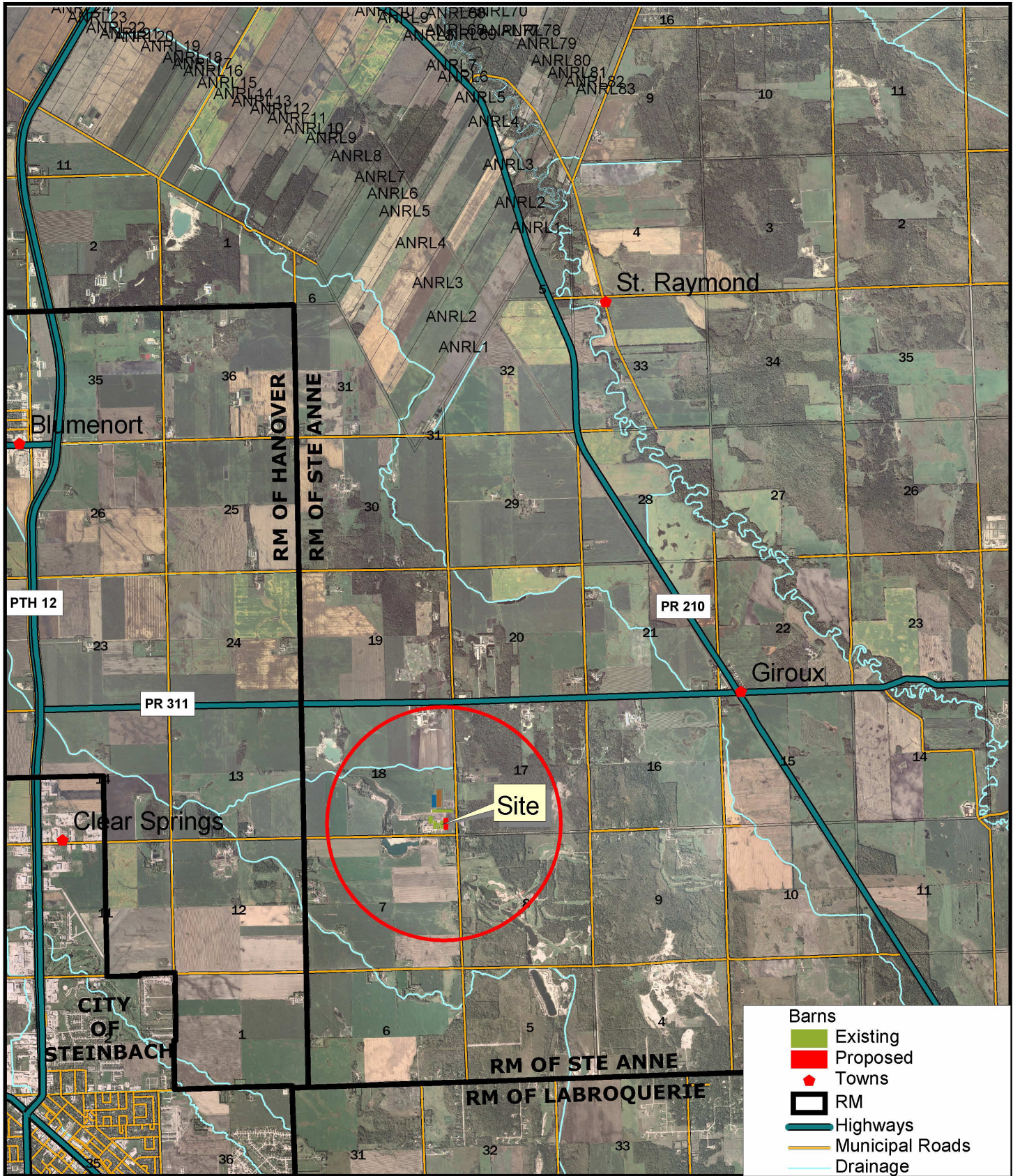


# Pennwood Dairy Location (SE 18-7-7E)

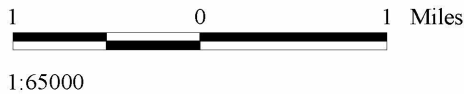


Twp 8

Twp 7

Rge. 6E

Rge. 7E



Data Sources:  
Fields and dwellings drawn by Tone Ag in consultation with landowner, and subject to change.  
Orthophotos are 1:60,000 from Manitoba Land Initiative website  
Highways are from Manitoba Highways and Transportation 1:60,000 map 1994  
Sections are from Manitoba Land Initiative website



2017-06-21





# 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 <sup>1</sup>	Current Animal Units	Proposed Number of Animals <sup>2</sup>	Proposed Number of Animal Units
Dairy <sup>3</sup>	Mature cows (lactating and dry) including associated livestock	2	800	1,600	1,705	3,410
	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 weaning (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:				1,600	Total Proposed:	3,410

**Footnotes:**

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

<sup>2</sup> Enter the total number of animals associated with the operation post construction or expansion.

<sup>3</sup> 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](#)



## Dairy Barn Water Requirement Estimator\*

Enter the following farm data:

Number of lactating/milking cows	1540
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	262291
Imperial gallons	57773
Cubic decametres	0.26

Total water needs estimate per year:	
Litres	95736215
Imperial gallons	21087272
Cubic decametres	95.74

\*Calculations are based on Manitoba AVERAGES for  
 • Feed composition



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)	P205 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%	1705	n/a	n/a	n/a	n/a	n/a	444607	235934

Last revised August 20, 2014



Species	Animal Category/Operation type	N (lb/year)	P2O5 (lb/year)
<b>Pigs</b>	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
	<b>Beef</b>	Mature Cows (>2 years old)	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
<b>Dairy</b>		Lactating cow	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	444607	235934
<b>Sheep</b>	Ewes	0	0
	Replacement Ewes	0	0
	Rams	0	0
	Lambs	0	0
	Ewes, plus assoc livestock	0	0
	Feeder	0	0
<b>Chickens</b>	Broilers	0	0
	Broiler Breeder Pullets	0	0
	Broiler Breeder Hens	0	0
<b>Layers</b>	Layer Pullets	0	0
	Layer Hens	0	0
	Breeder Pullets	0	0
	Breeder Hens	0	0
<b>Turkeys</b>	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	
<b>Total</b>		<b>444607</b>	<b>235934</b>

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



## 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:

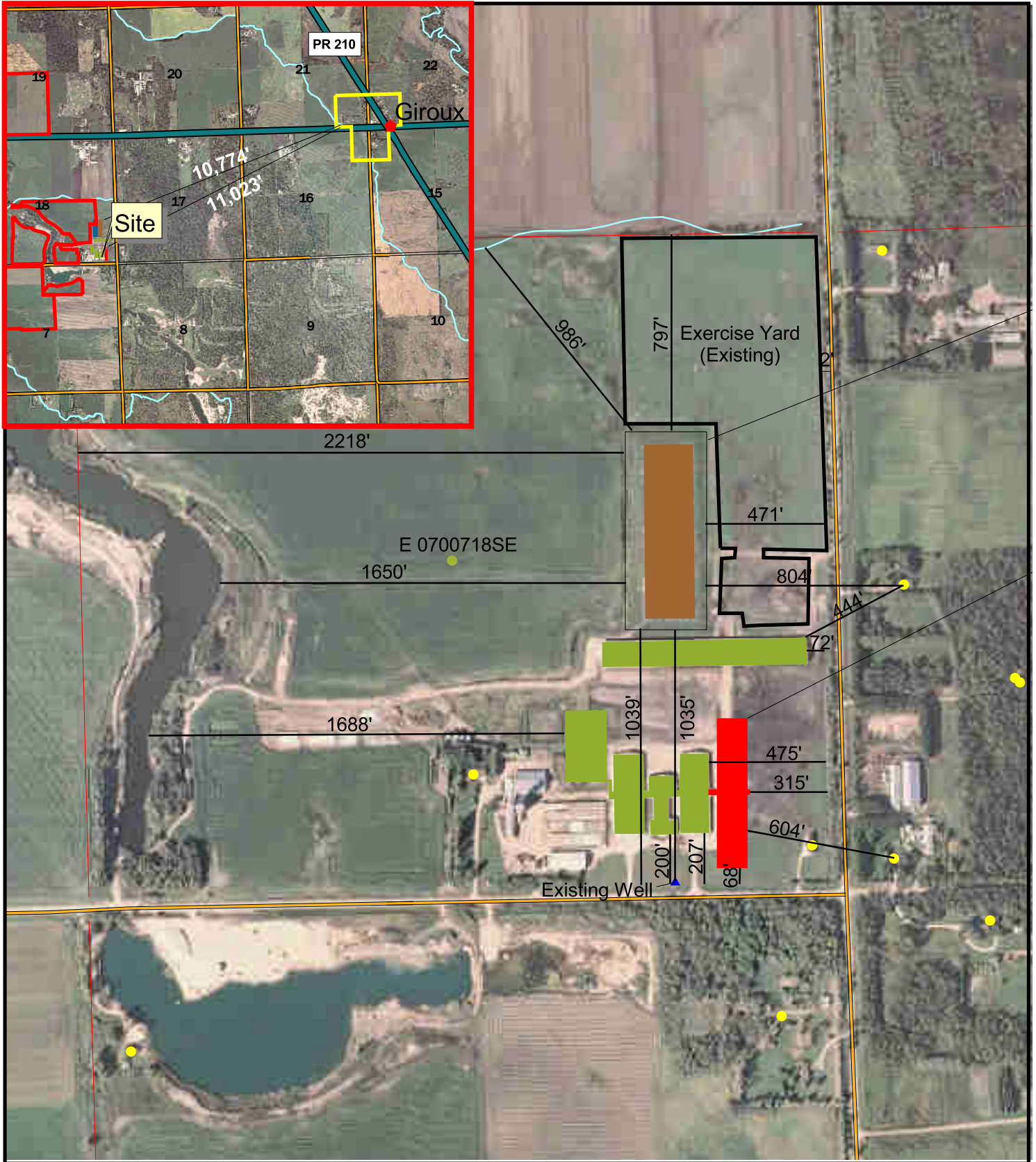
CELL	Existing Manure Storage Facility Dimensions						Storage Capacity (days)
	Width	Length	Depth	Height (Above Grade)	Slope (H:L)		
					Inside	Outside	
Primary	183 ft	708 ft	14 ft	9 ft	1:3.5	1:4	400
Secondary	ft	ft	ft	ft			
Tertiary	ft	ft	ft	ft			
Circular Tank	Diameter	Height	Depth (Above Grade)				
	ft	ft	ft				

Permit/Registration # LM - 0506





# Pennwood Dairy Project Site Plan (SE 18-7-7E) - Option I



- Dwelling Units
- Barns**
- Existing
- Proposed
- Existing EMS
- Municipal Roads
- Drainage

Data Sources:  
 Fields drawn by Tone Ag in consultation with landowner, and subject to change.  
 Orthophotos are 1:60,000 from Manitoba Land Initiative website  
 Highways are from Manitoba Highways and Transportation 1:60,000 map 1994  
 Sections are from Manitoba Land Initiative website



2018-09-13





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

CELL	Proposed Manure Storage Facility Dimensions						Storage Capacity (days)
	Width	Length	Depth	Height (Above Grade)	Slope (H:L)		
					Inside	Outside	
Primary	218 ft	743 ft	19 ft	14 ft	1:3.5	1:4	410
Secondary	ft	ft	ft	ft			
Tertiary	ft	ft	ft	ft			
Circular Tank		Diameter	Height	Depth			
		ft	ft	ft			

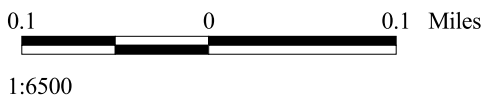
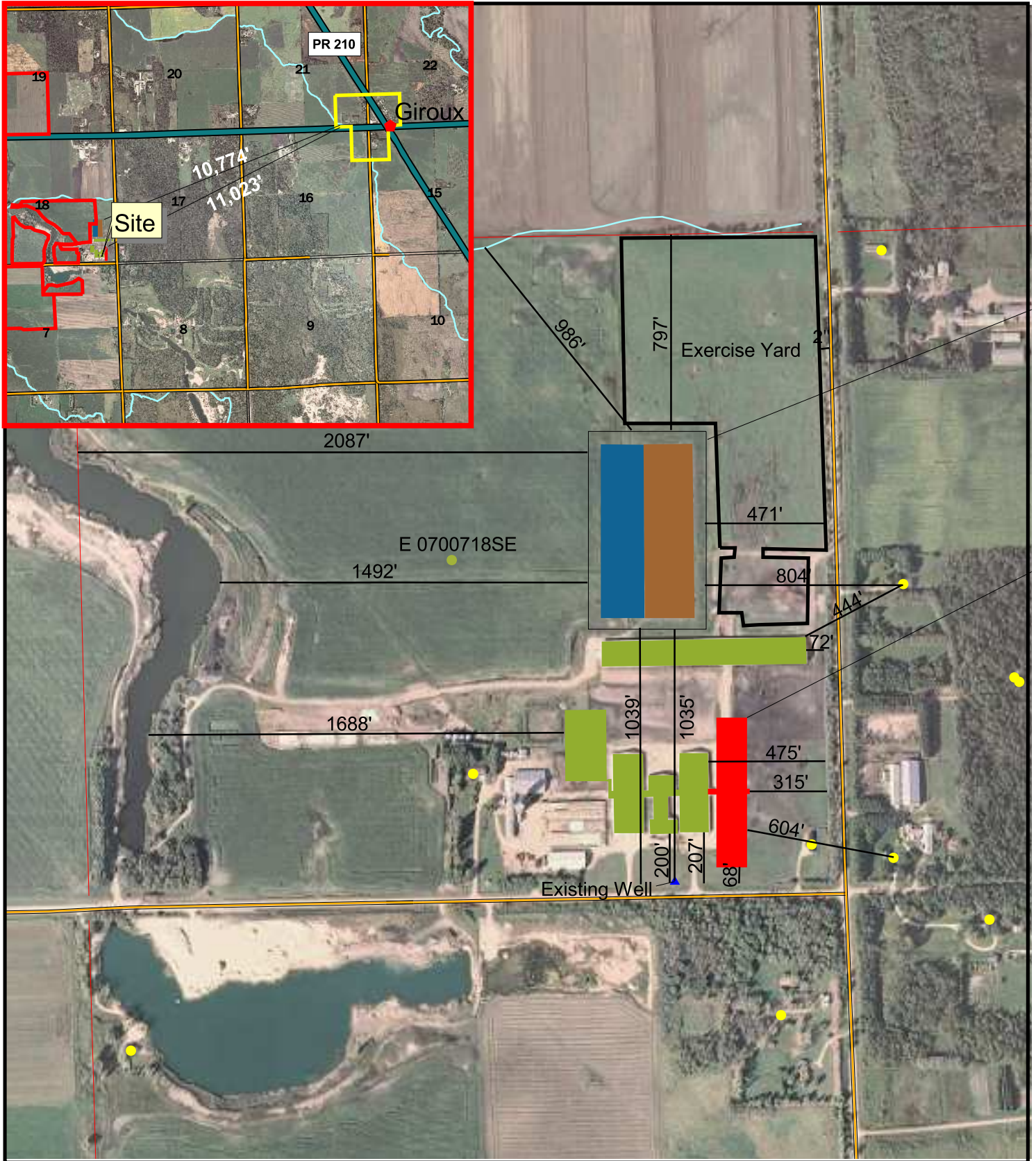
**The construction, modification or expansion of any manure storage structure requires a permit from Manitoba Sustainable Development as per the *Livestock Manure and Mortalities Management Regulation (M.R. 42/98)*.**

The above dimension are indicative of the preferred option to add capacity to the existing EMS by raising the berm. The dimensions indicate the final dimensions of the raised EMS.





# Pennwood Dairy Project Site Plan (SE 18-7-7E) - Option II



- Dwelling Units
- Existing Barns
- Proposed Barns
- Existing EMS
- Proposed EMS
- Municipal Roads
- Drainage

Data Sources:  
 Fields drawn by Tone Ag in consultation with landowner, and subject to change.  
 Orthophotos are 1:60,000 from Manitoba Land Initiative website  
 Highways are from Manitoba Highways and Transportation 1:60,000 map 1994  
 Sections are from Manitoba Land Initiative website



2018-07-26





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

CELL	Proposed Manure Storage Facility Dimensions						Storage Capacity (days)
	Width	Length	Depth	Height (Above Grade)	Slope (H:L)		
					Inside	Outside	
Primary	ft	ft	ft	ft			
Secondary	150 ft	708 ft	14 ft	9 ft	1:4	1:4	168
Tertiary	ft	ft	ft	ft			
Circular Tank		Diameter	Height	Depth			
		ft	ft	ft			

The construction, modification or expansion of any manure storage structure requires a permit from Manitoba Sustainable Development as per the *Livestock Manure and Mortalities Management Regulation (M.R. 42/98)*.

Option II – Adding a second cell.





**MANURE APPLICATION FIELD CHARACTERISTICS TABLE**

LEGAL	MUNICIPALITY	SOIL TEST FIELD ID NO.	DATE OF SOIL TEST	O/C/L/A	TOTAL ACREAGE	SETBACKS INCLUDING FEATURES (1)	NET ACREAGE FOR MANURE APPLICATION	AGRICULTURE CAPABILITY CLASS AND SUBCLASS	SOIL PHOSPHORUS (PPM OLSON P) 0 - 6"	DEVELOPMENT PLAN DESIGNATION	ZONING
SW 6-7-7E	Ste. Anne	6	2/28/2018	O	63		63	2W, 4M, 5W	28	Rural Agricultural Area	Agriculture
NE 7-7-7E	Ste. Anne	NW & NE7-7-7E	10/13/2017	O - 23 ac. L - 17 ac.	40		40	2W, 5M	57	Rural Agricultural Area	Agriculture
NW 7-7-7E	Ste. Anne			O	189		189	2W, 3M, 5M		Rural Agricultural Area	Agriculture
SW 18-7-7E	Ste. Anne	SW/SE18	4/13/2017	O	104.47	Water body / abandoned gravel pit	140	2W, 3P, 5M	36	Rural Agricultural Area	Agriculture
SE 18-7-7E	Ste. Anne			O	160						
SW 19-7-7E	Ste. Anne	19	10/12/2017	O	197.49		197	2W, 3P	42	Rural Agricultural Area	Agriculture
SE 28-7-7E	Ste. Anne	28	10/16/2017	O	156.5	Seine River	130	3MW <sup>7</sup> -5W <sup>3</sup>	17	Rural Agricultural Area	Agriculture
SW 28-7-7E	Ste. Anne	28	10/16/2017	O	141.13		141	3MW <sup>7</sup> -5W <sup>3</sup>		Rural Agricultural Area	Agriculture
NW 28-7-7E	Ste. Anne	28	10/16/2017	O	66.61		95	3MW <sup>7</sup> -5W <sup>3</sup> , 2M		Rural Agricultural Area	Agriculture
NE 28-7-7E	Ste. Anne			O	78.64	Seine River					
NW 32-7-7E	Ste. Anne	RL 1+2 southside	10/12/2017	O	41.38		40	2M, 2W	54	Rural Agricultural Area	Agriculture
NE 32-7-7E	Ste. Anne	NE/NW 32/33	3-Apr-18	O	111.7		100	2M, 2W, 3W	7	Pt. Rural Agricultural Area Pt. Rural Mixed Area	Pt. Agriculture Pt. Rural Mixed
NW 33-7-7E	Ste. Anne			O	48	Seine River	40	2M, 2W		Rural Mixed Area	Rural Mixed
RL 1 Parish of Ste. Anne	Ste. Anne	RL 1+2 northside	9/22/2017	O	196.83		120	2W, 2DW, 3W	44	Rural Agricultural Area	Agriculture
RL 2 Parish of Ste. Anne	Ste. Anne	RL 1+2 southside	10/12/2017	O	133.21		133	2W	54	Rural Agricultural Area	Agriculture
RL 4 Parish of Ste. Anne	Ste. Anne	RL4&RL5	10/12/2017	O	101		101	2W, 2M	38	Rural Agricultural Area	Agriculture
RL 5 Parish of Ste. Anne	Ste. Anne			O	41.3		40	2M, 2WP, 3M		Rural Agricultural Area	Agriculture
SW 31-7-7E	Ste. Anne	SW31	3/21/2018	O	85		85	2W, 3W	57	Rural Agricultural Area	Agriculture
SE 1-7-6E	Hanover	1	2/28/2018	O	114.14		114	2W	36	Rural Area	"R" Rural
NW 14-7-6E	Hanover	14	9/22/2017	O	146.2	3rd Order Drain	125	2W	18	Rural Area	"R" Rural
NE 14-7-6E	Hanover			O	160		155	2W		Rural Area	"R" Rural
SE 23-7-6E	Hanover	23	2/28/2018	O	73.86		73	2W	41	Rural Area	"R" Rural
SE 24-7-6E	Hanover	24	3/14/2018	O	125		110	2W, 3W	13	Rural Area	"R" Rural
NW 25-7-6E	Hanover	25	10/12/2017	O	80		80	2W, 3D, 3W	24	Rural Area	"R" Rural
S 1/2 SW 26-7-6E	Hanover	26	3/21/2018	O	80		80	2W	46	Rural Area	"R" Rural
W 1/2 31-6-7E	La Broquerie	NW31	2/28/2018	O	192		192	2W (87%), 5W (13%)	22	Agricultural Area 2	Rural Area 2
NW 33-6-7E	La Broquerie	33	9/15/2017	O	156.72	3rd Order Drain, 6W Soils	92	4M, 5M, 5W	48	Agricultural Area 2	Rural Area 2
<b>TOTALS</b>					<b>3083.18</b>		<b>2675</b>				

**NOTES:** (1) For areas affected by listed features, acreage for manure spread have taken into account and incorporate appropriate setbacks.



Crop	Removal		Uptake		Yield	Units	Acreage	Removal		Uptake	
	P205	N	N					P205	N	(lb)	(lb)
Alfalfa	13.8	58	58	lb/ton	4.542	ton/ac	967	60611	254743	254743	
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		bu/ac		-	-	-	
Corn Grain	0.44	0.97	1.53	lb/bu	116.4	bu/ac	660	33803	74519	117541	
Corn Silage	12.7	31.2	31.2	lb/ton	4.64	tons/ac	850	50089	123053	123053	
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	36.1	bu/ac	198	6004	27662	37169	
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		-	-	-	
<b>Total Acres</b>							2675	150507	479977	532505	
<b>Estimated Average Removal/Uptake (lb/ac)</b>								56.3	179.4	199.1	
<b>Acres in Hanover and La Broquerie</b>							1021				
<b>Proportion in Hanover or La Broquerie</b>							0.38				
<b>Additional Acres</b>											
<b>Crop Planned on Additional Acres</b>											
<b>Total Acreage</b>							2675				

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



# MASC 10-year Average Yields – RM of Ste. Anne

ALFALFA

Corporate >

Insurance >

Lending >

Other Programs >

Manitoba Agricultural Services Corporation

## MMPP - Fertilizer Data Browser

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### MMPP Fertilizer Data Browser - (Query Help)

Save Raw Data New Search

Summary **Raw Data**

#### Search Summary

Your selected search:

Region(s) Selected: STE. ANNE

Crop(s) Selected: ALFALFA

Soil Zone(s) Selected: SOIL TYPE D, SOIL TYPE E, SOIL TYPE G, SOIL TYPE H

Period Selected: 2007 to 2016

This search returned 15 records from the MASC database, summarized below:

Total Acres:	<b>1,014 acres</b>
Yield per Acre:	<b>5.152 Tons / acre</b> (4.675 tonnes / acre)

#### Fertilizer Applied per Acre (actual product):

Nitrogen:	<b>33.3 lbs / acre</b>	(0.015 tonnes / acre)
Phosphorus:	<b>35.3 lbs / acre</b>	(0.016 tonnes / acre)
Potassium:	<b>54.0 lbs / acre</b>	(0.024 tonnes / acre)
Sulfur:	<b>2.4 lbs / acre</b>	(0.001 tonnes / acre)

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## MMPP Fertilizer Data Browser - (Query Help)

[Save Raw Data](#) [New Search](#)

Summary **Raw Data**

### Search Summary

Your selected search:

Region(s) Selected: STE. ANNE

Crop(s) Selected: GRAIN CORN

Soil Zone(s) Selected: SOIL TYPE D, SOIL TYPE E, SOIL TYPE G, SOIL TYPE H

Period Selected: 2007 to 2016

**This search returned 37 records from the MASC database, summarized below:**

Total Acres:	<b>21,927 acres</b>
Yield per Acre:	<b>116.6 Bushels / acre</b> (2.962 tonnes / acre)

Fertilizer Applied per Acre (actual product):		
Nitrogen:	<b>123.0 lbs / acre</b>	(0.056 tonnes / acre)
Phosphorus:	<b>23.9 lbs / acre</b>	(0.011 tonnes / acre)
Potassium:	<b>15.2 lbs / acre</b>	(0.007 tonnes / acre)
Sulfur:	<b>3.5 lbs / acre</b>	(0.002 tonnes / acre)

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## MMPP Fertilizer Data Browser - (Query Help)

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Summary [Raw Data](#)

### Search Summary

Your selected search:

**Region(s)** Selected: STE. ANNE

**Crop(s)** Selected: SILAGE CORN

**Soil Zone(s)** Selected: SOIL TYPE D, SOIL TYPE E, SOIL TYPE G, SOIL TYPE H

**Period** Selected: 2007 to 2016

**This search returned 18 records from the MASC database, summarized below:**

Total Acres:	<b>1,355 acres</b>
Yield per Acre:	<b>11.677 Tons / acre</b> (10.596 tonnes / acre)

#### Fertilizer Applied per Acre (actual product):

Nitrogen:	<b>86.4 lbs / acre</b>	(0.039 tonnes / acre)
Phosphorus:	<b>23.5 lbs / acre</b>	(0.011 tonnes / acre)
Potassium:	<b>28.6 lbs / acre</b>	(0.013 tonnes / acre)
Sulfur:	<b>2.6 lbs / acre</b>	(0.001 tonnes / acre)

[View Raw Data](#)







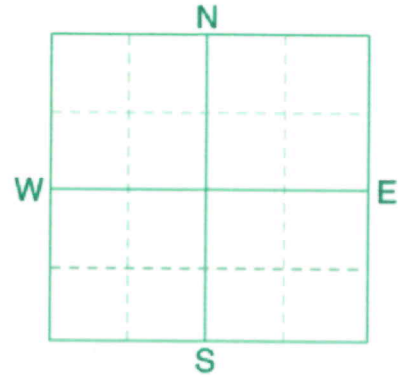




Soil Analysis by Agvise Laboratories  
 (http://www.agvise.com)  
 Northwood: (701) 587-6010  
 Benson: (320) 843-4109

### SOIL TEST REPORT

FIELD ID **PT. SW/SE 18-7-7E**  
 SAMPLE ID **18-7-7E**  
 FIELD NAME  
 COUNTY  
 TWP RANGE  
 SECTION QTR ACRES **140**  
 PREV. CROP **Corn-Grain**



SUBMITTED FOR:  
**PENNWOOD**

SUBMITTED BY: **TE2698**  
**RICHARDSON PIONEER-STEINB**  
**34 PIONEER ROAD**  
**STEINBACH, MB R5G 1W4**

REF # **11434677** BOX # **0**  
 LAB # **NW17631**

Date Sampled

Date Received **04/13/2017**

Date Reported **4/3/2018**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		VLow	Low	Med	High	Corn-Grain					
Nitrate	0-6"					YIELD GOAL		YIELD GOAL		YIELD GOAL	
	6-24"					160 BU					
	0-24"					SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
						Band					
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Phosphorus	Olsen 36 ppm	*****				N	187	N		N	
Potassium	349 ppm	*****				P <sub>2</sub> O <sub>5</sub>	15	P <sub>2</sub> O <sub>5</sub>		P <sub>2</sub> O <sub>5</sub>	
Chloride		*****				K <sub>2</sub> O	10	K <sub>2</sub> O		K <sub>2</sub> O	
Sulfur	0-6" 56 lb/ac 6-24" 150 lb/ac	*****				Cl		Cl		Cl	
Boron		*****				S	0	S		S	
Zinc	2.14 ppm	*****				B		B		B	
Iron		*****				Zn	0	Zn		Zn	
Manganese		*****				Fe		Fe		Fe	
Copper		*****				Mn		Mn		Mn	
Magnesium		*****				Cu		Cu		Cu	
Calcium		*****				Mg		Mg		Mg	
Sodium		*****				Lime		Lime		Lime	
Org. Matter	2.0 %	*****				Soil pH		% Base Saturation (Typical Range)			
Carbonate(CCE)		*****				Buffer pH		Cation Exchange Capacity		% Ca	% Mg
		*****								% K	% Na
		*****								% H	
Sol. Salts	0-6" 0.35 mmho/cm 6-24" 0.25 mmho/cm	*****				0-6" 8.4					
		*****				6-24" 8.6					

**Crop 1: \* 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 = 64 K2O = 43 AGVISE Band guidelines will build P & K test levels to the medium range over many years.**

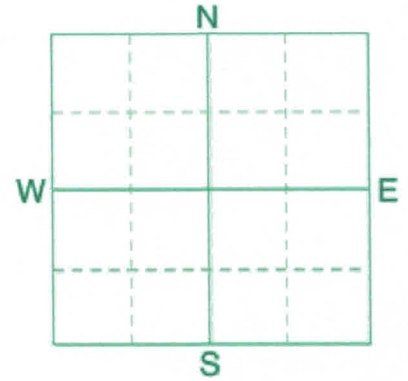




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### SOIL TEST REPORT

FIELD ID **19**  
 SAMPLE ID **SW 19-7-7E**  
 FIELD NAME  
 COUNTY **E**  
 TWP **7** RANGE **7**  
 SECTION **19** QTR **SW** ACRES **200**  
 PREV. CROP **Corn-Silage**



SUBMITTED FOR:  
**PENNWOOD DAIRY**

SUBMITTED BY: **TE2698**  
**RICHARDSON PIONEER-STEINB**  
**34 PIONEER ROAD**  
**STEINBACH, MB** **R5G 1W4**

REF # **2035967** BOX # **0**  
 LAB # **NW115662**

Date Sampled

Date Received **10/12/2017**

Date Reported **3/28/2018**

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		
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	
Nitrate	0-6" <b>52 lb/ac</b>		N		N		N		
	6-24" <b>60 lb/ac</b>		P <sub>2</sub> O <sub>5</sub>		P <sub>2</sub> O <sub>5</sub>		P <sub>2</sub> O <sub>5</sub>		
	0-24" <b>112 lb/ac</b>		K <sub>2</sub> O		K <sub>2</sub> O		K <sub>2</sub> O		
Phosphorus	Olsen <b>42 ppm</b>	*****	Cl		Cl		Cl		
Potassium	<b>324 ppm</b>	*****	S		S		S		
Chloride			B		B		B		
Sulfur	0-6" <b>34 lb/ac</b>	*****	Zn		Zn		Zn		
Boron	6-24" <b>102 lb/ac</b>	*****	Fe		Fe		Fe		
Zinc	<b>3.79 ppm</b>	*****	Mn		Mn		Mn		
Iron			Cu		Cu		Cu		
Manganese			Mg		Mg		Mg		
Copper			Lime		Lime		Lime		
Magnesium			Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)		
Calcium			Buffer pH			% Ca	% Mg	% K	% Na
Sodium									% H
Org.Matter	<b>6.6 %</b>	*****	0-6" <b>7.8</b>						
Carbonate(CCE)		*****	6-24" <b>8.3</b>						
Sol. Salts	0-6" <b>0.56 mmho/cm</b>	*****							
	6-24" <b>0.74 mmho/cm</b>	*****							





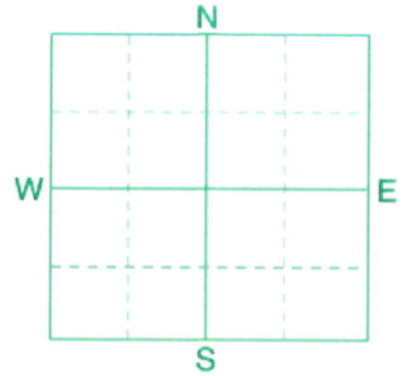




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### SOIL TEST REPORT

FIELD ID **RL1+2 Northside**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP RANGE  
 SECTION QTR ACRES **160**  
 PREV. CROP **Corn-Silage**



SUBMITTED FOR:  
**PENWOOD DAIRY**

SUBMITTED BY: **TE2698**  
**RICHARDSON PIONEER-STEINB**  
**34 PIONEER ROAD**  
**STEINBACH, MB R5G 1W4**

REF # **2002432** BOX # **0**  
 LAB # **NW80903**

Date Sampled

Date Received **09/22/2017**

Date Reported **4/3/2018**

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						
		*****				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION					
Nitrate	0-6" <b>46 lb/ac</b>					N		N		N						
	6-24" <b>30 lb/ac</b>					P <sub>2</sub> O <sub>5</sub>		P <sub>2</sub> O <sub>5</sub>		P <sub>2</sub> O <sub>5</sub>						
Olsen Phosphorus	<b>44 ppm</b>					K <sub>2</sub> O		K <sub>2</sub> O		K <sub>2</sub> O						
	<b>267 ppm</b>					Cl		Cl		Cl						
Potassium	<b>56 lb/ac</b>					S		S		S						
	<b>30 lb/ac</b>					B		B		B						
Chloride	<b>54 lb/ac</b>					Zn		Zn		Zn						
	<b>30 lb/ac</b>					Fe		Fe		Fe						
Sulfur	<b>54 lb/ac</b>					Mn		Mn		Mn						
	<b>54 lb/ac</b>					Cu		Cu		Cu						
Boron	<b>0.8 ppm</b>					Mg		Mg		Mg						
Zinc	<b>4.42 ppm</b>					Lime		Lime		Lime						
Iron	<b>53.8 ppm</b>					Soil pH		Buffer pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Manganese	<b>3.6 ppm</b>					0-6" <b>7.2</b>				<b>31.3 meq</b>	% Ca	% Mg	% K	% Na	% H	
Copper	<b>1.87 ppm</b>					6-24" <b>7.9</b>					(65-75)	(15-20)	(1-7)	(0-5)	(0-5)	
Magnesium	<b>1159 ppm</b>										<b>66.2</b>	<b>30.9</b>	<b>2.2</b>	<b>0.7</b>		
Calcium	<b>4140 ppm</b>															
Sodium	<b>48 ppm</b>															
Org.Matter	<b>5.0 %</b>															
Carbonate(CCE)	<b>0.9 %</b>															
Sol. Salts	0-6" <b>0.72 mmho/cm</b>															
	6-24" <b>0.5 mmho/cm</b>															

General Comments: Clays/Clay Loams (CEC range = 30+) (Fine)

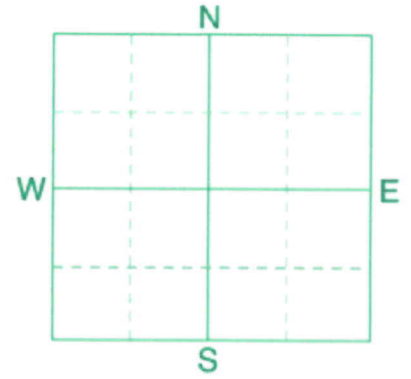




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### SOIL TEST REPORT

FIELD ID **RL1+2 Southside + NW 32**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP RANGE  
 SECTION QTR ACRES **207**  
 PREV. CROP **Alfalfa**



SUBMITTED FOR:  
**PENNWOOD DAIRY**

SUBMITTED BY: **TE2698**  
**RICHARDSON PIONEER-STEINB**  
**34 PIONEER ROAD**  
**STEINBACH, MB** **R5G 1W4**

REF # **2002433** BOX # **0**  
 LAB # **NW115654**

Date Sampled

Date Received **10/12/2017**

Date Reported **4/3/2018**

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						
		*****				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION					
Nitrate	0-6" 14 lb/ac					N		N		N						
	6-24" 15 lb/ac					P <sub>2</sub> O <sub>5</sub>		P <sub>2</sub> O <sub>5</sub>		P <sub>2</sub> O <sub>5</sub>						
	0-24" 29 lb/ac					K <sub>2</sub> O		K <sub>2</sub> O		K <sub>2</sub> O						
Olsen Phosphorus	54 ppm					Cl		Cl		Cl						
Potassium	243 ppm					S		S		S						
Chloride	0-24" 108 lb/ac					B		B		B						
	0-6" 22 lb/ac					Zn		Zn		Zn						
Sulfur	6-24" 66 lb/ac					Fe		Fe		Fe						
						Mn		Mn		Mn						
Boron	1.4 ppm					Cu		Cu		Cu						
Zinc	4.96 ppm					Mg		Mg		Mg						
Iron	50.3 ppm					Lime		Lime		Lime						
Manganese	2.2 ppm					Soil pH		Buffer pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Copper	2.04 ppm					0-6" 7.5					% Ca	% Mg	% K	% Na	% H	
Magnesium	1392 ppm					6-24" 8.1		40.2 meq			(65-75)	(15-20)	(1-7)	(0-5)	(0-5)	
Calcium	5557 ppm										<b>69.1</b>	<b>28.8</b>	<b>1.5</b>	<b>0.5</b>		
Sodium	46 ppm															
Org.Matter	5.4 %															
Carbonate(CCE)	3.6 %															
Sol. Salts	0-6" 0.56 mmho/cm															
	6-24" 0.66 mmho/cm															

General Comments: Clays/Clay Loams (CEC range = 30+) (Fine)



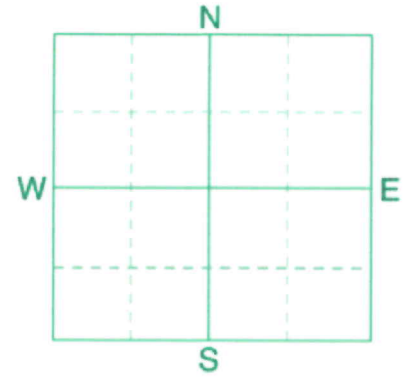




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### SOIL TEST REPORT

FIELD ID **31**  
 SAMPLE ID  
 FIELD NAME **SW 31-7-7E**  
 COUNTY  
 TWP RANGE  
 SECTION QTR ACRES **85**  
 PREV. CROP



SUBMITTED FOR:  
**PENWOOD DAIRY**

SUBMITTED BY: **TE2698**  
**RICHARDSON PIONEER-STEINB**  
**34 PIONEER ROAD**  
**STEINBACH, MB R5G 1W4**

REF # **12440314** BOX # **0**  
 LAB # **NW4762**

Date Sampled

Date Received **03/21/2018**

Date Reported **4/3/2018**

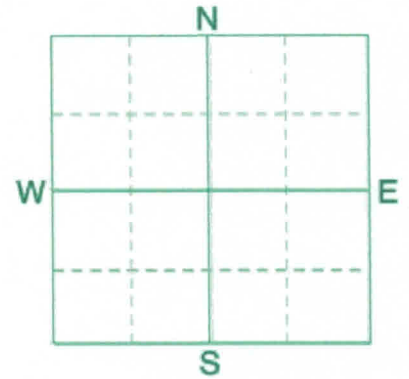
Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice						
		VLow	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL						
Nitrate	0-6"	*****				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES						
	6-24"	*****				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION					
	0-24"	*****				N		N		N						
Olsen Phosphorus	57 ppm	*****				P <sub>2</sub> O <sub>5</sub>		P <sub>2</sub> O <sub>5</sub>		P <sub>2</sub> O <sub>5</sub>						
Potassium	466 ppm	*****				K <sub>2</sub> O		K <sub>2</sub> O		K <sub>2</sub> O						
Chloride		*****				Cl		Cl		Cl						
Sulfur	0-6"	*****				S		S		S						
	6-24"	*****				B		B		B						
Boron		*****				Zn		Zn		Zn						
Zinc	2.60 ppm	*****				Fe		Fe		Fe						
Iron		*****				Mn		Mn		Mn						
Manganese		*****				Cu		Cu		Cu						
Copper		*****				Mg		Mg		Mg						
Magnesium		*****				Lime		Lime		Lime						
Calcium		*****				Soil pH		Buffer pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Sodium		*****										% Ca	% Mg	% K	% Na	% H
Org. Matter	7.7 %	*****				0-6" <b>7.7</b>										
Carbonate(CCE)		*****				6-24" <b>7.8</b>										
Sol. Salts		*****														



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### SOIL TEST REPORT

FIELD ID **1**  
 SAMPLE ID  
 FIELD NAME **SE 1-7-6E**  
 COUNTY  
 TWP RANGE  
 SECTION QTR ACRES **114.14**  
 PREV. CROP



SUBMITTED FOR:  
**PENNWOOD DAIRY**

SUBMITTED BY: **TE2698**  
**RICHARDSON PIONEER-STEINB**  
**34 PIONEER ROAD**  
**STEINBACH, MB R5G 1W4**

REF # **12440312** BOX # **0**  
 LAB # **NW3489**

Date Sampled

Date Received **02/28/2018**

Date Reported **3/28/2018**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice						
		V	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL						
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES						
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION					
Nitrate	0-6"					N		N		N						
	6-24"					P <sub>2</sub> O <sub>5</sub>		P <sub>2</sub> O <sub>5</sub>		P <sub>2</sub> O <sub>5</sub>						
Olsen Phosphorus	36 ppm	*****				K <sub>2</sub> O		K <sub>2</sub> O		K <sub>2</sub> O						
Potassium	211 ppm	*****				Cl		Cl		Cl						
Chloride	0-6"					S		S		S						
	6-24"					B		B		B						
Sulfur	26 lb/ac	*****				Zn		Zn		Zn						
Boron	66 lb/ac	*****				Fe		Fe		Fe						
Zinc	2.68 ppm	*****				Mn		Mn		Mn						
Iron						Cu		Cu		Cu						
Manganese						Mg		Mg		Mg						
Copper						Lime		Lime		Lime						
Magnesium						Soil pH		Buffer pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Calcium												% Ca	% Mg	% K	% Na	% H
Sodium						0-6"	8.1									
Org.Matter	3.7 %	*****				6-24"	8.1									
Carbonate(CCE)																
Sol. Salts	0-6"															
	6-24"															

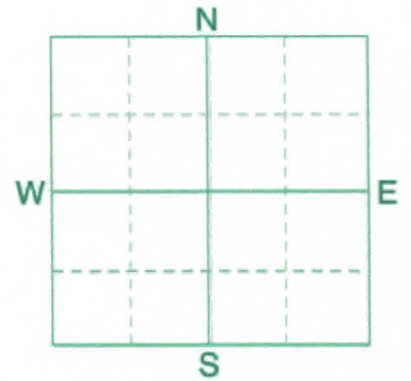




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### SOIL TEST REPORT

FIELD ID **14**  
 SAMPLE ID  
 FIELD NAME **NE 14-7-6E**  
 COUNTY **E**  
 TWP **7** RANGE **6**  
 SECTION **14** QTR **N 1/2** ACRES **280**  
 PREV. CROP **Alfalfa**



SUBMITTED FOR:  
**PENNWOOD DAIRY**

SUBMITTED BY: **TE2698**  
**RICHARDSON PIONEER-STEINB**  
**34 PIONEER ROAD**  
**STEINBACH, MB** **R5G 1W4**

REF # **2002434** BOX # **0**  
 LAB # **NW80902**

Date Sampled

Date Received **09/22/2017**

Date Reported **3/28/2018**

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		V Low Low Med High	Alfalfa							
Nitrate	0-6" 16 lb/ac	*****	YIELD GOAL		YIELD GOAL		YIELD GOAL			
	6-24" 9 lb/ac		4 Tons							
	0-24" 25 lb/ac		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
			Broadcast/Maint.							
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Olsen Phosphorus	18 ppm	*****	N	0	N		N			
Potassium	226 ppm	*****	P <sub>2</sub> O <sub>5</sub>	40 Broadcast	P <sub>2</sub> O <sub>5</sub>		P <sub>2</sub> O <sub>5</sub>			
Chloride	104 lb/ac	*****	K <sub>2</sub> O	200 Broadcast	K <sub>2</sub> O		K <sub>2</sub> O			
			Cl	Not Available	Cl		Cl			
Sulfur	52 lb/ac	*****	S	0	S		S			
Boron	1.3 ppm	*****	B	0	B		B			
Zinc	1.87 ppm	*****	Zn	0	Zn		Zn			
Iron	21.6 ppm	*****	Fe	0	Fe		Fe			
Manganese	1.7 ppm	*****	Mn	0	Mn		Mn			
Copper	2.06 ppm	*****	Cu	0	Cu		Cu			
Magnesium	1038 ppm	*****	Mg	0	Mg		Mg			
Calcium	5597 ppm	*****	Lime		Lime		Lime			
Sodium	83 ppm	*****								
Org. Matter	5.8 %	*****								
Carbonate(CCE)	4.3 %	*****								
Sol. Salts	0-6" 0.67 mmho/cm	*****	Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
	6-24" 0.59 mmho/cm	*****	0-6" 7.6		37.6 meq	% Ca	% Mg	% K	% Na	% H
			6-24" 8.3			(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
						74.5	23.0	1.5	1.0	

General Comments: Clays/Clay Loams (CEC range = 30+) (Fine)

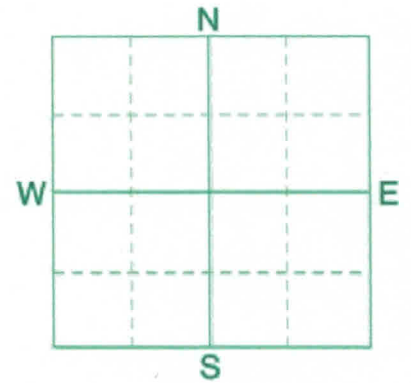
Crop 1: \*\* Chloride yield data is limited for this crop. Nitrogen is credited 25 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 40 K2O = 200 AGVISE Broadcast/Maintenance guidelines will build P & K test levels to the high range over several years and then maintain them.



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### SOIL TEST REPORT

FIELD ID **23**  
 SAMPLE ID  
 FIELD NAME **SE 23-7-6E**  
 COUNTY  
 TWP RANGE  
 SECTION QTR ACRES **73.86**  
 PREV. CROP



SUBMITTED FOR:  
**PENNWOOD DAIRY**

SUBMITTED BY: **TE2698**  
**RICHARDSON PIONEER-STEINB**  
**34 PIONEER ROAD**  
**STEINBACH, MB R5G 1W4**

REF # **12440306** BOX # **0**  
 LAB # **NW3486**

Date Sampled

Date Received **02/28/2018**

Date Reported **3/28/2018**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice						
		V	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL						
		*****				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES						
		*****				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION					
Nitrate	0-6"	59 lb/ac				N		N		N						
	6-24"	111 lb/ac				P <sub>2</sub> O <sub>5</sub>		P <sub>2</sub> O <sub>5</sub>		P <sub>2</sub> O <sub>5</sub>						
	0-24"	170 lb/ac				K <sub>2</sub> O		K <sub>2</sub> O		K <sub>2</sub> O						
Olsen Phosphorus		41 ppm				Cl		Cl		Cl						
Potassium		434 ppm				S		S		S						
Chloride						B		B		B						
Sulfur	0-6"	38 lb/ac				Zn		Zn		Zn						
	6-24"	192 lb/ac				Fe		Fe		Fe						
Boron						Mn		Mn		Mn						
Zinc		4.24 ppm				Cu		Cu		Cu						
Iron						Mg		Mg		Mg						
Manganese						Lime		Lime		Lime						
Copper						Soil pH		Buffer pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Magnesium					% Ca							% Mg	% K	% Na	% H	
Calcium						0-6"	7.7									
Sodium						6-24"	7.8									
Org. Matter		7.0 %														
Carbonate(CCE)																
Sol. Salts	0-6"	0.85 mmho/cm														
	6-24"	0.91 mmho/cm														

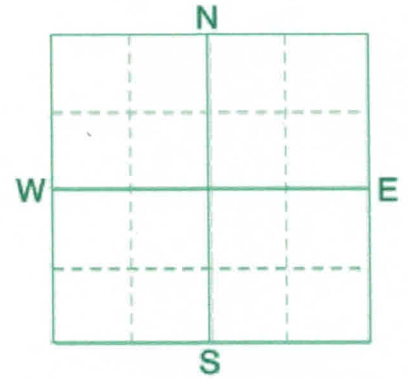




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### SOIL TEST REPORT

FIELD ID **24**  
 SAMPLE ID  
 FIELD NAME **SE 24-7-6E**  
 COUNTY  
 TWP RANGE  
 SECTION QTR ACRES **125**  
 PREV. CROP



SUBMITTED FOR:  
**PENNWOOD DAIRY**

SUBMITTED BY: **TE2698**  
**RICHARDSON PIONEER-STEINB**  
**34 PIONEER ROAD**  
**STEINBACH, MB R5G 1W4**

REF # **11518424** BOX # **0**  
 LAB # **NW4543**

Date Sampled

Date Received **03/14/2018**

Date Reported **3/28/2018**

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		V Low Low Med High	YIELD GOAL		YIELD GOAL		YIELD GOAL			
		*****	SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Nitrate	0-6" 12 lb/ac 6-24" 24 lb/ac 0-24" 36 lb/ac	*****	N		N		N			
Phosphorus	Olsen 13 ppm	*****	P <sub>2</sub> O <sub>5</sub>		P <sub>2</sub> O <sub>5</sub>		P <sub>2</sub> O <sub>5</sub>			
Potassium	298 ppm	*****	K <sub>2</sub> O		K <sub>2</sub> O		K <sub>2</sub> O			
Chloride			Cl		Cl		Cl			
Sulfur	0-6" 20 lb/ac 6-24" 54 lb/ac	*****	S		S		S			
Boron			B		B		B			
Zinc	1.53 ppm	*****	Zn		Zn		Zn			
Iron			Fe		Fe		Fe			
Manganese			Mn		Mn		Mn			
Copper			Cu		Cu		Cu			
Magnesium			Mg		Mg		Mg			
Calcium			Lime		Lime		Lime			
Sodium										
Org. Matter	6.7 %	*****								
Carbonate(CCE)										
Sol. Salts	0-6" 0.54 mmho/cm 6-24" 0.45 mmho/cm	*****	Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			0-6" 7.6 6-24" 7.8			% Ca	% Mg	% K	% Na	% H



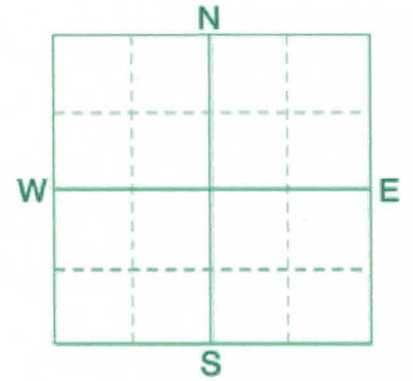




Soil Analysis by Agvise Laboratories  
 (http://www.agvise.com)  
 Northwood: (701) 587-6010  
 Benson: (320) 843-4109

### SOIL TEST REPORT

FIELD ID **26**  
 SAMPLE ID  
 FIELD NAME **SW 26-7-6E**  
 COUNTY  
 TWP RANGE  
 SECTION QTR ACRES **76.45**  
 PREV. CROP



SUBMITTED FOR:  
**PENNWOOD DAIRY**

SUBMITTED BY: **TE2698**  
**RICHARDSON PIONEER-STEINB**  
**34 PIONEER ROAD**  
**STEINBACH, MB R5G 1W4**

REF # **12440313** BOX # **0**  
 LAB # **NW4761**

Date Sampled

Date Received **03/21/2018**

Date Reported **3/28/2018**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice		
		V	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL		
		*****				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		
		*****				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	
Nitrate	0-6"	25 lb/ac				N		N		N		
	6-24"	138 lb/ac				P <sub>2</sub> O <sub>5</sub>		P <sub>2</sub> O <sub>5</sub>		P <sub>2</sub> O <sub>5</sub>		
Olsen Phosphorus	0-24"	163 lb/ac				K <sub>2</sub> O		K <sub>2</sub> O		K <sub>2</sub> O		
						Cl		Cl		Cl		
Potassium		655 ppm				S		S		S		
Chloride	0-6"	18 lb/ac				B		B		B		
	6-24"	84 lb/ac				Zn		Zn		Zn		
Sulfur						Fe		Fe		Fe		
Boron						Mn		Mn		Mn		
Zinc		3.93 ppm				Cu		Cu		Cu		
Iron						Mg		Mg		Mg		
Manganese						Lime		Lime		Lime		
Copper						Soil pH Buffer pH Cation Exchange Capacity		% Base Saturation (Typical Range)				
Magnesium								% Ca	% Mg	% K	% Na	% H
Calcium						0-6" <b>6.7</b>						
Sodium						6-24" <b>6.4</b>						
Org.Matter		9.0 %										
Carbonate(CCE)												
Sol. Salts	0-6"	0.75 mmho/cm										
	6-24"	0.75 mmho/cm										



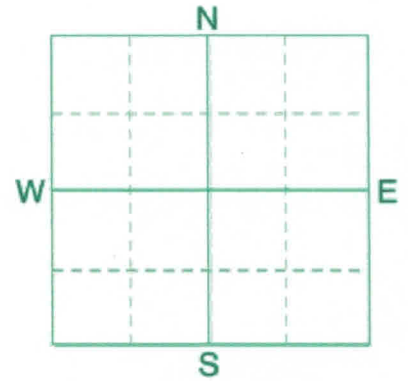




Soil Analysis by Agvise Laboratories  
 (http://www.agvise.com)  
 Northwood: (701) 587-6010  
 Benson: (320) 843-4109

### SOIL TEST REPORT

FIELD ID **33**  
 SAMPLE ID  
 FIELD NAME **NW33-6-7E**  
 COUNTY **E**  
 TWP **6** RANGE **7**  
 SECTION **33** QTR **NW** ACRES **135**  
 PREV. CROP **Corn-Silage**



SUBMITTED FOR:  
**PENNWOOD DAIRY**

SUBMITTED BY: **TE2698**  
**RICHARDSON PIONEER-STEINB**  
**34 PIONEER ROAD**  
**STEINBACH, MB** **R5G 1W4**

REF # **1987866** BOX # **0**  
 LAB # **NW71018**

Date Sampled

Date Received **09/15/2017**

Date Reported **3/28/2018**

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	
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Nitrate	0-6" 38 lb/ac 6-24" 90 lb/ac					N		N		N	
	0-24" 128 lb/ac					P <sub>2</sub> O <sub>5</sub>		P <sub>2</sub> O <sub>5</sub>		P <sub>2</sub> O <sub>5</sub>	
Phosphorus	Olsen 48 ppm					K <sub>2</sub> O		K <sub>2</sub> O		K <sub>2</sub> O	
Potassium	329 ppm					Cl		Cl		Cl	
Chloride						S		S		S	
Sulfur	0-6" 120 +lb/ac 6-24" 360 +lb/ac					B		B		B	
Boron						Zn		Zn		Zn	
Zinc	3.28 ppm					Fe		Fe		Fe	
Iron						Mn		Mn		Mn	
Manganese						Cu		Cu		Cu	
Copper						Mg		Mg		Mg	
Magnesium						Lime		Lime		Lime	
Calcium						Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)	
Sodium						Buffer pH			% Ca	% Mg	% K
Org.Matter	8.4 %								% Na	% H	
Carbonate(CCE)						0-6" 7.9					
Soil Salts	0-6" 0.73 mmho/cm 6-24" 0.45 mmho/cm					6-24" 7.9					

<b>Nutrients Excreted</b>		<b>lbs</b>
Nitrogen		444607
P2O5		235934
<b>Crop Nutrient Use</b>		<b>lb/ac</b>
Crop N Uptake		199.1
Crop P2O5 Rmoval		56.3
Operation P2O5 Credit		91.1
<b>Land Available</b>		<b>2675</b>
<b>Land Base Requirements</b>		<b>acres</b>
Acres for Nitrogen Uptake		<b>2233</b>
Acres for Phosphorus Removal		<b>2591</b>
<b>Phosphorus Balance</b>		<b>acres</b>
Acres for Phosphorus Balance		<b>4193</b>

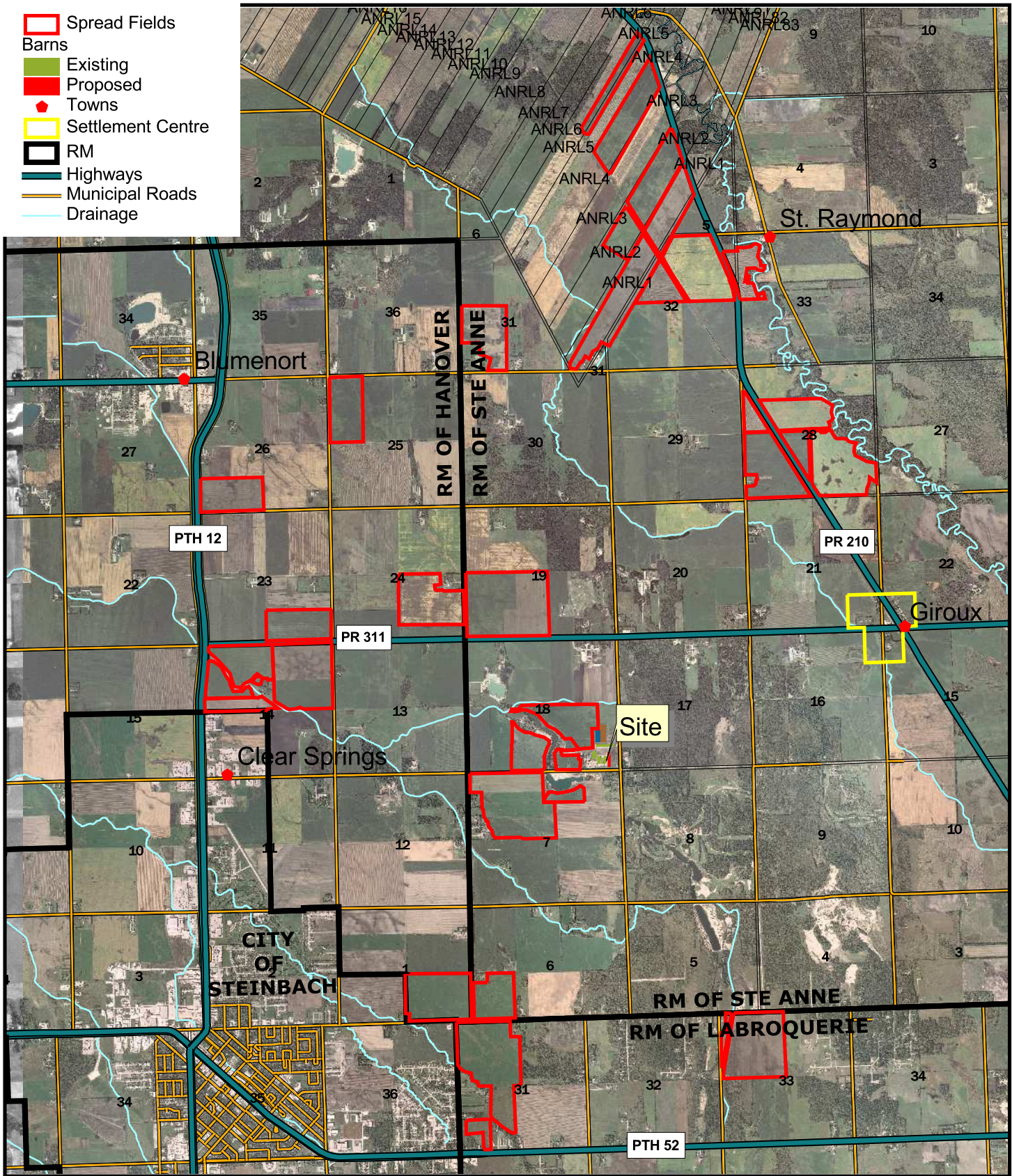
Provided by Manitoba Agriculture

Last revised Dec 18, 2017



# Pennwood Dairy Land Use & Spread Fields

- Spread Fields
- Barns
- Existing
- Proposed
- Towns
- Settlement Centre
- RM
- Highways
- Municipal Roads
- Drainage



Rge. 6E

Rge. 7E

1 0 1 Miles

1:65000

Data Sources:  
 Fields and dwellings drawn by Tone Ag in consultation with landowner, and subject to change.  
 Orthophotos are 1:60,000 from Manitoba Land Initiative website  
 Highways are from Manitoba Highways and Transportation 1:60,000 map 1994  
 Sections are from Manitoba Land Initiative website



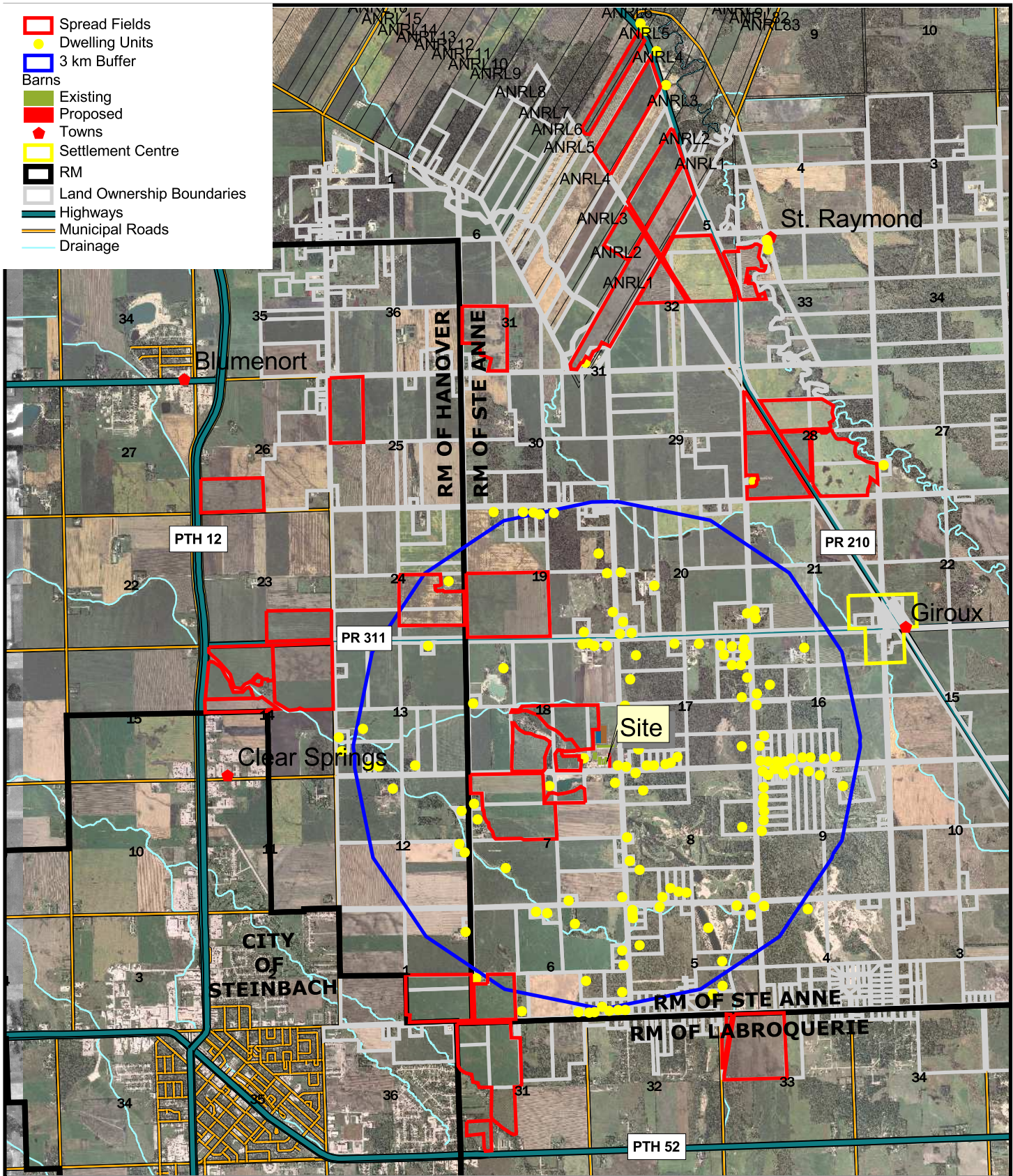
2018-04-05





# Pennwood Dairy Land Use & Spread Fields (With Roll Parcels)

- Spread Fields
- Dwelling Units
- 3 km Buffer
- Barns**
- Existing
- Proposed
- ♦ Towns
- Settlement Centre
- RM
- Land Ownership Boundaries
- Highways
- Municipal Roads
- Drainage



Twp 8

Twp 7

Rge. 6E

Rge. 7E

1 0 1 Miles

1:65000

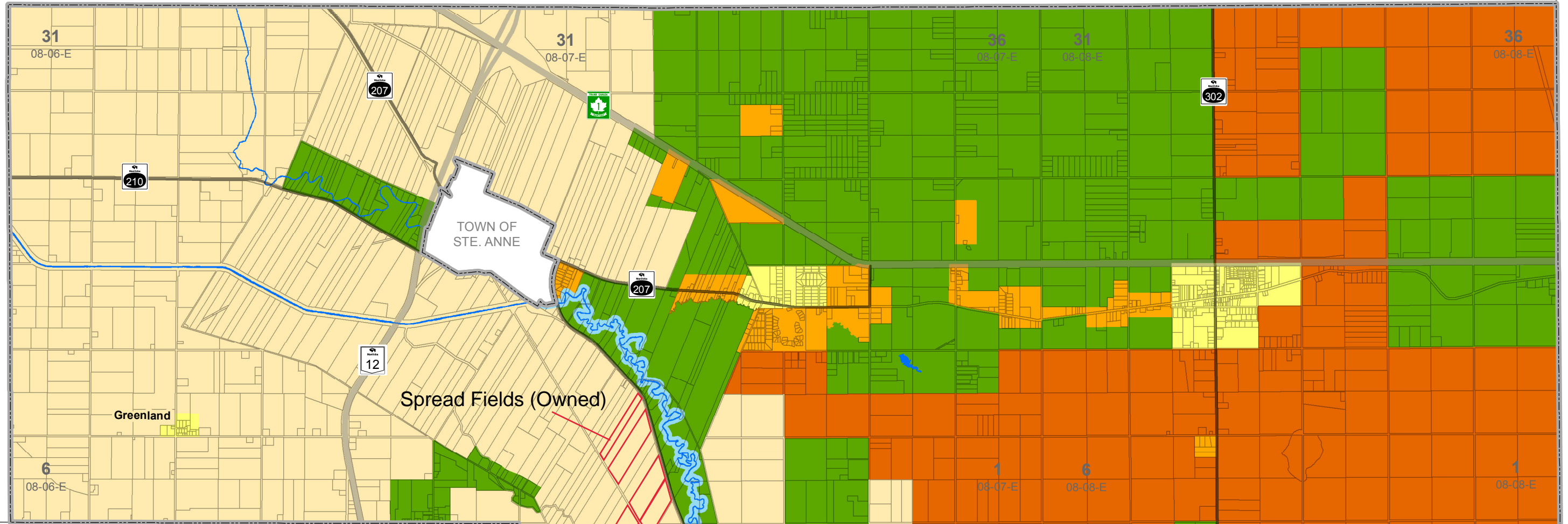
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 Sections are from Manitoba Land Initiative website



2018-04-05











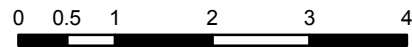




### RURAL MUNICIPALITY OF STE. ANNE

#### DEVELOPMENT PLAN BY-LAW NO. 13-2007

-  Rural Agriculture Area
-  Rural Mixed Use Area
-  Rural Natural Area
-  Rural Residential Area
-  Settlement Centre
-  Environmental Protection Area
-  Provincial Trunk Highway
-  Provincial Road



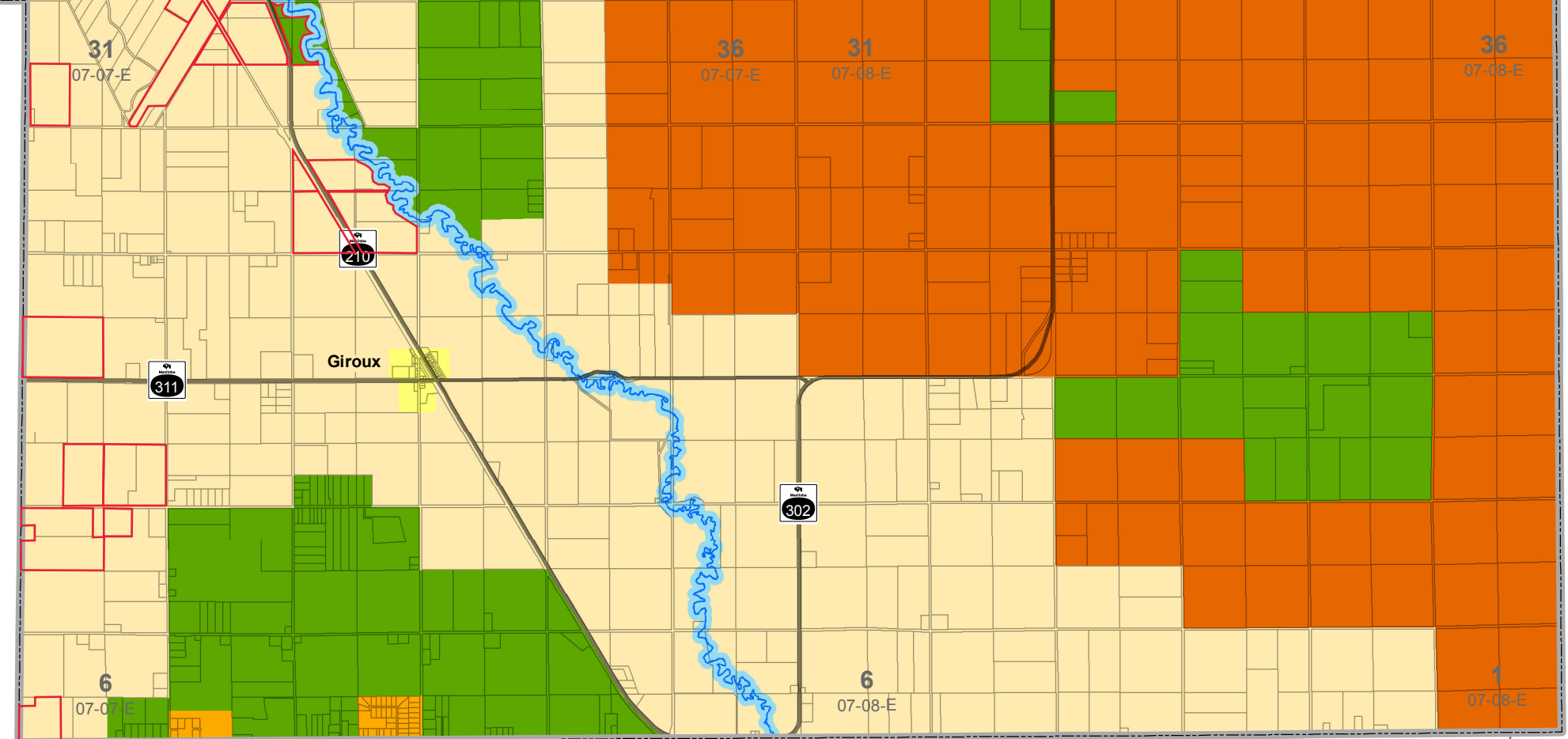
Kilometers



Miles

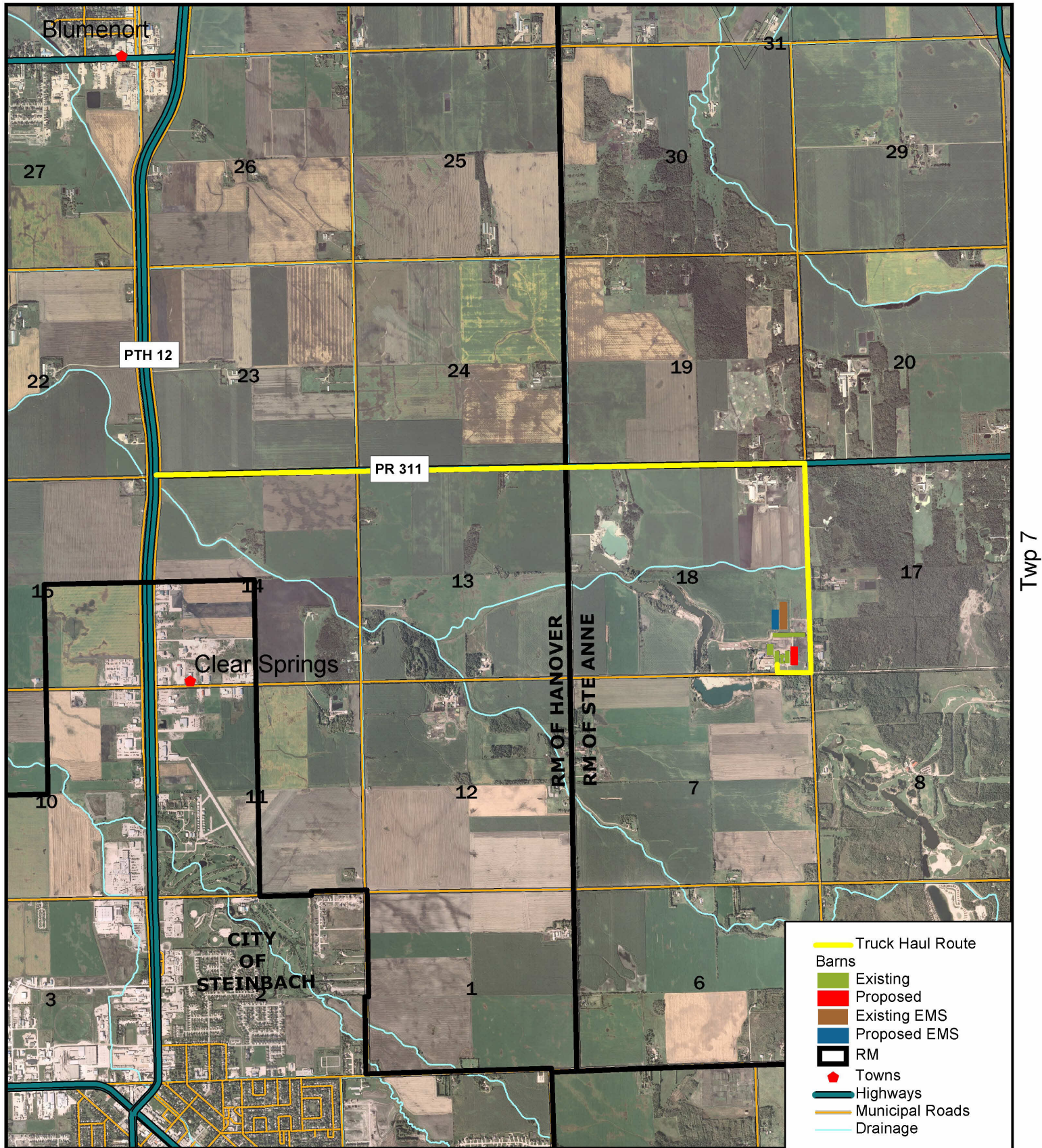


OFFICE CONSOLIDATION  
UP TO AND INCLUDING  
BY-LAW No. 01-2014  
June 5, 2014





# Pennwood Dairy Truck Haul Route and Access Map (SE 18-7-7E)



Rge. 6E

Rge. 7E

0 1 Miles

1:40000

Data Sources:  
Fields drawn by Tone Ag in consultation with landowner, and subject to change.  
Orthophotos are 1:60,000 from Manitoba Land Initiative website  
Highways are from Manitoba Highways and Transportation 1:60,000 map 1994  
Sections are from Manitoba Land Initiative website



2017-06-21





Pennwood Dairy1 - Copy

line

Well PID: 183259  
 Location: NE18-7-7E  
 UTMX:672209.1 UTM Y:5493526.7 XY Accuracy:1 EXACT [<5M] [GPS]  
 UTMZ:264 Z Accuracy:4 FAIR - Shuttle at Centroid  
 Owner: PENNWOOD DAIRY INC.  
 Driller: Echo Drilling Ltd.  
 Well Name:  
 Date Completed: 2014 Apr 15  
 Well Use: PRODUCTION  
 Water Use: Livestock  
 Well Status: ACTIVE Aquifer: UNKNOWN

REMARKS:

WELL MUST BE VENTED, PITLESS UNIT WAS NOT INSTALLED. TWO DATES PROVIDED ON THIS WELL LOG JAN 30 2013 AND APR 15 2014.

WELL LOG (Imperial units)

From	To(ft.)	Log
0.0	119	TILL
119.0	180	LIMESTONE
215.0	225	SHALE
225.0	298	SANDSTONE

WELL CONSTRUCTION

From	To(ft)	Const.Method	Inside Dia.(in)	Outside Dia.(in)	Slot Size(in)	Type	Material
0.0	121.0	CASING		5.5		INSERT	PVC
121.0	180.0	OPEN HOLE		4.8			
60.0	121.0	CASING GROUT					BENTONITE
115.0	225.0	CASING	2.0	2.3		INSERT	PVC
225.0	295.0	PERFORATIONS	2.0	2.3	0.010		PVC
118.0	298.0	GRAVEL PACK					SILICA S.

Top of Casing: 2.0 ft. above ground

PUMPING TEST

Date : 2014 Apr 15 Pumping 75.0 Imp. gallons/minute  
 Water level before test : 14.0 ft below ground  
 Water level at end of test : 28.0 ft below ground  
 Test duration: 1:00:00  
 Test Zone: from 121.0 ft to 180.0 ft



Pennwood Dairy2 - Copy

line  
Well PID: 180935  
Location: NE18-7-7E  
UTMX:672209.1 UTM Y:5493526.7 XY Accuracy:1 EXACT [<5M] [GPS]  
UTMZ:264 Z Accuracy:4 FAIR - Shuttle at Centroid  
Owner: PENNWOOD DAIRY INC  
Driller: Echo Drilling Ltd.  
Well Name:  
Date Completed: 2013 Jan 30  
Well Use: PRODUCTION  
Water Use: Livestock  
Well Status: ACTIVE Aquifer: LIMESTONE OR DOLOMITE

REMARKS:

WELL LOG (Imperial units)

From	To(ft.)	Log
0.0	119	TILL
119.0	180	LIMESTONE

WELL CONSTRUCTION

From	To(ft)	Const.Method	Inside Dia.(in)	Outside Dia.(in)	Slot Size(in)	Type	Material
0.0	121.0	CASING		5.5		INSERT	PVC
121.0	180.0	OPEN HOLE		4.8			
60.0	121.0	CASING GROUT					BENTONITE

Top of Casing: 2.0 ft. above ground

PUMPING TEST

Date : 2013 Jan 30 Pumping 20.0 Imp. gallons/minute  
Water level before test : 9.0 ft below ground  
Water level at end of test : 11.0 ft below ground  
Test duration: 1:00:00  
Test Zone: from 121.0 ft to 180.0 ft



-Original Message----- From: Friesen, Chris (SD) [<mailto:Chris.Friesen@gov.mb.ca>] Sent: Friday, June 30, 2017 8:46 AM To: '[ibsawka@shaw.ca](mailto:ibsawka@shaw.ca)' <[ibsawka@shaw.ca](mailto:ibsawka@shaw.ca)> Subject: RE: Conservation Data Centre Report Request for proposed Dairy Operation expansion at SE 18-7-7E, RM of Ste. Anne Bill 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](mailto:chris.friesen@gov.mb.ca) <http://www.manitoba.ca/conservation/cdc/>