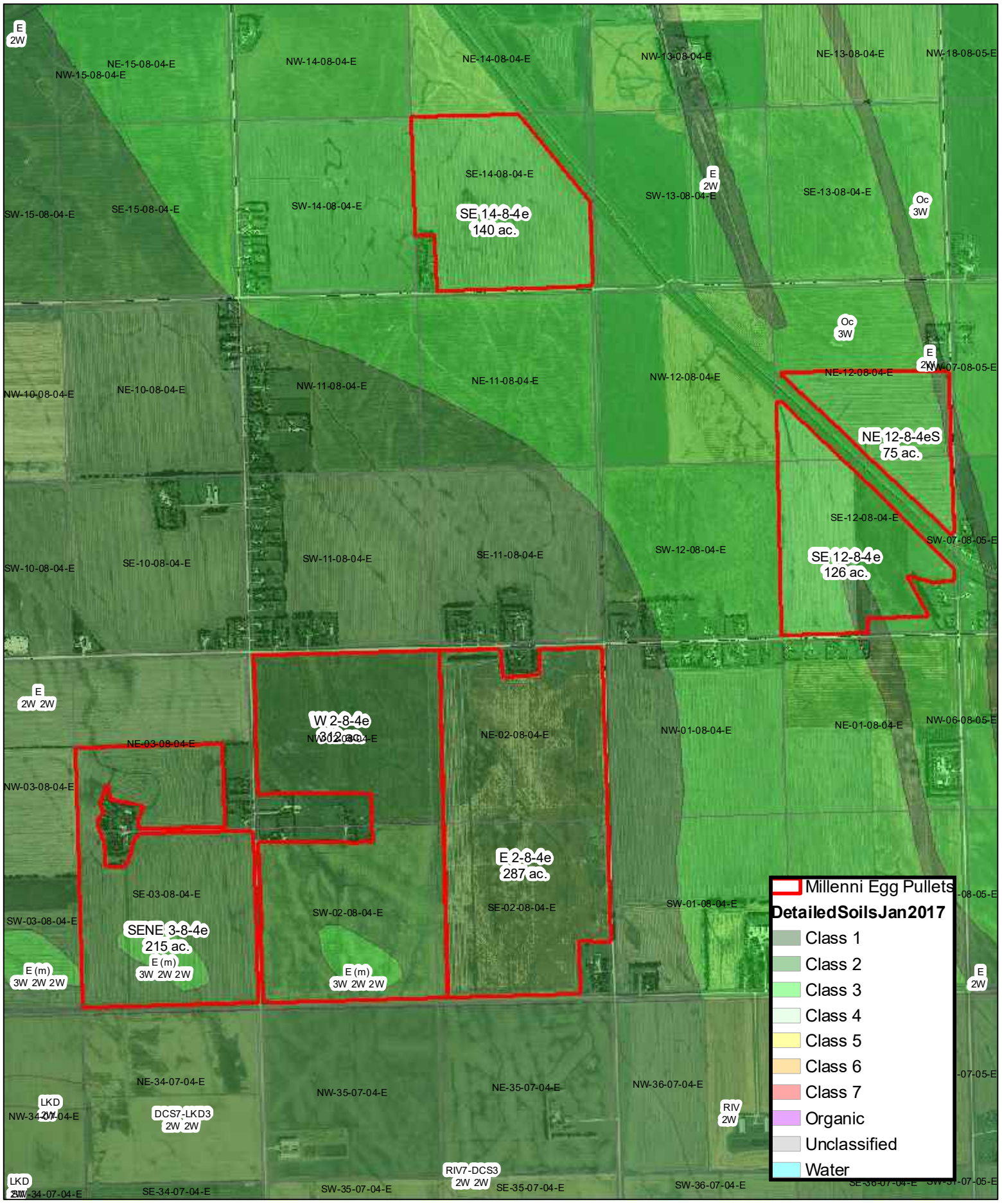


Millenni Egg Soils Map A, June 8, 2020

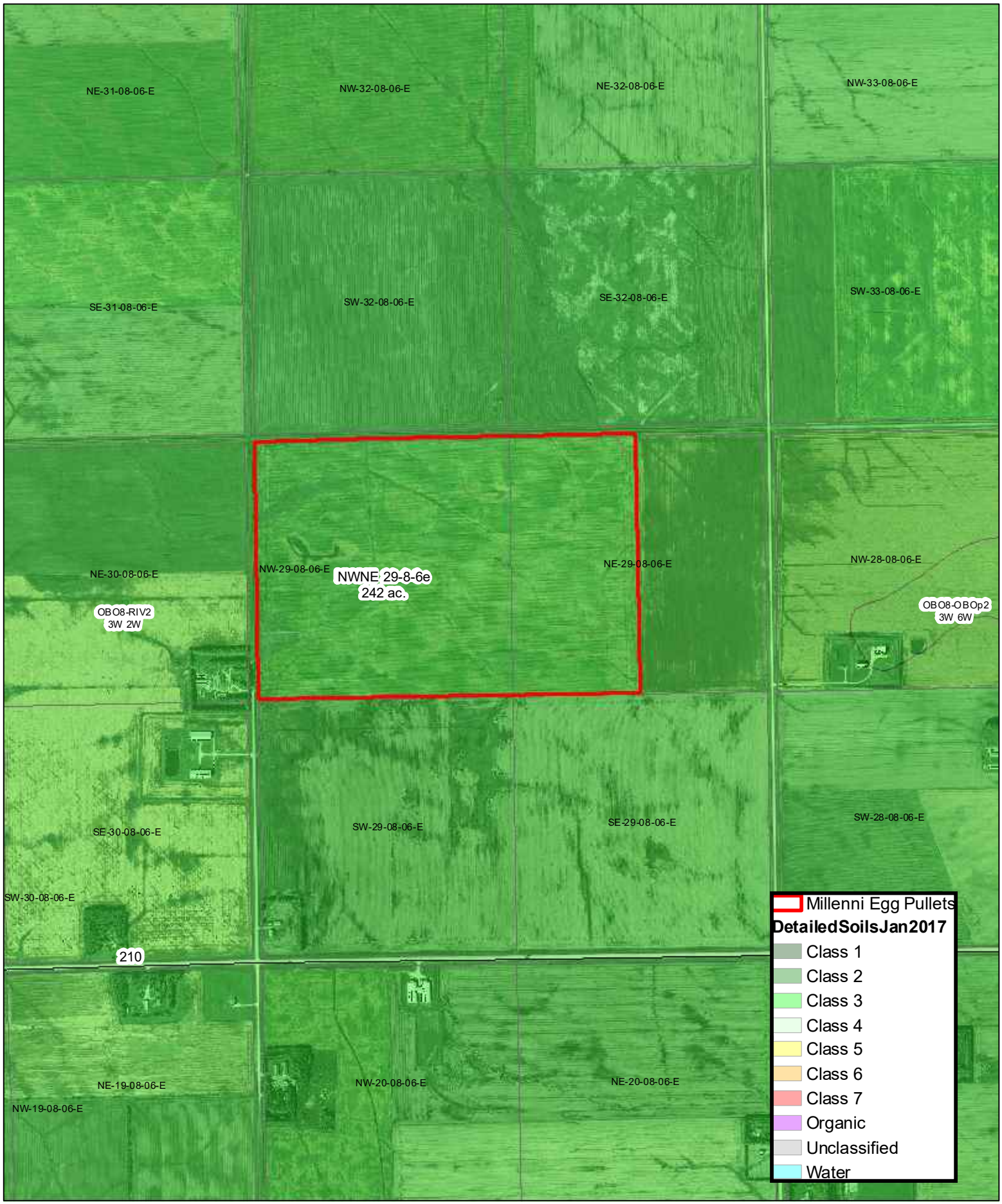


AGRA-GOLD
NUTRIENT MANAGEMENT

Millenni Egg Soils Map B, March 24, 2020



Millenni Egg Soils Map C, March 24, 2020

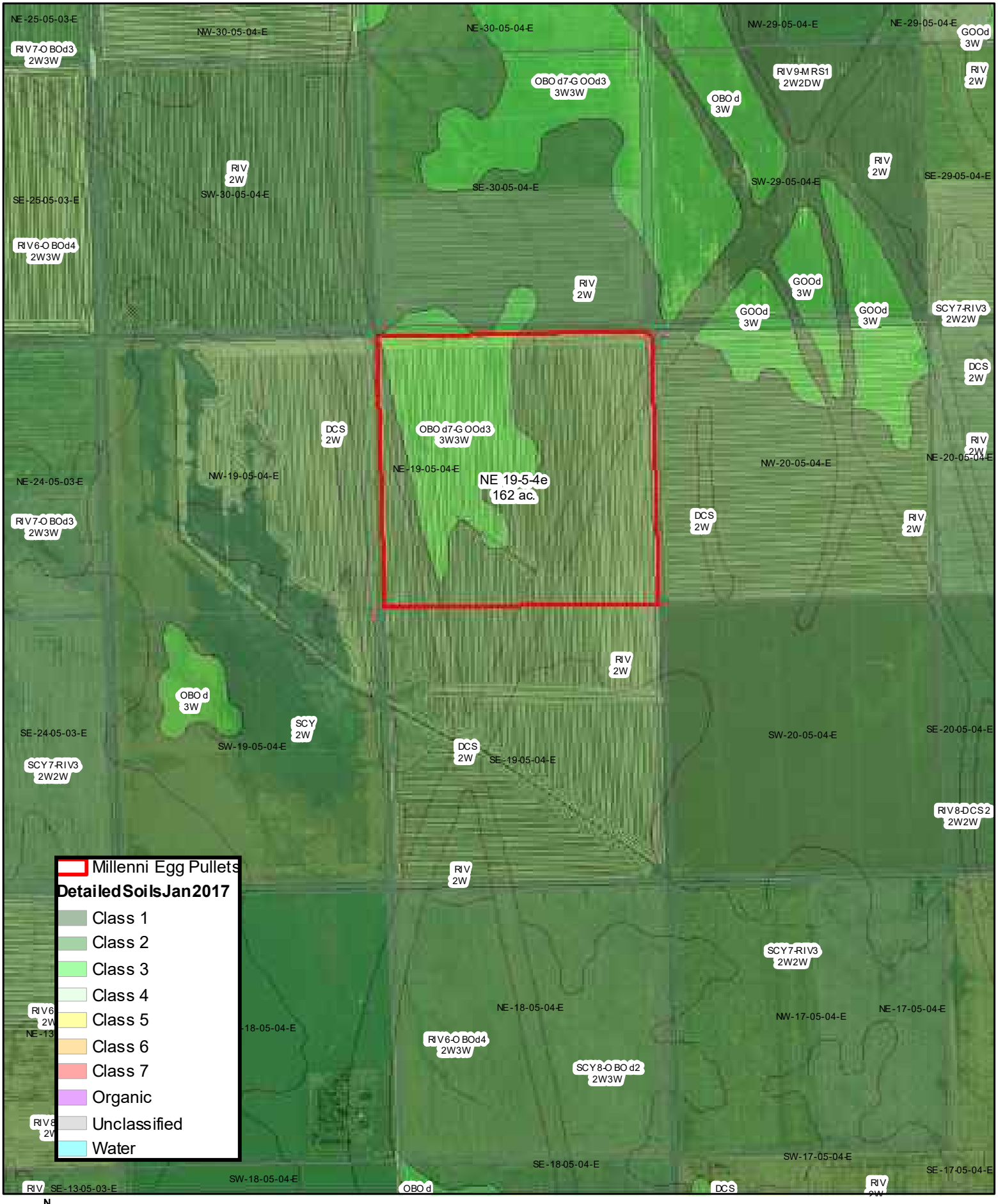


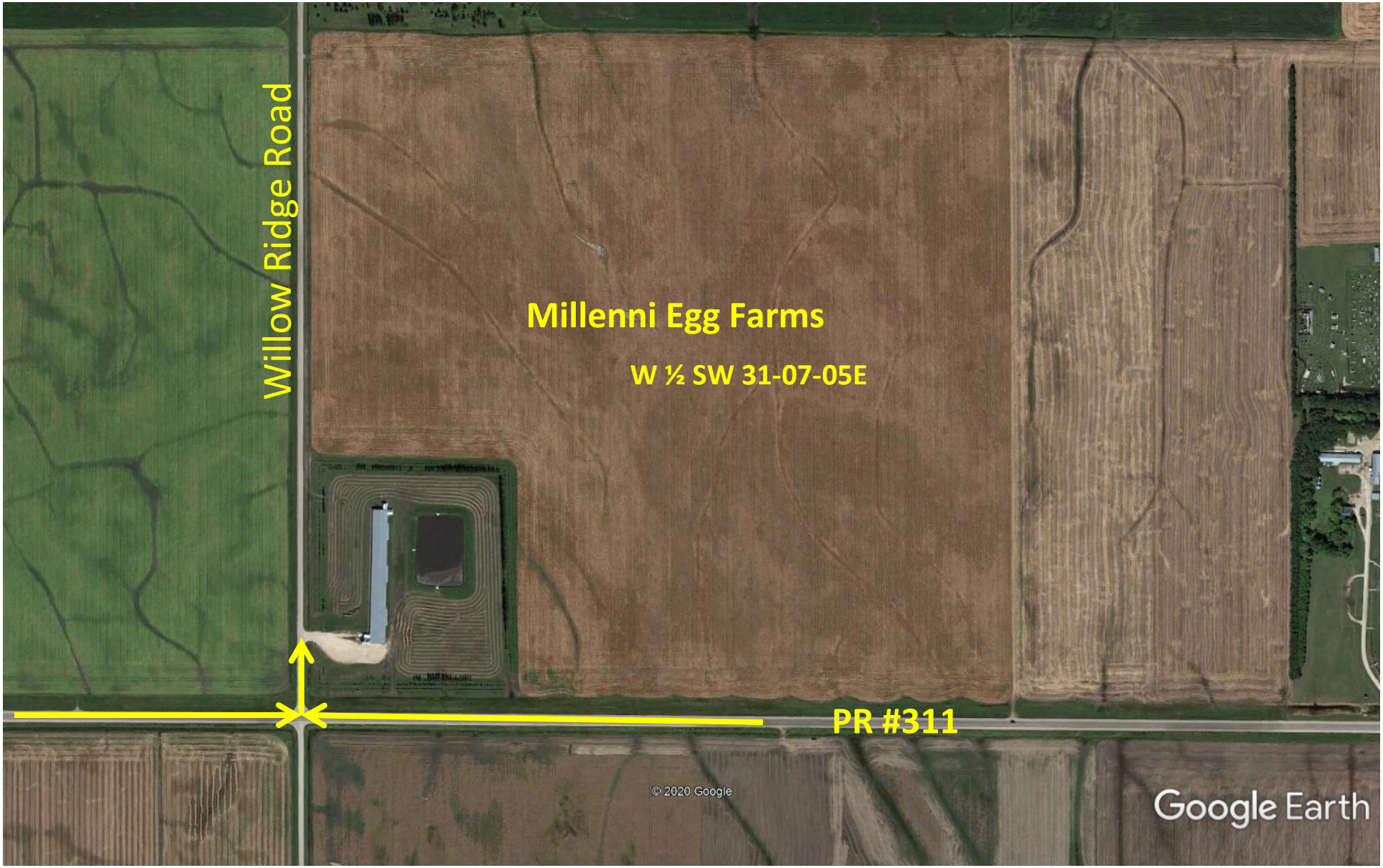
N
W E
S

0 0.2 0.4 0.8 Miles

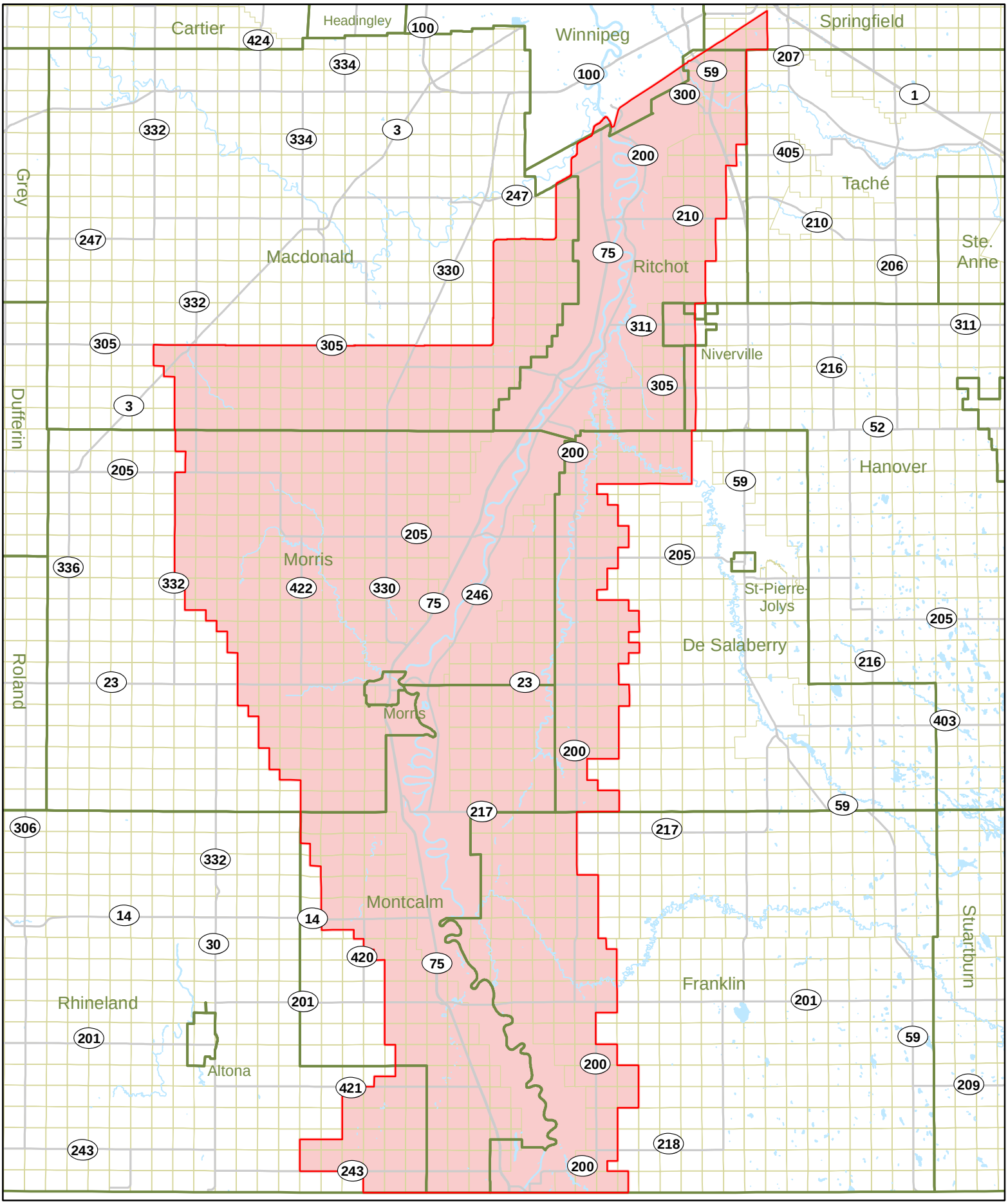
AGRA-GOLD
NUTRIENT MANAGEMENT

Millenni Egg Soils Map D, June 8, 2020





Millenni Egg Farm Truck Route



Upper Red River Designated Flood Area

2020 Apr 02

WELL INFORMATION REPORT

Well PID: 108838

Location: SW31-7-5E
UTMX:651240.6 UTMY:5497318 XY Accuracy:No Accuracy
Owner: PENNER FARM SERVICE
Driller: Echo Drilling Ltd.
Well Name:
Date Completed: 1998 Dec 10
Well Use: PRODUCTION
WATER USE: Domestic, Livestock
Well Status: ACTIVE Aquifer: LIMESTONE OR DOLOMITE

REMARKS:

WELL LOG (Imperial units)

From	To(ft.)	Log
0.0	2	FILL
2.0	4	BLACK LOAM
4.0	68	CLAY
68.0	92	TILL
92.0	120	LIMESTONE

WELL CONSTRUCTION

From	To(ft)	Const.Method	Inside Dia.(in)	Outside Dia.(in)	Slot Size(in)	Type	Material
0.0	95.0	CASING	5.0			INSERT	PVC
95.0	120.0	OPEN HOLE	4.0				
35.0	55.0	CASING GROUT					CEMENT

Top of Casing: 2.5 ft above ground

PUMPING TEST
Date : 1998 Dec 10 Pumping 50.0 Imp. gallons/minute
Water level before test : 5.0 ft below ground
Water level at end of test : 75.0 ft below ground
Test duration:
Test Zone: from 95.0 ft to 120.0 ft