








# R.M. OF KILLARNEY-TURTLE MOUNTAIN

0 5  
SCALE IN KILOMETRES

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

### LEGEND

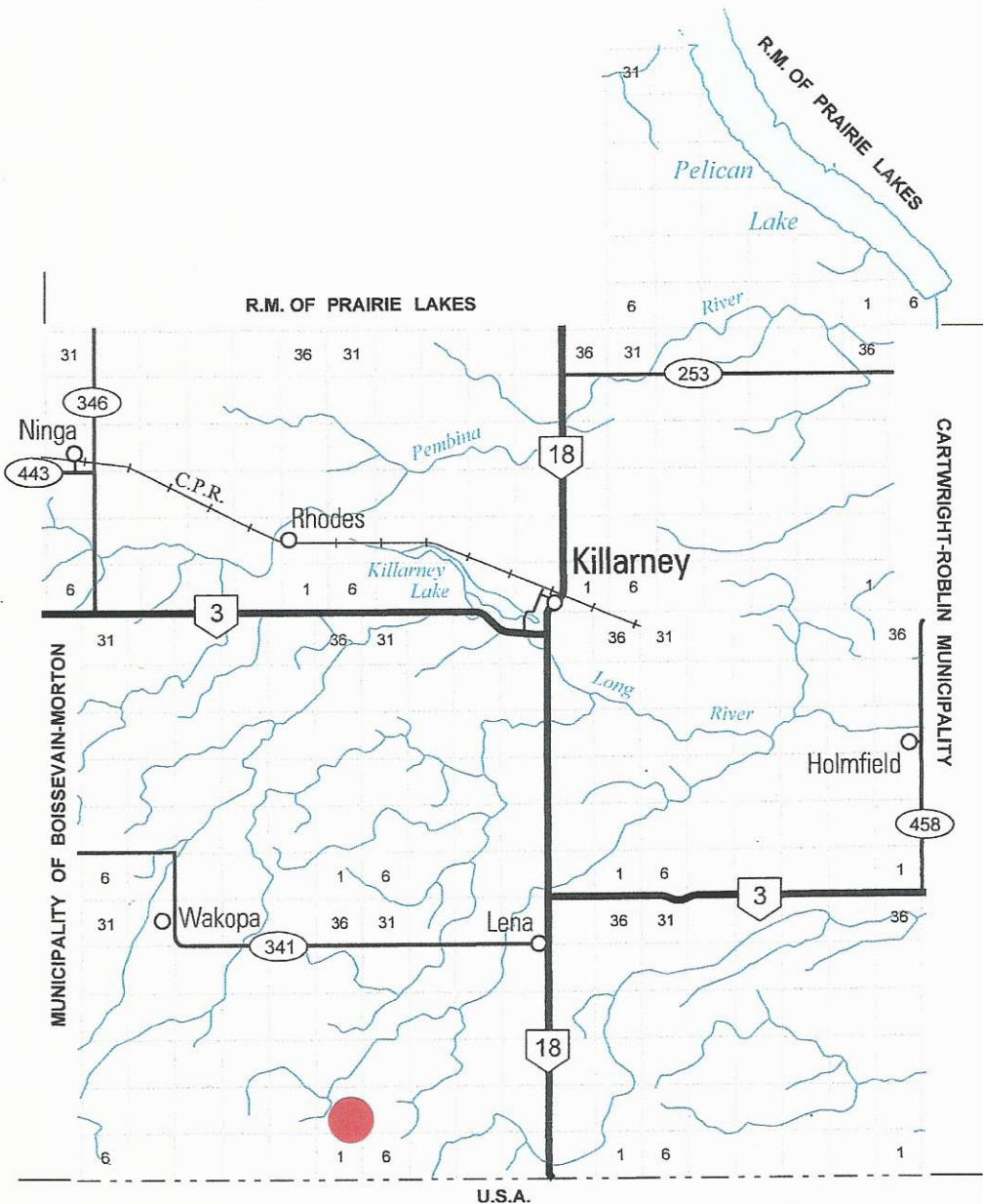
- PROVINCIAL TRUNK HIGHWAYS .....  18
- PROVINCIAL ROADS .....  341
- ACCESS ROADS ..... 
- RAILWAYS ..... 
- TUSCANY SITE ..... 

Tp. 4

Tp. 3

Tp. 2

Tp. 1



U.S.A.

Rge. 18W.

Rge. 17W.

Rge. 16W.

SHEET 1 OF 1



# R.M. OF KILLARNEY-TURTLE MOUNTAIN

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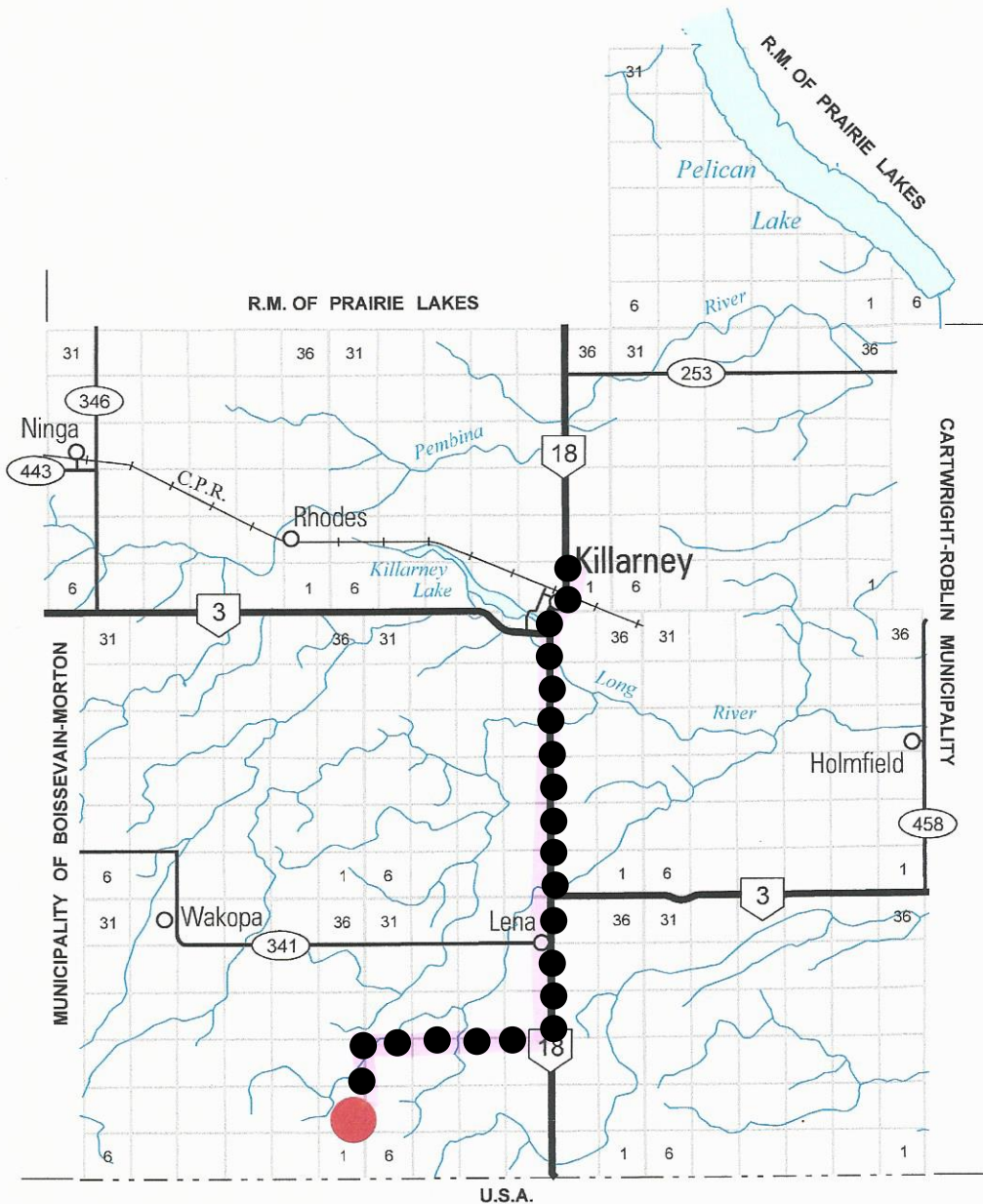
PROVINCIAL TRUNK HIGHWAYS		TRUCK	
PROVINCIAL ROADS		ACCESS ROADS	
		RAILWAYS	

Tp. 4

Tp. 3

Tp. 2

Tp. 1



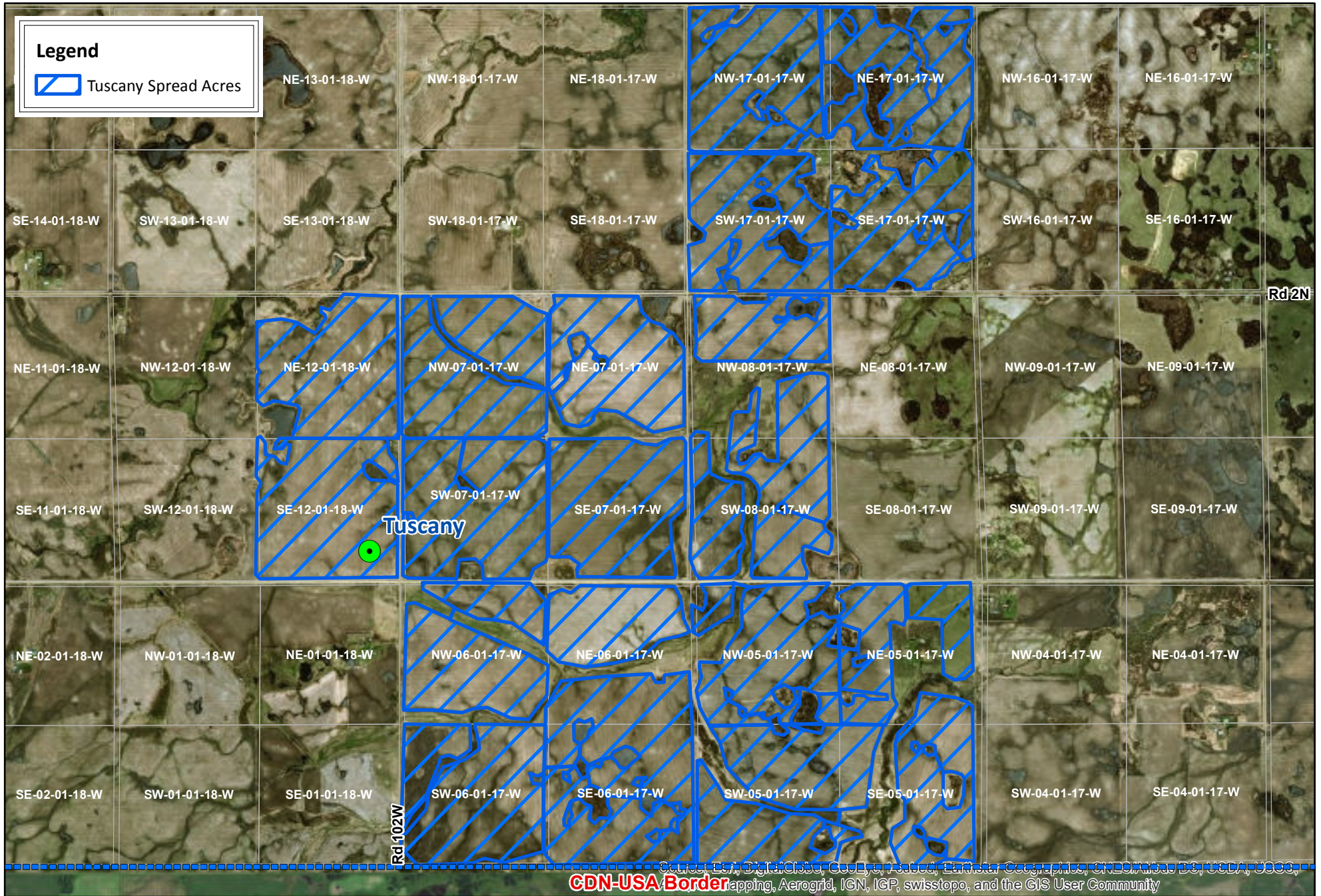
Rge. 18W.

Rge. 17W.

Rge. 16W.

SHEET 1 OF 1

# Tuscany [SE-12-01-18W] - Spread Acres



Prepared by:  
**Matt Reimer**  
 Manager of Agronomic Services  
 Hylife Ltd.

# 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		-		-
	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		-	10,000	1,430
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:				-	Total Proposed:	1,430

**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](#)



# Water Requirement Calculation Table

Livestock	Number	IG/day per animal in winter	IG/day per animal in summer	IG/day (Imperial gallons per day)
<b>Beef/Dairy/Bison *</b>				
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	-
<b>Horses</b>				
Horses		8	11	-
<b>Hogs</b>				
Sow (Farrow/wean)			6.5	-
Dry Sow/Boar			4	-
Feeder	10,000		3	30,000
Nursery (33 lb.)			2	-
<b>Chickens</b>				
Broilers			0.035	-
Roasters/Pullets			0.04	-
Layers			0.055	-
Breeders			0.07	-
<b>Turkeys</b>				
Turkey Growers			0.13	-
Turkey Heavies			0.16	-
<b>Sheep/Goats</b>				
Sheep/Goats			2	-
Ewes/Does			3	-
Lambs/Kids (90 lb.)			1.6	-
<b>TOTAL (IG/day)</b>				<b>30,000</b>
<b>*** TOTAL with 10% wash water</b>				<b>33,000</b>

\* 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 Estimator found on separate sheet.

Enter this number on page 7 of Application Form.

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

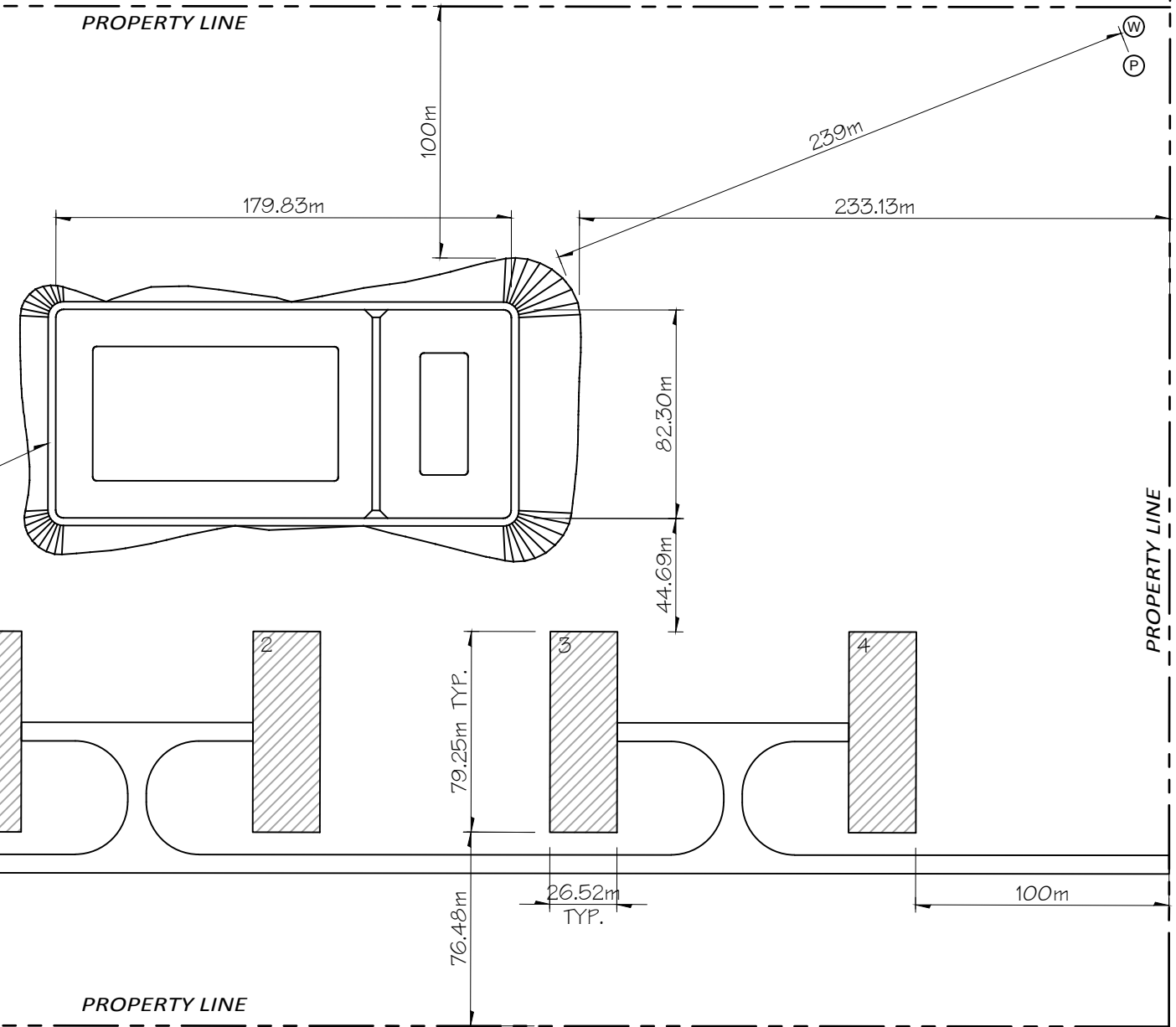
**Other consumption:**  
Normal household consumption: 60-75 IG/day per person or (272-340 l/day/person)

Unit Conversions		
Total per day	Total per year	Unit
33,000	12,045,000	IG
136,380	49,778,700	litres
0.136	50	cubic decametres (dam <sup>3</sup> )

Enter this number on page 7 of Application Form.

Conversion Factor: 1 IGPM = 4.546 l/m

LEGAL DESCRIPTION:  
S½ OF SE12-1-18W



SITE DEVELOPMENT - GENERAL SITE	
ITEM	SYMBOL
PROPERTY LINE	---
WATER WELL	⊙ W
PIEZOMETER	⊙ P

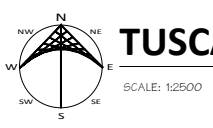
PROPERTY LINE

PROPERTY LINE

DEVELOPED ROAD

PROPERTY LINE

ROAD 1N



**TUSCANY SITE LAYOUT**

ISSUE (AND REVISION)		ENGINEER'S SEAL
NO.	DATE	DESCRIPTION
1	12/4/2017	ISSUED FOR CU PERMIT
DATE:	12/4/2017 9:02:58 AM	INITIAL(S)

**ISSUED FOR CU PERMIT**

**DGH ENGINEERING LTD.**  
Professional Service | Practical Solutions  
12 Aviation Boulevard St. Andrews MB R1A 3N5 Canada  
T: 204-334-8846 F: 204-334-6965

CLIENT  
**HYLIFE LTD.**  
BOX 100  
LA BROQUERIE, MB  
ROA OWO

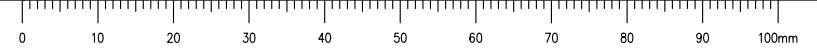
PROJECT TITLE  
**TUSCANY SITE**  
PROJECT LOCATION  
PROJECT NUMBER: ---

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DESIGNED	DRAWN	COORDINATOR
DATE	SCALE	X' REF PATH(S)
NOV/2017	AS NOTED	PROJECT/Dwg

**SITE LAYOUT**

**C1**  
REV. 0 R00



Animal Type (A)	Animal Sub-type (B)	Daily Manure Production				Production Period <sup>2</sup> (Days) (G)	Number of Animals <sup>3</sup> (Capacity) (H)	Total Manure Volume (ft <sup>3</sup> ) (F <sub>X</sub> G <sub>X</sub> H)	Total Manure Volume for Semi-Solid and Liquid Manure (Imp Gal)	
		References (C)	Manure Type (D)	Default Manure Production (ft <sup>3</sup> /animal/day) (E)	Operation Manure Production <sup>1</sup> (ft <sup>3</sup> /animal/day) (F)					
Dairy (milking cows <sup>4</sup> and associated livestock)	Free Stall	Table 6, pg 59, FPGs for Dairy 1995	Semi-Solid <sup>5</sup>	3.5				-	0.0	
			Solid	3.4				-		
			Liquid <sup>5</sup>	3.5				-	0.0	
	Tie Stall		Semi-Solid <sup>5</sup>	3.6					-	0.0
			Solid	3.5					-	
			Liquid <sup>5</sup>	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	0.25	400.00	10,000	1,000,000.00	6,228,832.7	
Animal Type	Type of Operation	Yearly Manure Production		Production Period <sup>2</sup> (Days)	Number of Birds <sup>3</sup> (Capacity)	Total Manure Volume (ft <sup>3</sup> ) (F/365xGxH)	Total Manure Volume for Semi-Solid and Liquid Manure (Imp Gal)			
		Default Manure Production (ft <sup>3</sup> /year/bird space)	Operation Manure Production <sup>1</sup> (ft <sup>3</sup> /year/bird space)							
Chickens	Broilers – floor <sup>6</sup>	Table 3, pg 85, FPGs for Poultry 2000		1.23				-		
	Broiler breeder hens <sup>7</sup>			2.3				-		
	Broiler breeder pullets <sup>6</sup>			0.99				-		
	Roasters – floor <sup>6</sup>			1.16				-		
	Layers – cage <sup>8</sup>			2.33				-	0.0	
	Layers – floor <sup>7</sup>			1.68				-		
	Layers – solid pack <sup>9</sup>							-		
	Pullets – cage <sup>8</sup>			0.71				-	0.0	
	Pullets – floor <sup>6</sup>			0.75				-		
	Pullets – solid pack <sup>9</sup>							-		
Turkeys	Broilers <sup>6</sup>	Table 3, pg 85, FPGs for Poultry 2000		2.83				-		
	Heavy toms <sup>6</sup>			5.58				-		
	Heavy hens <sup>6</sup>			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:**

- <sup>1</sup> ENTER the manure production estimate for your operation. If no estimate is available, use the default value provided in column E. References for default daily and yearly manure production are provided in column C.
- <sup>2</sup> 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
- <sup>3</sup> ENTER the total number of animals or birds that the operation can hold (e.g. barn or feedlot capacity).
- <sup>4</sup> Milking cows includes all lactating and dry cows.
- <sup>5</sup> Default manure production estimates for semi-solid and liquid dairy manure include manure and washwater from the milking parlour.
- <sup>6</sup> 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<sup>3</sup>
- <sup>7</sup> 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<sup>3</sup>
- <sup>8</sup> Manure removed from barn at 90% moisture content with a density of 59 lb/ft<sup>3</sup>
- <sup>9</sup> Poultry operations using litter (solid pack) must provide an estimate of yearly manure production

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	270 ft	170 ft	14 ft	ft	1:4	1:5	105
Secondary	270 ft	410 ft	12 ft	ft	1:4	1:5	308
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 proposed site is rolling. The height of the EMS will be verified on site.

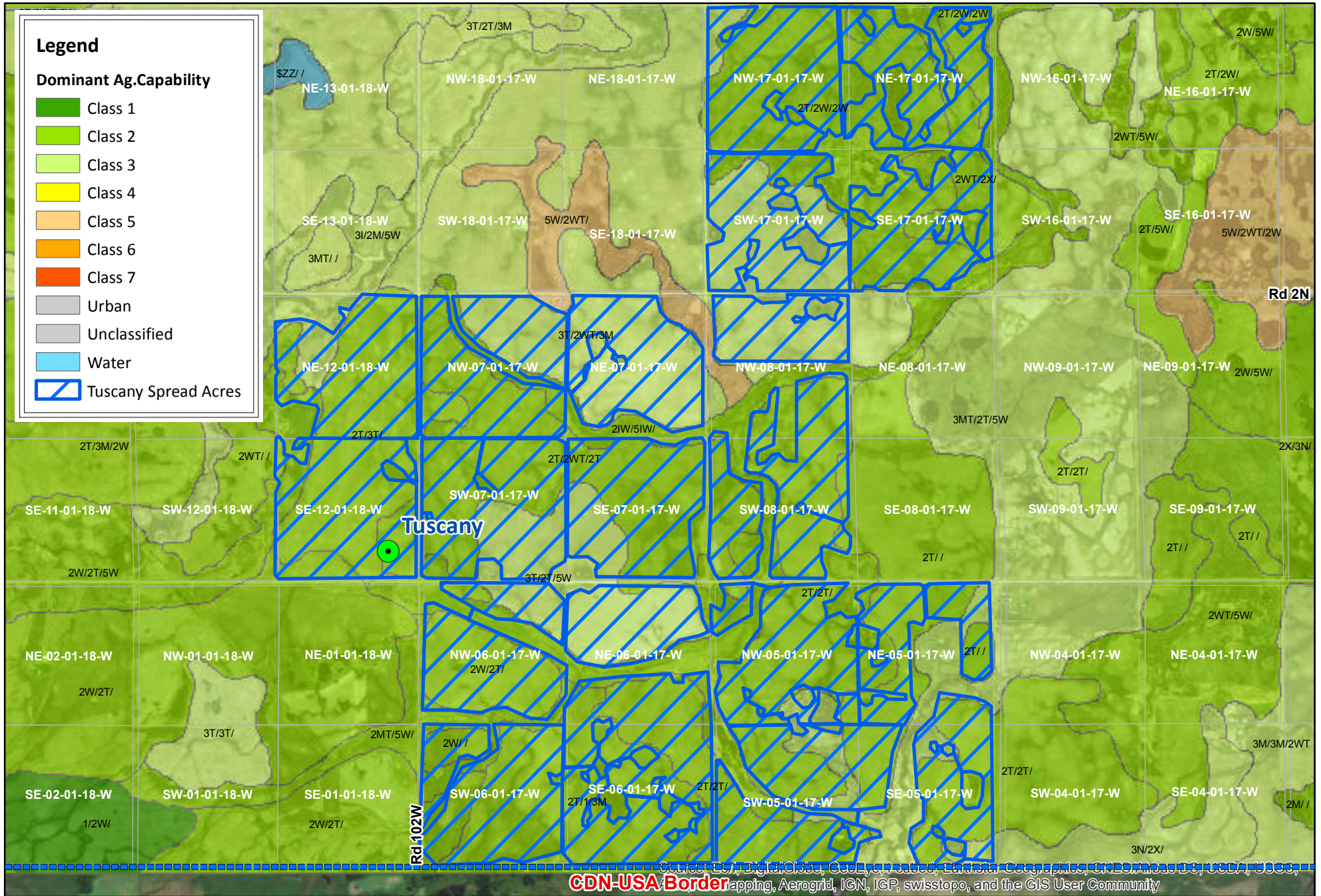




**Manure Application Field Characteristics Table - Tuscany**

	A	B	C	D	E	F	G	H	I	J
Field	Legal Description	Rural Municipality	O/C/L /A	Total Acreage	Setbacks	Net Acreage For Application	Ag Capability Class/Subclass	Soil Phos (0- 6" Olsen ppm)	Development Plan Designation	Zoning
1	NE-05-01-17-W	Killarney-Turtle Mountain	A	160	74	86	2T/3MT/5W	14	Rural Area	AG - Agricultural General
2	NE-06-01-17-W	Killarney-Turtle Mountain	A	160	25	135	3T/2TWI/5WI	11	Rural Area	AG - Agricultural General
3	NE-07-01-17-W	Killarney-Turtle Mountain	A	160	42	118	3T/2WT/3M	6	Rural Area	AG - Agricultural General
4	NE-12-01-18-W	Killarney-Turtle Mountain	A	160	26	134	2TWM/3TI/5W	9	Rural Area	AG - Agricultural General
5	NE-17-01-17-W	Killarney-Turtle Mountain	A	160	35	125	2TW	8	Rural Area	AG - Agricultural General
6	NW-05-01-17-W	Killarney-Turtle Mountain	A	160	34	126	2TIW/3MT/5IW	7	Rural Area	AG - Agricultural General
7	NW-06-01-17-W	Killarney-Turtle Mountain	A	160	36	124	2WMT/5W	8	Rural Area	AG - Agricultural General
8	NW-07-01-17-W	Killarney-Turtle Mountain	A	160	7	153	3TM/2WT	9	Rural Area	AG - Agricultural General
9	NW-08-01-17W	Killarney-Turtle Mountain	A	160	96	64	3T/2WT/3M	6	Rural Area	AG - Agricultural General
10	NW-17-01-17-W	Killarney-Turtle Mountain	A	160	17	143	2TW/3TM	13	Rural Area	AG - Agricultural General
11	SE-05-01-17-W	Killarney-Turtle Mountain	A	160	73	87	2T/3MT/5W	8	Rural Area	AG - Agricultural General
12	SE-06-01-17-W	Killarney-Turtle Mountain	A	160	20	140	2T/1/3M	12	Rural Area	AG - Agricultural General
13	SE-07-01-17-W	Killarney-Turtle Mountain	A	160	21	139	2TW/3T/5W	8	Rural Area	AG - Agricultural General
14	SE-12-01-18-W	Killarney-Turtle Mountain	A	160	60	100	2TW/3T/5W	10	Rural Area	AG - Agricultural General
15	SE-17-01-17-W	Killarney-Turtle Mountain	A	160	44	116	2WT	6	Rural Area	AG - Agricultural General
16	SW-05-01-17-W	Killarney-Turtle Mountain	A	160	4	156	2T/3MT/5W	6	Rural Area	AG - Agricultural General
17	SW-06-01-17-W	Killarney-Turtle Mountain	A	160	14	146	2WMT/3M/5W	5	Rural Area	AG - Agricultural General
18	SW-07-01-17-W	Killarney-Turtle Mountain	A	160	6	154	2TW/3T/5W	14	Rural Area	AG - Agricultural General
19	SW-08-01-17W	Killarney-Turtle Mountain	A	160	3	157	2TWI/5IW	8	Rural Area	AG - Agricultural General
20	SW-17-01-17-W	Killarney-Turtle Mountain	A	160	31	129	3TM/2WT	6	Rural Area	AG - Agricultural General
<b>Total Net Acreage for Manure</b>						<b>2532</b>				

# Tuscany [SE-12-01-18W] - Spread Acres and Ag Capability



Prepared by:  
**Matt Reimer**  
 Manager of Agronomic Services  
 Hylife Ltd.

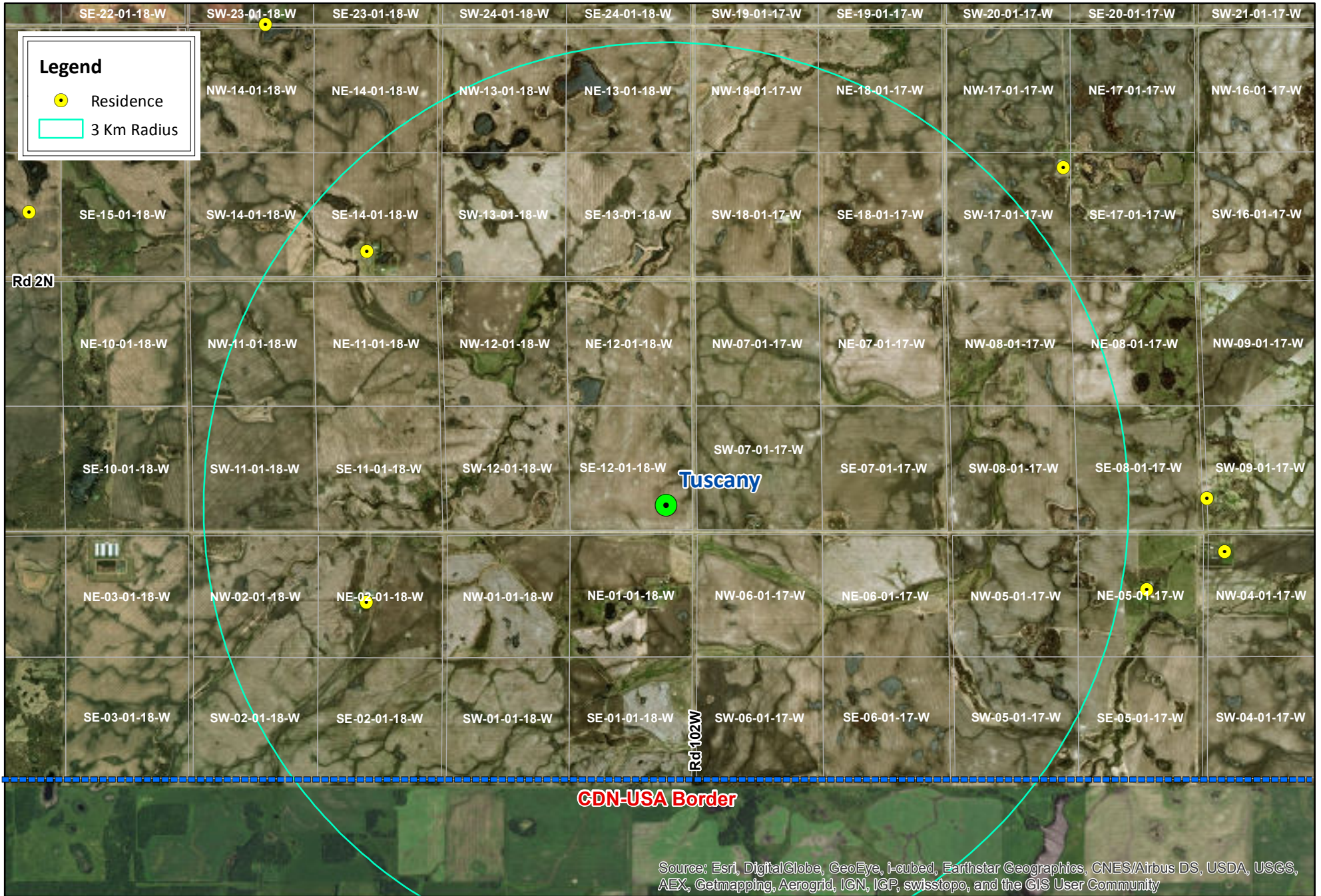
**CROP ROTATION TABLE**



A	B	C	D	E
Expected Crops in the Rotation	Acreage	Historical Yield	Units	Source of Yield Information
<b>Total Net Acreage for Manure Application</b>				

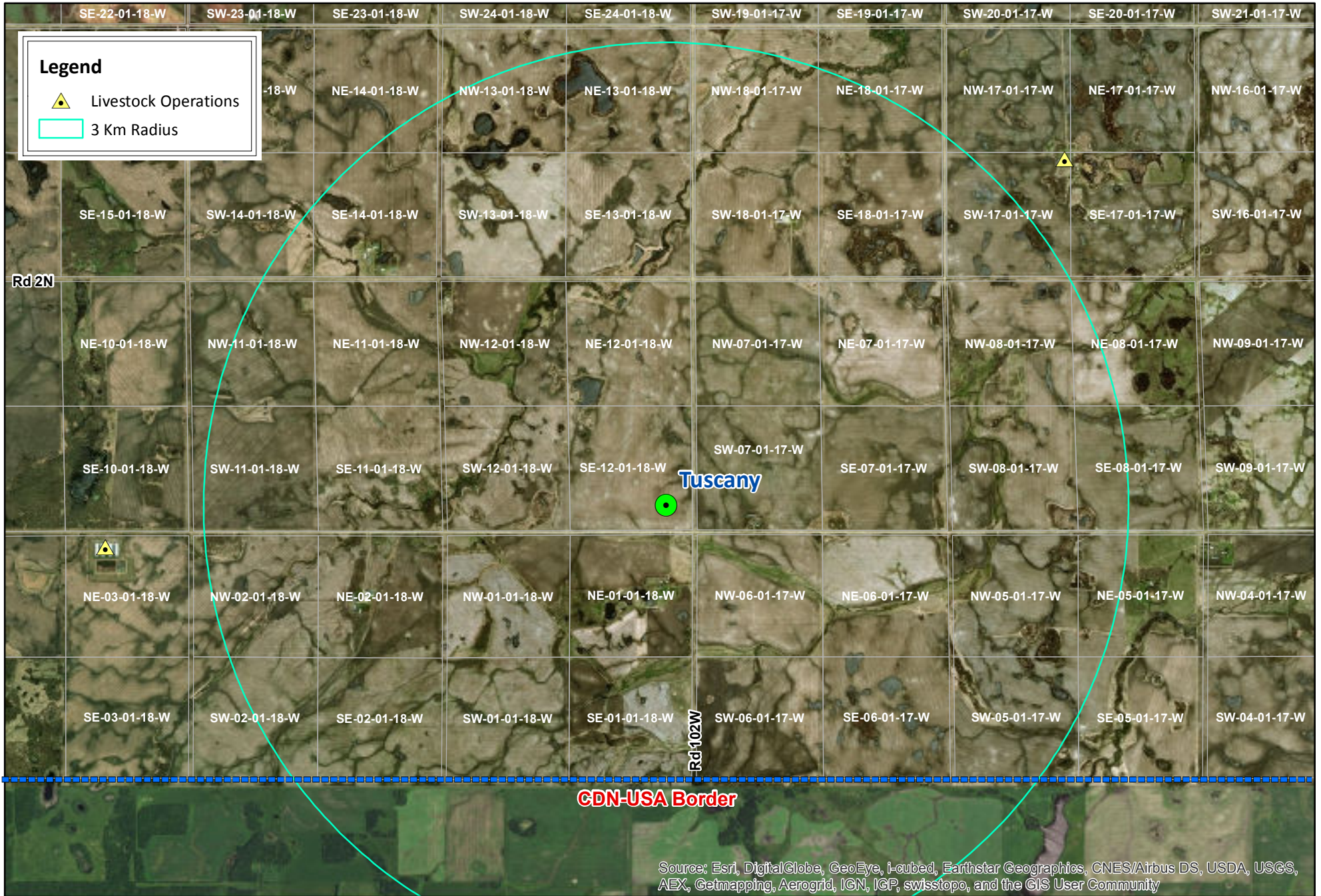
- A. List all of the crop(s) to be grown in the rotation on the acreage that will receive manure.
- B. Indicate the average acreage for each crop over the rotation. For example, if there are 720 suitable acres available for manure and approximately 40 these acres will be used to grow canola, enter 288. 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.

# Tuscany [SE-12-01-18W] - Residence within 3 KM



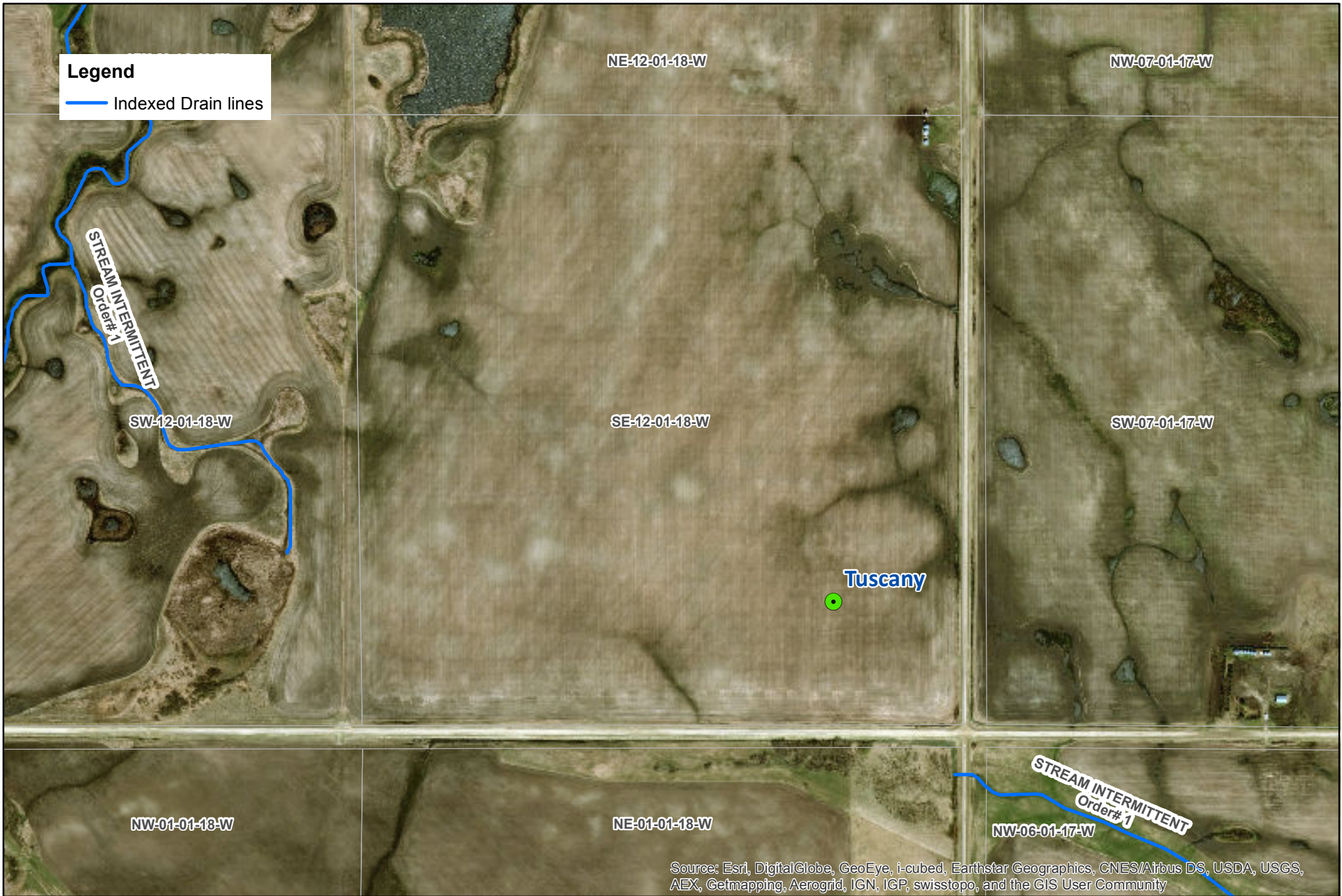
Prepared by:  
**Matt Reimer**  
 Manager of Agronomic Services  
 Hylife Ltd.

# Tuscany [SE-12-01-18W] - Livestock Operations within 3 KM

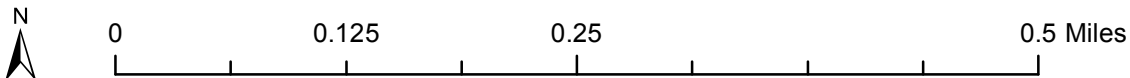


Prepared by:  
**Matt Reimer**  
 Manager of Agronomic Services  
 Hylife Ltd.

# Tuscany - Surface Water Drainage



Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Prepared by:  
Mary-Jane Orr  
Nutrient Management Specialist  
Hylife Ltd.

## RE: Identification of Species at Risk for Proposed HyLife Livestock Operations - Tuscany

----- Forwarded message -----

From: "Friesen, Chris (SD)" <Chris.Friesen@gov.mb.ca>

To: "'Peter Mah"' <petermahinc@gmail.com>

Cc: "'Sheldon Stott"' <Sheldon.Stott@hylife.com>

Bcc:

Date: Mon, 18 Sep 2017 15:26:57 +0000

Subject: RE: Identification of Species at Risk for Proposed HyLife Livestock Operations - Tuscany

Peter

Thank you for your information request. I completed a search of the MB Conservation Data Centre rare species database which resulted in the following occurrences:

Bobolink (*Dolichonyx oryzivorus*), S4B, COSEWIC: Threatened

NW 5-1-17W

SW 8-1-17W

Further information on this ranking system can be found on our website at <http://www.gov.mb.ca/conservation/cdc/constranks.html> and these designations can be found at <http://web2.gov.mb.ca/laws/statutes/ccsm/e111e.php>, <http://www.cosewic.gc.ca/> and [http://www.sararegistry.gc.ca/default\\_e.cfm](http://www.sararegistry.gc.ca/default_e.cfm).

Manitoba's recommended setback distances can be found at <http://www.gov.mb.ca/conservation/cdc/pubs.html>

The information provided in this letter is based on existing data known to the Manitoba CDC of the Wildlife and Fisheries Branch at the time of the request. These data are dependent on the research and observations of our scientists and reflects our current state of knowledge. An absence of data does not confirm the absence of any rare or endangered species. Many areas of the province have never been thoroughly surveyed, however, and the absence of data in any particular geographic area does not necessarily mean that species or ecological communities of concern are not present. The information should, therefore, not be regarded as a final statement on the occurrence of any species of concern nor should it substitute for on-site surveys for species or environmental assessments. Also, because our 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 passes before it is utilised.

Third party requests for products wholly or partially derived from the Biotics database 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 data from our database, as the Manitoba Conservation Data Centre; Wildlife and 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 contact me directly at [\(204\) 945-7747](tel:204-945-7747).

Chris Friesen  
Coordinator  
Manitoba Conservation Data Centre  
[204-945-7747](tel:204-945-7747)  
[chris.friesen@gov.mb.ca](mailto:chris.friesen@gov.mb.ca)  
<http://www.manitoba.ca/conservation/cdc/>

Oct 3

On Tue, Oct 3, 2017 at 7:10 AM, Friesen, Chris (SD) <[Chris.Friesen@gov.mb.ca](mailto:Chris.Friesen@gov.mb.ca)> wrote:

To: Peter Mah <[petermahinc@gmail.com](mailto:petermahinc@gmail.com)>

Hi Peter

Ken's conclusion of no concerns for species at risk would also apply to the proposed Tuscany operation.

Chris Friesen  
Coordinator  
Manitoba Conservation Data Centre  
[204-945-7747](tel:204-945-7747)  
[chris.friesen@gov.mb.ca](mailto:chris.friesen@gov.mb.ca)  
<http://www.manitoba.ca/conservation/cdc/>



**From:** De Smet, Ken (SD)  
**Sent:** September-29-17 12:49 PM  
**To:** Friesen, Chris (SD) <[Chris.Friesen@gov.mb.ca](mailto:Chris.Friesen@gov.mb.ca)>; Peter Mah <[petermahinc@gmail.com](mailto:petermahinc@gmail.com)>  
**Cc:** Sheldon Stott <[Sheldon.Stott@hylife.com](mailto:Sheldon.Stott@hylife.com)>  
**Subject:** RE: Identification of Species at Risk for Proposed HyLife Livestock Operations - Napa

Hi Chris & Peter

Just talked with Peter about the hog operation and the species/areas that we had identified as possible concerns.

Since neither Bobolink nor Loggerhead Shrike utilize cropland to any extent for nesting, and since most or all of the proposed spreading would occur after the nesting season, I see no concerns for either species.

*Cheers .....Ken*

Office: [\(204\) 945-5439](tel:(204)945-5439)  
Fax: [\(204\) 945-3077](tel:(204)945-3077)  
E-mail: [Ken.DeSmet@gov.mb.ca](mailto:Ken.DeSmet@gov.mb.ca)

**From:** Friesen, Chris (SD)  
**Sent:** September-29-17 8:13 AM  
**To:** Peter Mah <[petermahinc@gmail.com](mailto:petermahinc@gmail.com)>  
**Cc:** Sheldon Stott <[Sheldon.Stott@hylife.com](mailto:Sheldon.Stott@hylife.com)>; De Smet, Ken (SD) <[Ken.DeSmet@gov.mb.ca](mailto:Ken.DeSmet@gov.mb.ca)>  
**Subject:** Re: Identification of Species at Risk for Proposed HyLife Livestock Operations - Napa

Hi Peter

The best person to speak with regarding these bird occurrences is Ken De Smet (copied) if he hasn't already contacted you.

Cheers

Chris

## **SECTION 14.0 ADDITIONAL INFORMATION**

### **Additional Notes to Section 7.5 Groundwater Protection**

- We safeguard ground water quality and supply by carefully managing all our operations in manner that meets strict environmental requirements.
- Barns are not located in groundwater pollution hazard areas identified by government and background studies to the local development plan.
- Manure nutrient is stored in an engineer designed and certified earthen storage and is approved by Manitoba Sustainable Development before use.
- HyLife will monitor test samples from the sump pit that connects to the tile drainage system around the proposed earthen manure storage perimeter. Test sampling results will be submitted annually to Manitoba Sustainable Development.
- HyLife will comply fully within the approved annual groundwater withdrawal limit set by Manitoba Sustainable Development's Water Licensing Branch.

### **Additional Notes to Section 8.4 Odour Control Measures**

- Odour is best managed through barn cleanliness and hygiene which is accomplished through barn design (pen configurations), the barn environment (temperature and air flow) in the barns and management.
- We have incorporated current technology for ventilation and climate control in the barns for the comfort of pigs and ensuring a clean environment.
- The equipment is being used in other HyLife barns and has a proven track record of success,

### **Additional Notes to Section 8.5 Manure Treatment**

- Previous criteria and Confirmation Letter from Manitoba Pork Council relating to the Hog Production Pilot Protocol is no longer applicable.

### **Additional Notes to Section 8.6 Manure Application Method**

- A coultter or Aerway applicator system will be used which penetrates the soil surface and allows the liquid manure to be incorporated immediately to maximize soil absorption.
- Annual manure nutrient management plans are prepared by qualified manure management planners, approved by government and applied as a crop fertilizer by GPS monitored equipment by certified applicators.

### **Additional Notes to Section 10**

#### **Project Site Description: Land Use Planning Considerations**

- We have carefully explored potential development sites in the Killarney area. HyLife chose this proposed site because it is firstly on open, designated agricultural crop land that is being actively farmed. Thus neighbouring farmers will be able to sustainably utilize the manure as fertilizer for crop production. In turn, area farmers will be able to reduce their crop fertilizer input costs.
- This site also has good road access, hydro, good drainage, good topography, and groundwater supply. This site also allows us to exceed all government siting and setback requirements from residences and designated land uses and designated crown land.
- We also meet and indeed for the most part, exceed all provincial manure storage separation distances from property boundaries set by Manitoba regulations.
- The site is also situated within the Municipality of Killarney-Turtle Mountain that affords not only a good employable population but which provides important community and commercial services and close proximity to our new \$30 million HyLife feed mill.
- Local farmers will also benefit by having have a local opportunity to sell more feed crops to the new HyLife feed mill.

### **Additional Notes to Section 11.0 Truck Haul Routes and Access Points**

- For this 10,000 head pork production operation expansion, there will typically be 8 to 12 feed trucks and 2 to 3 livestock trucks per week.
- The Municipality already maintains an existing network of municipal roads in the rural area and will determine which route we will use.

### **Additional Notes:**

#### **HyLife Community Consultation on Development Site & Proposal**

- We have reached out to inform the community about our prospective plans in the area. In mid-September and early October, 2017 we met and talked to as many area farmers and residents around the proposed site while we were conducting alternative site investigations and geo-technical soil and ground water testing.
- HyLife also held an informal Public Open House on our development proposals on November 8th, 2017 to further inform residents and stakeholders in the community. While it was not requirements to consult early with neighbours in the site area nor to hold a Public Open House, we felt it was important to inform the community and to obtain their feedback.
- HyLife will continue to use our "best efforts to be a good neighbour" and good corporate citizen in the Killarney-Turtle Mountain community.



## Sustainable Development

Water Use Licensing Section  
Box 16, 200 Saulteaux Crescent  
Winnipeg, Manitoba, Canada R3J 3W3  
T 204-945-6118 F 204-948-2357  
Rob.Matthews@gov.mb.ca

August 17, 2017

File: Hylife Ltd. -22

Hylife Ltd.  
C/O Carlie Pauls  
Box 100  
La Broquerie, MB R0A 0W0

Dear Carlie Pauls:

Attached is a **Groundwater Exploration Permit** issued in response to an application dated August 11, 2017 for a Water Rights Licence for a new agricultural project on SE 12-1-18 WPM.

The Groundwater Exploration Permit authorizes Hylife Ltd. to carry out exploration test drilling, construct supply well(s), and conduct aquifer pump testing. The purpose of the pump testing is to determine if sufficient water is available from the well(s) and from the aquifer to support the project and to determine water level impacts on existing local wells and/or registered projects with earlier precedence dates than the proposed project. Please note that during testing, pumping must cease if any local water supplies are negatively impacted as a result of testing. Hylife Ltd. would further be responsible to correct any water supply problems or provide temporary water supply to anyone whose water supplies are negatively impacted as a result of testing. Please familiarize yourself with the terms and conditions of the Groundwater Exploration Permit.

**A licensing decision on this project will be held pending submission of the required information. Please note that diversion of water without a Water Rights Licence or written authorization would constitute a violation of *The Water Rights Act* and may be subject to enforcement.**

One important condition of any licence that may be issued for this project, in due course, is that a water use monitoring device, acceptable to Water Use Licensing Section, must be installed on the system, to measure instantaneous pumping rate and accumulative withdrawals. This monitoring data must be made available to the department on an annual basis.

Please contact Lorraine Thibert directly at 204-945-6693 should you have any questions regarding the requirements outlined in this letter and the attached permit or the water rights licensing aspects of this project.

Yours truly,

Rob Matthews  
Manager

Attachment - Permit

cc. Lorraine Thibert, SD

## Groundwater Exploration Permit

---

Pursuant to The Water Rights Act

**Hylife Ltd.**

is hereby permitted to construct a water well or wells on the following described lands to explore for groundwater in **SE 12-1-18 WPM** for **agricultural** purposes, subject, however, to the following conditions:

1. The permittee must have legal access to the site where the exploration work and project wells are to be located.
2. This Authorization is not transferable or assignable to any other party.
3. Prior to undertaking any work or construction of any works authorized by this permit the permittee is required to retain the services of a hydrogeologist registered with Association of Professional Engineers and Geoscientists of Manitoba, who would be required to:
  - Plan and supervise the drilling of boreholes, test wells, production wells, observation wells and well pump testing as authorized by this permit.
  - Conduct a constant rate pumping test on proposed production well(s) in accordance with Form H ([http://www.gov.mb.ca/conservation/waterstewardship/licensing/wlb/pdf/form\\_h\\_july\\_2013.pdf](http://www.gov.mb.ca/conservation/waterstewardship/licensing/wlb/pdf/form_h_july_2013.pdf)).
  - Conduct a recovery test for a period equal to pump test or 90% recovery.
  - Carry out an inventory of private and commercial wells within a 1600 m radius of the project well site. The inventory may need to be expanded based on the assessment of the expected area of water level drawdown impact resulting from future pumping.
  - Prepare and submit to the Water Use Licensing Section a technical report on drilling of boreholes and wells, pump testing of wells, well inventory and water quality sampling. The report would contain, but not limited to, such things as: well driller's reports for test wells, production wells; a plan showing the location of these wells on the property and/or GPS locations of the wells; an analysis of aquifer pumping tests; and calculations of transmissivity. The report would also indicate if any local wells are expected to be adversely affected by the proposed use of water and where these wells are located. Two copies of the report shall be submitted, one hardcopy and one digital copy.
4. During any pumping tests that may be conducted, pumping must cease immediately if any local water supplies are negatively impacted as a result of the tests. The permittee is also responsible to correct any water supply problems or provide temporary water supply to anyone whose water supplies are negatively impacted as a result of the tests.
5. This permit expires within twelve (12) months of the date of issuance.
6. Please note that diversion of water without a Water Rights Licence or written authorization would constitute a violation of The Water Rights Act and may be subject to enforcement.

---

Issued at the City of Winnipeg in the Province of Manitoba, this 18<sup>th</sup> day of August, A.D. 2017

  
for The Honourable Minister of Conservation and Water Stewardship

September 12, 2017

Dear Neighbour / Resident

Re: Proposed HyLife Livestock Development Project

HyLife is a company which started back in the 1994 as a collaboration of 2 family farm operations. Our head office is located in La Broquerie, Manitoba. Today, we are a fully integrated company that produces and sells high quality pork products around the world. While pork is our passion, we recognize that much of our success depends on our ability to produce a sustainable supply of quality pigs on the farm in our local communities.

You know us in the Killarney-Turtle Mountain area simply as HyLife. We have been here since 2004; fully invested in the community with our operations including our livestock barns, local office and now the new Killarney feed mill under construction. But you may know us even better by the many local people we employ whose families call Killarney-Turtle Mountain as home.

We dropped by today in the hopes of introducing ourselves and our preliminary HyLife finisher barn project to you.

While no formal application has been made yet, we want you to have a first-hand opportunity to learn more about the project which we hope to propose. Unfortunately, we missed you this time and look forward to getting in touch with you soon.

We would be happy to sit down with you should you have any questions.

Please contact me at (204) 355-7775 or Peter Mah at (204) 771-5117 should you wish to arrange another time to meet.

Sincerely,



Sheldon Stott,

Director of Environmental Affairs, HyLife



**Platinum Member - Canada's Best Managed Companies**

## **Our Vision**

**We will be the BEST Canadian Food Company in the World**

## **Core Values**

- **Teamwork**
- **Do What We Say, Say What We Do**
- **Open Door Policy**
- **Respecting People**
- **Respecting Animals**
- **Turning Challenges into Opportunities**
- **Empowering People**
- **Striving to be the Best**
- **Community Partners**
- **Get 'er Done**
- **Sustainable Profitability**
- **Work Hard, Play Hard • Work Safe**

## **Mission Statement**

**At HyLife we focus on developing our employees, providing quality products to our customers, and working in partnership with our community.**



<b>Nutrients Excreted</b>	<b>lbs</b>
Nitrogen	259094
P2O5	128009
<b>Crop Nutrient Use</b>	
	<b>lb/ac</b>
Nitrogen Uptake	128.0
P2O5 Removal	36.3
<b>Land Base Requirements</b>	
	<b>acres</b>
Acres for Nitrogen Uptake	<b>2024</b>
Acres for 2 x P2O5 Removal	<b>1762</b>
Acres for 1 x P2O5 Removal	<b>3524</b>

Crop	Removal		Uptake		Yield	Units	Acreage	Removal		Uptake
	P2O5	N	N	Units				P2O5 (lb)	N (lb)	N (lb)
Alfalfa	13.8	58	58	lb/ton		ton/ac		-	-	-
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	37.6	bu/ac	1266	49506	91871	151849
Corn Grain	0.44	0.97	1.53	lb/bu	115	bu/ac	127	6426	14167	22346
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	37.8	bu/ac	253	8033	37010	49730
Sunflower	1.1	2.8		lb/cwt		cwt/ac		-	-	-
Wheat - Spring	0.59	1.5	2.11	lb/bu	53.6	bu/ac	886	28019	71234	100203
Wheat - Winter	0.51	1.04	1.35	lb/bu		bu/ac		-	-	-
<b>Sub Total</b>							2532	91984	214283	324127
<b>Estimated Average Removal/Uptake (lb/ac)</b>								36.3	84.6	128.0
<b>Additional Acres</b>										
<b>Crop Planned on Additional Acres</b>										
<b>Total Acreage</b>							2532			

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

Last revised August 20, 2014

Pig/Operation Type	Storage Type	Volatilization	Animal Numbers (Places)	Weight In (lb)	Weight Out (lb)	Average Animal Wt (lb)	Days on Feed per Cycle (days)	Number of Cycles for the Place per Year (days)	Feed Consumed Per Pig Per Day (kg/day)	Protein %	N Excreted Per Herd Adjusted for Storage N (lb/yr/herd)	Phosphorus Content of Feed (DM) %	P2O5 Excreted Per Herd Per Year (lb/yr/herd)
Gestating Sow	Liquid Uncovered Earthen	30%		447	630	539	121	3	2.3	14%	0	0.53%	0
Nursing Sow	Liquid Uncovered Earthen	30%		539	539	539	21	15.2	6.5	20%	0	0.63%	0
Nursing Litter	Liquid Uncovered Earthen	30%		3.1	13.6	8	21	15.2	0	n/a	0	n/a	0
Live Cull Sow	Liquid Uncovered Earthen	30%		630	630	630	14	26.1	2.3	14%	0	0.46%	0
Bred Gilt	Liquid Uncovered Earthen	30%		340	447	394	121	3	2.3	14%	0	0.53%	0
Gilts (Purchased)	Liquid Uncovered Earthen	30%		290	340	315	28	13.0	3.2	16%	0	0.46%	0
Boars (Purchased)	Liquid Uncovered Earthen	30%		270	660	465	365	1	2.5	14%	0	0.46%	0
Weanlings	Liquid Uncovered Earthen	30%		13.6	61.6	38	52	6.9	0.7	20%	0	0.64%	0
Growers/Finishers	Liquid Uncovered Earthen	30%	10000	61.6	280	171	112	3	2.8	16%	259094	0.46%	128009
Sows, farrow to 6.2 kg	Liquid Uncovered Earthen	30%		n/a	n/a	n/a	365	1	n/a	n/a	0	n/a	0
Sows, farrow to 28 kg	Liquid Uncovered Earthen	30%		n/a	n/a	n/a	365	1	n/a	n/a	0	n/a	0
Sows, farrow to finish	Liquid Uncovered Earthen	30%		n/a	n/a	n/a	365	1	n/a	n/a	0	n/a	0

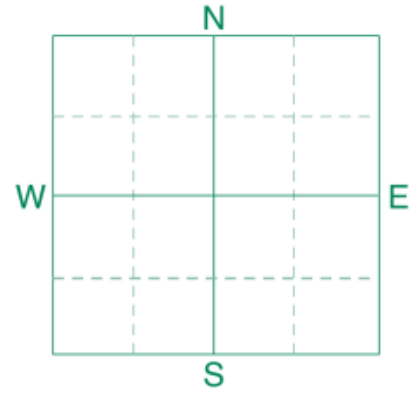
Last Revised April 13, 2016



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

## SOIL TEST REPORT

FIELD ID **TUNE0532**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **17 W**  
 SECTION **5** QTR **NE** ACRES **32**  
 PREV. CROP



SUBMITTED FOR:  
**Tuscany**

SUBMITTED BY: **HY4851**  
**HYLIFE LTD.**  
**5 FABAS STREET**  
**BOX 100**  
**LA BROQUERIE, MB** **ROA 0W0**

REF # **1991479** BOX # **0**  
 LAB # **NW79426**

Date Sampled

Date Received **09/21/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
		VLow	Low	Med	High	Canola-bu			Wheat-Spring			Corn-Grain		
Nitrate	0-6" 6-24"	***				YIELD GOAL			YIELD GOAL			YIELD GOAL		
						50 BU			60 BU			130 BU		
	0-24"					SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
						Band			Band			Band		
						LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION	
Phosphorus	Olsen 14 ppm	*****				N	161		N	148		N	142	
Potassium	186 ppm	*****				P <sub>2</sub> O <sub>5</sub>	28	Band *	P <sub>2</sub> O <sub>5</sub>	23	Band *	P <sub>2</sub> O <sub>5</sub>	25	Band *
Chloride						K <sub>2</sub> O	0		K <sub>2</sub> O	10	Band (Starter)*	K <sub>2</sub> O	10	Band (2x2) *
Sulfur	0-6" 6-24"	*****				Cl			Cl			Cl		
Boron						S	15	Band	S	5	Band (Trial)	S	5	Band (Trial)
Zinc						B			B			B		
Iron						Zn			Zn			Zn		
Manganese						Fe			Fe			Fe		
Copper						Mn			Mn			Mn		
Magnesium						Cu			Cu			Cu		
Calcium						Mg			Mg			Mg		
Sodium						Lime			Lime			Lime		
Org.Matter						Soil pH			Cation Exchange Capacity			% Base Saturation (Typical Range)		
Carbonate(CCE)						Buffer pH			% Ca	% Mg	% K	% Na	% H	
Sol. Salts	0-6" 6-24"	*****				0-6" 7.2								
		*****				6-24" 8.3								

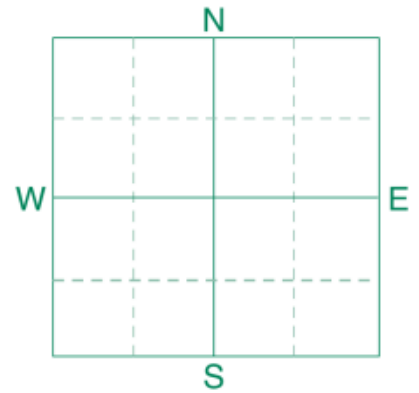
**Crop 1:** \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**Crop 2:** \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**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. Crop Removal: P2O5 = 52 K2O = 35 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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

## SOIL TEST REPORT

FIELD ID **TUNE0675**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **17 W**  
 SECTION **6** QTR **NE** ACRES **75**  
 PREV. CROP



SUBMITTED FOR:  
**Tuscany**

SUBMITTED BY: **HY4851**  
**HYLIFE LTD.**  
**5 FABAS STREET**  
**BOX 100**  
**LA BROQUERIE, MB** **ROA 0W0**

REF # **1991480** BOX # **0**  
 LAB # **NW92028**

Date Sampled

Date Received **10/02/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice			
		VLow	Low	Med	High	Canola-bu			Wheat-Spring			Grass/Pasture			
Nitrate	0-6" 6-24"	5 lb/ac 6 lb/ac	**												
	0-24"	11 lb/ac				YIELD GOAL	50 BU		YIELD GOAL	60 BU		YIELD GOAL	4 Tons		
						SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			
						Band			Band			Band			
						LB/ACRE	APPLICATION			LB/ACRE	APPLICATION			LB/ACRE	APPLICATION
Phosphorus	Olsen	11 ppm	*****			N	164		N	151		N	109		
Potassium		129 ppm	*****			P <sub>2</sub> O <sub>5</sub>	35	Band *	P <sub>2</sub> O <sub>5</sub>	29	Band *	P <sub>2</sub> O <sub>5</sub>	21	Band *	
Chloride						K <sub>2</sub> O	23	Band *	K <sub>2</sub> O	30	Band *	K <sub>2</sub> O	33	Band *	
Sulfur	0-6" 6-24"	24 lb/ac 66 lb/ac	*****			Cl			Cl			Cl			
Boron			*****			S	15	Band	S	0		S	0		
Zinc						B			B			B			
Iron						Zn			Zn			Zn			
Manganese						Fe			Fe			Fe			
Copper						Mn			Mn			Mn			
Magnesium						Cu			Cu			Cu			
Calcium						Mg			Mg			Mg			
Sodium						Lime			Lime			Lime			
Org.Matter						Soil pH			Cation Exchange Capacity			% Base Saturation (Typical Range)			
Carbonate(CCE)						Buffer pH			% Ca	% Mg	% K	% Na	% H		
Sol. Salts	0-6" 6-24"	0.44 mmho/cm 0.34 mmho/cm	*****			0-6" 7.0									
			*****			6-24" 8.0									

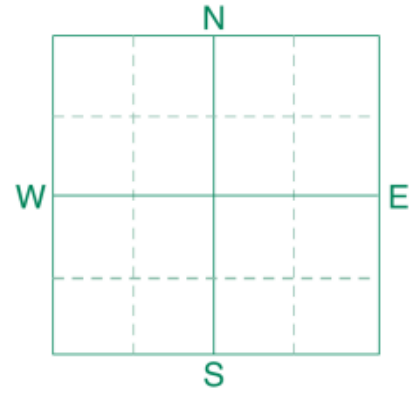
**Crop 1:** \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**Crop 2:** \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**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. Crop Removal: P2O5 = 48 K2O = 180 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



Soil Analysis by Agvise Laboratories  
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 Northwood: (701) 587-6010  
 Benson: (320) 843-4109

### SOIL TEST REPORT

FIELD ID **TUNE07118**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **17 W**  
 SECTION **7** QTR **NE** ACRES **1.18**  
 PREV. CROP



SUBMITTED FOR:  
**Tuscany**

SUBMITTED BY: **HY4851**  
**HYLIFE LTD.**  
**5 FABAS STREET**  
**BOX 100**  
**LA BROQUERIE, MB** **ROA 0W0**

REF # **1991481** BOX # **0**  
 LAB # **NW79375**

Date Sampled

Date Received **09/21/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		VLow	Low	Med	High						
Nitrate	0-6" 6-24"	11 lb/ac 6 lb/ac	***			Canola-bu	Wheat-Spring		Corn-Grain		
	0-24"	17 lb/ac				YIELD GOAL	YIELD GOAL		YIELD GOAL		
						50 BU	60 BU		130 BU		
						SUGGESTED GUIDELINES	SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		
						Band	Band		Band		
Phosphorus	Olsen	6 ppm	*****			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Potassium		191 ppm	*****		N	158		N	145	N	139
Chloride					P <sub>2</sub> O <sub>5</sub>	48	Band *	P <sub>2</sub> O <sub>5</sub>	39	P <sub>2</sub> O <sub>5</sub>	53
Sulfur	0-6" 6-24"	120 +lb/ac 360 +lb/ac	*****		K <sub>2</sub> O	0		K <sub>2</sub> O	10	K <sub>2</sub> O	10
Boron											
Zinc					Cl			Cl		Cl	
Iron					S	10	Band	S	0	S	0
Manganese					B			B		B	
Copper					Zn			Zn		Zn	
Magnesium					Fe			Fe		Fe	
Calcium					Mn			Mn		Mn	
Sodium					Cu			Cu		Cu	
Org.Matter					Mg			Mg		Mg	
Carbonate(CCE)					Lime			Lime		Lime	
Sol. Salts	0-6"	0.83 mmho/cm	*****		Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)			
	6-24"	0.53 mmho/cm	*****		0-6" 7.0			% Ca	% Mg	% K	% Na
					6-24" 8.2						

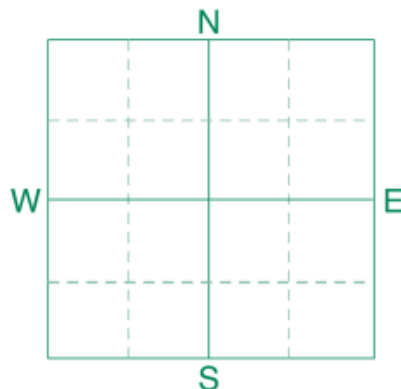
**Crop 1: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.**  
**Crop 2: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.**  
**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. Crop Removal: P2O5 = 52 K2O = 35 AGVISE Band guidelines will build P & K test levels to the medium range over many years.**



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 Northwood: (701) 587-6010  
 Benson: (320) 843-4109

## SOIL TEST REPORT

FIELD ID **TUNE12134**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **18 W**  
 SECTION **12** QTR **NE** ACRES **134**  
 PREV. CROP



SUBMITTED FOR:

**Tuscany**

SUBMITTED BY: **HY4851**

**HYLIFE LTD.**

**5 FABAS STREET**

**BOX 100**

**LA BROQUERIE, MB**

**ROA 0W0**

REF # **1991482** BOX # **0**

LAB # **NW79378**

Date Sampled

Date Received **09/21/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice			
		VLow	Low	Med	High	Canola-bu			Wheat-Spring			Corn-Grain			
Nitrate	0-6" 6-24"	9 lb/ac 3 lb/ac				YIELD GOAL			YIELD GOAL			YIELD GOAL			
	0-24"	12 lb/ac	**			50 BU			60 BU			130 BU			
						SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			
						Band			Band			Band			
						LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		
Phosphorus	Olsen	9 ppm	*****					N	150		N	144			
Potassium		159 ppm	*****					P <sub>2</sub> O <sub>5</sub>	40	Band *	P <sub>2</sub> O <sub>5</sub>	33	Band *		
Chloride								K <sub>2</sub> O	8	Band *	K <sub>2</sub> O	17	Band *		
Sulfur	0-6" 6-24"	24 lb/ac 24 lb/ac	*****					Cl			Cl				
Boron								S	15	Band	S	5	Band (Trial)		
Zinc								B			B				
Iron								Zn			Zn				
Manganese								Fe			Fe				
Copper								Mn			Mn				
Magnesium								Cu			Cu				
Calcium								Mg			Mg				
Sodium								Lime			Lime				
Org.Matter															
Carbonate(CCE)															
Sol. Salts	0-6"	0.34 mmho/cm	*****			Soil pH	Buffer pH	Cation Exchange Capacity			% Base Saturation (Typical Range)				
	6-24"	0.26 mmho/cm	*****			0-6" 7.4					% Ca	% Mg	% K	% Na	% H
						6-24" 8.2									

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 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

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 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

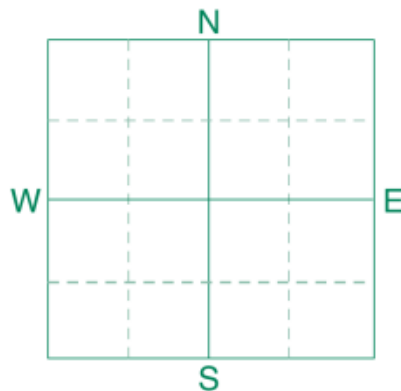
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 52 K2O = 35 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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### SOIL TEST REPORT

FIELD ID **TUNE17125**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **17 W**  
 SECTION **17** QTR **NE** ACRES **125**  
 PREV. CROP



SUBMITTED FOR:  
**Tuscany**

SUBMITTED BY: **HY4851**  
**HYLIFE LTD.**  
**5 FABAS STREET**  
**BOX 100**  
**LA BROQUERIE, MB** **ROA 0W0**

REF # **1991483** BOX # **0**  
 LAB # **NW79073**

Date Sampled

Date Received **09/21/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice		
		VLow Low Med High	Canola-bu		Wheat-Spring		Corn-Grain		
Nitrate	0-6" 6-24"	19 lb/ac 15 lb/ac	YIELD GOAL		YIELD GOAL		YIELD GOAL		
	0-24"	34 lb/ac	50 BU		60 BU		130 BU		
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		
			Band		Band		Band		
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	
Phosphorus	Olsen	8 ppm	N	141	N	128	N	122	
Potassium		213 ppm	P <sub>2</sub> O <sub>5</sub>	43 Band *	P <sub>2</sub> O <sub>5</sub>	35 Band *	P <sub>2</sub> O <sub>5</sub>	46 Band *	
Chloride			K <sub>2</sub> O	0	K <sub>2</sub> O	10 Band (Starter)*	K <sub>2</sub> O	10 Band (2x2) *	
Sulfur	0-6" 6-24"	120 +lb/ac 360 +lb/ac	Cl		Cl		Cl		
Boron			S	10 Band	S	0	S	0	
Zinc			B		B		B		
Iron			Zn		Zn		Zn		
Manganese			Fe		Fe		Fe		
Copper			Mn		Mn		Mn		
Magnesium			Cu		Cu		Cu		
Calcium			Mg		Mg		Mg		
Sodium			Lime		Lime		Lime		
Org.Matter			Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)		
Carbonate(CCE)			Buffer pH				% Ca	% Mg	% K
	0-6" 6-24"	0.8 mmho/cm 1.04 mmho/cm	0-6" 7.6						
Sol. Salts			6-24" 8.1						

**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 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.**  
**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 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.**  
**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. Crop Removal: P2O5 = 52 K2O = 35 AGVISE Band guidelines will build P & K test levels to the medium range over many years.**

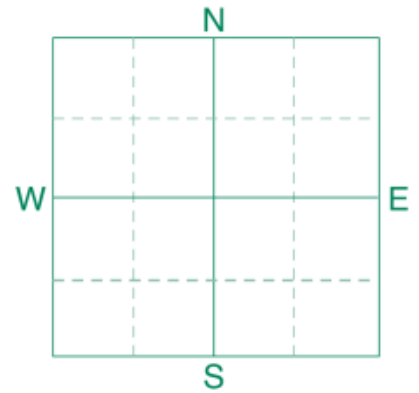




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## SOIL TEST REPORT

FIELD ID **TUNW06124**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **17 W**  
 SECTION **6** QTR **NW** ACRES **124**  
 PREV. CROP



SUBMITTED FOR:  
**Tuscany**

SUBMITTED BY: **HY4851**  
**HYLIFE LTD.**  
**5 FABAS STREET**  
**BOX 100**  
**LA BROQUERIE, MB** **ROA 0W0**

REF # **1991484** BOX # **0**  
 LAB # **NW85645**

Date Sampled

Date Received **09/26/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice		
		VLow	Low	Med	High							
Nitrate	0-6" 6-24"	8 lb/ac 12 lb/ac	****			Canola-bu	Wheat-Spring	Grass/Pasture				
	0-24"	20 lb/ac				YIELD GOAL	YIELD GOAL	YIELD GOAL				
						50 BU	60 BU	4 Tons				
						SUGGESTED GUIDELINES	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES				
						Band	Band	Band				
					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Olsen	8 ppm	*****			N	155	N	142	N	100		
Phosphorus					P <sub>2</sub> O <sub>5</sub>	43 Band *	P <sub>2</sub> O <sub>5</sub>	35 Band *	P <sub>2</sub> O <sub>5</sub>	28 Band *		
Potassium	197 ppm	*****			K <sub>2</sub> O	0	K <sub>2</sub> O	10 Band (Starter)*	K <sub>2</sub> O	16 Band *		
Chloride					Cl		Cl		Cl			
Sulfur	0-6" 6-24"	30 lb/ac 60 lb/ac	*****		S	15 Band	S	5 Band (Trial)	S	5 Band (Trial)		
Boron					B		B		B			
Zinc					Zn		Zn		Zn			
Iron					Fe		Fe		Fe			
Manganese					Mn		Mn		Mn			
Copper					Cu		Cu		Cu			
Magnesium					Mg		Mg		Mg			
Calcium					Lime	0	Lime	0	Lime	0		
Sodium												
Org.Matter												
Carbonate(CCE)												
Sol. Salts	0-6"	0.44 mmho/cm	*****		Soil pH	Buffer pH	Cation Exchange Capacity		% Base Saturation (Typical Range)			
	6-24"	0.38 mmho/cm	*****		0-6" 6.9				% Ca	% Mg	% K	% Na
					6-24" 8.2							

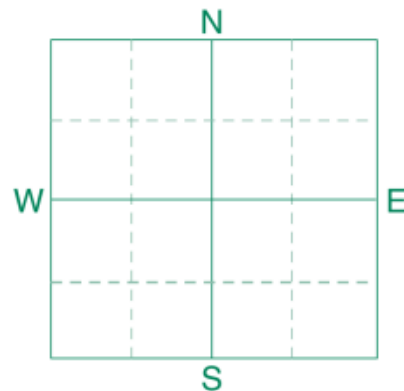
**Crop 1: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.**  
**Crop 2: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.**  
**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. Crop Removal: P2O5 = 48 K2O = 180 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 **TUNW07153**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **17 W**  
 SECTION **7** QTR **NW** ACRES **153**  
 PREV. CROP



SUBMITTED FOR:  
**Tuscany**

SUBMITTED BY: **HY4851**  
**HYLIFE LTD.**  
**5 FABAS STREET**  
**BOX 100**  
**LA BROQUERIE, MB ROA 0W0**

REF # **1991485** BOX # **0**  
 LAB # **NW79398**

Date Sampled

Date Received **09/21/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice					
		VLow	Low	Med	High	Canola-bu			Wheat-Spring			Corn-Grain					
Nitrate	0-6" 6-24"	*****				YIELD GOAL			YIELD GOAL			YIELD GOAL					
						50 BU			60 BU			130 BU					
	0-24"					SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES					
						Band			Band			Band					
						LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION				
Olsen	9 ppm	*****				N	148		N	135		N	129				
Phosphorus						P <sub>2</sub> O <sub>5</sub>	40	Band *	P <sub>2</sub> O <sub>5</sub>	33	Band *	P <sub>2</sub> O <sub>5</sub>	42	Band *			
Potassium	173 ppm	*****				K <sub>2</sub> O	1	Band *	K <sub>2</sub> O	11	Band *	K <sub>2</sub> O	15	Band *			
Chloride						Cl			Cl			Cl					
Sulfur	0-6" 6-24"	*****				S	15	Band	S	0		S	0				
Boron						B			B			B					
Zinc						Zn			Zn			Zn					
Iron						Fe			Fe			Fe					
Manganese						Mn			Mn			Mn					
Copper						Cu			Cu			Cu					
Magnesium						Mg			Mg			Mg					
Calcium						Lime			Lime			Lime					
Sodium						Soil pH			Buffer pH			Cation Exchange Capacity			% Base Saturation (Typical Range)		
Org.Matter																	
Carbonate(CCE)																	
Sol. Salts	0-6" 6-24"	*****				7.1 8.1											

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 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

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 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

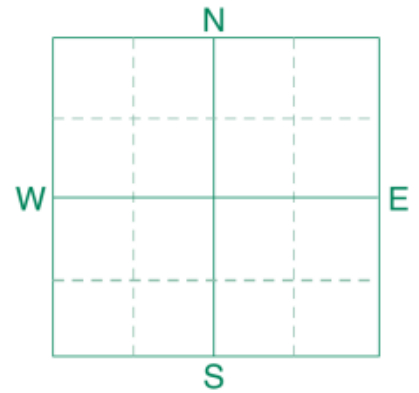
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 52 K2O = 35 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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## SOIL TEST REPORT

FIELD ID **TUNW0864**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **17 W**  
 SECTION **8** QTR **NW** ACRES **64**  
 PREV. CROP



SUBMITTED FOR:  
**Tuscany**

SUBMITTED BY: **HY4851**  
**HYLIFE LTD.**  
**5 FABAS STREET**  
**BOX 100**  
**LA BROQUERIE, MB** **ROA 0W0**

REF # **1991486** BOX # **0**  
 LAB # **NW79080**

Date Sampled

Date Received **09/21/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice						
		VLow	Low	Med	High	Canola-bu			Wheat-Spring			Corn-Grain						
Nitrate	0-6" 6-24"	7 lb/ac 9 lb/ac	***															
	0-24"	16 lb/ac				YIELD GOAL			YIELD GOAL					YIELD GOAL				
						50 BU			60 BU					130 BU				
						SUGGESTED GUIDELINES			SUGGESTED GUIDELINES					SUGGESTED GUIDELINES				
						Band			Band					Band				
	Olsen	6 ppm	*****			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION					
Phosphorus						N	159		N	146		N	140					
Potassium		164 ppm	*****			P <sub>2</sub> O <sub>5</sub>	48	Band *	P <sub>2</sub> O <sub>5</sub>	39	Band *	P <sub>2</sub> O <sub>5</sub>	53	Band *				
Chloride						K <sub>2</sub> O	6	Band *	K <sub>2</sub> O	15	Band *	K <sub>2</sub> O	19	Band *				
Sulfur	0-6" 6-24"	16 lb/ac 24 lb/ac	*****			Cl			Cl			Cl						
Boron						S	15	Band	S	5	Band (Trial)	S	5	Band (Trial)				
Zinc						B			B			B						
Iron						Zn			Zn			Zn						
Manganese						Fe			Fe			Fe						
Copper						Mn			Mn			Mn						
Magnesium						Cu			Cu			Cu						
Calcium						Mg			Mg			Mg						
Sodium						Lime			Lime			Lime						
Org.Matter						Soil pH			Buffer pH			Cation Exchange Capacity			% Base Saturation (Typical Range)			
Carbonate(CCE)																		
Sol. Salts	0-6" 6-24"	0.4 mmho/cm 0.28 mmho/cm	*****			0-6"	7.3		6-24"	8.3		% Ca	% Mg	% K	% Na	% H		

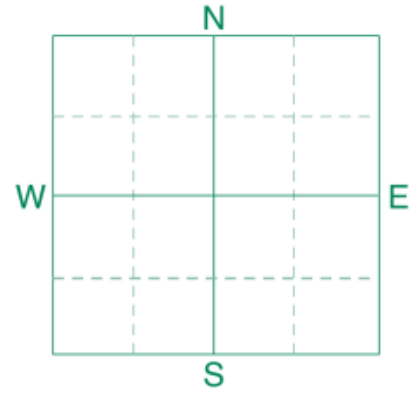
**Crop 1:** \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**Crop 2:** \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**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. Crop Removal: P2O5 = 52 K2O = 35 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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 (<http://www.agvise.com>)  
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 Benson: (320) 843-4109

## SOIL TEST REPORT

FIELD ID **TUNW17143**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **17 W**  
 SECTION **17** QTR **NW** ACRES **143**  
 PREV. CROP



SUBMITTED FOR:  
**Tuscany**

SUBMITTED BY: **HY4851**  
**HYLIFE LTD.**  
**5 FABAS STREET**  
**BOX 100**  
**LA BROQUERIE, MB** **ROA 0W0**

REF # **1991487** BOX # **0**  
 LAB # **NW79393**

Date Sampled

Date Received **09/21/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		VLow Low Med High	Canola-bu		Wheat-Spring		Corn-Grain			
Nitrate	0-6" 6-24"	10 lb/ac 12 lb/ac	****	YIELD GOAL	YIELD GOAL	YIELD GOAL	50 BU	60 BU	130 BU	
	0-24"	22 lb/ac		SUGGESTED GUIDELINES	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES				
				Band	Band	Band				
				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	
				N	153			N	140	
Phosphorus	Olsen	13 ppm	*****	P <sub>2</sub> O <sub>5</sub>	30	Band *	P <sub>2</sub> O <sub>5</sub>	25	Band *	
Potassium		180 ppm	*****	K <sub>2</sub> O	0		K <sub>2</sub> O	10	Band (Starter)*	
Chloride				Cl			Cl			
Sulfur	0-6" 6-24"	120 +lb/ac 360 +lb/ac	*****	S	10	Band	S	0		
Boron				B			B			
Zinc				Zn			Zn			
Iron				Fe			Fe			
Manganese				Mn			Mn			
Copper				Cu			Cu			
Magnesium				Mg			Mg			
Calcium				Lime			Lime			
Sodium										
Org.Matter										
Carbonate(CCE)										
Sol. Salts	0-6"	0.49 mmho/cm	*****	Soil pH	7.2		% Base Saturation (Typical Range)			
	6-24"	0.55 mmho/cm	*****	Buffer pH	8.1		% Ca	% Mg	% K	% Na

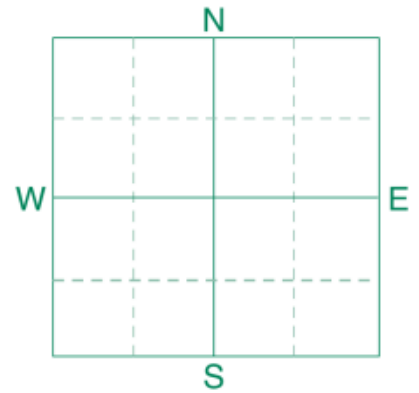
**Crop 1:** \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**Crop 2:** \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**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. Crop Removal: P2O5 = 52 K2O = 35 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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 Benson: (320) 843-4109

## SOIL TEST REPORT

FIELD ID **TUSE0587**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **17 W**  
 SECTION **5** QTR **SE** ACRES **87**  
 PREV. CROP



SUBMITTED FOR:  
**Tuscany**

SUBMITTED BY: **HY4851**  
**HYLIFE LTD.**  
**5 FABAS STREET**  
**BOX 100**  
**LA BROQUERIE, MB** **ROA 0W0**

REF # **1991488** BOX # **0**  
 LAB # **NW79075**

Date Sampled

Date Received **09/21/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
		VLow	Low	Med	High	Canola-bu			Wheat-Spring			Corn-Grain		
Nitrate	0-6" 6-24"	8 lb/ac 6 lb/ac	***			YIELD GOAL			YIELD GOAL			YIELD GOAL		
	0-24"					14 lb/ac				50 BU			60 BU	
						SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
						Band			Band			Band		
						LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION	
Phosphorus	Olsen	8 ppm	*****			N	161		N	148		N	142	
Potassium		159 ppm	*****			P <sub>2</sub> O <sub>5</sub>	43	Band *	P <sub>2</sub> O <sub>5</sub>	35	Band *	P <sub>2</sub> O <sub>5</sub>	46	Band *
Chloride						K <sub>2</sub> O	8	Band *	K <sub>2</sub> O	17	Band *	K <sub>2</sub> O	21	Band *
Sulfur	0-6" 6-24"	18 lb/ac 36 lb/ac	*****			Cl			Cl			Cl		
Boron						S	15	Band	S	5	Band (Trial)	S	5	Band (Trial)
Zinc						B			B			B		
Iron						Zn			Zn			Zn		
Manganese						Fe			Fe			Fe		
Copper						Mn			Mn			Mn		
Magnesium						Cu			Cu			Cu		
Calcium						Mg			Mg			Mg		
Sodium						Lime			Lime			Lime		
Org.Matter						Soil pH			Cation Exchange Capacity			% Base Saturation (Typical Range)		
Carbonate(CCE)						Buffer pH			% Ca	% Mg	% K	% Na	% H	
Sol. Salts	0-6" 6-24"	0.37 mmho/cm 0.26 mmho/cm	*****			0-6" 7.3								
			*****			6-24" 8.3								

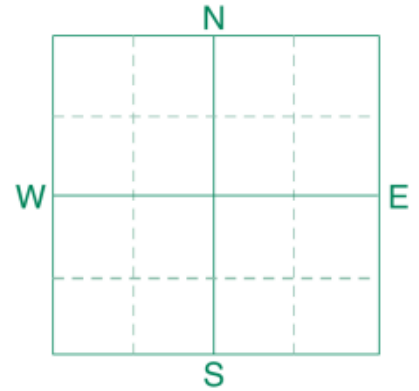
**Crop 1:** \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**Crop 2:** \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**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. Crop Removal: P2O5 = 52 K2O = 35 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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 Benson: (320) 843-4109

## SOIL TEST REPORT

FIELD ID **TUSE06200**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **17 W**  
 SECTION **6** QTR **SE** ACRES **200**  
 PREV. CROP



SUBMITTED FOR:  
**Tuscany**

SUBMITTED BY: **HY4851**  
**HYLIFE LTD.**  
**5 FABAS STREET**  
**BOX 100**  
**LA BROQUERIE, MB** **ROA 0W0**

REF # **1991489** BOX # **0**  
 LAB # **NW113914**

Date Sampled

Date Received **10/11/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
		VLow	Low	Med	High	Canola-bu			Wheat-Spring			Corn-Grain		
Nitrate	0-6" 6-24"	***				YIELD GOAL			YIELD GOAL			YIELD GOAL		
			6 lb/ac 9 lb/ac	50 BU			60 BU			130 BU				
	0-24"		15 lb/ac	SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES				
				Band			Band			Band				
				LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION			
Phosphorus	Olsen 12 ppm	*****				N	160		N	147		N	141	
Potassium	195 ppm	*****				P <sub>2</sub> O <sub>5</sub>	33	Band *	P <sub>2</sub> O <sub>5</sub>	27	Band *	P <sub>2</sub> O <sub>5</sub>	32	Band *
Chloride						K <sub>2</sub> O	0		K <sub>2</sub> O	10	Band (Starter)*	K <sub>2</sub> O	10	Band (2x2) *
Sulfur	0-6" 6-24"	*****				Cl			Cl			Cl		
Boron		*****				S	15	Band	S	0		S	0	
Zinc						B			B			B		
Iron						Zn			Zn			Zn		
Manganese						Fe			Fe			Fe		
Copper						Mn			Mn			Mn		
Magnesium						Cu			Cu			Cu		
Calcium						Mg			Mg			Mg		
Sodium						Lime			Lime			Lime		
Org.Matter						Soil pH			Cation Exchange Capacity			% Base Saturation (Typical Range)		
Carbonate(CCE)						Buffer pH			% Ca	% Mg	% K	% Na	% H	
Sol. Salts	0-6" 6-24"	*****				0-6" 7.3								
		*****				6-24" 8.4								

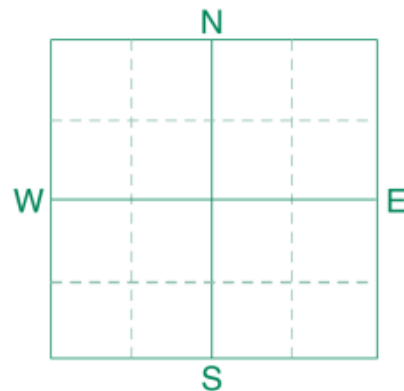
**Crop 1: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.**  
**Crop 2: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.**  
**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. Crop Removal: P2O5 = 52 K2O = 35 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 **TUSE07139**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **17 W**  
 SECTION **7** QTR **SE** ACRES **139**  
 PREV. CROP



SUBMITTED FOR:  
**Tuscany**

SUBMITTED BY: **HY4851**  
**HYLIFE LTD.**  
**5 FABAS STREET**  
**BOX 100**  
**LA BROQUERIE, MB** **ROA 0W0**

REF # **1991490** BOX # **0**  
 LAB # **NW79429**

Date Sampled

Date Received **09/21/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
		VLow	Low	Med	High	Canola-bu			Wheat-Spring			Corn-Grain		
Nitrate	0-6" 6-24"	12 lb/ac 6 lb/ac	****											
	0-24"	18 lb/ac				YIELD GOAL	50 BU		YIELD GOAL	60 BU		YIELD GOAL	130 BU	
						SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
						Band			Band			Band		
						LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION	
Phosphorus	Olsen	8 ppm	*****			N	157		N	144		N	138	
Potassium		173 ppm	*****			P <sub>2</sub> O <sub>5</sub>	43	Band *	P <sub>2</sub> O <sub>5</sub>	35	Band *	P <sub>2</sub> O <sub>5</sub>	46	Band *
Chloride						K <sub>2</sub> O	1	Band *	K <sub>2</sub> O	11	Band *	K <sub>2</sub> O	15	Band *
Sulfur	0-6" 6-24"	120 +lb/ac 156 lb/ac	*****			Cl			Cl			Cl		
Boron						S	10	Band	S	0		S	0	
Zinc						B			B			B		
Iron						Zn			Zn			Zn		
Manganese						Fe			Fe			Fe		
Copper						Mn			Mn			Mn		
Magnesium						Cu			Cu			Cu		
Calcium						Mg			Mg			Mg		
Sodium						Lime			Lime			Lime		
Org.Matter						Soil pH			Cation Exchange Capacity			% Base Saturation (Typical Range)		
Carbonate(CCE)						Buffer pH			% Ca	% Mg	% K	% Na	% H	
Sol. Salts	0-6" 6-24"	0.82 mmho/cm 0.45 mmho/cm	*****			0-6" 7.0 6-24" 8.1								

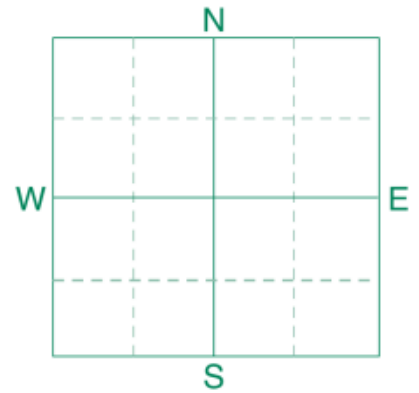
**Crop 1:** \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**Crop 2:** \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**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. Crop Removal: P2O5 = 52 K2O = 35 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 **TUSE12149**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **18 W**  
 SECTION **12** QTR **SE** ACRES **149**  
 PREV. CROP



SUBMITTED FOR:  
**Tuscany**

SUBMITTED BY: **HY4851**  
**HYLIFE LTD.**  
**5 FABAS STREET**  
**BOX 100**  
**LA BROQUERIE, MB** **ROA 0W0**

REF # **1991491** BOX # **0**  
 LAB # **NW79392**

Date Sampled

Date Received **09/21/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice				
		VLow	Low	Med	High	Canola-bu			Wheat-Spring			Corn-Grain				
Nitrate	0-6" 6-24"	*****				YIELD GOAL			YIELD GOAL			YIELD GOAL				
						50 BU			60 BU			130 BU				
	0-24"					SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES				
						Band			Band			Band				
						LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION			
Phosphorus	Olsen <b>10 ppm</b>	*****				N	<b>151</b>		N	<b>138</b>		N	<b>132</b>			
Potassium	<b>173 ppm</b>	*****				P <sub>2</sub> O <sub>5</sub>	<b>38</b>	<b>Band *</b>	P <sub>2</sub> O <sub>5</sub>	<b>31</b>	<b>Band *</b>	P <sub>2</sub> O <sub>5</sub>	<b>39</b>	<b>Band *</b>		
Chloride						K <sub>2</sub> O	<b>1</b>	<b>Band *</b>	K <sub>2</sub> O	<b>11</b>	<b>Band *</b>	K <sub>2</sub> O	<b>15</b>	<b>Band *</b>		
Sulfur	0-6" 6-24"	*****				Cl			Cl			Cl				
						S	<b>15</b>	<b>Band</b>	S	<b>5</b>	<b>Band (Trial)</b>	S	<b>5</b>	<b>Band (Trial)</b>		
Boron						B			B			B				
Zinc						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																
Carbonate(CCE)																
Sol. Salts	0-6"	*****				Soil pH	Buffer pH		Cation Exchange Capacity			% Base Saturation (Typical Range)				
	6-24"	*****				0-6"	<b>7.1</b>			% Ca	% Mg	% K	% Na	% H		
						6-24"	<b>8.2</b>									

**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 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.**  
**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 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.**  
**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. Crop Removal: P2O5 = 52 K2O = 35 AGVISE Band guidelines will build P & K test levels to the medium range over many years.**

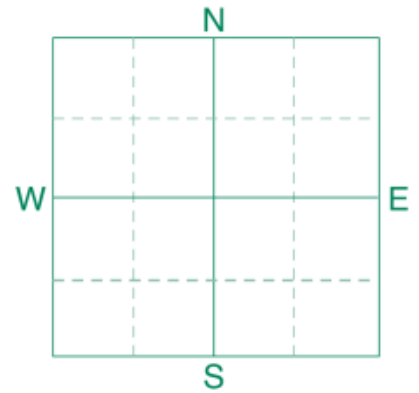




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 (<http://www.agvise.com>)  
 Northwood: (701) 587-6010  
 Benson: (320) 843-4109

## SOIL TEST REPORT

FIELD ID **TUSE17116**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **17 W**  
 SECTION **17** QTR **SE** ACRES **116**  
 PREV. CROP



SUBMITTED FOR:  
**Tuscany**

SUBMITTED BY: **HY4851**  
**HYLIFE LTD.**  
**5 FABAS STREET**  
**BOX 100**  
**LA BROQUERIE, MB** **ROA 0W0**

REF # **1991492** BOX # **0**  
 LAB # **NW79428**

Date Sampled

Date Received **09/21/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice					
		VLow	Low	Med	High	Canola-bu			Wheat-Spring			Corn-Grain					
Nitrate	0-6" 6-24"	25 lb/ac 15 lb/ac	*****														
	0-24"	40 lb/ac				YIELD GOAL	YIELD GOAL	YIELD GOAL	50 BU	60 BU	130 BU	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES			
						Band	Band	Band				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
						N	135		N	122		N	116		N	116	
						P <sub>2</sub> O <sub>5</sub>	48	Band *	P <sub>2</sub> O <sub>5</sub>	39	Band *	P <sub>2</sub> O <sub>5</sub>	53	Band *	P <sub>2</sub> O <sub>5</sub>	53	Band *
Olsen Phosphorus	6 ppm	*****															
Potassium	159 ppm	*****															
Chloride						K <sub>2</sub> O	8	Band *	K <sub>2</sub> O	17	Band *	K <sub>2</sub> O	21	Band *	K <sub>2</sub> O	21	Band *
Sulfur	0-6" 6-24"	120 +lb/ac 360 +lb/ac	*****			Cl			Cl			Cl			Cl		
Boron						S	10	Band	S	0		S	0		S	0	
Zinc						B			B			B			B		
Iron						Zn			Zn			Zn			Zn		
Manganese						Fe			Fe			Fe			Fe		
Copper						Mn			Mn			Mn			Mn		
Magnesium						Cu			Cu			Cu			Cu		
Calcium						Mg			Mg			Mg			Mg		
Sodium						Lime			Lime			Lime			Lime		
Org.Matter																	
Carbonate(CCE)																	
Sol. Salts	0-6"	0.63 mmho/cm	*****			Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)								
	6-24"	0.73 mmho/cm	*****			0-6" 7.1	6-24" 8.2		% Ca	% Mg	% K	% Na	% H				

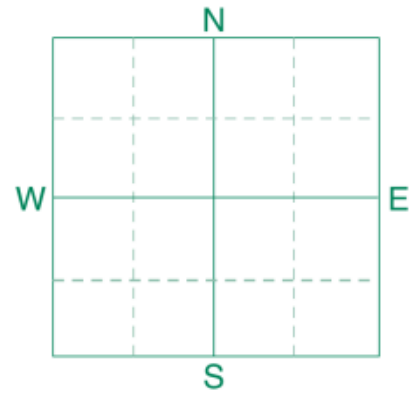
**Crop 1:** \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**Crop 2:** \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**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. Crop Removal: P2O5 = 52 K2O = 35 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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 Benson: (320) 843-4109

## SOIL TEST REPORT

FIELD ID **TUSW0566**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **17 W**  
 SECTION **5** QTR **SW** ACRES **66**  
 PREV. CROP



SUBMITTED FOR:  
**Tuscany**

SUBMITTED BY: **HY4851**  
**HYLIFE LTD.**  
**5 FABAS STREET**  
**BOX 100**  
**LA BROQUERIE, MB** **ROA 0W0**

REF # **1991493** BOX # **0**  
 LAB # **NW79079**

Date Sampled

Date Received **09/21/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice										
		VLow	Low	Med	High	Canola-bu			Wheat-Spring			Corn-Grain										
Nitrate	0-6" 6-24"	8 lb/ac 6 lb/ac	***																			
	0-24"	14 lb/ac				YIELD GOAL	YIELD GOAL	YIELD GOAL	50 BU	60 BU	130 BU	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES								
						SUGGESTED GUIDELINES	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES	Band	Band	Band	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION							
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	N	161		N	148		N	142			
						N	161		N	148		N	142		P <sub>2</sub> O <sub>5</sub>	48	Band *	P <sub>2</sub> O <sub>5</sub>	39	Band *	P <sub>2</sub> O <sub>5</sub>	53
Phosphorus	Olsen	6 ppm	*****											K <sub>2</sub> O	15	Band *	K <sub>2</sub> O	23	Band *	K <sub>2</sub> O	26	Band *
Potassium		146 ppm	*****											Cl			Cl			Cl		
Chloride														S	15	Band	S	0		S	0	
Sulfur	0-6" 6-24"	20 lb/ac 360 +lb/ac	*****											B			B			B		
Boron														Zn			Zn			Zn		
Zinc														Fe			Fe			Fe		
Iron														Mn			Mn			Mn		
Manganese														Cu			Cu			Cu		
Copper														Mg			Mg			Mg		
Magnesium														Lime			Lime			Lime		
Calcium																						
Sodium																						
Org.Matter																						
Carbonate(CCE)																						
Sol. Salts	0-6"	0.35 mmho/cm	*****			Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)													
	6-24"	0.94 mmho/cm	*****			0-6" 7.5			% Ca	% Mg	% K	% Na	% H									
						6-24" 7.9																

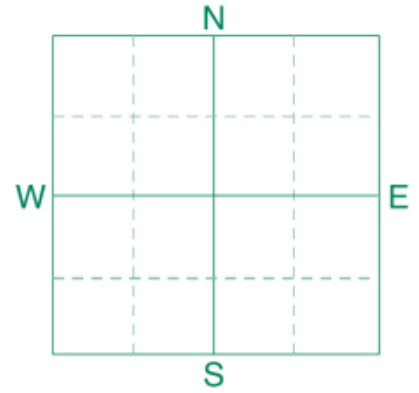
**Crop 1:** \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**Crop 2:** \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**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. Crop Removal: P2O5 = 52 K2O = 35 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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 Northwood: (701) 587-6010  
 Benson: (320) 843-4109

## SOIL TEST REPORT

FIELD ID **TUSW06146**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **17 W**  
 SECTION **6** QTR **SW** ACRES **146**  
 PREV. CROP



SUBMITTED FOR:  
**Tuscany**

SUBMITTED BY: **HY4851**  
**HYLIFE LTD.**  
**5 FABAS STREET**  
**BOX 100**  
**LA BROQUERIE, MB** **ROA 0W0**

REF # **1991494** BOX # **0**  
 LAB # **NW85647**

Date Sampled

Date Received **09/26/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice			
		VLow	Low	Med	High	Canola-bu			Wheat-Spring			Grass/Pasture			
Nitrate	0-6" 6-24"	***				YIELD GOAL			YIELD GOAL			YIELD GOAL			
			5 lb/ac 9 lb/ac	50 BU			60 BU			4 Tons					
	0-24"		14 lb/ac	SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES					
				Band			Band			Band					
				LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION				
Phosphorus	Olsen 5 ppm	*****				N	161		N	148		N	106		
Potassium	158 ppm	*****				P <sub>2</sub> O <sub>5</sub>	50	Band *	P <sub>2</sub> O <sub>5</sub>	41	Band *	P <sub>2</sub> O <sub>5</sub>	36	Band *	
Chloride						K <sub>2</sub> O	9	Band *	K <sub>2</sub> O	18	Band *	K <sub>2</sub> O	26	Band *	
Sulfur	0-6" 6-24"	*****				Cl			Cl			Cl			
	120 +lb/ac 360 +lb/ac	*****				S	10	Band	S	0		S	0		
Boron						B			B			B			
Zinc						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															
Carbonate(CCE)															
Sol. Salts	0-6"	*****				Soil pH	Buffer pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
	6-24"		0.46 mmho/cm 0.59 mmho/cm	*****			0-6" 7.6 6-24" 8.3				% Ca	% Mg	% K	% Na	% H

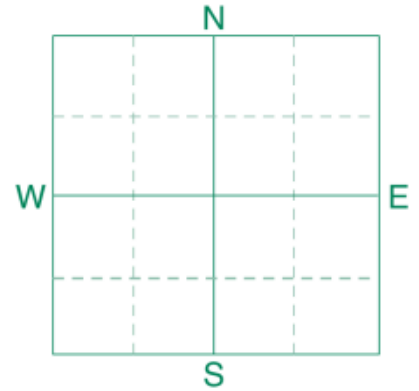
**Crop 1: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.**  
**Crop 2: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.**  
**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. Crop Removal: P2O5 = 48 K2O = 180 AGVISE Band guidelines will build P & K test levels to the medium range over many years.**



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

### SOIL TEST REPORT

FIELD ID **TUSW07154**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **17 W**  
 SECTION **7** QTR **SW** ACRES **154**  
 PREV. CROP



SUBMITTED FOR:  
**Tuscany**

SUBMITTED BY: **HY4851**  
**HYLIFE LTD.**  
**5 FABAS STREET**  
**BOX 100**  
**LA BROQUERIE, MB** **ROA 0W0**

REF # **1991495** BOX # **0**  
 LAB # **NW79388**

Date Sampled

Date Received **09/21/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice		
		VLow Low Med High	Canola-bu		Wheat-Spring		Corn-Grain		
Nitrate	0-6" 6-24"	19 lb/ac 48 lb/ac	YIELD GOAL		YIELD GOAL		YIELD GOAL		
	0-24"	67 lb/ac	50 BU		60 BU		130 BU		
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		
			Band		Band		Band		
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	
Phosphorus	Olsen	14 ppm	N	108	N	95	N	89	
Potassium		186 ppm	P <sub>2</sub> O <sub>5</sub>	28 Band *	P <sub>2</sub> O <sub>5</sub>	23 Band *	P <sub>2</sub> O <sub>5</sub>	25 Band *	
Chloride			K <sub>2</sub> O	0	K <sub>2</sub> O	10 Band (Starter)*	K <sub>2</sub> O	10 Band (2x2) *	
Sulfur	0-6" 6-24"	44 lb/ac 168 lb/ac	Cl		Cl		Cl		
Boron			S	10 Band	S	0	S	0	
Zinc			B		B		B		
Iron			Zn		Zn		Zn		
Manganese			Fe		Fe		Fe		
Copper			Mn		Mn		Mn		
Magnesium			Cu		Cu		Cu		
Calcium			Mg		Mg		Mg		
Sodium			Lime		Lime		Lime		
Org.Matter			Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)		
Carbonate(CCE)			Buffer pH				% Ca	% Mg	% K
	0-6" 6-24"	0.37 mmho/cm 0.42 mmho/cm							
Sol. Salts			0-6" 7.8						
			6-24" 8.5						

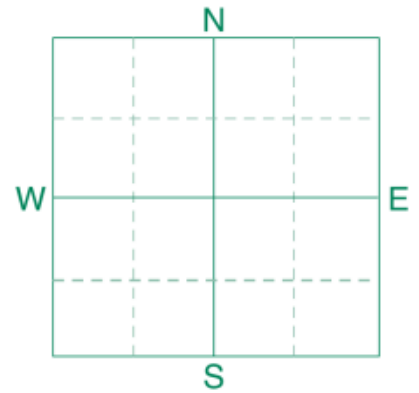
Crop 1: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
 Crop 2: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
 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. Crop Removal: P2O5 = 52 K2O = 35 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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 Benson: (320) 843-4109

## SOIL TEST REPORT

FIELD ID **TUSW08108**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **17 W**  
 SECTION **8** QTR **SW** ACRES **108**  
 PREV. CROP



SUBMITTED FOR:  
**Tuscany**

SUBMITTED BY: **HY4851**  
**HYLIFE LTD.**  
**5 FABAS STREET**  
**BOX 100**  
**LA BROQUERIE, MB** **ROA 0W0**

REF # **1991496** BOX # **0**  
 LAB # **NW79076**

Date Sampled

Date Received **09/21/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice									
		VLow	Low	Med	High	Canola-bu			Wheat-Spring			Corn-Grain									
Nitrate	0-6" 6-24"	2 lb/ac 3 lb/ac				YIELD GOAL			YIELD GOAL			YIELD GOAL									
	0-24"	5 lb/ac	*			50 BU			60 BU			130 BU									
						SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES									
						Band			Band			Band									
						LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION								
Phosphorus	Olsen	8 ppm	*****					N	170		N	157		N	151						
Potassium		173 ppm	*****					P <sub>2</sub> O <sub>5</sub>	43	Band *	P <sub>2</sub> O <sub>5</sub>	35	Band *	P <sub>2</sub> O <sub>5</sub>	46	Band *					
Chloride								K <sub>2</sub> O	1	Band *	K <sub>2</sub> O	11	Band *	K <sub>2</sub> O	15	Band *					
Sulfur	0-6" 6-24"	32 lb/ac 48 lb/ac	*****					Cl			Cl			Cl							
Boron								S	10	Band	S	0		S	0						
Zinc								B			B			B							
Iron								Zn			Zn			Zn							
Manganese								Fe			Fe			Fe							
Copper								Mn			Mn			Mn							
Magnesium								Cu			Cu			Cu							
Calcium								Mg			Mg			Mg							
Sodium								Lime			Lime			Lime							
Org.Matter								Soil pH			Buffer pH			Cation Exchange Capacity			% Base Saturation (Typical Range)				
Carbonate(CCE)								0-6" 7.5			6-24" 8.3						% Ca	% Mg	% K	% Na	% H
Sol. Salts	0-6" 6-24"	0.3 mmho/cm 0.27 mmho/cm	*****																		

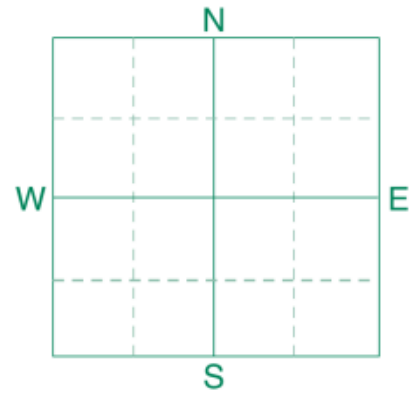
**Crop 1:** \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**Crop 2:** \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**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. Crop Removal: P2O5 = 52 K2O = 35 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 **TUSW0846**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **17 W**  
 SECTION **8** QTR **SW** ACRES **46**  
 PREV. CROP



SUBMITTED FOR:  
**Tuscany**

SUBMITTED BY: **HY4851**  
**HYLIFE LTD.**  
**5 FABAS STREET**  
**BOX 100**  
**LA BROQUERIE, MB** ROA **OWO**

REF # **1991497** BOX # **0**  
 LAB # **NW79081**

Date Sampled

Date Received **09/21/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice						
		VLow	Low	Med	High	Canola-bu			Wheat-Spring			Corn-Grain						
Nitrate	0-6" 6-24"	7 lb/ac 6 lb/ac	***															
	0-24"	13 lb/ac				YIELD GOAL			YIELD GOAL					YIELD GOAL				
						50 BU			60 BU					130 BU				
						SUGGESTED GUIDELINES			SUGGESTED GUIDELINES					SUGGESTED GUIDELINES				
						Band			Band					Band				
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION					
Phosphorus	Olsen	12 ppm	*****			N	162		N	149		N	143					
Potassium		200 ppm	*****			P <sub>2</sub> O <sub>5</sub>	33	Band *	P <sub>2</sub> O <sub>5</sub>	27	Band *	P <sub>2</sub> O <sub>5</sub>	32	Band *				
Chloride						K <sub>2</sub> O	0		K <sub>2</sub> O	10	Band (Starter)*	K <sub>2</sub> O	10	Band (2x2) *				
Sulfur	0-6" 6-24"	66 lb/ac 240 lb/ac	*****			Cl			Cl			Cl						
Boron						S	10	Band	S	0		S	0					
Zinc						B			B			B						
Iron						Zn			Zn			Zn						
Manganese						Fe			Fe			Fe						
Copper						Mn			Mn			Mn						
Magnesium						Cu			Cu			Cu						
Calcium						Mg			Mg			Mg						
Sodium						Lime			Lime			Lime						
Org.Matter						Soil pH			Buffer pH			Cation Exchange Capacity			% Base Saturation (Typical Range)			
Carbonate(CCE)																		
Sol. Salts	0-6" 6-24"	0.38 mmho/cm 0.44 mmho/cm	*****			0-6"	7.5											
			*****			6-24"	8.3											

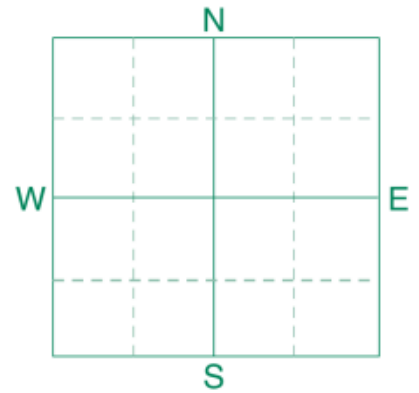
**Crop 1:** \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**Crop 2:** \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**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. Crop Removal: P2O5 = 52 K2O = 35 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 **TUSW17129**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **17 W**  
 SECTION **17** QTR **SW** ACRES **129**  
 PREV. CROP



SUBMITTED FOR:  
**Tuscany**

SUBMITTED BY: **HY4851**  
**HYLIFE LTD.**  
**5 FABAS STREET**  
**BOX 100**  
**LA BROQUERIE, MB** **ROA 0W0**

REF # **1991498** BOX # **0**  
 LAB # **NW79408**

Date Sampled

Date Received **09/21/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice					
		VLow	Low	Med	High	Canola-bu			Wheat-Spring			Corn-Grain					
Nitrate	0-6" 6-24"	*****				YIELD GOAL			YIELD GOAL			YIELD GOAL					
						50 BU			60 BU			130 BU					
	0-24"					SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES					
						Band			Band			Band					
						LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION				
Olsen Phosphorus	6 ppm	*****				N	152		N	139		N	133				
Potassium	142 ppm	*****				P <sub>2</sub> O <sub>5</sub>	48	Band *	P <sub>2</sub> O <sub>5</sub>	39	Band *	P <sub>2</sub> O <sub>5</sub>	53	Band *			
Chloride						K <sub>2</sub> O	17	Band *	K <sub>2</sub> O	24	Band *	K <sub>2</sub> O	28	Band *			
Sulfur	0-6" 6-24"	*****				Cl			Cl			Cl					
		*****				S	15	Band	S	0		S	0				
Boron						B			B			B					
Zinc						Zn			Zn			Zn					
Iron						Fe			Fe			Fe					
Manganese						Mn			Mn			Mn					
Copper						Cu			Cu			Cu					
Magnesium						Mg			Mg			Mg					
Calcium						Lime	0		Lime	0		Lime	0				
Sodium						Soil pH			Buffer pH			Cation Exchange Capacity			% Base Saturation (Typical Range)		
Org.Matter																	
Carbonate(CCE)																	
	0-6" 6-24"	*****				0-6" 6.9			6-24" 8.2			% Ca			% Mg		
Sol. Salts	0.36 mmho/cm 0.39 mmho/cm	*****															
												% K			% Na		
															% H		

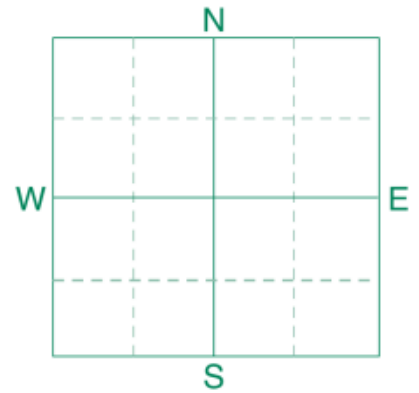
**Crop 1:** \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**Crop 2:** \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**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. Crop Removal: P2O5 = 52 K2O = 35 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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 (<http://www.agvise.com>)  
 Northwood: (701) 587-6010  
 Benson: (320) 843-4109

## SOIL TEST REPORT

FIELD ID **TUW05258**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **17 W**  
 SECTION **5** QTR **W** ACRES **258**  
 PREV. CROP



SUBMITTED FOR:  
**Tuscany**

SUBMITTED BY: **HY4851**  
**HYLIFE LTD.**  
**5 FABAS STREET**  
**BOX 100**  
**LA BROQUERIE, MB** **ROA 0W0**

REF # **1991500** BOX # **0**  
 LAB # **NW79077**

Date Sampled

Date Received **09/21/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
		VLow	Low	Med	High	Canola-bu			Wheat-Spring			Corn-Grain		
Nitrate	0-6" 6-24"	***				YIELD GOAL			YIELD GOAL			YIELD GOAL		
	0-24"					50 BU			60 BU			130 BU		
						SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
						Band			Band			Band		
Olsen	7 ppm	*****			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Phosphorus					N	158		N	145		N	139		
Potassium	146 ppm	*****			P <sub>2</sub> O <sub>5</sub>	45	Band *	P <sub>2</sub> O <sub>5</sub>	37	Band *	P <sub>2</sub> O <sub>5</sub>	49	Band *	
Chloride					K <sub>2</sub> O	15	Band *	K <sub>2</sub> O	23	Band *	K <sub>2</sub> O	26	Band *	
Sulfur	0-6" 6-24"	*****			Cl			Cl			Cl			
	120 +lb/ac 360 +lb/ac	*****			S	10	Band	S	0		S	0		
Boron					B			B			B			
Zinc					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														
Carbonate(CCE)														
Sol. Salts	0-6"	*****			Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)						
	6-24"							% Ca	% Mg	% K	% Na	% H		
	0.63 mmho/cm 1.11 mmho/cm	*****			0-6" 7.6									
		*****			6-24" 8.1									

**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 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**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 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**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. Crop Removal: P2O5 = 52 K2O = 35 AGVISE Band guidelines will build P & K test levels to the medium range over many years.