

## SITE ASSESSMENT

### For Large Livestock Operation Proposals (300 Animal Units or more)

#### 1.0 Purpose

The set up, or expansion, of a livestock operation that has 300 Animal Units or more is subject to [Part 7 of The Planning Act](#). This includes consideration as a conditional use by the municipal council or planning district board. It also includes a review by the Technical Review Committee (TRC) appointed by the Minister of Local Government. The [Technical Review Committee Regulation](#) requires a site assessment to help the committee do its review and allow people who will be affected by the livestock operation to comment on the proposal.

#### 2.0 Assistance

For assistance in completing the Site Assessment Form please refer to the following.

For links to resources, click on the [highlighted underlined items](#).

For additional information on a particular item, please click on the (?) "Learn More" icon.

For definitions, click on the [Glossary of Terms](#).

For help with mapping, contact your [Community and Regional Planning Regional Office](#).

For additional help, contact the [Technical Review Coordination Unit](#).

### 3.0 Description of Livestock Operation

Operation legal name, if other than the owner's name:

Blumengart Hutterian Mutual Corp

Operation location (project site):  NE16-2-3W & NW15-2-3W

Rural Municipality (RM) of Rhineland

Legal description: section, township, range or river lot(s)

NE16-2-3W- existing turkey barns & NW15-2-3W (new starter barn)

Manitoba Premises Identification Number: MB1004072 & MB1054154

Municipal tax roll number(s): 0177400.000, 0177100.000, 0177600.000

Show the location of the operation (project site) on a location map. (See [Location Map](#) for example).

Location Map attached



# R.M. OF RHINELAND

MAP REVISED-

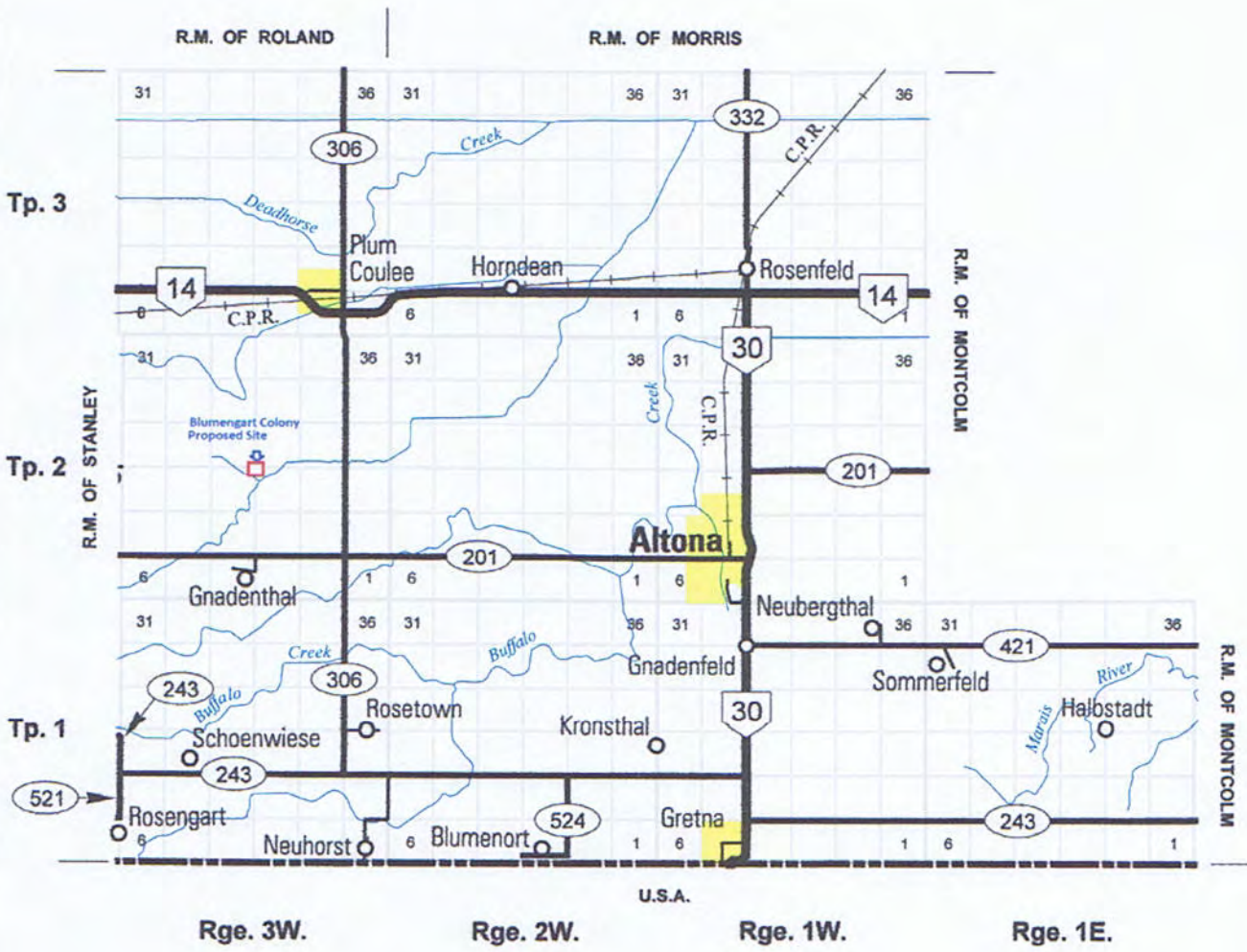


0 5  
SCALE IN KILOMETRES

MANITOBA  
TRANSPORTATION AND GOVERNMENT SERVICES  
HIGHWAY PLANNING AND DESIGN BRANCH  
DRAFTING SECTION  
WINNIPEG  
DECEMBER, 2002

### LEGEND

- PROVINCIAL TRUNK HIGHWAYS .....  .....
- PROVINCIAL ROADS .....  .....
- ACCESS ROADS .....  .....
- RAILWAYS .....  .....



U.S.A.

Location Map

#### 4.0 Nature of Project ?

New operation

Expansion of existing operation

State if any existing buildings will be replaced or demolished. If existing buildings will be reused or expanded, state how they will be reused or expanded.

**Expansion of existing turkey operation: addition of 24 000 heavy hens (2011), existing starter barn will be replaced with a new starter barn, to be built on NW15-2-3W and to house 18 000 starter places.**

#### 5.0 Proposed Type and Size of Operation ?

State the proposed type and size of the operation. (See [Animal Units Calculation Table](#).)

Type of operation (Column B from Animal Units Calculation Table)	Existing number of animals (Column C from Animal Units Calculation Table)	Total Animal Units (Column F from Animal Units Calculation Table)
Dairy livestock	37 hd (various categories)	28 au (total)
Hog operation	600 sows F-N, 2270 weanlings, 4430 finishers	858 au (all barns)
Chicken	18500 layers, 9500 pullets	185 au (total)
Turkey	63800 birds places currently, proposing additional 18000 places	818 au (total with expansion)

Animal Units Calculation Table attached

**Total: 1,889 au**

#### 6.0 [Animal Confinement Facilities](#) ?

##### Outdoor Confined Livestock Area

To ensure that it can be built in a way that the environment is protected, a permit is required for construction and expansion of [confined livestock areas](#) for operations with 300 Animal Units or more. Permits are required by the [Livestock Manure and Mortalities Management Regulation](#) (MR 42/98), under *The Environment Act*.

Confined Livestock Area:  outdoor seasonal feeding area  feedlot  not applicable

##### Indoor Barn/Animal Housing

Indoor Animal Housing:  barn  other (describe) \_\_\_\_\_  not applicable

# Animal Units Calculation Table

A	B	C	D	E	F	G
Animal Type	Type of Operation	Existing Number of Animals	Proposed Additional Number of Animals	Animal Units per Head	Total Animal Units	Annual Confinement Period (Days)
Dairy <sup>1</sup>	Mature cows (lactating and dry) including associated livestock	5		2	10.00	365
	Mature cows (lactating and dry)			1.35	-	
	Heifers (0 to 3 months)			0.16	-	
	Heifers (4 to 13 months)	22		0.41	9.02	120
	Heifers (> 13 months)	10		0.87	8.70	120
	Bulls			1.35	-	
	Veal calves			0.13	-	
Beef	Beef cows including associated livestock			1.25	-	
	Backgrounder (steers)			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)	600		0.25	150.00	365
	Sows - farrow to nursery (51 lbs)			0.313	-	
	Boars (artificial insemination units)			0.2	-	
	Weanlings, Nursery (11-51 lbs)	2,270		0.033	74.91	365
	Growers / Finishers (51-249 lbs)	4,430		0.143	633.49	365
Chickens	Broilers			0.005	-	
	Roasters			0.01	-	
	Layers	18,500		0.0083	153.55	365
	Pullets	9,500		0.0033	31.35	365
	Broiler breeder pullets			0.0033	-	
	Broiler breeder hens			0.01	-	
Turkeys	Broilers <sup>(See Note 1)</sup>	12,000	18,000	0.01	300.00	365
	Heavy Toms			0.02	-	
	Heavy Hens	27,800	24,000	0.01	518.00	365
Horses	Mares			1.333	-	
Sheep	Ewes			0.2	-	
	Feeder lambs			0.063	-	
Other Livestock	Type:				-	
	Type:				-	
<b>Total AUs</b>					<b>1,889</b>	


**Footnotes:**

<sup>1</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.

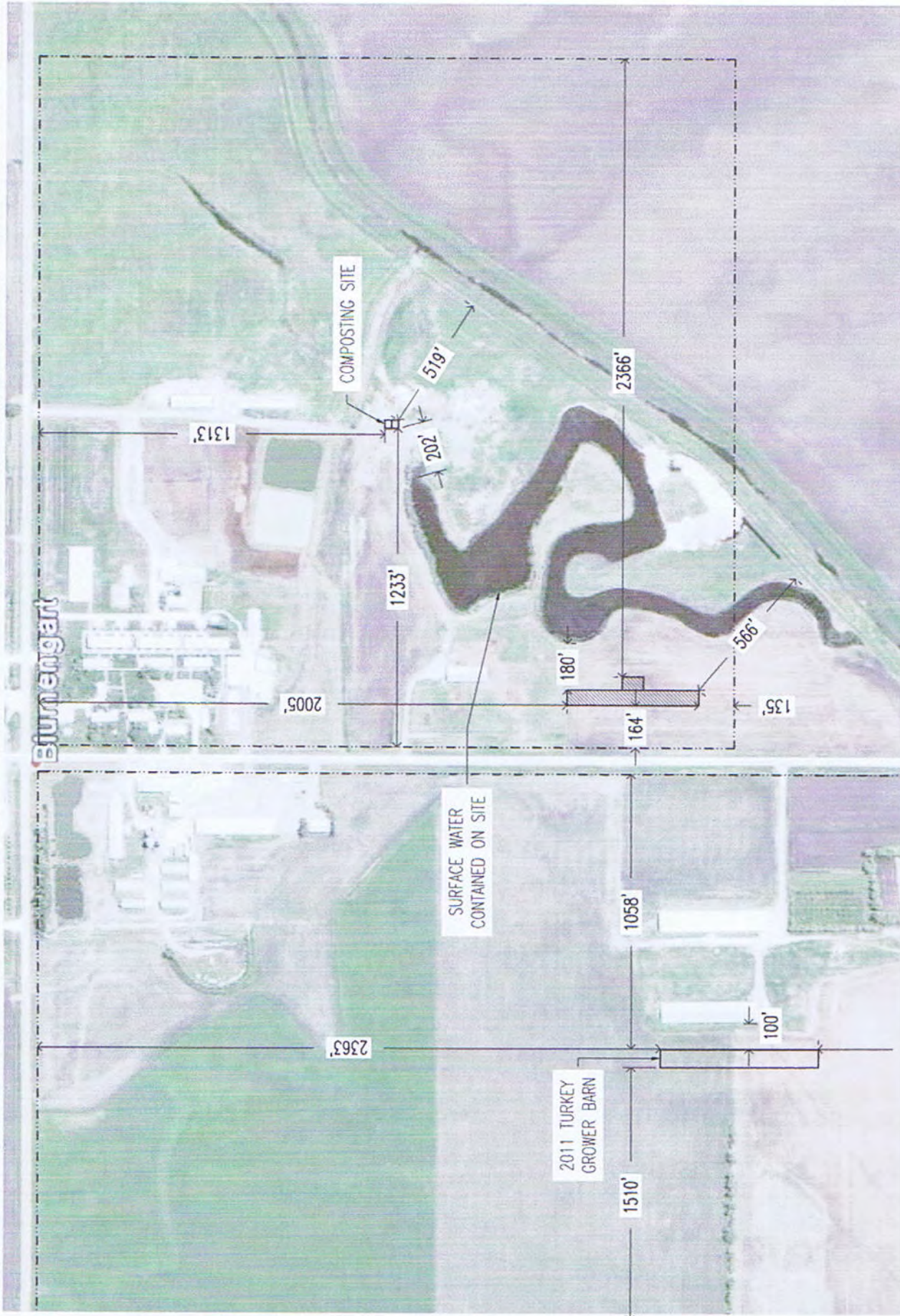
**Note 1:** AU for starter birds (12000, expanding to 30000 are calculated as equal to AU for broilers

For all other livestock or operation types please inquire with your Manitoba Agriculture, Food and Rural Initiatives GO office to determine the animal units per head.  
[www.gov.mb.ca/agriculture/contact/agoffices.html](http://www.gov.mb.ca/agriculture/contact/agoffices.html)

A permit under the Livestock Manure and Mortalities Management Regulation is not required for an indoor housing area or barn unless there is a manure storage facility within the building (an under barn storage capable of storing manure for 30 days or more).

Show all existing, proposed buildings and additions to existing buildings on the project site plan. See [Project Site Plan example](#) and the Project [Site Plan Guide](#) for help creating your site plan. 

Project Site Plan attached



<b>PROJECT NAME</b> BLUMENGART COLONY	<b>BUILDING AREA</b> N/A
<b>SHEET TITLE</b> SITE PLAN NW 15-02-03W	<b>DRAWN BY</b> R. FLORES SOUTH-MAN ENGINEERING
<b>DATE DRAWN</b> OCTOBER 2014	<b>DRAWING SCALE</b> N.T.S.
<b>THIS DRAWING IS THE PROPERTY OF SOUTH-MAN ENGINEERING, WINNIPEG, MANITOBA, CANADA.</b>	
<b>South-Man Engineering</b>	
<small>           UNIT 15-1599 PALMADO ROAD            WINNIPEG, MANITOBA            R2Z 0P3         </small>	
<b>S-P1</b>	

### 7.0 Environmental Farm Planning

Environmental farm planning is a voluntary, confidential self-assessment process designed to help farm managers identify the environmental strengths and weaknesses of their operations.

Do you have an [Environmental Farm Plan](#)  yes  no

If so, is it current (completed within past 5 years)  yes  no

### 8.0 Water

#### Project Sites Unsuitable for Development

To protect water quality, the [Nutrient Management Regulation](#) (MR 62/2008), under *The Water Protection Act*, prohibits the set up or expansion of nutrient generating facilities in Nutrient Management Zone 4 (Agriculture Capability Class 6, 7 and unimproved organic soils) and Nutrient Buffer Zones. Nutrient generating facilities include barns, confined livestock areas and manure storage facilities.

[Nutrient Buffer Zone](#) as defined in section 3(3) of the regulation includes areas of land along water bodies such as rivers, lakes, streams and drains.

The proposed indoor housing area, barn, confined livestock area and/or manure storage facility:

will   
will not

be located within Nutrient Management Zone 4 (Class 6, 7 and unimproved organic soils) or any Nutrient Buffer Zone.

Determine the agriculture capability class(es) of the project site, and its limitations. This information is available from Manitoba Agriculture, Food and Rural Initiatives (MAFRI) at 204-945-3869 in Winnipeg. Alternatively, operations with GIS mapping software can access information through [Manitoba Land Initiative](#) (MLI) website. In addition, information from MLI can also be viewed on Google Earth. Both the download for Google Earth and the registration for MLI are free. Click [here](#) for instructions under the MLI website.


#### Water Source

To be sustainable, a livestock operation must have access to a sufficient quantity and quality of water for livestock.



Water source for operation:

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> pipeline (public)          | <input type="checkbox"/> water co-operative |
| <input type="checkbox"/> proposed well                         | <input type="checkbox"/> existing well      |
| <input type="checkbox"/> river                                 | <input type="checkbox"/> lake               |
| <input type="checkbox"/> dugout (dimensions : ___ x ___ x ___) |   |

If using an existing well, provide a copy of the water well log and logs for other wells on the property. Logs can be obtained from Manitoba Conservation and Water Stewardship by calling (204) 945-7418 in Winnipeg; 1-800-214-6497 toll free. 

## Source Water Analysis Reports

Annual livestock source water monitoring analysis reports must be submitted to Manitoba Conservation and Water Stewardship for any operations of 300 Animal Units or more.

If an existing livestock operation of 300 Animal Units or more, have you submitted an annual source water monitoring report for the current calendar year?  yes  no

Will livestock have direct access to surface water (not including dugouts)?  yes  no

If yes, identify:

Name of the surface water feature: \_\_\_\_\_

List any steps that will be taken to prevent direct access of livestock to the water body.

\_\_\_\_\_ n/a (poultry barns) \_\_\_\_\_

## Water Requirements

**Protecting the interests of domestic users and the environment, in addition to existing licensees, is the intended purpose of the water rights licensing scheme.**

**In order to protect the sustainability of water sources, all operations using more than 25,000 litres (5,499 imperial gallons) per day must possess a Water Rights Licence required by the Water Rights Regulation (MR 126/87) under *The Water Rights Act*.**

For more information on the Water Rights Licensing process, contact the Water Use Licensing Section at (204) 945-3983 in Winnipeg; 1-800-214-6497 toll free.

### Water Use ?

To calculate the total water use, go to the [Water Requirement Calculation Table](#).

Maximum daily use: 35,754  imperial gallons or  litres

Maximum annual use: 13,050,028  acre-feet or  cubic decameters

Water Requirement Calculation Table attached

## Groundwater (Contamination Risk Protection)

Improper storage and handling of manure or mortalities increases the risk of contaminating groundwater. Beneficial management practices (BMP), mitigation measures and requirements for the permit process reduce this risk. Soil testing, manure management planning and proper engineering, along with construction and management of manure storage structures reduce the risk of contaminating groundwater.

## 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.)	32*	5	9	288
Feeder (900 lb.)		7	12	-
Feeder (1250 lb.)		10	15	-
Cow/calf pair		12	15	-
Dry cow		10	12	-
Milking cow	5	25	30	150
Bison		8	10	-
<b>Horses</b>				
Horses		8	11	-
<b>Hogs</b>				
Sow (Farrow/wean)	600		6.5	3,900
Dry Sow/Boar			4	-
Feeder	4,430		3	13,290
Nursery (33 lb.)	2,270		2	4,540
<b>Chickens</b>				
Broilers			0.035	-
Roasters/Pullets	9,500		0.04	380
Layers	18,500		0.055	1,018
Breeders			0.07	-
<b>Turkeys</b>				
Turkey Growers	30,000		0.13	3,900
Turkey Heavies	51,800		0.16	8,288
<b>Sheep/Goats</b>				
Sheep/Goats			2	-
Ewes/Does			3	-
Lambs/Kids (90 lb.)			1.6	-
<b>TOTAL (IG/day)</b>				<b>35,754</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.

\* All replacement heifers and any occasional steer (32 in total) from the dairy herd are listed here.

Enter this number on page 7 of Application Form.

### Other consumption values:

Normal household consumption:  
40-55 IG/day per person or  
(180-250 l/day/person)

Hydrant flow:  
10 imperial GPM (45 l/min)

Unit Conversions		
Total per day	Total per year	Unit
35,754	13,050,028	IG
162,535	59,325,425	litres
0.163	59	cubic decametres (dam <sup>3</sup> )

Enter this number on page 7 of Application Form.

Conversion Factor: 1 IGPM = 4.546 l/m

Check off the mitigation measures used for the existing components of the operation that may pose a risk of contamination. Also check off any measures that may be used with the proposed components for this expansion, if applicable:

	Existing	Proposed
Manure is stored in a storage facility built by permit or registered by Manitoba Conservation and Water Stewardship	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Storage includes leachate collection	<input checked="" type="checkbox"/>	<input type="checkbox"/> Layer barn
Earthen storage has between 400 and 500 days storage	<input type="checkbox"/>	<input type="checkbox"/>
Steel/concrete tank has between 250 and 500 days storage	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Manure storage facility meets required setbacks	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Field storage (solid manure) locations are changed annually	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Field storage meets required setbacks	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
All application fields are soil tested annually for nitrate-N and Olsen phosphorus	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
All manure is applied according to a manure management plan	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Licensed commercial manure applicator is used to apply manure	<input type="checkbox"/>	<input type="checkbox"/> Spread by Colony
Abandoned wells have been properly sealed	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Other:

At this point, we are not aware of any abandoned wells that would require sealing; should we find any, we will seal them.

### Building in Flood Areas

The [Livestock Manure and Mortalities Management Regulation](#) prohibits an operator from putting a manure storage facility within the boundaries of the 100-year flood plain elevation. [Manure storage facilities](#) that are constructed with protection for a flood-water level at least 0.6 meters higher than the 100-year flood water level are exempt.

The [Designated Flood Area Regulation](#) under *The Water Resources Administration Act* requires a Designated Flood Area Permit before a proposed structure (such as a barn) can be built within a Designated Flood Area.

The flood protection level for structures located within a Designated Flood Area is the site specific design flood level plus freeboard, as provided by the Hydraulic Forecasting Branch of Manitoba Infrastructure and Transportation. Contact the Hydrologic Forecasting Branch at (204) 945-2121 in Winnipeg; 1-800-214-6497 toll free.

The proposed site:

is  is not

located in a Designated Flood Area: [Red River Valley Designated Flood Area](#) or [Lower Red River Designated Flood Area](#)

**Note:** At the time a permit is issued, verification is needed to ensure any proposed structure(s) are located within the 100-year flood plain elevation; or at an elevation set by Manitoba Infrastructure and Transportation.

### **Watershed Management Planning**

Integrated watershed management planning is a co-operative effort by local residents, stakeholders and governments to create a long term plan to manage water and land-based activities for watersheds.

What are the names of the watershed and sub-watershed where the livestock operation and the fields identified for manure application are located?

Name of watershed(s): Red River

Name of sub-watershed(s): Pembina River

Name of Integrated Watershed Management Plan for the proposed project site, if applicable: n/a

For more on Integrated Watershed Management Planning, call Watershed Planning and Programs at (204) 945-7408 in Winnipeg; 1-800-214-6497 toll free.

### **9.0 Manure**

The Livestock Manure and Mortalities Management Regulation sets requirements for the use, management and storage of livestock manure in agricultural operations, to ensure it is handled in an environmentally sound manner. For more information on this, call Manitoba Conservation and Water Stewardship at (204) 619-2230 in Winnipeg.

Improper storage, handling and/or land application of manure can contaminate water and/or cause unacceptable odours for neighbours. The following is used to assess the manure management system.

#### **Manure Type**

The type of manure generated and used by the operation influences storage, handling and land application options available.

What type(s) of manure will be generated?

solid                       semi-solid                       liquid  
All but hog operation's                      Hog manure

#### **Manure Volume or Weight**

Manure production can be estimated using the Manure Production Calculator Table. The sizing of the manure storage is the responsibility of the operator and must be constructed in accordance with the Livestock Manure and Mortalities Management Regulation. Design and construction of a manure storage facility is dependent on the type of structure; earthen manure storage facilities must have between 400 and 500 days capacity, a steel or concrete storage tank must have between 250 and 500 days capacity. This ensures the facility has sufficient capacity eliminating the need for winter application.

What will be the total volume or weight of manure generated annually by the livestock operation? (See Manure Production Calculator Table.)

liquid volume: 4,126,082 lgal solid weight: 342,330 ft<sup>3</sup>

Manure Production Calculator Table attached

### Manure Storage Type and Capacity

The type of storage system used will affect the capacity requirements for the manure storage facility or field storage area.

What type of manure storage facility will be used by the operation?

under-barn concrete  earthen manure storage  concrete tank(s)  
 steel tank(s)  field storage  molehill

FOR TURKEY OPERATION.

Provide the dimensions of the existing and/or proposed manure storage facilities, if applicable. (See Existing and Proposed Manure Storage Facility Dimensions Table.)

Existing and Proposed Manure Storage Facility Dimensions Table attached

### Odour Control Measures (project site)

Barns and manure storage facilities can be significant sources of livestock odours. The use of manure storage covers and shelterbelts can reduce this, particularly for neighbours in the vicinity of the operation.

What odour control measures are you planning to use?

Manure storage cover:  yes  no

Type of cover: \_\_\_\_\_

Shelterbelt planting:  yes  no  existing shelterbelt

Other measures (specify): **after each cycle and field stored as solid dry manure. Odour emissions, if any, will be minimal.**

### Manure Treatment

Under *The Environment Act*, the director must not issue a permit for the modification, expansion, or construction of a manure storage facility accommodating an increase in the number of animal units for pigs, unless the manure is treated using anaerobic digestion or another environmentally sound treatment that is similar to or better than anaerobic digestion, according to Manitoba Conservation and Water Stewardship.

Does your proposal include anaerobic digestion or another environmentally sound treatment for manure?

yes  no  not applicable

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&GxH)	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)	Operation Manure Production <sup>1</sup> (ft <sup>3</sup> /year/bird space)				
Dairy, milking cows <sup>4</sup> and associated livestock)	Free Stall		Semi-Solid <sup>5</sup>	3.5					0.0	
			Solid	3.4						
			Liquid <sup>6</sup>	3.5					0.0	
			Semi-Solid <sup>5</sup>	3.6	4.13	365	5	7,537.25	0.0	
			Liquid <sup>6</sup>	3.6					0.0	
Beef	Loose Housing		Solid	3.0	3.4	365	32	39,712.00		
	Milking Parlour Manure and Washwater		Liquid	0.5						
	Beef cows including associated livestock		Solid	1.2						
	Backgrounder (200 day)	pg 117, FPGs for Hogs 1998	Solid	0.73						
	Summer pasture / replacement heifers		Solid	0.65						
Pigs	Feeder cattle		Solid	1.1						
	Sows - farrow to finish (234 - 254 lbs)		Liquid	2.3						
	Sows - farrow to wean (up to 11 lbs)	MAFRI website, FPGs for Pigs 2007	Liquid	0.8	0.8	365.00	600	175,200.00	1,091,486.0	
	Sows - farrow to nursery (51 lbs)		Liquid	1	1	365.00			0.0	
	Weanlings, Nursery (11 - 51 lbs)		Liquid	0.1	0.1	365.00	2,270	82,855.00	516,186.7	
Grower / Finisher (51 - 249 lbs)		Liquid	0.25	0.25	365.00	4,430	404,237.50	2,518,399.6		
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&GxH)	Total Manure Volume for Semi-Solid and Liquid Manure (Imp Gal)
Chickens	Broilers - floor <sup>6</sup>			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>	Table 3, pg 85, FPGs for Poultry 2000		2.33					0.0	
Turkeys	Layers - floor <sup>7</sup>			1.68						
	Layers - solid pack <sup>6</sup>			0.71			18,500	31,080	0.0	
	Pullets - floor <sup>6</sup>			0.75						
	Pullets - solid pack <sup>6</sup>			2.83	0.75	365	9,500	7,125		
	Broilers <sup>6</sup>	Table 3, pg 85, FPGs for Poultry 2000		5.58	2.83	365	30,000	84,900		
	Heavy toms <sup>6</sup>			3.32	5.58	365	51,800	171,976		
	Heavy hens <sup>6</sup>			3.32	3.32	365	51,800	171,976		

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 days.
- <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 yes, please describe \_\_\_\_\_

### Manure Application Method

The Livestock Manure and Mortalities Management Regulation requires the registration of annual manure management plans for new or expanding operations with 300 Animal Units or more.

Does the operation currently file an annual Manure Management Plan with Manitoba Conservation and Water Stewardship? (For operations with 300 Animal Units or more, only)

yes

no

PREVIOUSLY NOT SUBMITTED FOR TURKEY OPERATION, BUT TO BE SUBMITTED GOING FORWARD.

Manure application methods and the season in which manure is applied affect odour, nutrient availability, crop response, land base requirements and the risk of water contamination.

Proposed application method:

broadcast

broadcast and incorporation within 48 hours

injection

The Livestock Manure and Mortalities Management Regulation prohibits the application of manure from November 10 of one year to April 10 of the following year (winter application).

Time of year for application:  spring  summer  fall

The Livestock Manure and Mortalities Management Regulation puts restrictions on fall application of manure in the Red River Valley Special Management Area.

The proposed spread fields:

are  A limited number of fields are located into the RRVSMA

are not

in the Red River Valley Special Management Area.

### Land Available for Manure Application ?

The land available for manure application includes all suitable land (owned, leased or under agreement) that is available to the operation for manure application.

Under the Livestock Manure and Mortalities Management Regulation and the Nutrient Management Regulation, application of nutrients is not permitted on Agriculture Capability Class 6, 7 and unimproved organic soils (Nutrient Management Zone 4) and within Nutrient Buffer Zones.

Areas of a field that are Class 6, 7, unimproved organic soils (Nutrient Management Zone 4) or areas within the nutrient buffer zones are considered unsuitable for manure application. In addition, fields with 60 parts per million (ppm) Olsen phosphorus (P) in the top six inches (15 centimetres) of soil cannot be included in the land base calculation.

Nutrients cannot be applied within the Nutrient Buffer Zones as outlined in the Nutrient Management Regulation (62/2008) and illustrated in the [Setback Requirements From Water Features Table](#).

**Has the setback area for all water features been observed and excluded from land base calculations for this operation?**

yes

no

Use the [Manure Application Field Characteristics Table](#) to determine the following:

**Total suitable area available for manure application**

**7042 acres\***

Manure Application Field Characteristics Table attached

\* Fields with P levels > 50 ppm are not intended to receive manure until the P level recedes; however affected fields are still included in land available for manure application.

Copies of [soil test reports](#) that are no more than 12 months old must also be included with this submission.

Soil test reports for the required area for manure application attached.

### Land Required for Manure Application

Long term, land base requirements for manure application are calculated based on estimates of the quantity of nutrients (nitrogen and phosphorus) excreted by livestock and the removal of nutrients by the proposed crops.

### Phosphorus

The quantity of phosphorus excreted by the livestock depends on the type, number and size of livestock, the quantity and availability of phosphorus fed to the livestock and the amount retained by the livestock.

The removal of phosphorus by crops depends on the crops grown and the historical crop yield averages. (See the [Crop Rotation Table](#)).

The [Livestock Manure and Mortalities Management Regulation](#) requires that "sufficient land is available to the operator to implement an appropriate manure management plan" before Manitoba Conservation and Water Stewardship will issue a permit for a manure storage facility.

"*Certain Areas*" are defined by the [Livestock Manure and Mortalities Management Regulation](#) (M.R. 42/98) as areas where the amount of phosphorus in the manure produced annually by livestock in an area of not less than 93.24 km<sup>2</sup> is greater than two times the annual crop removal rate of P<sub>2</sub>O<sub>5</sub> in that area. Currently the rural municipalities of Hanover and La Broquerie are considered to be "*certain areas*".

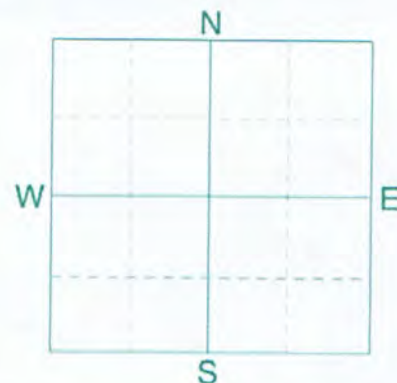
A livestock operation is considered to be located within a "*certain area*" if any part of the operation is located within the "*certain area*". This may include, but not limited to, barn(s), confined livestock area(s), field storage location(s), manure storage facility(ies), and/or spread filed(s).



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

### SOIL TEST REPORT

FIELD ID **1-N**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY **3**  
 TWP **2** RANGE  
 SECTION **20** QTR **SW/SE** ACRES **150**  
 PREV. CROP **Beans-Edible**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB R6W 4A5**

REF # **14020659** BOX # **0**  
 LAB # **NW73957**

Date Sampled **09/26/2014**

Date Received **09/27/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High	Corn-Grain		Corn-Grain		Corn-Grain				
Nitrate	0-6" 30 lb/ac					YIELD GOAL		YIELD GOAL		YIELD GOAL				
	0-24" 116 lb/ac					120 BU		140 BU		150 BU				
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
						Broadcast		Broadcast		Band				
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Phosphorus	Olsen 37 ppm					N	20	N	22	N	34			
Potassium	229 ppm					P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	15			
Chloride	0-24" 148 lb/ac					K <sub>2</sub> O	0	K <sub>2</sub> O	0	K <sub>2</sub> O	10			
	0-6" 68 lb/ac 0-24" 480 +lb/ac					Cl	Not Available	Cl	Not Available	Cl	Not Available			
Boron	1.5 ppm					S	0	S	0	S	0			
Zinc	2.99 ppm					B	0	B	0	B	0			
Iron	20.4 ppm					Zn	0	Zn	0	Zn	0			
Manganese	3.5 ppm					Fe	0	Fe	0	Fe	0			
Copper	0.93 ppm					Mn	0	Mn	0	Mn	0			
Magnesium	768 ppm					Cu	0	Cu	0	Cu	0			
Calcium	4401 ppm					Mg	0	Mg	0	Mg	0			
Sodium	38 ppm					Lime		Lime		Lime				
Org.Matter	3.1 %					Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Carbonate(CCE)	1.4 %					Buffer pH				% Ca	% Mg	% K	% Na	% H
Sol. Salts	0-6" 0.46 mmho/cm					0-6" 8.0		29.2 meq		(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
	0-24" 0.8 mmho/cm					6-24" 8.4				75.5	21.9	2.0	0.6	

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

Crop 1: \*\* Chloride yield data is limited for this crop. Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 48 K2O = 32 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: \*\* Chloride yield data is limited for this crop. Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 56 K2O = 38 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

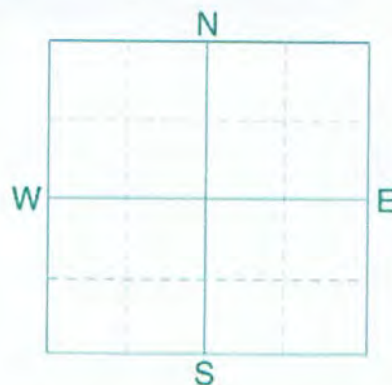
Crop 3: \*\* Chloride yield data is limited for this crop. \* Caution: Seed Placed Fertilizer Can Cause Injury \* Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 60 K2O = 41 AGVISE Band guidelines will build P & 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 **2W**  
 SAMPLE ID **WEST HALF**  
 FIELD NAME  
 COUNTY **3**  
 TWP **2** RANGE  
 SECTION **20** QTR **SW** ACRES **0**  
 PREV. CROP **Potatoes**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB** **R6W 4A5**

REF # **14020707** BOX # **0**  
 LAB # **NW99763**

Date Sampled **10/09/2014**

Date Received **10/10/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High	Beans-Edible		Beans-Edible		Beans-Edible				
Nitrate	0-6" 27 lb/ac	.....				YIELD GOAL		YIELD GOAL		YIELD GOAL				
	0-24" 48 lb/ac					2000 LBS		2500 LBS		3000 LBS				
Phosphorus	Olsen 28 ppm	.....				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
	Potassium 180 ppm	.....				Broadcast		Broadcast		Band				
Chloride	0-24" 268 lb/ac	.....				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
	0-6" 58 lb/ac	.....				N	52	N	77	N	102			
Sulfur	0-24" 480 +lb/ac	.....				P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	0			
	Boron 1.3 ppm	.....				K <sub>2</sub> O	0	K <sub>2</sub> O	0	K <sub>2</sub> O	0			
Zinc	2.35 ppm	.....				Cl	0	Cl	0	Cl	0			
Iron	9.4 ppm	.....				S	0	S	0	S	0			
Manganese	2.0 ppm	.....				B	0	B	0	B	0			
Copper	0.8 ppm	.....				Zn	0	Zn	0	Zn	0			
Magnesium	737 ppm	.....				Fe	0	Fe	0	Fe	0			
Calcium	4443 ppm	.....				Mn	0	Mn	0	Mn	0			
Sodium	35 ppm	.....				Cu	0	Cu	0	Cu	0			
Org.Matter	2.4 %	.....				Mg	0	Mg	0	Mg	0			
Carbonate(CCE)	2.3 %	.....				Lime		Lime		Lime				
Sol. Salts	0-6" 0.41 mmho/cm	.....				Soil pH	Buffer pH	Cation Exchange Capacity		% Base Saturation (Typical Range)				
	0-24" 0.55 mmho/cm	.....				0-6" 8.1		29.0 meq		% Ca	% Mg	% K	% Na	% H
						6-24" 8.3				(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
										76.7	21.2	1.6	0.5	

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

Crop 1: Crop Removal: P2O5 = 28 K2O = 28 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: Crop Removal: P2O5 = 35 K2O = 35 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

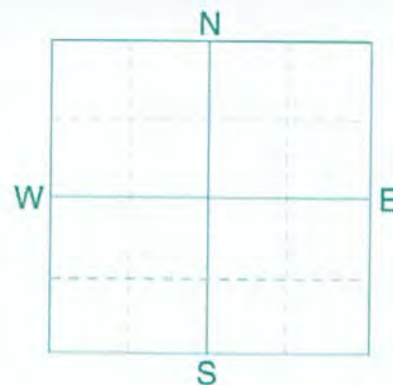
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Crop Removal: P2O5 = 42 K2O = 42 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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

### SOIL TEST REPORT

FIELD ID **3**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY **3**  
 TWP **2** RANGE  
 SECTION **21** QTR **SW/SE** ACRES **306**  
 PREV. CROP **Beans-Edible**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB R6W 4A5**

REF # **14020662** BOX # **0**  
 LAB # **NW63580**

Date Sampled **09/19/2014**

Date Received **09/20/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High	Wheat-Spring		Wheat-Spring		Wheat-Spring				
Nitrate	0-6" 18 lb/ac					YIELD GOAL		YIELD GOAL		YIELD GOAL				
	6-24" 78 lb/ac					50 BU		60 BU		65 BU				
	0-24" 96 lb/ac					SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
						Broadcast		Broadcast		Band				
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Phosphorus	Olsen 23 ppm					N	32	N	51	N	65			
Potassium	262 ppm					P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	15			
Chloride	0-24" 232 lb/ac													
						K <sub>2</sub> O	0	K <sub>2</sub> O	0	K <sub>2</sub> O	10			
Sulfur	0-6" 22 lb/ac													
	6-24" 246 lb/ac					Cl	0	Cl	0	Cl	0			
Boron	1.1 ppm					S	0	S	0	S	0			
Zinc	3.59 ppm					B	0	B	0	B	0			
Iron	24.4 ppm					Zn	0	Zn	0	Zn	0			
Manganese	3.3 ppm					Fe	0	Fe	0	Fe	0			
Copper	0.93 ppm					Mn	0	Mn	0	Mn	0			
Magnesium	704 ppm					Cu	0	Cu	0	Cu	0			
Calcium	3392 ppm					Mg	0	Mg	0	Mg	0			
Sodium	30 ppm					Lime		Lime		Lime				
Org.Matter	3.6 %													
Carbonate(CCE)	1.4 %													
Sol. Salts	0-6" 0.2 mmho/cm					Soil pH	Buffer pH	Cation Exchange Capacity		% Base Saturation (Typical Range)				
	6-24" 0.36 mmho/cm					0-6" 7.5		23.6 meq		% Ca	% Mg	% K	% Na	% H
						6-24" 8.6				(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
										71.8	24.8	2.8	0.6	

General Comments: Fine Loams (CEC range 21 to 30) (Medium)

Crop 1: Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 31 K2O = 19 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

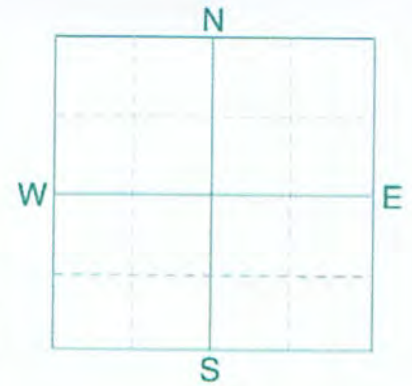
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 41 K2O = 24 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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

### SOIL TEST REPORT

FIELD ID **5-E**  
 SAMPLE ID **5-E-EAST 80**  
 FIELD NAME  
 COUNTY **3**  
 TWP **2** RANGE  
 SECTION **21** QTR **NE** ACRES **160**  
 PREV. CROP **Corn-Grain**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB R6W 4A5**

REF # **17020543** BOX # **0**  
 LAB # **NW133336**

Date Sampled **10/22/2014**

Date Received **10/23/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High	Beans-Edible		Beans-Edible		Beans-Edible				
Nitrate	0-6" 27 lb/ac					YIELD GOAL		YIELD GOAL		YIELD GOAL				
	0-24" 60 lb/ac					2000 LBS		2500 LBS		3000 LBS				
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
						Broadcast		Broadcast		Band				
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Olsen Phosphorus	33 ppm					N	40	N	65	N	90			
Potassium	256 ppm					P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	0			
Chloride						K <sub>2</sub> O	0	K <sub>2</sub> O	0	K <sub>2</sub> O	0			
Sulfur	0-6" 24 lb/ac 0-24" 432 lb/ac					Cl		Cl		Cl				
Boron	0.9 ppm					S	10 Broadcast (Trial)	S	10 Broadcast (Trial)	S	5 Band (Trial)			
Zinc	4.46 ppm					B	0	B	0	B	0			
Iron	49.3 ppm					Zn	0	Zn	0	Zn	0			
Manganese	3.8 ppm					Fe	0	Fe	0	Fe	0			
Copper	1.02 ppm					Mn	0	Mn	0	Mn	0			
Magnesium	581 ppm					Cu	0	Cu	0	Cu	0			
Calcium	2561 ppm					Mg	0	Mg	0	Mg	0			
Sodium	30 ppm					Lime	0	Lime	0	Lime	0			
Org.Matter	3.8 %					Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Carbonate(CCE)	0.1 %					Buffer pH				% Ca	% Mg	% K	% Na	% H
Sol. Salts	0-6" 0.35 mmho/cm 0-24" 0.58 mmho/cm					0-6" 6.7 6-24" 7.8		18.4 meq		(65-75) 69.5	(15-20) 26.3	(1-7) 3.6	(0-5) 0.7	(0-5)

General Comments: Coarse Loams (CEC range = 11 to 20) (Medium)

Crop 1: Crop Removal: P2O5 = 28 K2O = 28 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: Crop Removal: P2O5 = 35 K2O = 35 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

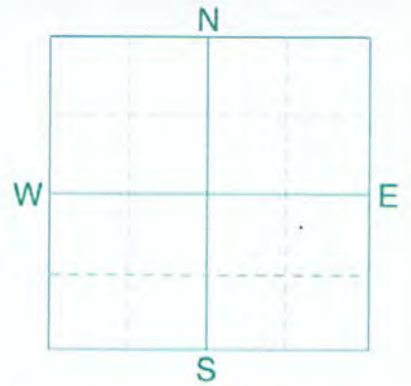
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Crop Removal: P2O5 = 42 K2O = 42 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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

### SOIL TEST REPORT

FIELD ID **8**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY **3**  
 TWP **2** RANGE  
 SECTION **28** QTR **SE** ACRES **161**  
 PREV. CROP **Soybeans**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB R6W 4A5**

REF # **14020939** BOX # **0**  
 LAB # **NW72306**

Date Sampled **09/25/2014**

Date Received **09/26/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High	Wheat-Spring		Wheat-Spring		Wheat-Spring				
Nitrate	0-6" 17 lb/ac					YIELD GOAL		YIELD GOAL		YIELD GOAL				
	0-24" 60 lb/ac					50 BU		60 BU		65 BU				
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
						Broadcast		Broadcast		Band				
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Phosphorus	Olsen 41 ppm					N	60	N	87	N	101			
Potassium	581 ppm					P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	15			
Chloride	0-24" 280 lb/ac					K <sub>2</sub> O	0	K <sub>2</sub> O	0	K <sub>2</sub> O	10			
Sulfur	0-6" 30 lb/ac					Cl	0	Cl	0	Cl	0			
	0-24" 480 +lb/ac													
Boron	1.7 ppm					S	0	S	0	S	0			
Zinc	4.97 ppm					B	0	B	0	B	0			
Iron	14.3 ppm					Zn	0	Zn	0	Zn	0			
Manganese	2.1 ppm					Fe	0	Fe	0	Fe	0			
Copper	1.51 ppm					Mn	0	Mn	0	Mn	0			
Magnesium	905 ppm					Cu	0	Cu	0	Cu	0			
Calcium	5714 ppm					Mg	0	Mg	0	Mg	0			
Sodium	64 ppm					Lime		Lime		Lime				
Org.Matter	5.2 %					Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Carbonate(CCE)	3.7 %					Buffer pH				% Ca	% Mg	% K	% Na	% H
Sol. Salts	0-6" 0.44 mmho/cm					6-24" 8.0	37.9 meq			(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
	0-24" 1.94 mmho/cm									75.4	19.9	3.9	0.7	

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

Crop 1: Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 31 K2O = 19 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 41 K2O = 24 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

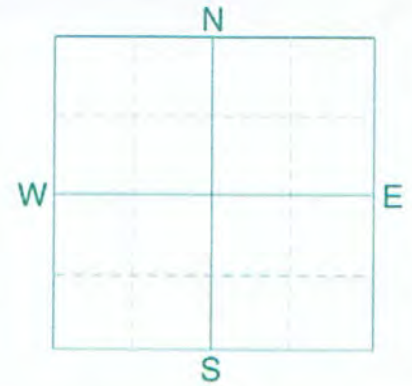




Soil Analysis by Agvise Laboratories  
 (http://www.agvise.com)  
 Northwood: (701) 587-6010  
 Benson: (320) 843-4109

### SOIL TEST REPORT

FIELD ID **9**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY **03**  
 TWP **04** RANGE  
 SECTION **3** QTR **SW** ACRES **154**  
 PREV. CROP **Wheat-Spring**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB** **R6W 4A5**

REF # **14020643** BOX # **0**  
 LAB # **NW45758**

Date Sampled **09/04/2014**

Date Received **09/07/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice		
		VLow	Low	Med	High	Beans-Edible		Beans-Edible		Beans-Edible		
Nitrate	0-6" 10 lb/ac	***				YIELD GOAL		YIELD GOAL		YIELD GOAL		
	0-24" 16 lb/ac					2000 LBS		2500 LBS		3000 LBS		
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		
						Broadcast		Broadcast		Band		
					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Phosphorus	Olsen 26 ppm				N	84	N	109	N	134		
Potassium	235 ppm				P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	11 Band *		
Chloride					K <sub>2</sub> O	0	K <sub>2</sub> O	0	K <sub>2</sub> O	0		
Sulfur	0-6" 26 lb/ac 0-24" 480 +lb/ac				Cl		Cl		Cl			
Boron					S	15 Broadcast (Trial)	S	15 Broadcast (Trial)	S	7 Band (Trial)		
Zinc	4.29 ppm				B		B		B			
Iron					Zn	0	Zn	0	Zn	0		
Manganese					Fe		Fe		Fe			
Copper	1.0 ppm				Mn		Mn		Mn			
Magnesium					Cu	0	Cu	0	Cu	0		
Calcium					Mg		Mg		Mg			
Sodium					Lime		Lime		Lime			
Org.Matter	2.8 %				Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)			
Carbonate(CCE)	0.0 %				Buffer pH			% Ca	% Mg	% K	% Na	% H
Sol. Salts	0-6" 0.23 mmho/cm 0-24" 0.36 mmho/cm				0-6" 8.4 6-24" 8.6							

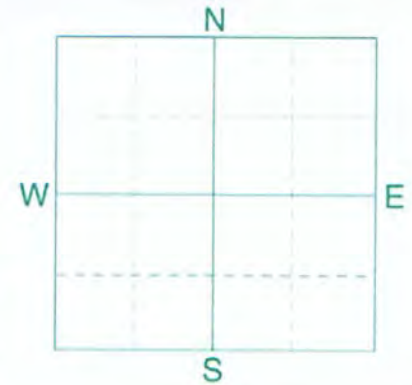
Crop 1: Crop Removal: P2O5 = 28 K2O = 28 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.  
 Crop 2: Crop Removal: P2O5 = 35 K2O = 35 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.  
 Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Crop Removal: P2O5 = 42 K2O = 42 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 **10**  
 SAMPLE ID **G1-DARK GREEN**  
 FIELD NAME  
 COUNTY **3**  
 TWP **2** RANGE  
 SECTION **26** QTR **SW** ACRES **163**  
 PREV. CROP **Beans-Edible**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB** **R6W 4A5**

REF # **16952011** BOX # **0**  
 LAB # **NW63572**

Date Sampled **09/19/2014**

Date Received **09/20/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		VLow	Low	Med	High	Corn-Grain		Corn-Grain		Corn-Grain			
Nitrate	0-6" 18 lb/ac					YIELD GOAL		YIELD GOAL		YIELD GOAL			
	0-24" 88 lb/ac					120 BU		140 BU		150 BU			
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
						Broadcast		Broadcast		Band			
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Olsen Phosphorus	31 ppm					N	32	N	50	N	62		
Potassium	209 ppm					P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	15		
											Band (2x2) *		
Chloride						K <sub>2</sub> O	0	K <sub>2</sub> O	0	K <sub>2</sub> O	10		
											Band (2x2) *		
Sulfur	0-6" 14 lb/ac 0-24" 80 lb/ac					Cl		Cl		Cl			
Boron	1.2 ppm					S	15 Broadcast	S	15 Broadcast	S	4 Band (Trial)		
Zinc	3.51 ppm					B	0	B	0	B	0		
Iron	8.6 ppm					Zn	0	Zn	0	Zn	0		
Manganese	2.6 ppm					Fe	0	Fe	0	Fe	0		
Copper	1.02 ppm					Mn	0	Mn	0	Mn	0		
Magnesium	536 ppm					Cu	0	Cu	0	Cu	0		
Calcium	4356 ppm					Mg	0	Mg	0	Mg	0		
Sodium	24 ppm					Lime		Lime		Lime			
Org.Matter	2.4 %												
Carbonate(CCE)	2.8 %												
						Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
									% Ca	% Mg	% K	% Na	% H
						0-6" 8.4		26.9 meq	(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
Sol. Salts	0-6" 0.26 mmho/cm 0-24" 0.26 mmho/cm					6-24" 8.5			81.0	16.6	2.0	0.4	

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

Crop 1: Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 48 K2O = 32 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 56 K2O = 38 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

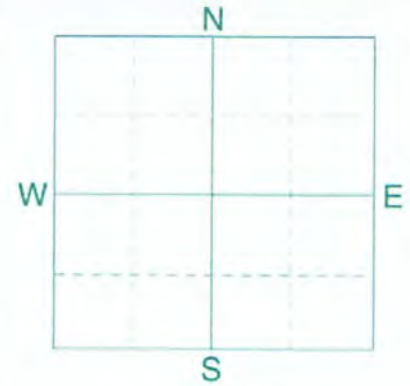
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 60 K2O = 41 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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

### SOIL TEST REPORT

FIELD ID **11**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY **03**  
 TWP **02** RANGE  
 SECTION **22** QTR NE ACRES **162**  
 PREV. CROP **Beans-Edible**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB R6W 4A5**

REF # **14020660** BOX # **0**  
 LAB # **NW53793**

Date Sampled **09/11/2014**

Date Received **09/13/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High	Potatoes		Potatoes		Potatoes-Irr.				
Nitrate	0-6" 18 lb/ac					YIELD GOAL		YIELD GOAL		YIELD GOAL				
	0-24" 48 lb/ac					300 Cwt		350 Cwt		400 Cwt				
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
						Broadcast/Maint.		Broadcast/Maint.		Band				
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Olsen Phosphorus	36 ppm					N	72	N	97	N	142			
Potassium	236 ppm					P <sub>2</sub> O <sub>5</sub>	54 Broadcast	P <sub>2</sub> O <sub>5</sub>	63 Broadcast	P <sub>2</sub> O <sub>5</sub>	50 Band (2x2) *			
Chloride	0-24" 80 lb/ac					K <sub>2</sub> O	150 Broadcast	K <sub>2</sub> O	175 Broadcast	K <sub>2</sub> O	50 Band (2x2) *			
Sulfur	0-6" 38 lb/ac 0-24" 440 lb/ac					Cl	Not Available	Cl	Not Available	Cl	Not Available			
Boron	1.7 ppm					S	0	S	0	S	0			
Zinc	4.51 ppm					B	0	B	0	B	0			
Iron	11.3 ppm					Zn	0	Zn	0	Zn	0			
Manganese	2.7 ppm					Fe	0	Fe	0	Fe	0			
Copper	1.25 ppm					Mn	0	Mn	0	Mn	0			
Magnesium	443 ppm					Cu	0	Cu	0	Cu	0			
Calcium	4328 ppm					Mg	0	Mg	0	Mg	0			
Sodium	15 ppm	**				Lime		Lime		Lime				
Org.Matter	2.6 %					Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Carbonate(CCE)	2.0 %					Buffer pH				% Ca	% Mg	% K	% Na	% H
Sol. Salts	0-6" 0.24 mmho/cm 0-24" 0.32 mmho/cm					0-6" 8.2 6-24" 8.4		26.0 meq		(65-75) 83.2	(15-20) 14.2	(1-7) 2.3	(0-5) 0.3	(0-5)

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

Crop 1: \*\* Chloride yield data is limited for this crop. Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 54 K2O = 150 AGVISE Broadcast/Maintenance guidelines will build P & K test levels to the high range over several years and then maintain them.

Crop 2: \*\* Chloride yield data is limited for this crop. Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 63 K2O = 175 AGVISE Broadcast/Maintenance guidelines will build P & K test levels to the high range over several years and then maintain them.

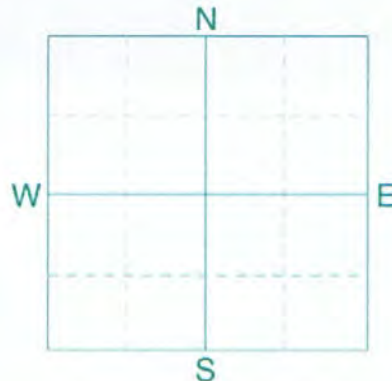
Crop 3: \*\* Chloride yield data is limited for this crop. \* Caution: Seed Placed Fertilizer Can Cause Injury \* Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Phosphorus guidelines for irrigated potatoes have been adjusted based on carbonate levels. Crop Removal: P2O5 = 72 K2O = 200 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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

### SOIL TEST REPORT

FIELD ID **13**  
 SAMPLE ID **Z2-LIGHT GREEN**  
 FIELD NAME  
 COUNTY **3**  
 TWP **2** RANGE  
 SECTION **26** QTR **SE** ACRES **157**  
 PREV. CROP **Corn-Grain**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB** **R6W 4A5**

REF # **16953087** BOX # **0**  
 LAB # **NW127391**

Date Sampled **10/20/2014**

Date Received **10/21/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High									
Nitrate	0-6" 26 lb/ac					Beans-Edible		Beans-Edible		Beans-Edible				
	0-24" 64 lb/ac					YIELD GOAL		YIELD GOAL		YIELD GOAL				
						2000 LBS		2500 LBS		3000 LBS				
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
Phosphorus	Olsen 26 ppm					Broadcast		Broadcast		Band				
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Potassium	203 ppm					N	36	N	61	N	86			
Chloride	0-6" 60 lb/ac					P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	11			
	0-24" 480 +lb/ac					K <sub>2</sub> O	0	K <sub>2</sub> O	0	K <sub>2</sub> O	0			
Sulfur						Cl		Cl		Cl				
Boron	1.4 ppm					S	0	S	0	S	0			
Zinc	2.82 ppm					B	0	B	0	B	0			
Iron	9.4 ppm					Zn	0	Zn	0	Zn	0			
Manganese	1.8 ppm					Fe	0	Fe	0	Fe	0			
Copper	0.84 ppm					Mn	0	Mn	0	Mn	0			
Magnesium	573 ppm					Cu	0	Cu	0	Cu	0			
Calcium	4816 ppm					Mg	0	Mg	0	Mg	0			
Sodium	44 ppm					Lime		Lime		Lime				
Org.Matter	3.1 %					Soil pH		Cation Exchange		% Base Saturation (Typical Range)				
Carbonate(CCE)	3.4 %					Buffer pH	Capacity		% Ca	% Mg	% K	% Na	% H	
Sol. Salts	0-6" 0.5 mmho/cm					0-6" 8.1	29.6 meq		(65-75)	(15-20)	(1-7)	(0-5)	(0-5)	
	0-24" 0.66 mmho/cm					6-24" 8.4			81.4	16.1	1.8	0.6		

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

Crop 1: Crop Removal: P2O5 = 28 K2O = 28 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: Crop Removal: P2O5 = 35 K2O = 35 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

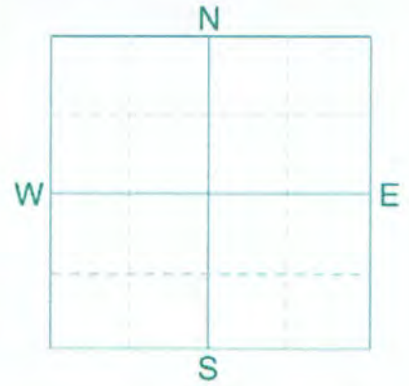
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Crop Removal: P2O5 = 42 K2O = 42 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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

### SOIL TEST REPORT

FIELD ID **14**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY **03**  
 TWP **02** RANGE  
 SECTION **22** QTR **SE** ACRES **150**  
 PREV. CROP **Beans-Edible**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB** **R6W 4A5**

REF # **14020661** BOX # **0**  
 LAB # **NW53796**

Date Sampled **09/11/2014**

Date Received **09/13/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		VLow	Low	Med	High	Wheat-Spring		Wheat-Spring		Wheat-Spring			
Nitrate	0-6" 23 lb/ac					YIELD GOAL		YIELD GOAL		YIELD GOAL			
	0-24" 76 lb/ac					50 BU		60 BU		65 BU			
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
						Broadcast		Broadcast		Band			
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Olsen Phosphorus	39 ppm					N	44	N	71	N	85		
Potassium	237 ppm					P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	15		
Chloride	0-24" 68 lb/ac					K <sub>2</sub> O	0	K <sub>2</sub> O	0	K <sub>2</sub> O	10		
	0-6" 16 lb/ac											Cl	0
Sulfur	0-24" 480 +lb/ac					S	0	S	0	S	0		
	Baron	2.7 ppm											B
Zinc	4.35 ppm					Zn	0	Zn	0	Zn	0		
Iron	12.8 ppm											Fe	0
Manganese	2.8 ppm					Mn	0	Mn	0	Mn	0		
Copper	1.89 ppm											Cu	0
Magnesium	642 ppm					Mg	0	Mg	0	Mg	0		
Calcium	5856 ppm											Lime	
Sodium	21 ppm					Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
Org.Matter	4.5 %								0-6" 8.1	6-24" 8.3	35.3 meq	% Ca	% Mg
Carbonate(CCE)	4.8 %					(65-75)	(15-20)	(1-7)				(0-5)	(0-5)
Sol. Salts	0-6" 0.34 mmho/cm					82.9	15.1	1.7	0.3				
	0-24" 0.93 mmho/cm												

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

Crop 1: Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 31 K2O = 19 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

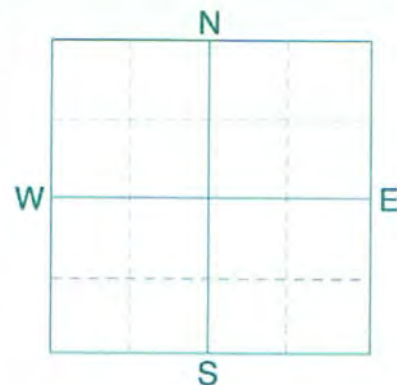
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 41 K2O = 24 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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

### SOIL TEST REPORT

FIELD ID **15-S**  
 SAMPLE ID **SOUTH POINTS**  
 FIELD NAME  
 COUNTY **3**  
 TWP **2** RANGE  
 SECTION **22** QTR **SW** ACRES **65**  
 PREV. CROP **Soybeans**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB** **R6W 4A5**

REF # **14020688** BOX # **0**  
 LAB # **NW77123**

Date Sampled **09/29/2014**

Date Received **09/30/2014**

Date Reported **10/29/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice		
		VLow	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL		
Nitrate	0-6" 16 lb/ac	.....				0	0	0	SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
	0-24" 40 lb/ac					SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	
Phosphorus	Olsen 54 ppm	.....				N		N		N		
Potassium	460 ppm	.....				P <sub>2</sub> O <sub>5</sub>		P <sub>2</sub> O <sub>5</sub>		P <sub>2</sub> O <sub>5</sub>		
Chloride	0-24" 292 lb/ac	.....				K <sub>2</sub> O		K <sub>2</sub> O		K <sub>2</sub> O		
Sulfur	0-6" 42 lb/ac 0-24" 480 +lb/ac	.....				Cl		Cl		Cl		
Boron	1.9 ppm	.....				S		S		S		
Zinc	4.28 ppm	.....				B		B		B		
Iron	13.0 ppm	.....				Zn		Zn		Zn		
Manganese	1.7 ppm	.....				Fe		Fe		Fe		
Copper	1.32 ppm	.....				Mn		Mn		Mn		
Magnesium	818 ppm	.....				Cu		Cu		Cu		
Calcium	5639 ppm	.....				Mg		Mg		Mg		
Sodium	44 ppm	.....				Lime		Lime		Lime		
Org.Matter	4.9 %	.....				Soil pH		% Base Saturation (Typical Range)				
Carbonate(CCE)	2.1 %	.....				Buffer pH	Cation Exchange Capacity	% Ca	% Mg	% K	% Na	% H
Sol. Salts	0-6" 0.44 mmho/cm 0-24" 1.56 mmho/cm	.....				0-6" 7.9 6-24" 8.0	36.4 meq	(65-75) 77.5	(15-20) 18.7	(1-7) 3.2	(0-5) 0.5	(0-5)

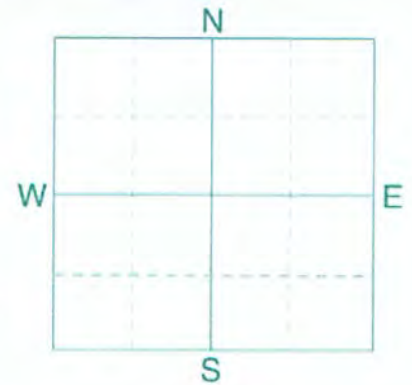
General Comments: Texture is not estimated on high pH soils.



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

### SOIL TEST REPORT

FIELD ID **15-N**  
 SAMPLE ID **NORTH POINTS**  
 FIELD NAME  
 COUNTY **3**  
 TWP **2** RANGE  
 SECTION **22** QTR **SW** ACRES **65**  
 PREV. CROP **Soybeans**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB** **R6W 4A5**

REF # **14020690** BOX # **0**  
 LAB # **NW77111**

Date Sampled **09/27/2014**

Date Received **09/30/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		VLow	Low	Med	High	Corn-Grain		Corn-Grain		Corn-Grain			
Nitrate	0-6" 15 lb/ac	.....				YIELD GOAL		YIELD GOAL		YIELD GOAL			
	0-24" 32 lb/ac					120 BU		140 BU		150 BU			
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
						Broadcast		Broadcast		Band			
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Phosphorus	Olsen 52 ppm	.....				N	82	N	106	N	118		
Potassium	374 ppm	.....				P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	15		
Chloride	0-24" 100 lb/ac	.....				K <sub>2</sub> O	0	K <sub>2</sub> O	0	K <sub>2</sub> O	10		
	0-6" 18 lb/ac	.....				Cl	Not Available	Cl	Not Available	Cl	Not Available		
Sulfur	0-24" 480 +lb/ac	.....				S	0	S	0	S	0		
Boron	1.8 ppm	.....				B	0	B	0	B	0		
Zinc	5.64 ppm	.....				Zn	0	Zn	0	Zn	0		
Iron	15.7 ppm	.....				Fe	0	Fe	0	Fe	0		
Manganese	2.0 ppm	.....				Mn	0	Mn	0	Mn	0		
Copper	1.51 ppm	.....				Cu	0	Cu	0	Cu	0		
Magnesium	699 ppm	.....				Mg	0	Mg	0	Mg	0		
Calcium	4997 ppm	.....				Lime		Lime		Lime			
Sodium	31 ppm	.....											
Org.Matter	5.2 %	.....											
Carbonate(CCE)	1.5 %	.....											
Sol. Salts	0-6" 0.47 mmho/cm	.....				Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
	0-24" 1.36 mmho/cm	.....				0-6" 7.8	6-24" 8.0	31.9 meq	% Ca	% Mg	% K	% Na	% H
									(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
									78.3	18.3	3.0	0.4	

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

Crop 1: \*\* Chloride yield data is limited for this crop. Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 48 K2O = 32 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: \*\* Chloride yield data is limited for this crop. Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 56 K2O = 38 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

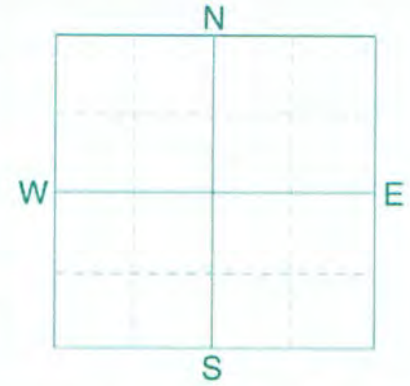
Crop 3: \*\* Chloride yield data is limited for this crop. \* Caution: Seed Placed Fertilizer Can Cause Injury \* Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 60 K2O = 41 AGVISE Band guidelines will build P & 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 **16**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY **3**  
 TWP **2** RANGE  
 SECTION **22** QTR **NW** ACRES **163**  
 PREV. CROP **Soybeans**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB** **R6W 4A5**

REF # **14020689** BOX # **0**  
 LAB # **NW77107**

Date Sampled **09/27/2014**

Date Received **09/30/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High	Corn-Grain		Corn-Grain		Corn-Grain				
Nitrate	0-6" 18 lb/ac					YIELD GOAL		YIELD GOAL		YIELD GOAL				
	0-24" 32 lb/ac					120 BU		140 BU		150 BU				
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
						Broadcast		Broadcast		Band				
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Olsen Phosphorus	39 ppm					N	82	N	106	N	118			
Potassium	292 ppm					P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	15			
Chloride	0-24" 348 lb/ac					K <sub>2</sub> O	0	K <sub>2</sub> O	0	K <sub>2</sub> O	10			
	0-6" 120 +lb/ac 0-24" 480 +lb/ac					Cl	Not Available	Cl	Not Available	Cl	Not Available			
Sulfur	2.1 ppm					S	0	S	0	S	0			
Boron	3.65 ppm					B	0	B	0	B	0			
Iron	10.8 ppm					Zn	0	Zn	0	Zn	0			
Manganese	1.8 ppm					Fe	0	Fe	0	Fe	0			
Copper	1.27 ppm					Mn	0	Mn	0	Mn	0			
Magnesium	709 ppm					Cu	0	Cu	0	Cu	0			
Calcium	5633 ppm					Mg	0	Mg	0	Mg	0			
Sodium	57 ppm					Lime		Lime		Lime				
Org.Matter	4.4 %					Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Carbonate(CCE)	4.7 %					Buffer pH				% Ca	% Mg	% K	% Na	% H
Sol. Salts	0-6" 0.5 mmho/cm					0-6" 8.0		35.1 meq		(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
	0-24" 1.61 mmho/cm					6-24" 8.2				80.3	16.8	2.1	0.7	

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

Crop 1: \*\* Chloride yield data is limited for this crop. Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 48 K2O = 32 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: \*\* Chloride yield data is limited for this crop. Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 56 K2O = 38 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 3: \*\* Chloride yield data is limited for this crop. \* Caution: Seed Placed Fertilizer Can Cause Injury \* Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 60 K2O = 41 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

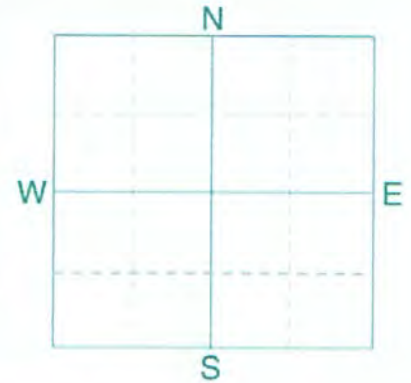




Soil Analysis by Agvise Laboratories  
 (http://www.agvise.com)  
 Northwood: (701) 587-6010  
 Benson: (320) 843-4109

### SOIL TEST REPORT

FIELD ID **17**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY **03**  
 TWP **02** RANGE  
 SECTION **15** QTR **NE/SE** ACRES **188**  
 PREV. CROP **Wheat-Spring**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB R6W 4A5**

REF # **14020927** BOX # **0**  
 LAB # **NW44887**

Date Sampled **09/03/2014**

Date Received **09/04/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		VLow	Low	Med	High	Beans-Edible		Beans-Edible		Beans-Edible			
Nitrate	0-6" 13 lb/ac	*****				YIELD GOAL		YIELD GOAL		YIELD GOAL			
	0-24" 24 lb/ac					2000 LBS		2500 LBS		3000 LBS			
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
						Broadcast		Broadcast		Band			
Phosphorus	Olsen 22 ppm	*****				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Potassium	278 ppm	*****				N 76		N 101		N 126			
Chloride	0-24" 148 lb/ac	*****				P <sub>2</sub> O <sub>5</sub> 0		P <sub>2</sub> O <sub>5</sub> 0		P <sub>2</sub> O <sub>5</sub> 20	Band *		
	0-6" 24 lb/ac 0-24" 480 +lb/ac	*****				K <sub>2</sub> O 0		K <sub>2</sub> O 0		K <sub>2</sub> O 0			
Sulfur		*****				Cl 0		Cl 0		Cl 0			
Boron	1.5 ppm	*****				S 10	Broadcast (Trial)	S 10	Broadcast (Trial)	S 5	Band (Trial)		
Zinc	3.18 ppm	*****				B 0		B 0		B 0			
Iron	21.9 ppm	*****				Zn 0		Zn 0		Zn 0			
Manganese	3.1 ppm	*****				Fe 0		Fe 0		Fe 0			
Copper	1.09 ppm	*****				Mn 0		Mn 0		Mn 0			
Magnesium	694 ppm	*****				Cu 0		Cu 0		Cu 0			
Calcium	3940 ppm	*****				Mg 0		Mg 0		Mg 0			
Sodium	26 ppm	****				Lime		Lime		Lime			
Org.Matter	4.6 %	*****											
Carbonate(CCE)	0.8 %	*****											
Sol. Salts	0-6" 0.37 mmho/cm	*****				Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
	0-24" 0.52 mmho/cm	*****				0-6" 7.7		26.3 meq	% Ca	% Mg	% K	% Na	% H
						6-24" 8.2			(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
									74.9	22.0	2.7	0.4	

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

Crop 1: Crop Removal: P2O5 = 28 K2O = 28 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: Crop Removal: P2O5 = 35 K2O = 35 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

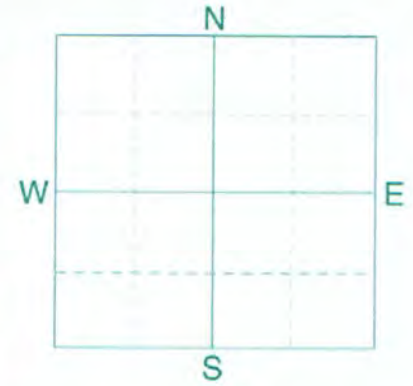
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Crop Removal: P2O5 = 42 K2O = 42 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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 Benson: (320) 843-4109

### SOIL TEST REPORT

FIELD ID **18**  
 SAMPLE ID **G1-DARK GREEN**  
 FIELD NAME  
 COUNTY **3**  
 TWP **2** RANGE  
 SECTION **15** QTR **SW** ACRES **238**  
 PREV. CROP **Beans-Edible**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB** **R6W 4A5**

REF # **16952026** BOX # **0**  
 LAB # **NW71953**

Date Sampled **09/25/2014**

Date Received **09/26/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice			
		VLow	Low	Med	High	Corn-Grain			Corn-Grain			Corn-Grain			
Nitrate	0-6" 18 lb/ac					YIELD GOAL			YIELD GOAL			YIELD GOAL			
	0-24" 48 lb/ac					120 BU			140 BU			150 BU			
						SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			
						Broadcast			Broadcast			Band			
						LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		
Olsen Phosphorus	34 ppm	*****				N	66		N	90		N	102		
Potassium	247 ppm	*****				P <sub>2</sub> O <sub>5</sub>	0		P <sub>2</sub> O <sub>5</sub>	0		P <sub>2</sub> O <sub>5</sub>	15	Band (2x2) *	
Chloride						K <sub>2</sub> O	0		K <sub>2</sub> O	0		K <sub>2</sub> O	10	Band (2x2) *	
Sulfur	0-6" 20 lb/ac	*****				Cl			Cl			Cl			
	0-24" 56 lb/ac	*****				S	10	Broadcast (Trial)	S	10	Broadcast (Trial)	S	5	Band (Trial)	
Boron	1.0 ppm	*****				B	0		B	0		B	0		
Zinc	3.45 ppm	*****				Zn	0		Zn	0		Zn	0		
Iron	11.1 ppm	*****				Fe	0		Fe	0		Fe	0		
Manganese	2.4 ppm	*****				Mn	0		Mn	0		Mn	0		
Copper	0.89 ppm	*****				Cu	0		Cu	0		Cu	0		
Magnesium	356 ppm	*****				Mg	0		Mg	0		Mg	0		
Calcium	3626 ppm	*****				Lime			Lime			Lime			
Sodium	13 ppm	**													
Org.Matter	3.0 %	*****													
Carbonate(CCE)	3.0 %	*****													
Sol. Salts	0-6" 0.24 mmho/cm	*****				Soil pH	Buffer pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
	0-24" 0.23 mmho/cm	*****				0-6" 8.1			21.8 meq		% Ca	% Mg	% K	% Na	% H
						6-24" 8.5					(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
										83.2	13.6	2.9	0.3		

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

Crop 1: Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P205 = 48 K2O = 32 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P205 = 56 K2O = 38 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

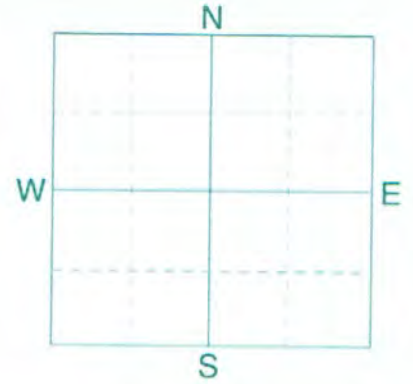
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P205 = 60 K2O = 41 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



Soil Analysis by Agvise Laboratories  
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 Benson: (320) 843-4109

### SOIL TEST REPORT

FIELD ID **19E**  
 SAMPLE ID **G1-DARK GREEN**  
 FIELD NAME  
 COUNTY **3**  
 TWP **2** RANGE  
 SECTION **16** QTR **SE** ACRES **170**  
 PREV. CROP **Corn-Grain**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB R6W 4A5**

REF # **17020511** BOX # **0**  
 LAB # **NW129998**

Date Sampled **10/21/2014**

Date Received **10/22/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		VLow	Low	Med	High	Wheat-Spring		Wheat-Spring		Wheat-Spring			
Nitrate	0-6" 14 lb/ac	*****				YIELD GOAL		YIELD GOAL		YIELD GOAL			
	0-24" 44 lb/ac					50 BU	60 BU	65 BU					
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
						Broadcast		Broadcast		Band			
					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Phosphorus	Olsen 43 ppm	*****					N 118		N 132				
Potassium	301 ppm	*****			P <sub>2</sub> O <sub>5</sub> 0		P <sub>2</sub> O <sub>5</sub> 0		P <sub>2</sub> O <sub>5</sub> 15	Band (Starter)*			
Chloride					K <sub>2</sub> O 0		K <sub>2</sub> O 0		K <sub>2</sub> O 10	Band (Starter)*			
Sulfur	0-6" 42 lb/ac 0-24" 184 lb/ac	*****			Cl		Cl		Cl				
Boron					S 0		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	2.0 %	*****											
Carbonate(CCE)	3.5 %	*****			Soil pH	Buffer pH	Cation Exchange Capacity		% Base Saturation (Typical Range)				
									% Ca	% Mg	% K	% Na	% H
Sol. Salts	0-6" 0.28 mmho/cm 0-24" 0.3 mmho/cm	*****			0-6" 8.2								
		*****			6-24" 8.4								

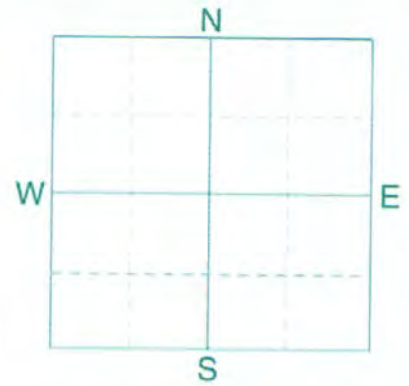
Crop 1: Crop Removal: P205 = 31 K2O = 19 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.  
 Crop 2: Crop Removal: P205 = 38 K2O = 23 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.  
 Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Crop Removal: P205 = 41 K2O = 24 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 **19W**  
 SAMPLE ID **G1-DARK GREEN**  
 FIELD NAME  
 COUNTY **3**  
 TWP **2** RANGE  
 SECTION **16** QTR **SW** ACRES **120**  
 PREV. CROP **Corn-Grain**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB** **R6W 4A5**

REF # **17020506** BOX # **0**  
 LAB # **NW129979**

Date Sampled **10/21/2014**

Date Received **10/22/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
		VLow	Low	Med	High	Wheat-Spring			Wheat-Spring			Wheat-Spring		
Nitrate	0-6" 12 lb/ac	.....				YIELD GOAL			YIELD GOAL			YIELD GOAL		
	0-24" 28 lb/ac					50 BU			60 BU			65 BU		
						SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
						Broadcast			Broadcast			Band		
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Phosphorus	Olsen 14 ppm	.....				N	107	N	134	N	148			
Potassium	102 ppm	.....				P <sub>2</sub> O <sub>5</sub>	36 Broadcast	P <sub>2</sub> O <sub>5</sub>	43 Broadcast	P <sub>2</sub> O <sub>5</sub>	25	Band *		
Chloride						K <sub>2</sub> O	64 Broadcast	K <sub>2</sub> O	76 Broadcast	K <sub>2</sub> O	45	Band *		
Sulfur	0-6" 20 lb/ac 0-24" 56 lb/ac	.....				Cl		Cl		Cl				
Sulfur		.....				S	15 Broadcast (Trial)	S	15 Broadcast (Trial)	S	7	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		Lime		Lime				
Sodium														
Org.Matter	1.6 %	.....												
Carbonate(CCE)	2.2 %	.....												
Sol. Salts	0-6" 0.25 mmho/cm	.....				Soil pH	Buffer pH	Cation Exchange Capacity		% Base Saturation (Typical Range)				
	0-24" 0.25 mmho/cm	.....				0-6" 8.2				% Ca	% Mg	% K	% Na	% H
						6-24" 8.4								

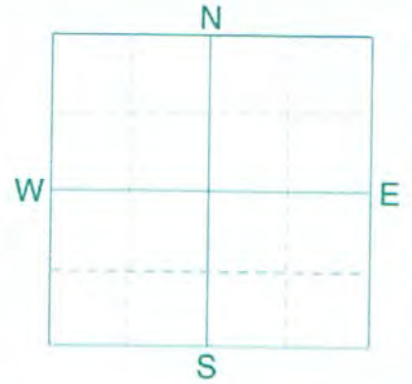
Crop 1: Crop Removal: P2O5 = 31 K2O = 19 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.  
 Crop 2: Crop Removal: P2O5 = 38 K2O = 23 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.  
 Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Crop Removal: P2O5 = 41 K2O = 24 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 **20-21**  
 SAMPLE ID **G3-20**  
 FIELD NAME  
 COUNTY **3**  
 TWP **2** RANGE  
 SECTION **16** QTR **NW/NE** ACRES **284.7**  
 PREV. CROP **Beans-Edible**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB** **R6W 4A5**

REF # **16952043** BOX # **0**  
 LAB # **NW77147**

Date Sampled **09/29/2014**

Date Received **09/30/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		VLow	Low	Med	High	Corn-Grain		Corn-Grain		Corn-Grain			
Nitrate	0-6" 31 lb/ac					YIELD GOAL		YIELD GOAL		YIELD GOAL			
	0-24" 108 lb/ac					120 BU		140 BU		150 BU			
SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		Broadcast		Broadcast		Band			
Phosphorus	Olsen 51 ppm					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Potassium	264 ppm					N 19		N 30		N 42			
Chloride						P <sub>2</sub> O <sub>5</sub> 0		P <sub>2</sub> O <sub>5</sub> 0		P <sub>2</sub> O <sub>5</sub> 15	Band (2x2) *		
Sulfur	0-6" 114 lb/ac 0-24" 480 +lb/ac					K <sub>2</sub> O 0		K <sub>2</sub> O 0		K <sub>2</sub> O 10	Band (2x2) *		
Boron	1.7 ppm					Cl		Cl		Cl			
Zinc	3.75 ppm					S 0		S 0		S 0			
Iron	11.9 ppm					B 0		B 0		B 0			
Manganese	2.2 ppm					Zn 0		Zn 0		Zn 0			
Copper	1.14 ppm					Fe 0		Fe 0		Fe 0			
Magnesium	922 ppm					Mn 0		Mn 0		Mn 0			
Calcium	3888 ppm					Cu 0		Cu 0		Cu 0			
Sodium	511 ppm					Mg 0		Mg 0		Mg 0			
Org.Matter	3.2 %					Lime		Lime		Lime			
Carbonate(CCE)	0.9 %					Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)			
Sol. Salts	0-6" 0.51 mmho/cm 0-24" 0.99 mmho/cm					Buffer pH			% Ca	% Mg	% K	% Na	% H
						0-6" 7.9		30.0 meq	(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
						6-24" 8.2			64.8	25.6	2.3	7.4	

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

Crop 1: Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 48 K2O = 32 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 56 K2O = 38 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

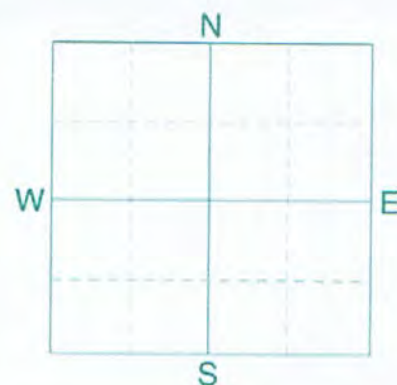
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 60 K2O = 41 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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

### SOIL TEST REPORT

FIELD ID **22**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY **3**  
 TWP **2** RANGE  
 SECTION **17** QTR **NE** ACRES **164**  
 PREV. CROP **Potatoes**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB R6W 4A5**

REF # **14018732** BOX # **0**  
 LAB # **NW99754**

Date Sampled **10/09/2014**

Date Received **10/10/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High	Beans-Edible		Beans-Edible		Beans-Edible				
Nitrate	0-6" 39 lb/ac					YIELD GOAL		YIELD GOAL		YIELD GOAL				
	0-24" 60 lb/ac					2000 LBS		2500 LBS		3000 LBS				
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
						Broadcast		Broadcast		Band				
Phosphorus	Olsen 57 ppm					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Potassium	489 ppm					N	40	N	65	N	90			
Chloride	0-24" 260 lb/ac					P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	0			
	0-6" 94 lb/ac 0-24" 480 +lb/ac					K <sub>2</sub> O	0	K <sub>2</sub> O	0	K <sub>2</sub> O	0			
Sulfur						Cl	0	Cl	0	Cl	0			
Boron	1.4 ppm					S	0	S	0	S	0			
Zinc	3.53 ppm					B	0	B	0	B	0			
Iron	10.4 ppm					Zn	0	Zn	0	Zn	0			
Manganese	3.4 ppm					Fe	0	Fe	0	Fe	0			
Copper	1.27 ppm					Mn	0	Mn	0	Mn	0			
Magnesium	2265 ppm					Cu	0	Cu	0	Cu	0			
Calcium	5455 ppm					Mg	0	Mg	0	Mg	0			
Sodium	168 ppm					Lime		Lime		Lime				
Org.Matter	2.6 %					Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Carbonate(CCE)	2.2 %					Buffer pH				% Ca	% Mg	% K	% Na	% H
Sol. Salts	0-6" 0.52 mmho/cm					0-6" 8.1		48.1 meq		(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
	0-24" 0.69 mmho/cm					6-24" 8.4				56.7	39.2	2.6	1.5	

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

Crop 1: Crop Removal: P2O5 = 28 K2O = 28 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: Crop Removal: P2O5 = 35 K2O = 35 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

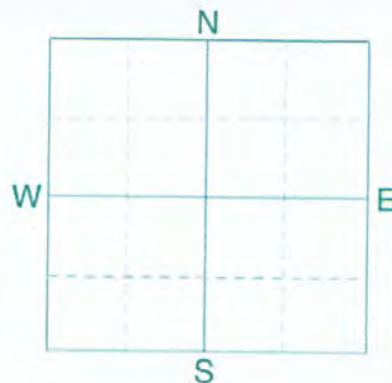
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Crop Removal: P2O5 = 42 K2O = 42 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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

### SOIL TEST REPORT

FIELD ID **23**  
 SAMPLE ID **Z4-ORANGE**  
 FIELD NAME  
 COUNTY **3**  
 TWP **2** RANGE  
 SECTION **17** QTR **SW** ACRES **120**  
 PREV. CROP **Corn-Grain**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB** **R6W 4A5**

REF # **16953103** BOX # **0**  
 LAB # **NW130054**

Date Sampled **10/21/2014**

Date Received **10/22/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice		
		VLow	Low	Med	High	Wheat-Spring		Wheat-Spring		Wheat-Spring		
Nitrate	0-6" 9 lb/ac	.....				YIELD GOAL		YIELD GOAL		YIELD GOAL		
	0-24" 32 lb/ac					50 BU	60 BU	65 BU				
SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		
Broadcast		Broadcast		Band		LB/ACRE APPLICATION		LB/ACRE APPLICATION		LB/ACRE APPLICATION		
Phosphorus	Olsen 21 ppm	.....				N	103	N	130	N	144	
Potassium	150 ppm	.....				P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	15	
Chloride		.....				K <sub>2</sub> O	30	K <sub>2</sub> O	36	K <sub>2</sub> O	23	
Sulfur	0-6" 74 lb/ac 0-24" 328 lb/ac	.....				Cl		Cl		Cl		
Boron	1.5 ppm	.....				S	0	S	0	S	0	
Zinc	2.46 ppm	.....				B	0	B	0	B	0	
Iron	11.9 ppm	.....				Zn	0	Zn	0	Zn	0	
Manganese	2.0 ppm	.....				Fe	0	Fe	0	Fe	0	
Copper	0.7 ppm	.....				Mn	0	Mn	0	Mn	0	
Magnesium	679 ppm	.....				Cu	2	Cu	2	Cu	1	
Calcium	4810 ppm	.....				Mg	0	Mg	0	Mg	0	
Sodium	26 ppm	.....				Lime		Lime		Lime		
Org.Matter	2.5 %	.....				Soil pH		% Base Saturation (Typical Range)				
Carbonate(CCE)	2.5 %	.....				Buffer pH	Cation Exchange Capacity	% Ca	% Mg	% K	% Na	% H
Sol. Salts	0-6" 0.46 mmho/cm 0-24" 0.45 mmho/cm	.....				0-6" 8.3 6-24" 8.4	30.2 meq	(65-75) 79.6	(15-20) 18.7	(1-7) 1.3	(0-5) 0.4	(0-5)

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

Crop 1: Crop Removal: P2O5 = 31 K2O = 19 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: Crop Removal: P2O5 = 38 K2O = 23 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

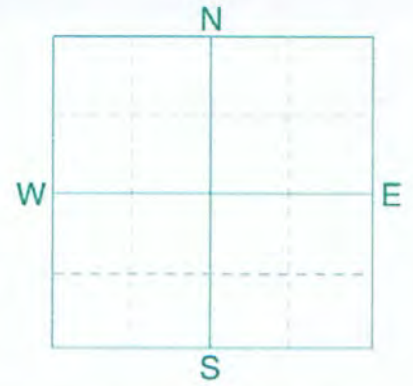
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Crop Removal: P2O5 = 41 K2O = 24 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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 Benson: (320) 843-4109

### SOIL TEST REPORT

FIELD ID **24**  
 SAMPLE ID **G1-DARK GREEN**  
 FIELD NAME  
 COUNTY **3**  
 TWP **2** RANGE  
 SECTION **17** QTR **NW** ACRES **118**  
 PREV. CROP **Beans-Edible**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB** **R6W 4A5**

REF # **16952036** BOX # **0**  
 LAB # **NW77132**

Date Sampled **09/29/2014**

Date Received **09/30/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High									
Nitrate	0-6" 19 lb/ac					Corn-Grain		Corn-Grain		Corn-Grain				
	0-24" 60 lb/ac					YIELD GOAL		YIELD GOAL		YIELD GOAL				
						120 BU		140 BU		150 BU				
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
						Broadcast		Broadcast		Band				
Olsen Phosphorus	39 ppm					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Potassium	261 ppm					N 54		N 78		N 90				
Chloride						P <sub>2</sub> O <sub>5</sub> 0		P <sub>2</sub> O <sub>5</sub> 0		P <sub>2</sub> O <sub>5</sub> 15	Band (2x2) *			
Sulfur	0-6" 14 lb/ac					K <sub>2</sub> O 0		K <sub>2</sub> O 0		K <sub>2</sub> O 10	Band (2x2) *			
	0-24" 80 lb/ac					Cl		Cl		Cl				
Boron	1.1 ppm					S 10	Broadcast	S 10	Broadcast	S 0				
Zinc	3.40 ppm					B 0		B 0		B 0				
Iron	13.4 ppm					Zn 0		Zn 0		Zn 0				
Manganese	2.5 ppm					Fe 0		Fe 0		Fe 0				
Copper	1.02 ppm					Mn 0		Mn 0		Mn 0				
Magnesium	451 ppm					Cu 0		Cu 0		Cu 0				
Calcium	3604 ppm					Mg 0		Mg 0		Mg 0				
Sodium	16 ppm	**				Lime		Lime		Lime				
Org.Matter	3.4 %					Soil pH		Cation Exchange		% Base Saturation (Typical Range)				
Carbonate(CCE)	1.1 %					Buffer pH	Capacity							
Sol. Salts	0-6" 0.27 mmho/cm					0-6" 7.9	22.5 meq	% Ca	% Mg	% K	% Na	% H		
	0-24" 0.35 mmho/cm					6-24" 8.3		80.0	16.7	3.0	0.3	0.5		

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

Crop 1: Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 48 K2O = 32 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 56 K2O = 38 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 60 K2O = 41 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

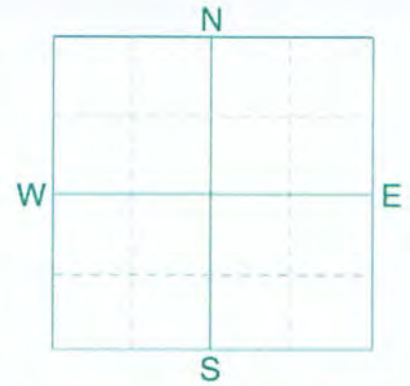




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 Benson: (320) 843-4109

### SOIL TEST REPORT

FIELD ID **25**  
 SAMPLE ID **G2-MEDIUM GREEN**  
 FIELD NAME  
 COUNTY **3**  
 TWP **2** RANGE  
 SECTION **10** QTR **NW** ACRES **82**  
 PREV. CROP **Beans-Edible**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB R6W 4A5**

REF # **16952292** BOX # **0**  
 LAB # **NW63577**

Date Sampled **09/19/2014**

Date Received **09/20/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High	Corn-Grain		Corn-Grain		Corn-Grain				
						YIELD GOAL		YIELD GOAL		YIELD GOAL				
						120 BU		140 BU		150 BU				
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
						Broadcast		Broadcast		Band				
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
						N	66	N	90	N	102			
						P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	15			
						K <sub>2</sub> O	0	K <sub>2</sub> O	0	K <sub>2</sub> O	10			
						Cl		Cl		Cl				
						S	15 Broadcast	S	15 Broadcast	S	4 Band (Trial)			
						B	0	B	0	B	0			
						Zn	0	Zn	0	Zn	0			
						Fe	0	Fe	0	Fe	0			
						Mn	0	Mn	0	Mn	0			
						Cu	0	Cu	0	Cu	0			
						Mg	0	Mg	0	Mg	0			
						Lime		Lime		Lime				
						Soil pH	Buffer pH	Cation Exchange Capacity		% Base Saturation (Typical Range)				
						0-6" 8.4		25.8 meq		% Ca	% Mg	% K	% Na	% H
						6-24" 8.6				(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
										83.0	14.8	2.0	0.2	

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

Crop 1: Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 48 K2O = 32 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 56 K2O = 38 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

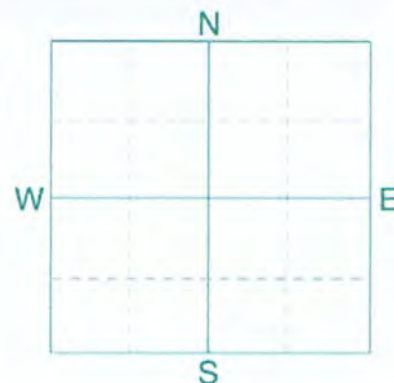
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 60 K2O = 41 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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### SOIL TEST REPORT

FIELD ID **26**  
 SAMPLE ID **Z1-DRK GREEN**  
 FIELD NAME  
 COUNTY **3**  
 TWP **2** RANGE  
 SECTION **10** QTR **NW** ACRES **79**  
 PREV. CROP **Corn-Grain**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB** **R6W 4A5**

REF # **16953091** BOX # **0**  
 LAB # **NW130062**

Date Sampled **10/21/2014**

Date Received **10/22/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		VLow	Low	Med	High	Wheat-Spring		Wheat-Spring		Wheat-Spring			
Nitrate	0-6" 17 lb/ac					YIELD GOAL		YIELD GOAL		YIELD GOAL			
	0-24" 52 lb/ac	*****				50 BU		60 BU		65 BU			
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
						Broadcast		Broadcast		Band			
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Olsen Phosphorus	34 ppm	*****				N	83	N	110	N	124		
Potassium	137 ppm	*****				P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	15		
											Band (Starter)*		
Chloride						K <sub>2</sub> O	39	K <sub>2</sub> O	47	K <sub>2</sub> O	29		
							Broadcast		Broadcast		Band *		
						Cl		Cl		Cl			
Sulfur	0-6" 12 lb/ac 0-24" 96 lb/ac	*****				S	15	S	15	S	4		
							Broadcast		Broadcast		Band (Trial)		
Boron	1.2 ppm	*****				B	0	B	0	B	0		
Zinc	2.18 ppm	*****				Zn	0	Zn	0	Zn	0		
Iron	8.9 ppm	*****				Fe	0	Fe	0	Fe	0		
Manganese	2.0 ppm	*****				Mn	0	Mn	0	Mn	0		
Copper	0.76 ppm	*****				Cu	2	Cu	2	Cu	1		
							Broadcast (Trial)		Broadcast (Trial)		Band (Trial)		
Magnesium	545 ppm	*****				Mg	0	Mg	0	Mg	0		
Calcium	4278 ppm	*****				Lime		Lime		Lime			
Sodium	17 ppm	**											
Org.Matter	1.7 %	*****											
Carbonate(CCE)	2.6 %	*****											
Sol. Salts	0-6" 0.25 mmho/cm 0-24" 0.25 mmho/cm	*****											
						Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
									% Ca	% Mg	% K	% Na	% H
						0-6" 8.3		26.4 meq	(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
						6-24" 8.6			81.2	17.2	1.3	0.3	

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

Crop 1: Crop Removal: P2O5 = 31 K2O = 19 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: Crop Removal: P2O5 = 38 K2O = 23 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

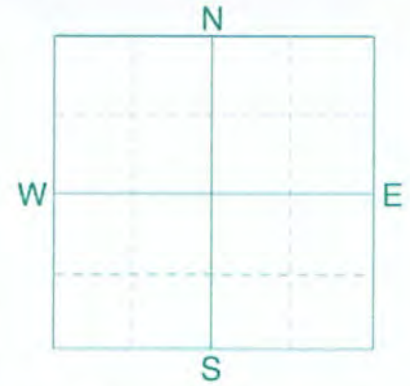
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Crop Removal: P2O5 = 41 K2O = 24 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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

### SOIL TEST REPORT

FIELD ID **27**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY **3**  
 TWP **2** RANGE  
 SECTION **24** QTR **NW** ACRES **79**  
 PREV. CROP **Corn-Grain**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB R6W 4A5**

REF # **14047008** BOX # **0**  
 LAB # **NW127398**

Date Sampled **10/20/2014**

Date Received **10/21/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High	Beans-Edible		Beans-Edible		Beans-Edible				
Nitrate	0-6" 14 lb/ac					YIELD GOAL		YIELD GOAL		YIELD GOAL				
	0-24" 52 lb/ac	*****				2000 LBS		2500 LBS		3000 LBS				
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
						Broadcast		Broadcast		Band				
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Phosphorus	Olsen 18 ppm	*****				N 48		N 73		N 98				
Potassium	168 ppm	*****				P <sub>2</sub> O <sub>5</sub> 28	Broadcast	P <sub>2</sub> O <sub>5</sub> 36	Broadcast	P <sub>2</sub> O <sub>5</sub> 28	Band *			
Chloride						K <sub>2</sub> O 0		K <sub>2</sub> O 24	Broadcast	K <sub>2</sub> O 12	Band *			
Sulfur	0-6" 20 lb/ac 0-24" 480 +lb/ac	*****				Cl		Cl		Cl				
Boron						S 10	Broadcast (Trial)	S 10	Broadcast (Trial)	S 5	Band (Trial)			
Zinc	2.02 ppm	*****				B		B		B				
Iron						Zn 0		Zn 0		Zn 0				
Manganese						Fe		Fe		Fe				
Copper	0.8 ppm	*****				Mn		Mn		Mn				
Magnesium						Cu 0		Cu 0		Cu 0				
Calcium						Mg		Mg		Mg				
Sodium						Lime		Lime		Lime				
Org.Matter	3.7 %	*****				Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Carbonate(CCE)	2.3 %	*****				Buffer pH				% Ca	% Mg	% K	% Na	% H
Sol. Salts	0-6" 0.31 mmho/cm 0-24" 0.61 mmho/cm	*****				0-6" 8.3 6-24" 8.4								

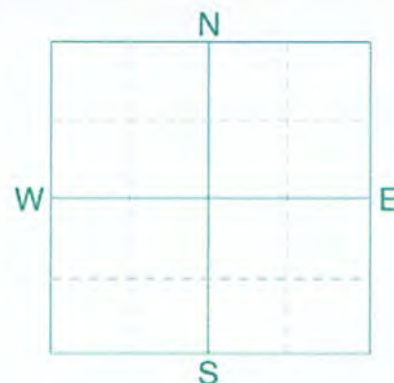
Crop 1: Crop Removal: P2O5 = 28 K2O = 28 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.  
 Crop 2: Crop Removal: P2O5 = 35 K2O = 35 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.  
 Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Crop Removal: P2O5 = 42 K2O = 42 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 **28**  
 SAMPLE ID **G1-DARK GREEN**  
 FIELD NAME  
 COUNTY **3**  
 TWP **2** RANGE  
 SECTION **25** QTR **NW** ACRES **53**  
 PREV. CROP **Beans-Edible**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB** **R6W 4A5**

REF # **17020616** BOX # **0**  
 LAB # **NW149980**

Date Sampled **10/29/2014**

Date Received **10/30/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High									
Nitrate	0-6" 16 lb/ac					Corn-Grain		Corn-Grain		Corn-Grain				
	0-24" 40 lb/ac					YIELD GOAL		YIELD GOAL		YIELD GOAL				
						120 BU		140 BU		150 BU				
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
Phosphorus	Olsen 12 ppm					Broadcast		Broadcast		Band				
	Potassium 123 ppm					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Chloride	0-6" 10 lb/ac					N	74	N	98	N	110			
	0-24" 200 lb/ac					P <sub>2</sub> O <sub>5</sub>	62 Broadcast	P <sub>2</sub> O <sub>5</sub>	73 Broadcast	P <sub>2</sub> O <sub>5</sub>	37 Band *			
Sulfur						K <sub>2</sub> O	64 Broadcast	K <sub>2</sub> O	75 Broadcast	K <sub>2</sub> O	42 Band *			
						Cl		Cl		Cl				
Boron	1.4 ppm					S	15 Broadcast	S	15 Broadcast	S	4 Band (Trial)			
Zinc	0.82 ppm					B	0	B	0	B	0			
Iron	10.6 ppm					Zn	5 Broadcast	Zn	5 Broadcast	Zn	2 Band			
Manganese	1.7 ppm					Fe	0	Fe	0	Fe	0			
Copper	0.6 ppm					Mn	0	Mn	0	Mn	0			
Magnesium	783 ppm					Cu	0	Cu	0	Cu	0			
Calcium	4981 ppm					Mg	0	Mg	0	Mg	0			
Sodium	30 ppm					Lime		Lime		Lime				
Org.Matter	2.5 %					Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Carbonate(CCE)	5.4 %					Buffer pH				% Ca	% Mg	% K	% Na	% H
Sol. Salts	0-6" 0.37 mmho/cm					0-6" 8.3		31.9 meq		(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
	0-24" 0.3 mmho/cm					6-24" 8.5				78.1	20.5	1.0	0.4	

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

Crop 1: Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 48 K2O = 32 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 56 K2O = 38 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

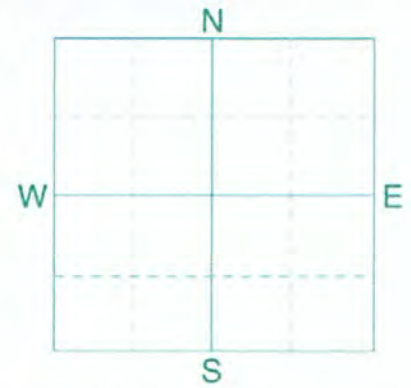
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 60 K2O = 41 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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

### SOIL TEST REPORT

FIELD ID **110**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY **3**  
 TWP **2** RANGE  
 SECTION **26** QTR **NE** ACRES **162**  
 PREV. CROP **Beans-Edible**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB R6W 4A5**

REF # **14018823** BOX # **0**  
 LAB # **NW66907**

Date Sampled **09/22/2014**

Date Received **09/23/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice					
		VLow	Low	Med	High	Wheat-Spring			Wheat-Spring			Wheat-Spring					
Nitrate	0-6" 20 lb/ac	*****				YIELD GOAL			YIELD GOAL			YIELD GOAL					
	6-24" 30 lb/ac					50 BU			60 BU			65 BU					
	0-24" 50 lb/ac					SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES					
						Broadcast			Broadcast			Band					
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION						
Phosphorus	Olsen 11 ppm	*****				N 70		N 97		N 111							
Potassium	325 ppm	*****				P <sub>2</sub> O <sub>5</sub> 47	Broadcast	P <sub>2</sub> O <sub>5</sub> 56	Broadcast	P <sub>2</sub> O <sub>5</sub> 32	Band *						
Chloride						K <sub>2</sub> O 0		K <sub>2</sub> O 0		K <sub>2</sub> O 10	Band (Starter)*						
Sulfur	0-6" 16 lb/ac 6-24" 126 lb/ac	*****				Cl		Cl		Cl							
Boron						S 0		S 0		S 0							
Zinc	2.01 ppm	*****				B		B		B							
Iron						Zn 0		Zn 0		Zn 0							
Manganese						Fe		Fe		Fe							
Copper	1.06 ppm	*****				Mn		Mn		Mn							
Magnesium						Cu 0		Cu 0		Cu 0							
Calcium						Mg		Mg		Mg							
Sodium						Lime		Lime		Lime							
Org.Matter	4.3 %	*****				Soil pH			Buffer pH			Cation Exchange Capacity			% Base Saturation (Typical Range)		
Carbonate(CCE)	0.4 %	**				0-6" 7.6						% Ca			% Mg		
Sol. Salts	0-6" 0.26 mmho/cm 6-24" 0.36 mmho/cm	*****				6-24" 8.6											

Crop 1: Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 31 K2O = 19 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

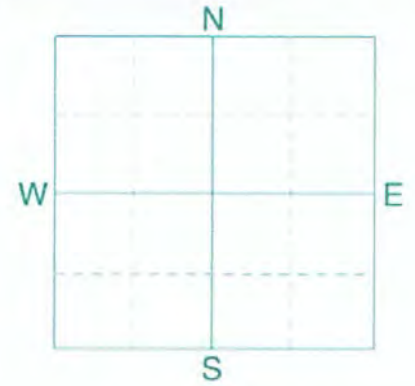
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 41 K2O = 24 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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

### SOIL TEST REPORT

FIELD ID **111**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY **3**  
 TWP **3** RANGE  
 SECTION **26** QTR **NW** ACRES **150**  
 PREV. CROP **Beans-Edible**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB R6W 4A5**

REF # **14018824** BOX # **0**  
 LAB # **NW66911**

Date Sampled **09/22/2014**

Date Received **09/23/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
		VLow	Low	Med	High	Wheat-Spring			Wheat-Spring			Wheat-Spring		
Nitrate	0-6"	23 lb/ac				YIELD GOAL			YIELD GOAL			YIELD GOAL		
	6-24"	18 lb/ac				50 BU			60 BU			65 BU		
	0-24"	41 lb/ac				SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
						Broadcast			Broadcast			Band		
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	
Phosphorus	Olsen	9 ppm				N	79		N	106		N	120	
Potassium		483 ppm				P <sub>2</sub> O <sub>5</sub>	54	Broadcast	P <sub>2</sub> O <sub>5</sub>	64	Broadcast	P <sub>2</sub> O <sub>5</sub>	36	Band *
Chloride						K <sub>2</sub> O	0		K <sub>2</sub> O	0		K <sub>2</sub> O	10	Band (Starter)*
Sulfur	0-6"	22 lb/ac				Cl			Cl			Cl		
	6-24"	288 lb/ac				S	0		S	0		S	0	
Boron						B			B			B		
Zinc		1.31 ppm				Zn	0		Zn	0		Zn	0	
Iron						Fe			Fe			Fe		
Manganese						Mn			Mn			Mn		
Copper		1.73 ppm				Cu	0		Cu	0		Cu	0	
Magnesium						Mg			Mg			Mg		
Calcium						Lime			Lime			Lime		
Sodium														
Org.Matter		5.1 %				Soil pH			Cation Exchange Capacity			% Base Saturation (Typical Range)		
Carbonate(CCE)		0.2 %				Buffer pH			% Ca	% Mg	% K	% Na	% H	
	0-6"	0.31 mmho/cm				0-6"	7.6							
Sol. Salts	6-24"	0.48 mmho/cm				6-24"	8.3							

Crop 1: Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 31 K2O = 19 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

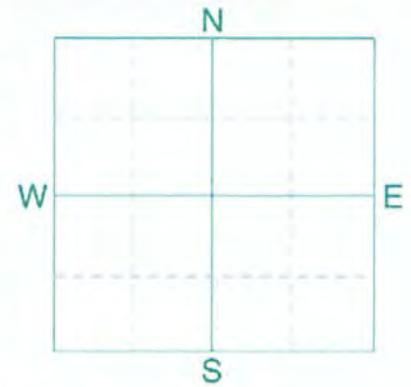
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 41 K2O = 24 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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

### SOIL TEST REPORT

FIELD ID **112**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY **3**  
 TWP **3** RANGE  
 SECTION **35** QTR **NE** ACRES **78**  
 PREV. CROP **Wheat-Spring**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB R6W 4A5**

REF # **14020641** BOX # **0**  
 LAB # **NW44892**

Date Sampled **08/30/2014**

Date Received **09/04/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		VLow	Low	Med	High								
Nitrate	0-6" 6 lb/ac	*****				Soybeans	Soybeans	Soybeans					
	0-24" 24 lb/ac					YIELD GOAL	YIELD GOAL	YIELD GOAL					
						40 BU	50 BU	60 BU					
						SUGGESTED GUIDELINES	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES					
						Broadcast	Broadcast	Band					
Phosphorus	Olsen 30 ppm	*****				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Potassium	471 ppm	*****				N ***		N ***		N ***			
Chloride	0-24" 88 lb/ac	*****				P <sub>2</sub> O <sub>5</sub> 0		P <sub>2</sub> O <sub>5</sub> 0		P <sub>2</sub> O <sub>5</sub> 10	Band (Starter)*		
	0-6" 12 lb/ac	*****				K <sub>2</sub> O 0		K <sub>2</sub> O 0		K <sub>2</sub> O 0			
Sulfur	0-24" 168 lb/ac	*****				Cl 0		Cl 0		Cl 0			
						S 15 Broadcast		S 15 Broadcast		S 7 Band (Trial)			
Boron	1.2 ppm	*****				B 0		B 0		B 0			
Zinc	2.29 ppm	*****				Zn 0		Zn 0		Zn 0			
Iron	28.5 ppm	*****				Fe 0		Fe 0		Fe 0			
Manganese	2.4 ppm	*****				Mn 0		Mn 0		Mn 0			
Copper	1.52 ppm	*****				Cu 0		Cu 0		Cu 0			
Magnesium	802 ppm	*****				Mg 0		Mg 0		Mg 0			
Calcium	3796 ppm	*****				Lime		Lime		Lime			
Sodium	29 ppm	****											
Org. Matter	4.8 %	*****											
Carbonate(CCE)	0.6 %	****											
Sol. Salts	0-6" 0.33 mmho/cm	*****				Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
	0-24" 0.4 mmho/cm	*****				0-6" 7.4		27.0 meq	% Ca	% Mg	% K	% Na	% H
						6-24" 8.1			(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
									70.3	24.8	4.5	0.5	

General Comments: Fine Loams (CEC range 21 to 30) (Medium)

Crop 1: The risk of the development of iron chlorosis on soybeans on this field is low based on the salt and carbonate levels. Crop Removal: P2O5 = 35 K2O = 60 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years. Soybeans may respond to nitrogen on fields testing less than 60 lb/ac with a limited soybean history.

Crop 2: The risk of the development of iron chlorosis on soybeans on this field is low based on the salt and carbonate levels. Crop Removal: P2O5 = 44 K2O = 75 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years. Soybeans may respond to nitrogen on fields testing less than 60 lb/ac with a limited soybean history.

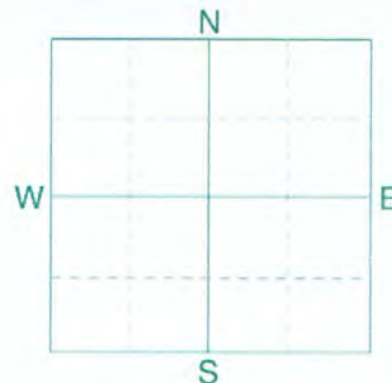
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* The risk of the development of iron chlorosis on soybeans on this field is low based on the salt and carbonate levels. Crop Removal: P2O5 = 53 K2O = 90 AGVISE Band guidelines will build P & K test levels to the medium range over many years. Soybeans may respond to nitrogen on fields testing less than 60 lb/ac with a limited soybean history.



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

### SOIL TEST REPORT

FIELD ID **114**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY **3**  
 TWP **3** RANGE  
 SECTION **36** QTR **NW** ACRES **320**  
 PREV. CROP **Corn-Grain**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB R6W 4A5**

REF # **14047007** BOX # **0**  
 LAB # **NW133316**

Date Sampled **10/22/2014**

Date Received **10/23/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High									
Nitrate	0-6" 24 lb/ac					Beans-Edible		Beans-Edible		Beans-Edible				
	0-24" 76 lb/ac					YIELD GOAL		YIELD GOAL		YIELD GOAL				
						2000 LBS		2500 LBS		3000 LBS				
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
Phosphorus	Olsen 12 ppm					Broadcast		Broadcast		Band				
	Potassium 381 ppm					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Sulfur	0-6" 12 lb/ac					N	24	N	49	N	74			
	0-24" 328 lb/ac					P <sub>2</sub> O <sub>5</sub>	48 Broadcast	P <sub>2</sub> O <sub>5</sub>	60 Broadcast	P <sub>2</sub> O <sub>5</sub>	41 Band *			
Boron						K <sub>2</sub> O	0	K <sub>2</sub> O	0	K <sub>2</sub> O	0			
						Cl		Cl		Cl				
Zinc						S	15 Broadcast	S	15 Broadcast	S	7 Band (Trial)			
	0.89 ppm					B		B		B				
Iron						Zn	5 Broadcast	Zn	5 Broadcast	Zn	2 Band			
						Fe		Fe		Fe				
Manganese						Mn		Mn		Mn				
	1.22 ppm					Cu	0	Cu	0	Cu	0			
Copper						Mg		Mg		Mg				
						Lime		Lime		Lime				
Magnesium						Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
						Buffer pH				% Ca	% Mg	% K	% Na	% H
Calcium						0-6" 7.9								
						6-24" 8.4								
Sodium						Sol. Salts								
Org.Matter	4.5 %													
Carbonate(CCE)	1.9 %													
Sol. Salts	0-6" 0.55 mmho/cm													
	0-24" 0.71 mmho/cm													

Crop 1: Crop Removal: P2O5 = 28 K2O = 28 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: Crop Removal: P2O5 = 35 K2O = 35 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Crop Removal: P2O5 = 42 K2O = 42 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

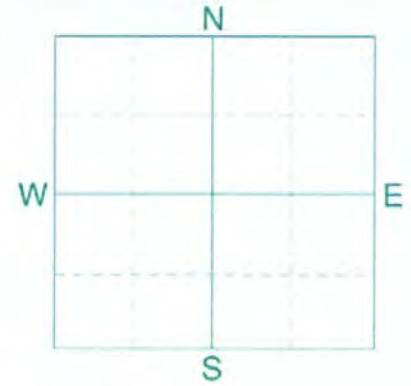


## SOIL TEST REPORT



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

FIELD ID **115**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY **03**  
 TWP **02** RANGE  
 SECTION **27** QTR **SW** ACRES **163**  
 PREV. CROP **Wheat-Spring**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB R6W 4A5**

REF # **14020642** BOX # **0**  
 LAB # **NW45760**

Date Sampled **09/04/2014**

Date Received **09/07/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High									
Nitrate	0-6"	12 lb/ac	***				Beans-Edible		Beans-Edible		Beans-Edible			
	0-24"	16 lb/ac					YIELD GOAL		YIELD GOAL		YIELD GOAL			
							2000 LBS		2500 LBS		3000 LBS			
							SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
							Broadcast		Broadcast		Band			
Phosphorus	Olsen	19 ppm	*****			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Potassium		342 ppm	*****			N	84	N	109	N	134			
Chloride	0-24"	208 lb/ac	*****			P <sub>2</sub> O <sub>5</sub>	25 Broadcast	P <sub>2</sub> O <sub>5</sub>	32 Broadcast	P <sub>2</sub> O <sub>5</sub>	26 Band *			
Sulfur	0-6"	14 lb/ac	*****			K <sub>2</sub> O	0	K <sub>2</sub> O	0	K <sub>2</sub> O	0			
	0-24"	480 +lb/ac	*****			Cl	0	Cl	0	Cl	0			
Boron		1.2 ppm	*****			S	15 Broadcast	S	15 Broadcast	S	7 Band (Trial)			
Zinc		1.36 ppm	*****			B	0	B	0	B	0			
Iron		27.5 ppm	*****			Zn	2 Broadcast	Zn	2 Broadcast	Zn	2 Band (Trial)			
Manganese		3.8 ppm	*****			Fe	0	Fe	0	Fe	0			
Copper		1.49 ppm	*****			Mn	0	Mn	0	Mn	0			
Magnesium		742 ppm	*****			Cu	0	Cu	0	Cu	0			
Calcium		3317 ppm	*****			Mg	0	Mg	0	Mg	0			
Sodium		42 ppm	*****			Lime		Lime		Lime				
Org.Matter		4.6 %	*****			Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Carbonate(CCE)		14.9 %	*****			Buffer pH				% Ca	% Mg	% K	% Na	% H
Sol. Salts	0-6"	0.27 mmho/cm	*****			0-6"	7.3	23.8 meq		(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
	0-24"	0.51 mmho/cm	*****			6-24"	8.3			69.6	26.0	3.7	0.8	

General Comments: Fine Loams (CEC range 21 to 30) (Medium)

Crop 1: Crop Removal: P2O5 = 28 K2O = 28 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: Crop Removal: P2O5 = 35 K2O = 35 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

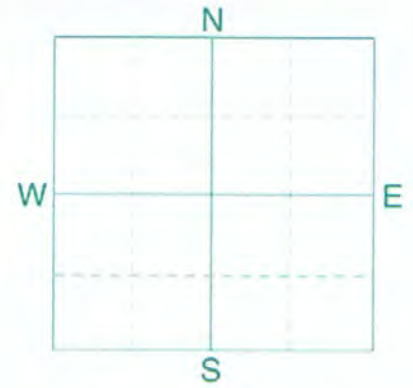
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Crop Removal: P2O5 = 42 K2O = 42 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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

### SOIL TEST REPORT

FIELD ID **116**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY **3**  
 TWP **3** RANGE  
 SECTION **35** QTR **SW** ACRES **153**  
 PREV. CROP **Beans-Edible**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB** **R6W 4A5**

REF # **14018825** BOX # **0**  
 LAB # **NW66916**

Date Sampled **09/22/2014**

Date Received **09/23/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High	Beans-Edible		Beans-Edible		Beans-Edible				
Nitrate	0-6"	*****				YIELD GOAL		YIELD GOAL		YIELD GOAL				
	6-24"					27 lb/ac	24 lb/ac	2000 LBS	2500 LBS	3000 LBS				
	0-24"					51 lb/ac	SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
							Broadcast		Broadcast		Band			
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Phosphorus	Olsen	20 ppm				N	34	N	59	N	84			
Potassium		352 ppm				P <sub>2</sub> O <sub>5</sub>	22	Broadcast	P <sub>2</sub> O <sub>5</sub>	28	Broadcast	P <sub>2</sub> O <sub>5</sub>	24	Band *
Chloride						K <sub>2</sub> O	0	K <sub>2</sub> O	0	K <sub>2</sub> O	0			
Sulfur	0-6"	20 lb/ac				Cl		Cl		Cl				
	6-24"	78 lb/ac				S	10	Broadcast (Trial)	S	10	Broadcast (Trial)	S	5	Band (Trial)
Boron						B		B		B				
Zinc		1.50 ppm				Zn	2	Broadcast	Zn	2	Broadcast	Zn	2	Band (Trial)
Iron						Fe		Fe		Fe				
Manganese						Mn		Mn		Mn				
Copper		1.34 ppm				Cu	0	Cu	0	Cu	0			
Magnesium						Mg		Mg		Mg				
Calcium						Lime		Lime		Lime				
Sodium														
Org.Matter		4.1 %				Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Carbonate(CCE)		0.4 %	**			Buffer pH				% Ca	% Mg	% K	% Na	% H
	0-6"	0.4 mmho/cm												
Sol. Salts	6-24"	0.44 mmho/cm				0-6"	7.4							
						6-24"	8.3							

Crop 1: Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 28 K2O = 28 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 35 K2O = 35 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

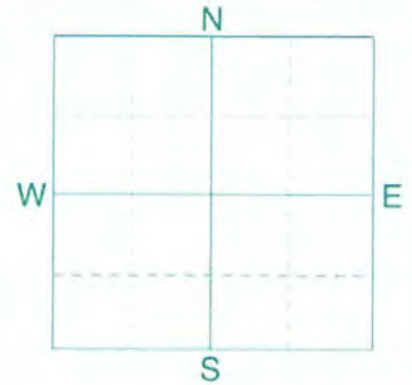
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 42 K2O = 42 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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

### SOIL TEST REPORT

FIELD ID **117**  
 SAMPLE ID **EAST 80**  
 FIELD NAME  
 COUNTY **3**  
 TWP **4** RANGE  
 SECTION **2** QTR **NE** ACRES **80**  
 PREV. CROP **Beans-Edible**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB R6W 4A5**

REF # **14018822** BOX # **0**  
 LAB # **NW66903**

Date Sampled **09/22/2014**

Date Received **09/23/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		VLow	Low	Med	High	Corn-Grain		Corn-Grain		Corn-Grain			
						YIELD GOAL		YIELD GOAL		YIELD GOAL			
						120 BU		140 BU		150 BU			
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
						Broadcast		Broadcast		Band			
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Nitrate	0-6" 36 lb/ac 6-24" 36 lb/ac 0-24" 72 lb/ac					N	42	N	66	N	78		
Phosphorus	Olsen 20 ppm					P <sub>2</sub> O <sub>5</sub>	28 Broadcast	P <sub>2</sub> O <sub>5</sub>	32 Broadcast	P <sub>2</sub> O <sub>5</sub>	15 Band (2x2) *		
Potassium	544 ppm					K <sub>2</sub> O	0	K <sub>2</sub> O	0	K <sub>2</sub> O	10 Band (2x2) *		
Chloride	0-24" 220 lb/ac					Cl	Not Available	Cl	Not Available	Cl	Not Available		
Sulfur	0-6" 120 lb/ac 6-24" 228 lb/ac					S	0	S	0	S	0		
Boron	1.3 ppm					B	0	B	0	B	0		
Zinc	1.66 ppm					Zn	0	Zn	0	Zn	0		
Iron	23.2 ppm					Fe	0	Fe	0	Fe	0		
Manganese	2.1 ppm					Mn	0	Mn	0	Mn	0		
Copper	1.68 ppm					Cu	0	Cu	0	Cu	0		
Magnesium	990 ppm					Mg	0	Mg	0	Mg	0		
Calcium	4681 ppm					Lime		Lime		Lime			
Sodium	68 ppm												
Org.Matter	5.1 %												
Carbonate(CEC)	0.8 %												
Sol. Salts	0-6" 0.91 mmho/cm 6-24" 0.61 mmho/cm					Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
						0-6" 7.5 6-24" 8.1		33.3 meq	% Ca (65-75) 70.2	% Mg (15-20) 24.7	% K (1-7) 4.2	% Na (0-5) 0.9	% H (0-5)

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

Crop 1: \*\* Chloride yield data is limited for this crop. Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 48 K2O = 32 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: \*\* Chloride yield data is limited for this crop. Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 56 K2O = 38 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

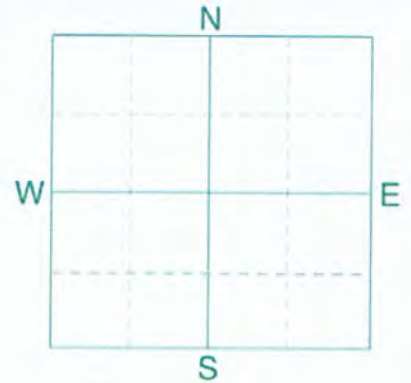
Crop 3: \*\* Chloride yield data is limited for this crop. \* Caution: Seed Placed Fertilizer Can Cause Injury \* Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 60 K2O = 41 AGVISE Band guidelines will build P & 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 **118**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY **3**  
 TWP **4** RANGE  
 SECTION **11** QTR SE ACRES **79**  
 PREV. CROP **Corn-Grain**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB R6W 4A5**

REF # **14047004** BOX # **0**  
 LAB # **NW133311**

Date Sampled **10/22/2014**

Date Received **10/23/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		VLow	Low	Med	High	Wheat-Spring		Wheat-Spring		Wheat-Spring			
Nitrate	0-6" 13 lb/ac	.....				YIELD GOAL		YIELD GOAL		YIELD GOAL			
	0-24" 36 lb/ac					50 BU		60 BU		65 BU			
Phosphorus	Olsen 48 ppm	.....				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
	Potassium 606 ppm	.....				Broadcast		Broadcast		Band			
Chloride	0-6" 18 lb/ac	.....				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
	0-24" 152 lb/ac	.....				N 99		N 126		N 140			
Sulfur						P <sub>2</sub> O <sub>5</sub> 0		P <sub>2</sub> O <sub>5</sub> 0		P <sub>2</sub> O <sub>5</sub> 15	Band (Starter)*		
Boron						K <sub>2</sub> O 0		K <sub>2</sub> O 0		K <sub>2</sub> O 10	Band (Starter)*		
Zinc	3.94 ppm	.....				Cl		Cl		Cl			
Iron						S 0		S 0		S 0			
Manganese						B		B		B			
Copper	1.62 ppm	.....				Zn 0		Zn 0		Zn 0			
Magnesium						Fe		Fe		Fe			
Calcium						Mn		Mn		Mn			
Sodium						Cu 0		Cu 0		Cu 0			
Org.Matter	4.5 %	.....				Mg		Mg		Mg			
Carbonate(CCE)	0.7 %	....				Lime		Lime		Lime			
Sol. Salts	0-6" 0.3 mmho/cm	.....				Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
	0-24" 0.38 mmho/cm	.....				0-6" 7.7			% Ca	% Mg	% K	% Na	% H
						6-24" 8.1							

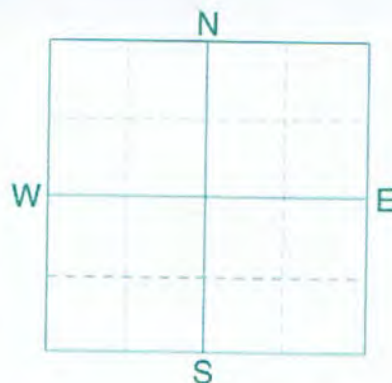
Crop 1: Crop Removal: P2O5 = 31 K2O = 19 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.  
 Crop 2: Crop Removal: P2O5 = 38 K2O = 23 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.  
 Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Crop Removal: P2O5 = 41 K2O = 24 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 **119**  
 SAMPLE ID **G1-DARK GREEN**  
 FIELD NAME  
 COUNTY **3**  
 TWP **3** RANGE  
 SECTION **10** QTR **NW** ACRES **137**  
 PREV. CROP **Beans-Edible**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB** **R6W 4A5**

REF # **17020621** BOX # **0**  
 LAB # **NW149984**

Date Sampled **10/29/2014**

Date Received **10/30/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High	Corn-Grain		Corn-Grain		Corn-Grain				
Nitrate	0-6" <b>19 lb/ac</b>					YIELD GOAL		YIELD GOAL		YIELD GOAL				
	0-24" <b>64 lb/ac</b>					120 BU		140 BU		150 BU				
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
						Broadcast		Broadcast		Band				
Olsen Phosphorus	<b>29 ppm</b>					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Potassium	<b>145 ppm</b>					N	<b>50</b>	N	<b>74</b>	N	<b>86</b>			
Chloride						P <sub>2</sub> O <sub>5</sub>	<b>0</b>	P <sub>2</sub> O <sub>5</sub>	<b>0</b>	P <sub>2</sub> O <sub>5</sub>	<b>15</b> <b>Band (2x2) *</b>			
Sulfur	0-6" <b>12 lb/ac</b> 0-24" <b>104 lb/ac</b>					K <sub>2</sub> O	<b>47</b> <b>Broadcast</b>	K <sub>2</sub> O	<b>55</b> <b>Broadcast</b>	K <sub>2</sub> O	<b>31</b> <b>Band *</b>			
Boron	<b>1.4 ppm</b>					Cl		Cl		Cl				
Zinc	<b>1.82 ppm</b>					S	<b>15</b> <b>Broadcast</b>	S	<b>15</b> <b>Broadcast</b>	S	<b>4</b> <b>Band (Trial)</b>			
Iron	<b>9.5 ppm</b>					B	<b>0</b>	B	<b>0</b>	B	<b>0</b>			
Manganese	<b>1.8 ppm</b>					Zn	<b>2</b> <b>Broadcast</b>	Zn	<b>2</b> <b>Broadcast</b>	Zn	<b>2</b> <b>Band (Trial)</b>			
Copper	<b>0.81 ppm</b>					Fe	<b>0</b>	Fe	<b>0</b>	Fe	<b>0</b>			
Magnesium	<b>671 ppm</b>					Mn	<b>0</b>	Mn	<b>0</b>	Mn	<b>0</b>			
Calcium	<b>4879 ppm</b>					Cu	<b>0</b>	Cu	<b>0</b>	Cu	<b>0</b>			
Sodium	<b>24 ppm</b>					Mg	<b>0</b>	Mg	<b>0</b>	Mg	<b>0</b>			
Org.Matter	<b>2.6 %</b>					Lime		Lime		Lime				
Carbonate(CCE)	<b>3.2 %</b>					Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Sol. Salts	0-6" <b>0.37 mmho/cm</b> 0-24" <b>0.35 mmho/cm</b>					Buffer pH				% Ca	% Mg	% K	% Na	% H
						0-6" <b>8.2</b>		<b>30.5 meq</b>		(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
						6-24" <b>8.5</b>				<b>80.1</b>	<b>18.4</b>	<b>1.2</b>	<b>0.3</b>	

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

Crop 1: Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 48 K2O = 32 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 56 K2O = 38 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

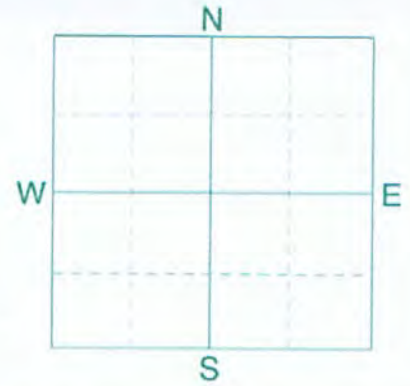
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 60 K2O = 41 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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

### SOIL TEST REPORT

FIELD ID **140**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY **2**  
 TWP **5** RANGE  
 SECTION **18** QTR **SW/SE** ACRES **320**  
 PREV. CROP **Soybeans**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB R6W 4A5**

REF # **14020937** BOX # **0**  
 LAB # **NW72282**

Date Sampled **09/25/2014**

Date Received **09/26/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High	Oats		Oats		Oats				
Nitrate	0-6" 17 lb/ac					YIELD GOAL		YIELD GOAL		YIELD GOAL				
	6-24" 12 lb/ac					100 BU		110 BU		120 BU				
	0-24" 29 lb/ac					SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
						Broadcast		Broadcast		Band				
Phosphorus Olsen	15 ppm					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Potassium	690 ppm					N	56	N	66	N	76			
Chloride	0-24" 184 lb/ac					P <sub>2</sub> O <sub>5</sub>	30 Broadcast	P <sub>2</sub> O <sub>5</sub>	33 Broadcast	P <sub>2</sub> O <sub>5</sub>	18 Band *			
	0-6" 66 lb/ac					K <sub>2</sub> O	0	K <sub>2</sub> O	0	K <sub>2</sub> O	10 Band (Starter)*			
Sulfur	6-24" 360 +lb/ac					Cl	0	Cl	0	Cl	0			
Boron	1.5 ppm					S	0	S	0	S	0			
Zinc	0.94 ppm					B	0	B	0	B	0			
Iron	27.0 ppm					Zn	2 Broadcast (Trial)	Zn	2 Broadcast (Trial)	Zn	2 Band (Trial)			
Manganese	2.6 ppm					Fe	0	Fe	0	Fe	0			
Copper	1.67 ppm					Mn	0	Mn	0	Mn	0			
Magnesium	1607 ppm					Cu	0	Cu	0	Cu	0			
Calcium	5328 ppm					Mg	0	Mg	0	Mg	0			
Sodium	64 ppm					Lime		Lime		Lime				
Org.Matter	6.4 %					Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Carbonate(CCE)	8.4 %					Buffer pH				% Ca	% Mg	% K	% Na	% H
Sol. Salts	0-6" 0.72 mmho/cm					0-6" 7.6		42.1 meq		(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
	6-24" 1.75 mmho/cm					6-24" 8.1				63.3	31.8	4.2	0.7	

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

Crop 1: Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 25 K2O = 19 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 28 K2O = 21 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 30 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

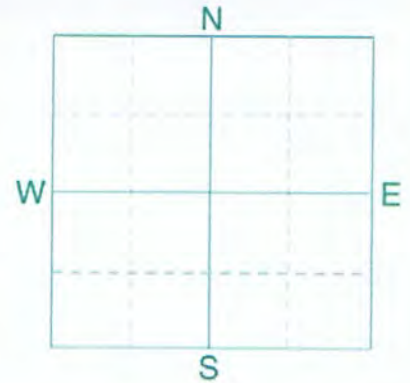


Soil Analysis by Agvise Laboratories  
 (http://www.agvise.com)  
 Northwood: (701) 587-6010  
 Benson: (320) 843-4109

### SOIL TEST REPORT

FIELD ID **150-S**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY **37**  
 TWP **2** RANGE  
 SECTION **20** QTR **SE/SW** ACRES **164**  
 PREV. CROP **Corn-Grain**

*Field label mistake - PA*



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB R6W 4A5**

REF # **14047012** BOX # **0**  
 LAB # **NW133300**

Date Sampled **10/22/2014**

Date Received **10/23/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		VLow	Low	Med	High								
Nitrate	0-6" 14 lb/ac					Beans-Edible	Beans-Edible		Beans-Edible				
	6-24" 18 lb/ac					YIELD GOAL	YIELD GOAL		YIELD GOAL				
	0-24" 32 lb/ac					2000 LBS	2500 LBS		3000 LBS				
						SUGGESTED GUIDELINES	SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
Phosphorus	Olsen 29 ppm					Broadcast	Broadcast		Band				
						LB/ACRE APPLICATION	LB/ACRE APPLICATION	LB/ACRE APPLICATION					
Potassium	338 ppm					N 68	N 93	N 118					
						P <sub>2</sub> O <sub>5</sub> 0	P <sub>2</sub> O <sub>5</sub> 0	P <sub>2</sub> O <sub>5</sub> 0					
Chloride	0-24" 212 lb/ac					K <sub>2</sub> O 0	K <sub>2</sub> O 0	K <sub>2</sub> O 0					
						Cl 0	Cl 0	Cl 0					
Sulfur	0-6" 22 lb/ac					S 10 Broadcast (Trial)	S 10 Broadcast (Trial)	S 5 Band (Trial)					
	6-24" 360 +lb/ac												
Boron	1.5 ppm					B 0	B 0	B 0					
Zinc	0.72 ppm					Zn 5 Broadcast	Zn 5 Broadcast	Zn 2 Band					
Iron	18.1 ppm					Fe 0	Fe 0	Fe 0					
Manganese	3.4 ppm					Mn 0	Mn 0	Mn 0					
Copper	1.95 ppm					Cu 0	Cu 0	Cu 0					
Magnesium	1249 ppm					Mg 0	Mg 0	Mg 0					
Calcium	5076 ppm												
Sodium	84 ppm					Lime	Lime	Lime					
Org.Matter	4.0 %												
Carbonate(C.C.E.)	1.6 %												
Sol. Salts	0-6" 0.61 mmho/cm					Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
	6-24" 1.0 mmho/cm					0-6" 7.9		37.0 meq	% Ca	% Mg	% K	% Na	% H
						6-24" 8.4			(65-75) 68.6	(15-20) 28.1	(1-7) 2.3	(0-5) 1.0	(0-5)

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

Crop 1: Crop Removal: P205 = 28 K2O = 28 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: Crop Removal: P205 = 35 K2O = 35 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

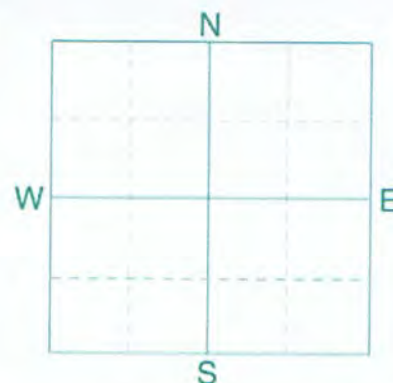
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Crop Removal: P205 = 42 K2O = 42 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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

### SOIL TEST REPORT

FIELD ID **150-N**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY **2**  
 TWP **3** RANGE  
 SECTION **20** QTR **NE** ACRES **236**  
 PREV. CROP **Wheat-Spring**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB R6W 4A5**

REF # **14020639** BOX # **0**  
 LAB # **NW44895**

Date Sampled **08/30/2014**

Date Received **09/04/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		VLow	Low	Med	High								
Nitrate	0-6" 5 lb/ac	**				Soybeans		Soybeans		Soybeans			
	0-24" 8 lb/ac		YIELD GOAL		YIELD GOAL		YIELD GOAL						
			40 BU		50 BU		60 BU						
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES						
			Broadcast		Broadcast		Band						
Olsen Phosphorus	19 ppm				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Potassium	418 ppm				N	***	N	***	N	***			
Chloride	0-24" 60 lb/ac				P <sub>2</sub> O <sub>5</sub>	0	P <sub>2</sub> O <sub>5</sub>	24	Broadcast	P <sub>2</sub> O <sub>5</sub>	22	Band *	
	0-6" 26 lb/ac 0-24" 264 lb/ac				K <sub>2</sub> O	0	K <sub>2</sub> O	0		K <sub>2</sub> O	0		
Sulfur					Cl	0	Cl	0		Cl	0		
Boron	1.5 ppm				S	10	Broadcast (Trial)	S	10	Broadcast (Trial)	S	5	Band (Trial)
Zinc	1.01 ppm				B	0		B	0		B	0	
Iron	42.3 ppm				Zn	0		Zn	0		Zn	0	
Manganese	3.1 ppm				Fe	0		Fe	0		Fe	0	
Copper	1.89 ppm				Mn	0		Mn	0		Mn	0	
Magnesium	1113 ppm				Cu	0		Cu	0		Cu	0	
Calcium	4796 ppm				Mg	0		Mg	0		Mg	0	
Sodium	47 ppm				Lime			Lime			Lime		
Org.Matter	5.2 %				Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Carbonate(CCE)	1.0 %				Buffer pH				% Ca	% Mg	% K	% Na	% H
Sol. Salts	0-6" 0.43 mmho/cm				0-6" 7.1		34.5 meq		(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
	0-24" 0.65 mmho/cm				6-24" 7.9				69.4	26.9	3.1	0.6	

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

Crop 1: The risk of the development of iron chlorosis on soybeans on this field is low based on the salt and carbonate levels. Crop Removal: P2O5 = 35 K2O = 60 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years. Soybeans may respond to nitrogen on fields testing less than 60 lb/ac with a limited soybean history.

Crop 2: The risk of the development of iron chlorosis on soybeans on this field is low based on the salt and carbonate levels. Crop Removal: P2O5 = 44 K2O = 75 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years. Soybeans may respond to nitrogen on fields testing less than 60 lb/ac with a limited soybean history.

Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* The risk of the development of iron chlorosis on soybeans on this field is low based on the salt and carbonate levels. Crop Removal: P2O5 = 53 K2O = 90 AGVISE Band guidelines will build P & K test levels to the medium range over many years. Soybeans may respond to nitrogen on fields testing less than 60 lb/ac with a limited soybean history.

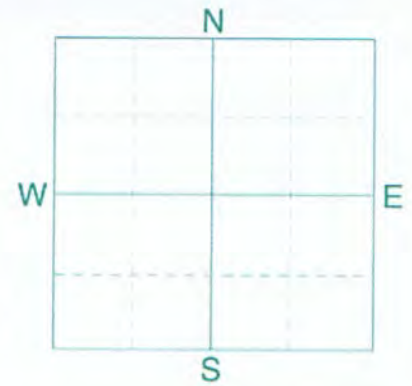




Soil Analysis by Agvise Laboratories  
 (http://www.agvise.com)  
 Northwood: (701) 587-6010  
 Benson: (320) 843-4109

### SOIL TEST REPORT

FIELD ID **152**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY **02**  
 TWP **04** RANGE  
 SECTION **8** QTR **SE** ACRES **162**  
 PREV. CROP **Wheat-Spring**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB** **R6W 4A5**

REF # **14020640** BOX # **0**  
 LAB # **NW44891**

Date Sampled **08/30/2014**

Date Received **09/04/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High	Soybeans		Soybeans		Soybeans				
Nitrate	0-6" 4 lb/ac	**				YIELD GOAL		YIELD GOAL		YIELD GOAL				
	0-24" 8 lb/ac					40 BU		50 BU		60 BU				
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
						Broadcast		Broadcast		Band				
Olsen Phosphorus	18 ppm					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Potassium	419 ppm					N ***		N ***		N ***				
Chloride	0-24" 212 lb/ac					P <sub>2</sub> O <sub>5</sub> 22	Broadcast	P <sub>2</sub> O <sub>5</sub> 28	Broadcast	P <sub>2</sub> O <sub>5</sub> 24	Band *			
						K <sub>2</sub> O 0		K <sub>2</sub> O 0		K <sub>2</sub> O 0				
						Cl 0		Cl 0		Cl 0				
						S 10	Broadcast (Trial)	S 10	Broadcast (Trial)	S 5	Band (Trial)			
Sulfur	0-6" 26 lb/ac 0-24" 192 lb/ac					B 0		B 0		B 0				
Boron	1.4 ppm					Zn 0		Zn 0		Zn 0				
Zinc	1.03 ppm					Fe 0		Fe 0		Fe 0				
Iron	37.0 ppm					Mn 0		Mn 0		Mn 0				
Manganese	3.3 ppm					Cu 0		Cu 0		Cu 0				
Copper	1.69 ppm					Mg 0		Mg 0		Mg 0				
Magnesium	1086 ppm					Lime		Lime		Lime				
Calcium	4785 ppm													
Sodium	27 ppm	***												
Org.Matter	5.4 %													
Carbonate(CEC)	1.2 %	*****												
Sol. Salts	0-6" 0.47 mmho/cm					Soil pH	Buffer pH	Cation Exchange Capacity		% Base Saturation (Typical Range)				
	0-24" 0.6 mmho/cm					0-6" 7.3	6-24" 8.0	34.2 meq	% Ca	% Mg	% K	% Na	% H	
										70.0	26.5	3.1	0.3	0.3

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

Crop 1: The risk of the development of iron chlorosis on soybeans on this field is low based on the salt and carbonate levels. Crop Removal: P2O5 = 35 K2O = 60 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years. Soybeans may respond to nitrogen on fields testing less than 60 lb/ac with a limited soybean history.

Crop 2: The risk of the development of iron chlorosis on soybeans on this field is low based on the salt and carbonate levels. Crop Removal: P2O5 = 44 K2O = 75 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years. Soybeans may respond to nitrogen on fields testing less than 60 lb/ac with a limited soybean history.

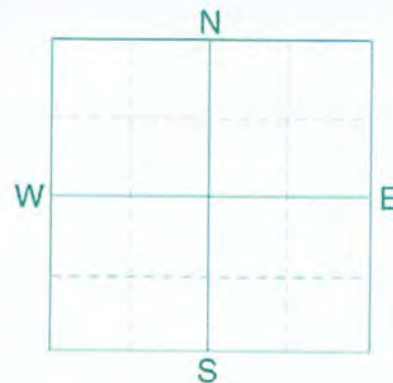
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* The risk of the development of iron chlorosis on soybeans on this field is low based on the salt and carbonate levels. Crop Removal: P2O5 = 53 K2O = 90 AGVISE Band guidelines will build P & K test levels to the medium range over many years. Soybeans may respond to nitrogen on fields testing less than 60 lb/ac with a limited soybean history.



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

### SOIL TEST REPORT

FIELD ID **153**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY **2**  
 TWP **3** RANGE  
 SECTION **15** QTRSE ACRES **65**  
 PREV. CROP **Soybeans**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB R6W 4A5**

REF # **14018819** BOX # **0**  
 LAB # **NW66893**

Date Sampled **09/22/2014**

Date Received **09/23/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High	Corn-Grain		Corn-Grain		Corn-Grain				
Nitrate	0-6" 15 lb/ac	.....				YIELD GOAL		YIELD GOAL		YIELD GOAL				
	0-24" 28 lb/ac	.....				120 BU		140 BU		150 BU				
		.....				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
		.....				Broadcast		Broadcast		Band				
Olsen Phosphorus	12 ppm	.....					N	110	N	122				
Potassium	571 ppm	.....					P <sub>2</sub> O <sub>5</sub>	73	P <sub>2</sub> O <sub>5</sub>	37	Band *			
Chloride	0-24" 48 lb/ac	.....						K <sub>2</sub> O	0	K <sub>2</sub> O	10	Band (2x2) *		
	0-6" 8 lb/ac 0-24" 96 lb/ac	.....						Cl	Not Available	Cl	Not Available	Not Available		
Boron	1.2 ppm	.....				S	10	S	10	S	0			
Zinc	0.56 ppm	.....				B	0	B	0	B	0			
Iron	16.5 ppm	.....				Zn	6	Zn	6	Zn	2	Band		
Manganese	1.6 ppm	.....				Fe	0	Fe	0	Fe	0			
Copper	1.38 ppm	.....				Mn	0	Mn	0	Mn	0			
Magnesium	1317 ppm	.....				Cu	0	Cu	0	Cu	0			
Calcium	5409 ppm	.....				Mg	0	Mg	0	Mg	0			
Sodium	51 ppm	.....				Lime		Lime		Lime				
Org.Matter	5.4 %	.....												
Carbonate(CCE)	0.9 %	.....												
Sol. Salts	0-6" 0.49 mmho/cm	.....				Soil pH	7.7	Cation Exchange Capacity		% Base Saturation (Typical Range)				
	0-24" 0.52 mmho/cm	.....				6-24" 8.1		39.7 meq	(65-75)	(15-20)	(1-7)	(0-5)	(0-5)	
									68.1	27.6	3.7	0.6		

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

Crop 1: \*\* Chloride yield data is limited for this crop. Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 48 K2O = 32 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: \*\* Chloride yield data is limited for this crop. Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 56 K2O = 38 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

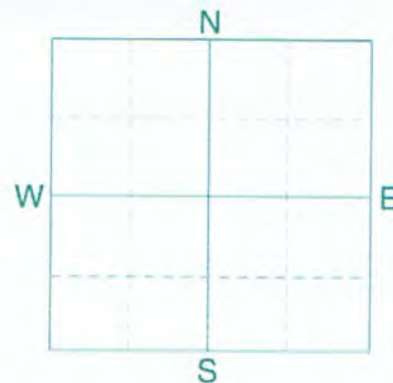
Crop 3: \*\* Chloride yield data is limited for this crop. \* Caution: Seed Placed Fertilizer Can Cause Injury \* Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 60 K2O = 41 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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### SOIL TEST REPORT

FIELD ID **154**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY **2**  
 TWP **3** RANGE  
 SECTION **8** QTR **NE/SE** ACRES **178**  
 PREV. CROP **Beans-Edible**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB R6W 4A5**

REF # **14018821** BOX # **0**  
 LAB # **NW66899**

Date Sampled **09/22/2014**

Date Received **09/23/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		VLow	Low	Med	High	Corn-Grain		Corn-Grain		Corn-Grain			
						YIELD GOAL		YIELD GOAL		YIELD GOAL			
						120 BU		140 BU		150 BU			
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
						Broadcast		Broadcast		Band			
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Nitrate	0-6" 24 lb/ac 6-24" 24 lb/ac 0-24" 48 lb/ac					N	66	N	90	N	102		
Phosphorus	Olsen 16 ppm					P <sub>2</sub> O <sub>5</sub>	45 Broadcast	P <sub>2</sub> O <sub>5</sub>	52 Broadcast	P <sub>2</sub> O <sub>5</sub>	22 Band *		
Potassium	529 ppm					K <sub>2</sub> O	0	K <sub>2</sub> O	0	K <sub>2</sub> O	10 Band (2x2) *		
Chloride	0-24" 1112 lb/ac					Cl	Not Available	Cl	Not Available	Cl	Not Available		
Sulfur	0-6" 18 lb/ac 6-24" 360 +lb/ac					S	0	S	0	S	0		
Boron	1.4 ppm					B	0	B	0	B	0		
Zinc	0.92 ppm					Zn	3 Broadcast	Zn	3 Broadcast	Zn	0		
Iron	24.5 ppm					Fe	0	Fe	0	Fe	0		
Manganese	3.1 ppm					Mn	0	Mn	0	Mn	0		
Copper	1.59 ppm					Cu	0	Cu	0	Cu	0		
Magnesium	1362 ppm					Mg	0	Mg	0	Mg	0		
Calcium	5430 ppm					Lime		Lime		Lime			
Sodium	74 ppm												
Org.Matter	5.7 %												
Carbonate(CCE)	0.6 %												
	0-6" 0.38 mmho/cm 6-24" 0.9 mmho/cm					Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
Sol. Salts						0-6" 7.6 6-24" 8.2		40.2 meq	% Ca	% Mg	% K	% Na	% H
									(65-75) 67.6	(15-20) 28.2	(1-7) 3.4	(0-5) 0.8	(0-5)

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

Crop 1: \*\* Chloride yield data is limited for this crop. Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 48 K2O = 32 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: \*\* Chloride yield data is limited for this crop. Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 56 K2O = 38 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

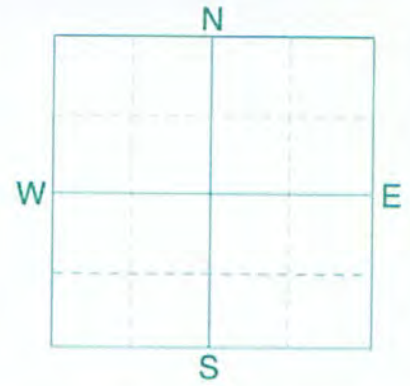
Crop 3: \*\* Chloride yield data is limited for this crop. \* Caution: Seed Placed Fertilizer Can Cause Injury \* Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 60 K2O = 41 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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 Benson: (320) 843-4109

### SOIL TEST REPORT

FIELD ID **155**  
 SAMPLE ID **NORTH OF PC**  
 FIELD NAME  
 COUNTY **2**  
 TWP **3** RANGE  
 SECTION **30** QTR **SW** ACRES **78**  
 PREV. CROP **Corn-Grain**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB** **R6W 4A5**

REF # **14047013** BOX # **0**  
 LAB # **NW133306**

Date Sampled **10/22/2014**

Date Received **10/23/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High									
Nitrate	0-6" 18 lb/ac					Beans-Edible		Beans-Edible		Beans-Edible				
	6-24" 15 lb/ac					YIELD GOAL		YIELD GOAL		YIELD GOAL				
	0-24" 33 lb/ac					2000 LBS		2500 LBS		3000 LBS				
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
Phosphorus	Olsen 10 ppm					Broadcast		Broadcast		Band				
	Potassium 263 ppm					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Chloride	0-6" 10 lb/ac					N	67	N	92	N	117			
	6-24" 282 lb/ac					P <sub>2</sub> O <sub>5</sub>	54 Broadcast	P <sub>2</sub> O <sub>5</sub>	68 Broadcast	P <sub>2</sub> O <sub>5</sub>	45 Band *			
Sulfur						K <sub>2</sub> O	0	K <sub>2</sub> O	0	K <sub>2</sub> O	0			
						Cl		Cl		Cl				
Boron						S	15 Broadcast	S	15 Broadcast	S	7 Band (Trial)			
						B		B		B				
Zinc						Zn	10 Broadcast	Zn	10 Broadcast	Zn	4 Band			
	0.40 ppm					Fe		Fe		Fe				
Iron						Mn		Mn		Mn				
						Cu	0	Cu	0	Cu	0			
Manganese						Mg		Mg		Mg				
						Lime		Lime		Lime				
Copper						Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
	0.96 ppm					Buffer pH				% Ca	% Mg	% K	% Na	% H
Magnesium						0-6" 8.2								
						6-24" 8.6								
Calcium						Sol. Salts								
						0-6" 0.47 mmho/cm								
Sodium						6-24" 0.73 mmho/cm								
Org.Matter														
	3.1 %													
Carbonate(CCE)														
	2.9 %													

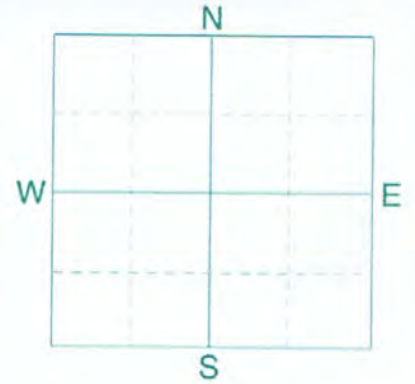
Crop 1: Crop Removal: P2O5 = 28 K2O = 28 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.  
 Crop 2: Crop Removal: P2O5 = 35 K2O = 35 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.  
 Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Crop Removal: P2O5 = 42 K2O = 42 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 **157**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY **2**  
 TWP **4** RANGE  
 SECTION **10** QTR **NW** ACRES **151.1**  
 PREV. CROP **Soybeans**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB R6W 4A5**

REF # **14020938** BOX # **0**  
 LAB # **NW72287**

Date Sampled **09/25/2014**

Date Received **09/26/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		VLow	Low	Med	High	Corn-Grain		Corn-Grain		Corn-Grain			
Nitrate	0-6" 13 lb/ac	*****				YIELD GOAL		YIELD GOAL		YIELD GOAL			
	6-24" 12 lb/ac					120 BU		140 BU		150 BU			
	0-24" 25 lb/ac					SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
						Broadcast		Broadcast		Band			
Phosphorus	Olsen 12 ppm	*****				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Potassium	678 ppm	*****				N 89		N 113		N 125			
Chloride						P <sub>2</sub> O <sub>5</sub> 62	Broadcast	P <sub>2</sub> O <sub>5</sub> 73	Broadcast	P <sub>2</sub> O <sub>5</sub> 37	Band *		
						K <sub>2</sub> O 0		K <sub>2</sub> O 0		K <sub>2</sub> O 10	Band (2x2) *		
Sulfur	0-6" 38 lb/ac 6-24" 222 lb/ac	*****				Cl		Cl		Cl			
Boron						S 0		S 0		S 0			
Zinc	0.77 ppm	*****				B		B		B			
Iron						Zn 3	Broadcast	Zn 3	Broadcast	Zn 0			
Manganese						Fe		Fe		Fe			
Copper	2.0 ppm	*****				Mn		Mn		Mn			
Magnesium						Cu 0		Cu 0		Cu 0			
Calcium						Mg		Mg		Mg			
Sodium						Lime		Lime		Lime			
Org.Matter	6.3 %	*****											
Carbonate(CCE)	11.3 %	*****											
Sol. Salts	0-6" 0.64 mmho/cm	*****				Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
	6-24" 0.73 mmho/cm					0-6" 8.0			% Ca	% Mg	% K	% Na	% H
						6-24" 8.4							

Crop 1: Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 48 K2O = 32 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 56 K2O = 38 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

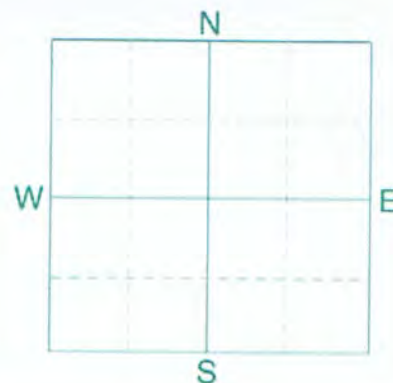
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 60 K2O = 41 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



Soil Analysis by Agvise Laboratories  
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 Benson: (320) 843-4109

### SOIL TEST REPORT

FIELD ID **158**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY **2**  
 TWP **4** RANGE  
 SECTION **16** QTR **SE** ACRES **160**  
 PREV. CROP **Wheat-Spring**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB R6W 4A5**

REF # **14002250** BOX # **0**  
 LAB # **NW44888**

Date Sampled **08/30/2014**

Date Received **09/04/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		VLow	Low	Med	High	Soybeans		Soybeans		Soybeans			
Nitrate	0-6" 4 lb/ac	**				YIELD GOAL		YIELD GOAL		YIELD GOAL			
	0-24" 12 lb/ac		40 BU		50 BU		60 BU						
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES						
			Broadcast		Broadcast		Band						
					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Olsen Phosphorus	17 ppm				N	***	N	***	N	***			
Potassium	721 ppm				P <sub>2</sub> O <sub>5</sub>	26 Broadcast	P <sub>2</sub> O <sub>5</sub>	32 Broadcast	P <sub>2</sub> O <sub>5</sub>	26 Band *			
Chloride					K <sub>2</sub> O	0	K <sub>2</sub> O	0	K <sub>2</sub> O	0			
Sulfur	0-6" 30 lb/ac 0-24" 136 lb/ac				Cl		Cl		Cl				
Baron					S	10 Broadcast (Trial)	S	10 Broadcast (Trial)	S	5 Band (Trial)			
Zinc	1.21 ppm				B		B		B				
Iron					Zn	0	Zn	0	Zn	0			
Manganese					Fe		Fe		Fe				
Copper	2.33 ppm				Mn		Mn		Mn				
Magnesium					Cu	0	Cu	0	Cu	0			
Calcium					Mg		Mg		Mg				
Sodium					Lime		Lime		Lime				
Org.Matter	6.0 %				Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Carbonate(CCE)	0.8 %				Buffer pH				% Ca	% Mg	% K	% Na	% H
Sol. Salts	0-6" 0.53 mmho/cm 0-24" 0.63 mmho/cm				0-6" 7.7 6-24" 8.2								

Crop 1: The risk of the development of iron chlorosis on soybeans on this field is moderate based on the salt and carbonate levels. Crop Removal: P2O5 = 35 K2O = 60 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years. Soybeans may respond to nitrogen on fields testing less than 60 lb/ac with a limited soybean history.

Crop 2: The risk of the development of iron chlorosis on soybeans on this field is moderate based on the salt and carbonate levels. Crop Removal: P2O5 = 44 K2O = 75 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years. Soybeans may respond to nitrogen on fields testing less than 60 lb/ac with a limited soybean history.

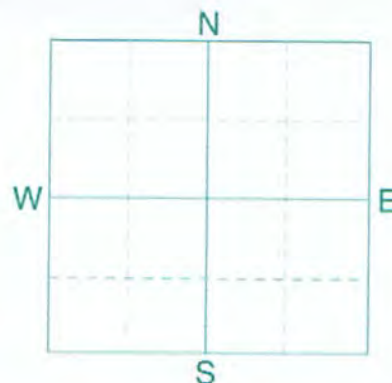
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* The risk of the development of iron chlorosis on soybeans on this field is moderate based on the salt and carbonate levels. Crop Removal: P2O5 = 53 K2O = 90 AGVISE Band guidelines will build P & K test levels to the medium range over many years. Soybeans may respond to nitrogen on fields testing less than 60 lb/ac with a limited soybean history.



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

### SOIL TEST REPORT

FIELD ID **210**  
 SAMPLE ID **NORTH 60**  
 FIELD NAME  
 COUNTY **4**  
 TWP **1** RANGE  
 SECTION **23** QTR **NE** ACRES **60**  
 PREV. CROP **Wheat-Spring**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB R6W 4A5**

REF # **14020928** BOX # **0**  
 LAB # **NW48277**

Date Sampled **09/06/2014**

Date Received **09/09/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		VLow	Low	Med	High	Beans-Edible		Beans-Edible		Beans-Edible			
Nitrate	0-6" 11 lb/ac					YIELD GOAL		YIELD GOAL		YIELD GOAL			
	0-24" 56 lb/ac					2000 LBS		2500 LBS		3000 LBS			
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
						Broadcast		Broadcast		Band			
Phosphorus	Olsen 13 ppm					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Potassium	234 ppm					N 44		N 69		N 94			
Chloride						P <sub>2</sub> O <sub>5</sub> 44	Broadcast	P <sub>2</sub> O <sub>5</sub> 56	Broadcast	P <sub>2</sub> O <sub>5</sub> 39	Band *		
						K <sub>2</sub> O 0		K <sub>2</sub> O 0		K <sub>2</sub> O 0			
Sulfur	0-6" 120 +lb/ac 0-24" 480 +lb/ac					Cl		Cl		Cl			
Boron						S 0		S 0		S 0			
Zinc	2.11 ppm					B		B		B			
Iron						Zn 0		Zn 0		Zn 0			
Manganese						Fe		Fe		Fe			
Copper	1.28 ppm					Mn		Mn		Mn			
Magnesium						Cu 0		Cu 0		Cu 0			
Calcium						Mg		Mg		Mg			
Sodium						Lime		Lime		Lime			
Org.Matter	4.6 %					Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)			
Carbonate(CCE)	1.4 %					Buffer pH			% Ca	% Mg	% K	% Na	% H
Sol. Salts	0-6" 1.25 mmho/cm					0-6" 7.6							
	0-24" 2.05 mmho/cm					6-24" 8.0							

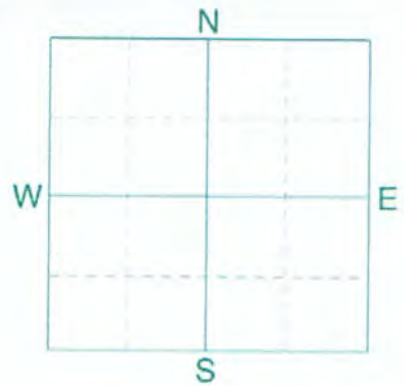
Crop 1: Crop Removal: P2O5 = 28 K2O = 28 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.  
 Crop 2: Crop Removal: P2O5 = 35 K2O = 35 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.  
 Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Crop Removal: P2O5 = 42 K2O = 42 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 **211**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY **3**  
 TWP **1** RANGE  
 SECTION **19** QTR **NW** ACRES **160**  
 PREV. CROP **Beans-Edible**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB R6W 4A5**

REF # **14020665** BOX # **0**  
 LAB # **NW56692**

Date Sampled **09/15/2014**

Date Received **09/16/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		VLow	Low	Med	High	Wheat-Spring		Wheat-Spring		Wheat-Spring	
Nitrate	0-6" 20 lb/ac	*****				YIELD GOAL		YIELD GOAL		YIELD GOAL	
	6-24" 24 lb/ac					50 BU		60 BU		65 BU	
	0-24" 44 lb/ac					SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
						Broadcast		Broadcast		Band	
Olsen Phosphorus	15 ppm					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Potassium	272 ppm					N	76	N	103	N	117
Chloride						P <sub>2</sub> O <sub>5</sub>	33 Broadcast	P <sub>2</sub> O <sub>5</sub>	39 Broadcast	P <sub>2</sub> O <sub>5</sub>	23 Band *
Sulfur	0-6" 120 +lb/ac 6-24" 360 +lb/ac					K <sub>2</sub> O	0	K <sub>2</sub> O	0	K <sub>2</sub> O	10 Band (Starter)*
Boron						Cl		Cl		Cl	
Zinc	3.40 ppm					S	0	S	0	S	0
Iron						B		B		B	
Manganese						Zn	0	Zn	0	Zn	0
Copper	1.63 ppm					Fe		Fe		Fe	
Magnesium						Mn		Mn		Mn	
Calcium						Cu	0	Cu	0	Cu	0
Sodium						Mg		Mg		Mg	
Org.Matter	4.9 %					Lime		Lime		Lime	
Carbonate(CCE)	1.5 %					Soil pH		% Base Saturation (Typical Range)			
Sol. Salts	0-6" 1.12 mmho/cm					Buffer pH		Cation Exchange Capacity	% Ca	% Mg	% K
	6-24" 1.98 mmho/cm								% Na	% H	
						0-6" 7.6					
						6-24" 8.3					

Crop 1: Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 31 K2O = 19 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 41 K2O = 24 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

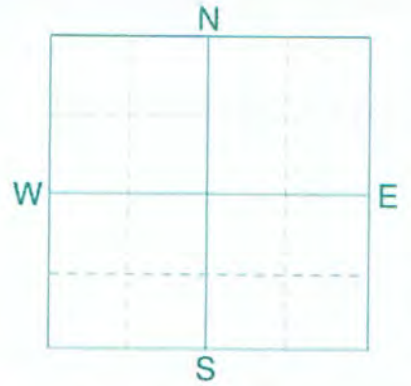




Soil Analysis by Agvise Laboratories  
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 Northwood: (701) 587-6010  
 Benson: (320) 843-4109

### SOIL TEST REPORT

FIELD ID **212**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY **3**  
 TWP **1** RANGE  
 SECTION **19** QTR **NE** ACRES **160**  
 PREV. CROP **Beans-Edible**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB** **R6W 4A5**

REF # **14020664** BOX # **0**  
 LAB # **NW56695**

Date Sampled **09/15/2014**

Date Received **09/16/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		VLow	Low	Med	High						
Nitrate	0-6"					Corn-Grain		Corn-Grain		Corn-Grain	
	6-24"					YIELD GOAL		YIELD GOAL		YIELD GOAL	
						120 BU		140 BU		150 BU	
	0-24"					SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
						Broadcast		Broadcast		Band	
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Phosphorus	Olsen					N	71	N	95	N	107
Potassium						P <sub>2</sub> O <sub>5</sub>	75 Broadcast	P <sub>2</sub> O <sub>5</sub>	88 Broadcast	P <sub>2</sub> O <sub>5</sub>	49 Band *
Chloride						K <sub>2</sub> O	0	K <sub>2</sub> O	0	K <sub>2</sub> O	10 Band (2x2) *
Sulfur	0-6"					Cl		Cl		Cl	
	6-24"					S	0	S	0	S	0
Boron						B		B		B	
Zinc						Zn	3 Broadcast	Zn	3 Broadcast	Zn	0
Iron						Fe		Fe		Fe	
Manganese						Mn		Mn		Mn	
Copper						Cu	0	Cu	0	Cu	0
Magnesium						Mg		Mg		Mg	
Calcium						Lime		Lime		Lime	
Sodium						Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)	
Org.Matter						Buffer pH				% Ca	% Mg
Carbonate(CCE)										% K	% Na
										% H	
	0-6"					0-6"	7.4				
Sol. Salts	6-24"					6-24"	8.0				

Crop 1: Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 48 K2O = 32 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 56 K2O = 38 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

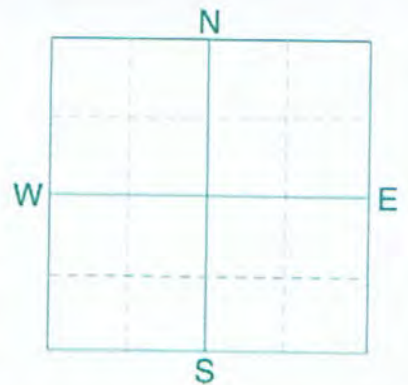
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 60 K2O = 41 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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### SOIL TEST REPORT

FIELD ID **213**  
 SAMPLE ID **Z1-DARK GREEN**  
 FIELD NAME  
 COUNTY **2**  
 TWP **1** RANGE  
 SECTION **19** QTR **SW** ACRES **80**  
 PREV. CROP **Corn-Grain**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB** **R6W 4A5**

REF # **16953096** BOX # **0**  
 LAB # **NW137626**

Date Sampled **10/23/2014**

Date Received **10/24/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		VLow	Low	Med	High	Wheat-Spring		Wheat-Spring		Wheat-Spring			
Nitrate	0-6" <b>19 lb/ac</b>	*****				YIELD GOAL		YIELD GOAL		YIELD GOAL			
	0-24" <b>24 lb/ac</b>					50 BU	60 BU	65 BU					
SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		Broadcast		Broadcast		Band			
Olsen Phosphorus	<b>8 ppm</b>	*****				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Potassium	<b>218 ppm</b>	*****				N <b>111</b>		N <b>138</b>		N <b>152</b>			
Chloride						P <sub>2</sub> O <sub>5</sub> <b>57</b>	<b>Broadcast</b>	P <sub>2</sub> O <sub>5</sub> <b>68</b>	<b>Broadcast</b>	P <sub>2</sub> O <sub>5</sub> <b>38</b>	<b>Band *</b>		
Sulfur	0-6" <b>120 +lb/ac</b> 0-24" <b>480 +lb/ac</b>					K <sub>2</sub> O <b>0</b>		K <sub>2</sub> O <b>0</b>		K <sub>2</sub> O <b>10</b>	<b>Band (Starter)*</b>		
Boron	<b>2.0 ppm</b>					Cl		Cl		Cl			
Zinc	<b>1.26 ppm</b>					S <b>0</b>		S <b>0</b>		S <b>0</b>			
Iron	<b>16.0 ppm</b>					B <b>0</b>		B <b>0</b>		B <b>0</b>			
Manganese	<b>3.3 ppm</b>					Zn <b>0</b>		Zn <b>0</b>		Zn <b>0</b>			
Copper	<b>1.19 ppm</b>					Fe <b>0</b>		Fe <b>0</b>		Fe <b>0</b>			
Magnesium	<b>686 ppm</b>					Mn <b>0</b>		Mn <b>0</b>		Mn <b>0</b>			
Calcium	<b>6150 ppm</b>					Cu <b>0</b>		Cu <b>0</b>		Cu <b>0</b>			
Sodium	<b>52 ppm</b>					Mg <b>0</b>		Mg <b>0</b>		Mg <b>0</b>			
Org.Matter	<b>5.1 %</b>					Lime		Lime		Lime			
Carbonate(CCE)	<b>1.1 %</b>					Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
Sol. Salts	0-6" <b>0.73 mmho/cm</b> 0-24" <b>1.6 mmho/cm</b>					0-6" <b>8.0</b>		<b>37.3 meq</b>	% Ca (65-75)	% Mg (15-20)	% K (1-7)	% Na (0-5)	% H (0-5)
						6-24" <b>8.0</b>			<b>82.5</b>	<b>15.3</b>	<b>1.5</b>	<b>0.6</b>	

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

Crop 1: Crop Removal: P2O5 = 31 K2O = 19 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: Crop Removal: P2O5 = 38 K2O = 23 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

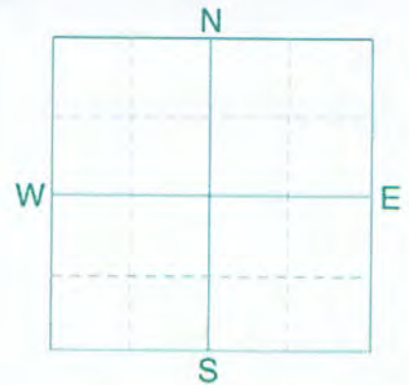
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Crop Removal: P2O5 = 41 K2O = 24 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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

### SOIL TEST REPORT

FIELD ID **214**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY **3**  
 TWP **1** RANGE  
 SECTION **30** QTRSE ACRES **40**  
 PREV. CROP **Beans-Edible**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB R6W 4A5**

REF # **14020666** BOX # **0**  
 LAB # **NW56688**

Date Sampled **09/15/2014**

Date Received **09/16/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		VLow	Low	Med	High	Corn-Grain		Corn-Grain		Corn-Grain	
Nitrate	0-6" 34 lb/ac					YIELD GOAL		YIELD GOAL		YIELD GOAL	
	0-24" 64 lb/ac					120 BU		140 BU		150 BU	
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
						Broadcast		Broadcast		Band	
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Olsen Phosphorus	12 ppm					N	50	N	74	N	86
Potassium	243 ppm					P <sub>2</sub> O <sub>5</sub>	62 Broadcast	P <sub>2</sub> O <sub>5</sub>	73 Broadcast	P <sub>2</sub> O <sub>5</sub>	37 Band *
Chloride						K <sub>2</sub> O	0	K <sub>2</sub> O	0	K <sub>2</sub> O	10 Band (2x2) *
Sulfur	0-6" 120 +lb/ac 0-24" 480 +lb/ac					Cl		Cl		Cl	
Baron						S	0	S	0	S	0
Zinc	1.24 ppm					B		B		B	
Iron						Zn	0	Zn	0	Zn	0
Manganese						Fe		Fe		Fe	
Copper	1.46 ppm					Mn		Mn		Mn	
Magnesium						Cu	0	Cu	0	Cu	0
Calcium						Mg		Mg		Mg	
Sodium						Lime		Lime		Lime	
Org.Matter	4.5 %					Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)	
Carbonate(CCE)	1.3 %					Buffer pH		% Ca	% Mg	% K	% Na
Sol. Salts	0-6" 0.7 mmho/cm 0-24" 1.23 mmho/cm							% H			

Crop 1: Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 48 K2O = 32 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 56 K2O = 38 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

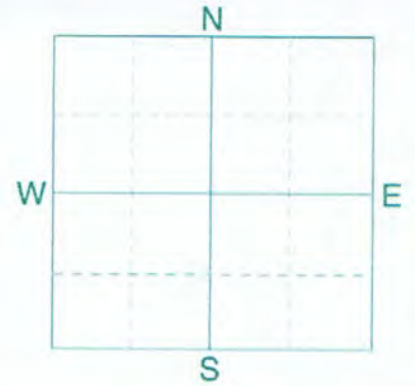
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Nitrogen is credited 30 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Crop Removal: P2O5 = 60 K2O = 41 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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### SOIL TEST REPORT

FIELD ID **215**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY **3**  
 TWP **1** RANGE  
 SECTION **30** QTR **NW** ACRES **83**  
 PREV. CROP **Corn-Grain**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB R6W 4A5**

REF # **14047009** BOX # **0**  
 LAB # **NW137616**

Date Sampled **10/23/2014**

Date Received **10/24/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		VLow	Low	Med	High						
Nitrate	0-6"	39 lb/ac				Soybeans		Soybeans		Soybeans	
	6-24"	45 lb/ac				YIELD GOAL		YIELD GOAL		YIELD GOAL	
	0-24"	84 lb/ac				40 BU		50 BU		60 BU	
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
Phosphorus	Olsen	16 ppm				Broadcast		Broadcast		Band	
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Potassium		367 ppm				N ***		N ***		N ***	
Chloride						P <sub>2</sub> O <sub>5</sub>	29 Broadcast	P <sub>2</sub> O <sub>5</sub>	36 Broadcast	P <sub>2</sub> O <sub>5</sub>	29 Band *
						K <sub>2</sub> O	0	K <sub>2</sub> O	0	K <sub>2</sub> O	0
Sulfur	0-6"	26 lb/ac				Cl		Cl		Cl	
	6-24"	360 +lb/ac				S	10 Broadcast (Trial)	S	10 Broadcast (Trial)	S	5 Band (Trial)
Boron					B		B		B		
Zinc		1.67 ppm				Zn	0	Zn	0	Zn	0
Iron						Fe		Fe		Fe	
Manganese						Mn		Mn		Mn	
Copper		3.06 ppm				Cu	0	Cu	0	Cu	0
Magnesium						Mg		Mg		Mg	
Calcium						Lime		Lime		Lime	
Sodium											
Org.Matter		5.4 %				Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)	
Carbonate(CCE)		4.3 %				Buffer pH			% Ca	% Mg	% K
Sol. Salts	0-6"	0.54 mmho/cm							% Na	% H	
	6-24"	1.25 mmho/cm				0-6" 7.9					
						6-24" 8.1					

Crop 1: The risk of the development of iron chlorosis on soybeans on this field is high based on the salt and carbonate levels. Crop Removal: P2O5 = 35 K2O = 60 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

Crop 2: The risk of the development of iron chlorosis on soybeans on this field is high based on the salt and carbonate levels. Crop Removal: P2O5 = 44 K2O = 75 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

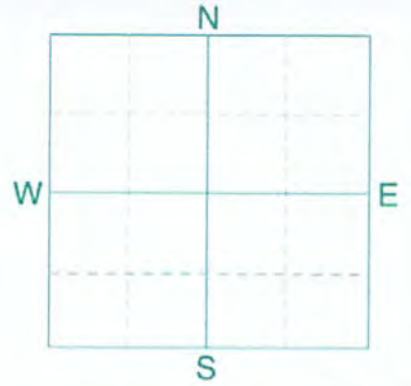
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* The risk of the development of iron chlorosis on soybeans on this field is high based on the salt and carbonate levels. Crop Removal: P2O5 = 53 K2O = 90 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



Soil Analysis by Agvise Laboratories  
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 Benson: (320) 843-4109

### SOIL TEST REPORT

FIELD ID **216**  
 SAMPLE ID \_\_\_\_\_  
 FIELD NAME \_\_\_\_\_  
 COUNTY **3**  
 TWP **2** RANGE \_\_\_\_\_  
 SECTION **6** QTR **SE** ACRES **55**  
 PREV. CROP **Corn-Grain**



SUBMITTED FOR:  
**BLUMENGART COLONY**

SUBMITTED BY: **KR3239**  
**KR CROP CHECK LIMITED**  
**12085 RD 23 W (DICKE**  
**BOX 240**  
**WINKLER, MB R6W 4A5**

REF # **14047006** BOX # **0**  
 LAB # **NW137618**

Date Sampled **10/23/2014**

Date Received **10/24/2014**

Date Reported **11/25/2014**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High									
Nitrate	0-6" 56 lb/ac					Beans-Edible		Beans-Edible		Beans-Edible				
	6-24" 36 lb/ac					YIELD GOAL		YIELD GOAL		YIELD GOAL				
	0-24" 92 lb/ac					2000 LBS		2500 LBS		3000 LBS				
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
Phosphorus	Olsen 15 ppm					Broadcast		Broadcast		Band				
Potassium	377 ppm					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Chloride						N	8	N	33	N	58			
Sulfur	0-6" 34 lb/ac					P <sub>2</sub> O <sub>5</sub>	38 Broadcast	P <sub>2</sub> O <sub>5</sub>	48 Broadcast	P <sub>2</sub> O <sub>5</sub>	35 Band *			
Baron	6-24" 360 +lb/ac					K <sub>2</sub> O	0	K <sub>2</sub> O	0	K <sub>2</sub> O	0			
Zinc	1.35 ppm					Cl		Cl		Cl				
Iron						S	0	S	0	S	0			
Manganese						B		B		B				
Copper	2.41 ppm					Zn	2 Broadcast	Zn	2 Broadcast	Zn	2 Band (Trial)			
Magnesium						Fe		Fe		Fe				
Calcium						Mn		Mn		Mn				
Sodium						Cu	0	Cu	0	Cu	0			
Org.Matter	4.4 %					Mg		Mg		Mg				
Carbonate(CCE)	1.9 %					Lime		Lime		Lime				
Sol. Salts	0-6" 0.67 mmho/cm					Soil pH	Buffer pH	Cation Exchange Capacity		% Base Saturation (Typical Range)				
	6-24" 1.4 mmho/cm					0-6" 7.7				% Ca	% Mg	% K	% Na	% H
						6-24" 8.0								

Crop 1: Crop Removal: P2O5 = 28 K2O = 28 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.  
 Crop 2: Crop Removal: P2O5 = 35 K2O = 35 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.  
 Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Crop Removal: P2O5 = 42 K2O = 42 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

In "*certain areas*" it is Manitoba Conservation and Water Stewardship policy to consider a manure storage facility permit if the operation shows it has access to sufficient suitable land to apply manure at a rate equivalent to one times the crop removal rate of phosphorus.

Is the livestock operation located in "*certain areas*"?

yes  no

In areas which are not considered to be "*certain areas*", Manitoba Conservation and Water Stewardship may issue a manure storage facility permit, if the operation shows it has access to sufficient suitable land to apply manure at a rate equivalent to two times the crop removal rate of phosphorus.

For more information on obtaining a manure storage facility permit, please contact Manitoba Conservation and Water Stewardship, Environmental Approvals branch at (204) 945-5081.

Use the [Land Base Calculator](#) to calculate the minimum area required for manure application.

<b>Total minimum area required for manure application at two times crop removal, for operations outside of Hanover and La Broquerie</b>	<b>3028 acres</b>
<b>Total minimum area required for manure application at one times crop removal, for operations within Hanover and La Broquerie AND For the long-term sustainability of operations outside of Hanover and La Broquerie</b>	<b>6057 acres</b>

For more information on completing land base calculations, call Manitoba Agriculture, Food and Rural Initiatives (MAFRI) at (204) 945-3869 in Winnipeg.

Land Base Calculator attached

#### **Land Base Requirement Summary**

By comparing the land **available** for manure application with the land **required** for manure application, state whether sufficient suitable land for manure application:

- has not been identified
- has been identified for two times the crop removal rate of phosphorus (for operations outside of the RMs of Hanover or La Broquerie)
- has been identified for one times the crop removal rate of phosphorus (for operations within the RMs of Hanover and La Broquerie)





Pig/Operation Type	Storage Type	Volatilization	Animal Numbers	Days per Cycle (days)	Number of Cycles per Year	N Excreted Per Herd Adjusted for Storage N Loss (lb/yr/herd)	P2O5 Excreted Per Herd Per Year (lb/yr/herd)
Gestating Sow	Liquid Uncovered Earthen	30%	0	365	1	0	0
Nursing Sow	Liquid Uncovered Earthen	30%	0	365	1	0	0
Gilts	Liquid Uncovered Earthen	30%	0	365	1	0	0
Boars	Liquid Uncovered Earthen	30%	0	365	1	0	0
Weanlings	Liquid Uncovered Steel/Concrete	10%	2270	57	6.4	14066	6970
Growers/Finishers	Liquid Uncovered Steel/Concrete	10%	4430	125	2.9	104463	51236
Sows, farrow to 5 kg	Liquid Uncovered Steel/Concrete	10%	600	365	1	21865	19091
Sows, farrow to 23 kg	Liquid Uncovered Earthen	30%	0	365	1	0	0
Sows, farrow to finish	Liquid Uncovered Earthen	30%	0	365	1	0	0

Species / Commodity	Type of Operation	Storage Type	Volatilization	Bird Places	Weight In (lb)	Weight Out (lb)	Average Weight (lb)	Days on Feed	Cycles per Year	N Excreted Adjusted for N Loss lb/flock/yr	P2O5 Excreted lb/flock/yr
Chickens	Broilers	Field Storage	40%	0	0.05	4.36	2.20	33	7.4	0	0
Chickens	Broiler Breeder Pullets	Field Storage	40%	0	0.05	4.40	2.23	140	2	0	0
Chickens	Broiler Breeder Hens	Field Storage	40%	0	4.40	8.67	6.53	273	1	0	0
Eggs	Layer Pullets	Solid Stock Pile	40%	9500	0.05	3.04	1.54	133	2	2573	2947
Eggs	Layer Hens	Solid Stock Pile	40%	18500	3.03	3.74	3.38	355	1	15138	17333
Eggs	Breeder Pullets	Liquid Covered	10%	0	0.05	3.04	1.54	133	2	0	0
Eggs	Breeder Hens	Liquid Covered	10%	0	3.03	3.74	3.38	351	1	0	0
Turkey	Broiler Hens (0-9 wks)	Field Storage	40%	30000	0.06	12.39	6.22	63	4	20324	21547
Turkey	Hens (0-11 wks)	Field Storage	40%	0	0.06	16.46	8.26	77	3.5	0	0
Turkey	Heavy Hens (0-14 wks)	Field Storage	40%	51800	0.05	21.19	10.62	98	2.8108	65481	69422
Turkey	Light Toms (0-12 wks)	Field Storage	40%	0	0.05	21.19	10.62	84	3	0	0
Turkey	Toms (0-13 wks)	Field Storage	40%	0	0.06	26.84	13.45	91	3	0	0
Turkey	Heavy Toms (0-15 wks)	Field Storage	40%	0	0.06	30.29	15.18	105	2.5	0	0
Turkey	Breeding Hen Growers (0-30 wks)	Field Storage	40%	0	0.06	26.95	13.51	210	1	0	0
Turkey	Breeding Hens (30-60 wks)	Field Storage	40%	0	26.95	24.95	26.95	210	1	0	0
Turkey	Breeding Tom Grower (0-18 wks)	Field Storage	40%	0	0.06	33.92	16.99	126	2	0	0
Turkey	Breeding Tom Grower (0-30 wks)	Field Storage	40%	0	0.06	50.89	25.47	210	1	0	0
Turkey	Breeding Tom (30-60 wks)	Field Storage	40%	0	50.89	61.86	56.38	210	1	0	0

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		bu/ac		-	-	-
Corn Grain	0.44	0.97	1.53	lb/bu	106.3	bu/ac	2352	110008	242517	382527
Corn Silage	12.7	31.2	31.2	lb/ton		tons/ac		-	-	-
Dry Edible Beans	1.39	4.17		lb/cwt	12	cwt/ac	1830	30524	91573	-
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	187.48	cwt/ac	380	6412	22798	40608
Rye	0.45	1.06	1.67	lb/bu		bu/ac		-	-	-
Soybeans	0.84	3.87	5.2	lb/bu	34.6	bu/ac	1000	29064	133902	179920
Sunflower	1.1	2.8		lb/cwt		cwt/ac		-	-	-
Wheat - Spring	0.59	1.5	2.11	lb/bu	51.7	bu/ac	1480	45144	114774	161449
Wheat - Winter	0.51	1.04	1.35	lb/bu		bu/ac		-	-	-
<b>Total</b>							<b>7042</b>	<b>221152.4</b>	<b>605563.8</b>	<b>764503.9</b>
<b>Removal (lb/ac)</b>								<b>31</b>	<b>86</b>	<b>109</b>

Species	Animal Category/Operation type	N (lb/year)	P2O5 (lb/year)
<b>Pigs</b>	Gestating Sow	0	0
	Nursing Sow	0	0
	Gilts	0	0
	Boars	0	0
	Sows, farrow to 5 kg	21865	19091
	Sows, farrow to 23 kg	0	0
	Sows, farrow to finish	0	0
	Weanlings	14066	6970
	Growers/finishers	104463	51236
<b>Beef</b>	Cows	0	0
	Bred Heifers	0	0
	Calves	0	0
	Bulls	0	0
	Cows, plus associated livestock	0	0
	Feedlot Cattle - grain based diet	0	0
	Pasture Cattle	0	0
	Backgrounders	0	0
<b>Dairy</b>	Lactating cow	1058	729
	Dry cow	0	0
	Calf, 0-3 months	0	0
	Calf, 4-13 months	1036	555
	Replacements, >13 months	948	381
Mature Cows, plus assoc livestock	0	0	
<b>Sheep</b>	Ewes	0	0
	Replacement Ewes	0	0
	Rams	0	0
	Lambs	0	0
	Ewes, plus assoc livestock	0	0
	Feeder	0	0
<b>Chickens</b>	Broilers	0	0
	Broiler Breeder Pullets	0	0
	Broiler Breeder Hens	0	0
<b>Layers</b>	Layer Pullets	2573	2947
	Layer Hens	15138	17333
	Breeder Pullets	0	0
	Breeder Hens	0	0
<b>Turkeys</b>	Broiler Hens (0-9 wks)	20324	21547
	Hens (0-11 wks)	0	0
	Heavy Hens (0-14 wks)	65481	69422
	Light Toms (0-12 wks)	0	0
	Toms (0-13 wks)	0	0
	Heavy Toms (0-15 wks)	0	0
	Breeding Hen Growers (0-30 wks)	0	0
	Breeding Hens (30-60 wks)	0	0
	Breeding Tom Grower (0-18 wks)	0	0
	Breeding Tom Grower (0-30 wks)	0	0
	Breeding Tom (30-60 wks)	0	0
<b>Total</b>		<b>246954</b>	<b>190212</b>

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

<b>Nutrients Excreted</b>		<b>lbs</b>
Nitrogen		246954
P2O5		190212
<b>Crop Nutrient Use</b>		<b>lb/ac</b>
Nitrogen Uptake		108.6
P2O5 Removal		31.4
<b>Land Base Requirements</b>		<b>acres</b>
Acres Available		7042
Acres for Nitrogen Uptake		2275
Acres for 2 x P2O5 Removal		3028
Acres for 1 x P2O5 Removal		6057

CROP ROTATION TABLE

A	B	C	D	E
Expected Crops in the Rotation	Acreage	Historical Yield	Units	Source of Yield Information
Corn grain	2352	106.3	bu/ac	MMMP crop variety yields average
Dry edible beans	1830	1211	lbs/ac	MMMP crop variety yields average
Potatoes	380	187.5	cwt/ac	MMMP crop variety yields average
Soybeans	1000	34.6	bu/ac	MMMP crop variety yields average
Spring wheat	1480	51.7	bu/ac	MMMP crop variety yields average
<b>Total Net Acreage for Manure Application</b>	<b>7042 acres</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.



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### MMPP Variety Yield Data Browser

[\(Variety Query Help\)](#)





#### Search Summary

Your selected search:

Region(s) Selected: RHINELAND

Crop(s) Selected: GRAIN CORN

Variety(s) Selected: All

Period Selected: 2003 to 2013

---

This search returned 296 records from the MASC database, summarized below:

Sum of Farm Varieties:	2,259 farms
Total Acres:	296,519 acres
Yield per Acre:	106.3 Bushels / acre (2.699 tonnes / acre)

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## MMPP Variety Yield Data Browser

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### Search Summary

Your selected search:

Region(s) Selected: RHINELAND

Crop(s) Selected: WHITE PEA BEANS

Variety(s) Selected: All

Period Selected: 2003 to 2013

---

This search returned 78 records from the MASC database, summarized below:

Sum of Farm Varieties:	405 farms
Total Acres:	43,499 acres
Yield per Acre:	1,211 Pounds / acre (0.549 tonnes / acre)

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### MMPP Variety Yield Data Browser

[\(Variety Query Help\)](#)





#### Search Summary

Your selected search:

Region(s) Selected: RHINELAND

Crop(s) Selected: PROC POTATOES-DRYLND

Variety(s) Selected: All

Period Selected: 2003 to 2013

---

This search returned 46 records from the MASC database, summarized below:

Sum of Farm Varieties:	159 farms
Total Acres:	17,382 acres
Yield per Acre:	187.48 CWT / acre (8.504 tonnes / acre)

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## MMPP Variety Yield Data Browser

[\(Variety Query Help\)](#)

### Search Summary

Your selected search:

Region(s) Selected: RHINELAND

Crop(s) Selected: SOYBEANS

Variety(s) Selected: All

Period Selected: 2003 to 2013

---

This search returned 295 records from the MASC database, summarized below:

Sum of Farm Varieties:	1,715 farms
Total Acres:	244,643 acres
Yield per Acre:	34.6 Bushels / acre (0.943 tonnes / acre)

[View Raw Data](#)





Benchmarks for Better Farm Management

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### Search

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### MMPP Variety Yield Data Browser

[\(Variety Query Help\)](#)





#### Search Summary

Your selected search:

Region(s) Selected: RHINELAND

Crop(s) Selected: RED SPRING WHEAT

Variety(s) Selected: All

Period Selected: 2003 to 2013

---

This search returned 96 records from the MASC database, summarized below:

Sum of Farm Varieties:	2,301 farms
Total Acres:	418,966 acres
Yield per Acre:	51.7 Bushels / acre (1.407 tonnes / acre)

[View Raw Data](#)

**Long-Term Environmental Sustainability**

The Government of Manitoba has included phosphorus as a nutrient by which applications of manure, synthetic fertilizer and municipal waste sludge to agricultural lands may be limited.

Over the short-term for fields with low phosphorus, regulations allow manure to be applied to meet the nitrogen requirements of the crop. This often results in over-application of phosphorus and a build-up of phosphorus in soils. When soil test phosphorus levels reach 60 ppm Olsen P, manure application rates must consider how much phosphorus will be removed in the harvested portion of the crop. At 60 to 119 ppm Olsen P, the amount of phosphorus that can be applied cannot exceed twice (two times) what the crop can remove in order to slow the build-up of soil phosphorus. Once soil test phosphorus levels reach 120 ppm Olsen P, applications of phosphorus are restricted to no more than what the crop can remove (one times) in order to stop further soil test phosphorus build-up. At 180 ppm Olsen P, no additional phosphorus may be applied.

It should be noted that soil-test phosphorus levels of 60 ppm Olsen P or greater are agronomically very high and at these levels most crops will not benefit from additional phosphorus beyond starter phosphorus. As phosphorus levels build up in soils, the concentration of phosphorus in runoff increases.

Therefore, to remain environmentally sustainable over a long-term planning horizon of 25 years or more, phosphorus applications from applied manure and other nutrient sources such as commercial fertilizers must be balanced with crop removal to avoid further build-up in soils. Consequently, sufficient land must be available in relatively close proximity to the operation to balance phosphorus applications with crop phosphorus removals (one times) so that manure treatment and export of phosphorus from the region is not required.

I acknowledge that up to 6 057 acres \_\_\_\_\_ acres/hectares (one times crop removal from table above) may be required for the long term environmental sustainability of the operation.

### 10.0 Mortalities (Dead Animal) Disposal

The [Livestock Manure and Mortalities Management Regulation](#) sets requirements for the use, management and storage of livestock mortalities in agricultural operations. It helps ensure livestock mortalities are handled in an environmentally sound manner. Winter application of composted mortalities is prohibited.

Type of disposal:  rendering  
 composting  
 incineration (in approved incinerator only)

#### Mass Mortalities

A plan for [mass mortalities](#) is in place.

What steps will be taken in the case of mass mortalities?

**Hogs and poultry would be sent for rendering at Rothsay, in keeping with current practices. Dairy and beef cattle mortalities are/would be composted. In the event of mass mortalities, deadstock will be disposed as instructed by Manitoba Conservation's environmental officer.**

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

For assistance contact your [Community and Regional Planning Regional Office](#).

#### Development Plan and Zoning Bylaw

The Planning District or Municipal Development Plan and Zoning By-law adopted under [The Planning Act](#), set policy and regulations for the use and development of land. A proposed livestock operation must comply with the requirements of this bylaw. In the absence of a By-law, the [Provincial Planning Regulation](#) under [The Planning Act](#) applies.

### Development Plan

Every Development Plan must contain a livestock operation policy (LOP) that identifies areas where new or expanded livestock operations may be allowed. It must also set general standards for the location and setback of livestock operations. Identifying the Development Plan's land use designation and policies (for the planning district or municipality that affect the site) will help confirm the project site's compliance. The Development Plan designations for the spread fields (if something other than agricultural) will indicate the potential loss of the fields in the future due to possible development.

Name of Planning District	<b>RM of Rhineland</b>
Development Plan by-law number	<b>Zoning by-law 3-2011</b>
Land use designation of project site	AG - Agricultural General
Livestock operation policies – quote supportive policy numbers	2.3.10, 2.3.20, 2.3.21
Other Development Plan policies – quote supportive policy numbers	<b>Zoning Map 2000/10</b>
Non-supportive Development Plan policies	Subject to Conditional Use

The Development Plan livestock operation policies support the size and location of the proposed operation.

The Development Plan designations support the long term use of the proposed spread fields.

### Zoning By-law

Identifying the zoning for the project site, the proposed spread fields and the related zoning provisions, helps determine the project's compliance and the minimum separation distances needed between the operation and property boundaries and other natural features and land uses. The zoning bylaw contains specific regulations that govern location and setback of livestock operations.

What are the minimum project site requirements stated in the Zoning By-law?

	Project site dimensions	Minimum zoning bylaw site requirements
Minimum site area		<b>none</b>
Minimum site width	<b>2640 ft</b>	<b>300 ft</b>
Minimum front yard	<b>2640 ft</b>	<b>125 ft</b>
Minimum side and rear yard	<b>2640 ft</b>	<b>25 ft</b>

If any project (front, side or rear) yard site dimensions are less than the Zoning By-law minimum, a Variation Order from the Municipality will be required.

**Separation Distances (Zoning Bylaw or Provincial Planning Regulation) ?**

Using the proposed size of the operation (see [Animal Units Calculation Table](#)) and the type of animal housing and manure storage facility, complete the following table.

Indicate the distance from:

- a. earthen manure storage facility or b. feedlot and  
c. animal confinement facility or d. non-earthen manure storage facility...

...to the following land use features (if applicable)	Indicate minimum separation distance required in the zoning bylaw or Provincial Planning Regulation  (Check appropriate box(es))		If land use feature is less than the minimum separation distance	
	<input type="checkbox"/> a. <input type="checkbox"/> b.	<input checked="" type="checkbox"/> c. <input checked="" type="checkbox"/> d.	Provide actual distance	Provide location or name of feature (e.g. Red River)
Residence/dwelling		1,148 ft	5 410 ft	Neighbour on NW14-2-3W
Designated area (non-agricultural) ?		6,135 ft	9 500 ft	Town of Gnadenthal
Surface water		n/a	180 ft	SELF CONTAINED POND AREA
Surface watercourse		n/a	566 ft	MUNICIPAL DRAIN TO SOUTH EAST
Crown land		n/a	NOT IN IMMEDIATE AREA	
Wildlife Management Area		n/a	NOT IN IMMEDIATE AREA	
Livestock operation		n/a	> 1 MILE	NW14-02-03W
Other significant features/land uses		50 ft 1 320 ft	164 ft 10 miles	from property lines from the town of Altona



If Crown Lands are located within one mile, provide coding. Information can be obtained from the Interdepartmental Operations Crown Lands Plans through the [Manitoba Legislative Library](#) or contact Manitoba Conservation and Water Stewardship at (204) 619-2230.

If undesignated Crown Lands will be used for manure spreading purposes, including the laying of pipe or clearing activity, and use will require a Crown Lands General Permit disposition for the use and access of the subject Crown Lands Parcel(s). ?

In cases where minimum separation distances are not stated in the Zoning By-law or Development Plan, the minimum separation distances in the [Provincial Planning Regulation](#) apply.

Note: If any separation distance is less than the zoning by-law minimum, a Variation Order will be required from the Municipality.

#### Setback Distances (Livestock Manure and Mortalities Management Regulation)

Using the following table to indicate the distance from:

Feature	Structure	Minimum setback distance required	Provide actual distance (m)	Provide location or name of feature (e.g. Red River)
Surface watercourse, sinkhole, spring, or well	Manure storage facility	100 m	n/a	FIELD STORAGE
	Field storage	100 m	>100 m	Locations change annually
	Composting site	100 m	158 m (519 FT)	Municipal Drain
	Confined livestock area	100 m	n/a	
Property Line	Manure storage facility	100 m	n/a	Field Storage
	Composting site	100 m	376 m (1233 FT)	WEST PROPERTY LINE.
	Confined livestock area	100 m	n/a	

If any setback distances have not been met, please provide explanation below:

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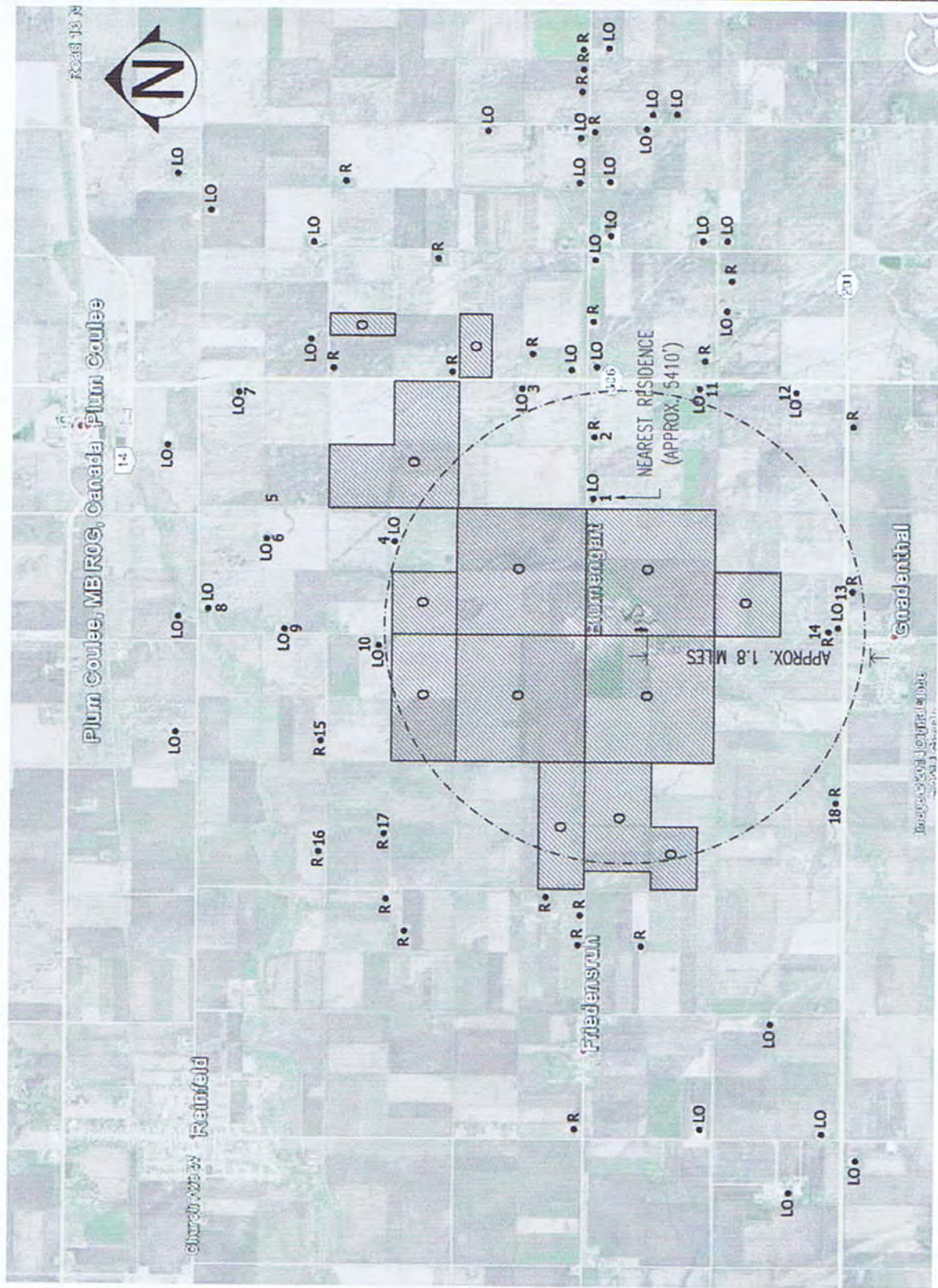
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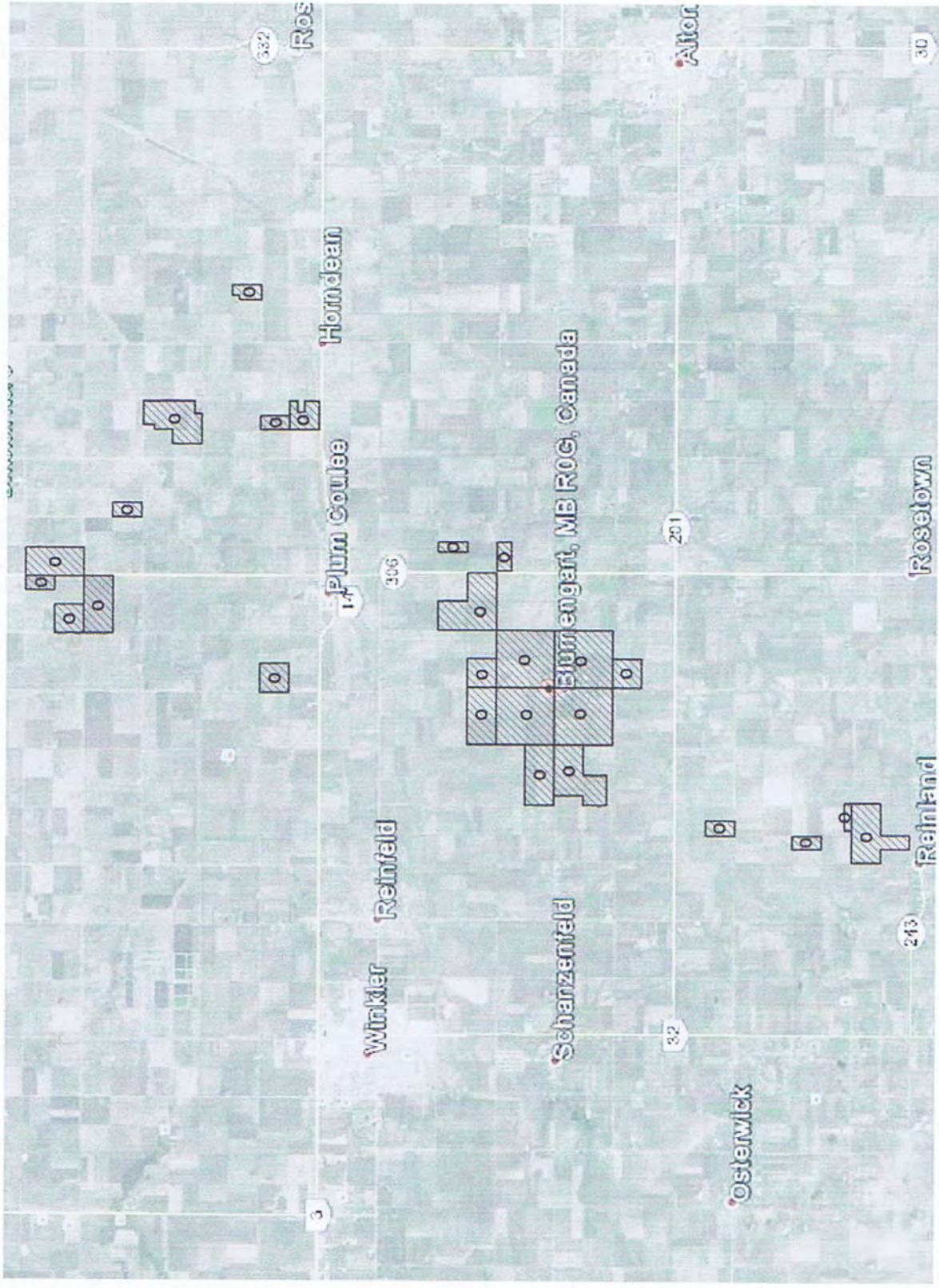
Show: a) location of the project site, location and ownership of spread fields and b) land uses and significant features including dwellings (i) within a 1 mile radius of the project site and (ii) within and adjacent to each spread field on a Land Use & Spread Field Map. (See [Land Use & Spread Field Map Example](#)). ?

1. RESIDENCE/10 BEEF
2. RESIDENCE
3. RESIDENCE/3 HORSES
4. RESIDENCE
5. RESIDENCE/10 SHEEP,  
30 CHICKENS
6. RESIDENCE
7. RESIDENCE
8. RESIDENCE/40 BEEF
9. RESIDENCE
10. RESIDENCE/15 BEEF
11. RESIDENCE/35 DAIRY COWS  
+HEIFERS
12. RESIDENCE
13. RESIDENCE/8 BEEF
14. RESIDENCE
15. RESIDENCE
16. RESIDENCE
17. RESIDENCE
18. RESIDENCE/90 BEEF



- LEGEND:**
- LO - LIVESTOCK OPERATIONS
  - 0 - SPREAD FIELDS (OWNED)
  - L - LEASED/AGREEMENT
  - R - RESIDENCE
  - - 3km NOTIFICATION AREA FOR THE PUBLIC CONDITIONAL USE HEARING

 <p>UNIT 20-1508 BUCKLE ROAD WINNIPEG, MANITOBA R2Z 0P0</p> <p>REG. CORP. NO. 10000 REG. LTR. 100-000</p>		PROJECT NAME <b>BLUMENGART COLONY</b>	BUILDING AREA N/A
SHEET TITLE <b>LAND USE &amp; SPREAD FIELD MAP NW 15-02-03W</b>		DRAWN BY <b>R. FLORES SOUTH-MAN ENGINEERING</b>	
DATE DRAWN <b>OCTOBER 2014</b>		DRAWING SCALE N.T.S.	
THIS DRAWING IS THE PROPERTY OF SOUTH-MAN ENGINEERING, WINNIPEG, MANITOBA, CANADA.		SHEET NUMBER <b>SP-2</b>	



**LEGEND:**  
 0 - SPREAD FIELDS (OWNED)



PROJECT NAME	BLUMENGART COLONY	BUILDING AREA	N/A
SHEET TITLE	SPREAD FIELD MAP NW 15-02-03W	DRAWN BY	P. FERRER SOUTH-MAN ENGINEERING
DATE DRAWN	OCTOBER 2014	DRAWING SCALE	N.T.S.
THIS DRAWING IS THE PROPERTY OF SOUTH-MAN ENGINEERING, WINNIPEG, MANITOBA, CANADA.		SHEET NUMBER	SP-4

## 12.0 Truck Haul Routes and Access Points ?

One consideration with new or expanding livestock operations is the potential impact on existing public roads (municipal and provincial), access and the need for improvements or mitigation. Complete the following table.

Vehicle Type	Estimated Average Number of times per day accessing		Access from PTH/PR onto site will mainly require a Left or Right Hand Turn Please check one				Access onto PTH/PR from site will mainly require a Left or Right Hand Turn Please check one				
	Provincial Trunk Highway (PTH)	Provincial Road (PR)	Provincial Trunk Highway (PTH)		Provincial Road (PR)		Provincial Trunk Highway (PTH)		Provincial Road (PR)		
			LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT	
Truck											
Tractor Trailer	1	1	X			X	X	X			
Other – Specify											

Identify what roads and access points will be used for the proposed operation? (See [Truck Haul Routes and Access Points Map](#) for an example).

For help with mapping, contact your [Community and Regional Planning Regional Office](#).

Truck Haul Routes and Access Points Map attached

## 13.0 Conservation Data Centre Report

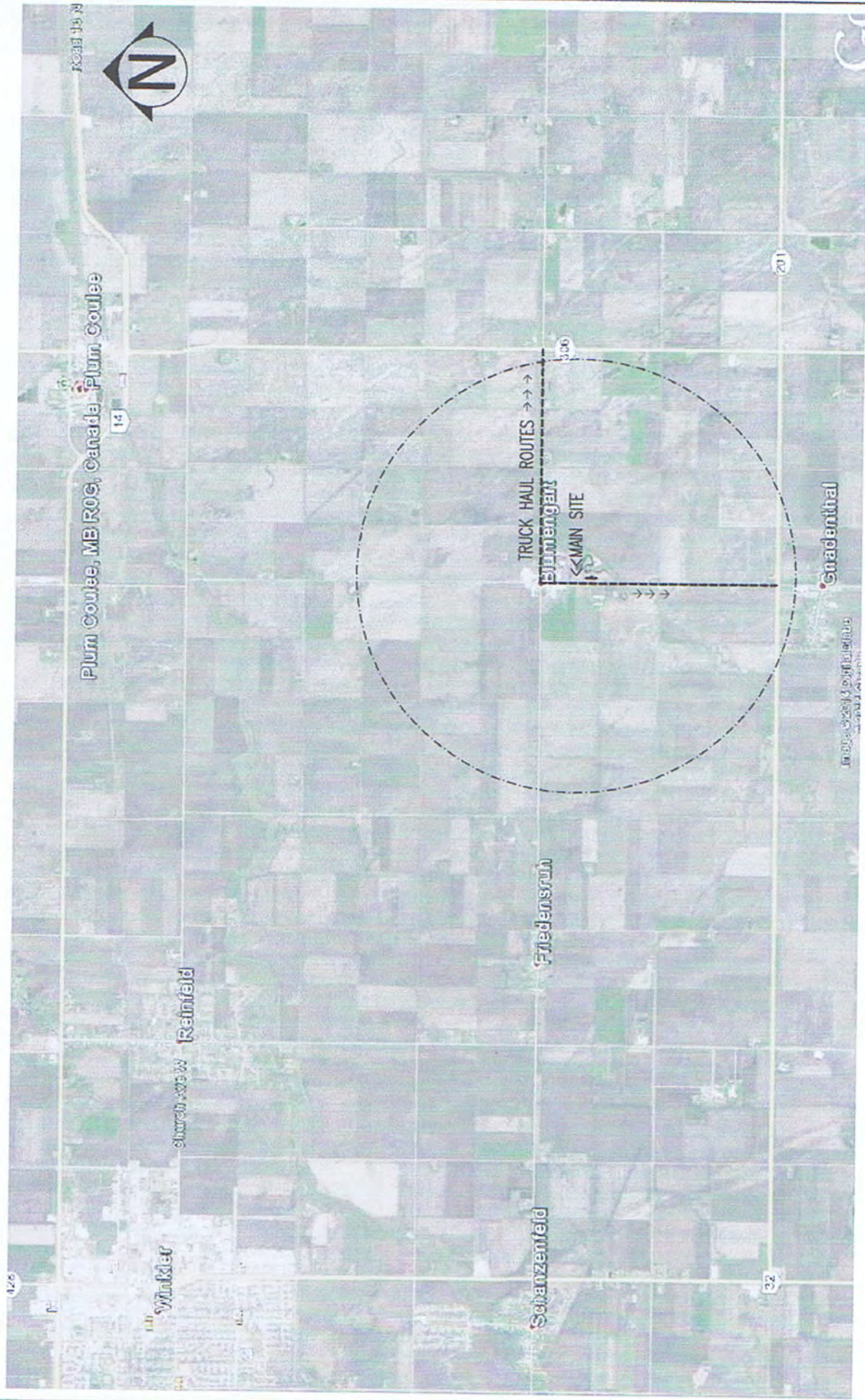
A Conservation Data Centre Report must be requested and the response attached to this site assessment. The request may be submitted electronically at:


[www.gov.mb.ca/conservation/cdc](http://www.gov.mb.ca/conservation/cdc)

Were rare species identified in the Conservation Data Centre Report?

Yes

No



 <p><b>South-Man Engineering</b>  <small>UNIT 15-189 CORRAL ROAD        WINNIPEG, MANITOBA        R2J 0A5</small></p>		<p>PROJECT NAME  <b>BLUMENGART COLONY</b></p>	<p>BUILDING AREA  <b>N/A</b></p>
<p>SHEET TITLE  <b>TRUCK HAUL ROUTE        NW 15-02-03W</b></p>	<p>DRAWN BY  <b>R. FLORES        SOUTH-MAN ENGINEERING</b></p>	<p>DATE DRAWN  <b>OCTOBER 2014</b></p>	<p>DRAWING SCALE  <b>N.T.S.</b></p>
<p>THIS DRAWING IS THE PROPERTY OF SOUTH-MAN ENGINEERING, WINNIPEG, MANITOBA, CANADA.</p>		<p>SHEET NUMBER  <b>SP-3</b></p>	

### 14.0 Supporting Documents

Check off the supporting documents included in this submission:

- Contact Information and Privacy and Publication Notice
- Location Map (shows proposed project within rural municipality)
- Animal Units Calculation Table
- Water Requirement Calculation Table
- Manure Production Calculator Table
- Existing and Proposed Manure Storage Facility Dimensions Tables  
(if applicable)
- Manure Application Field Characteristics Table
- Crop Rotation Table
- Recent manure application field soil sample results (Nitrate- N lb/ac at 0-6 and 6-24  
inch depths, Phosphorus – ppm at 0-6 inch depth)
- Land Base Calculator
- Project Site Plan (proposed operation showing current and proposed structures)
- Land Use and Spread Field Map (location and ownership of operation, spread fields,  
location and distance to non-agricultural uses, development plan designation, zoning  
for project site and spread fields)
- Truck Haul Routes and Access Points Map (with routes and access points on  
municipal/provincial roads and/or provincial trunk highways)
- Response from the Conservation Data Centre
- Other, please specify:

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### 15.0 Declaration

I do hereby verify that the information contained in the Site Assessment and all required Supporting Documents is accurate and complete to my knowledge

Date: Feb 2/2015

Signature: 

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**From:** Friesen, Chris (CWS) <Chris.Friesen@gov.mb.ca>  
**Sent:** Friday, October 31, 2014 2:03 PM  
**Subject:** Expansion of a livestock operation - Blumengart Colony

Sylvio

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

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

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

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

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

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

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

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

-----Original Message-----

**From:**  
**Sent:** October-24-14 9:35 AM  
**To:** Friesen, Chris (CWS)  
**Subject:** WWW Form Submission



Below is the result of your feedback form. It was submitted by WWW Information Request () on Friday, October 24, 2014 at 09:34:51

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DocumentID: Manitoba\_Conservation

Project Title: Expansion of a livestock operation - Blumengart Colony

Date Needed: 2014/11/07

Name: Sylvio Tessier

Company/Organization: Ssouthman Engineering

City: Winnipeg

Province/State: Manitoba

Phone: 204-290-7797

Email: [sylvio.tessier@mymts.net](mailto:sylvio.tessier@mymts.net)

Project Description: Blumengart Colony is proposing to expand their turkey operations located at NE16-2-3W by adding a new covered turkey barn at NW15-2-3W.

Information Requested: We would like to know whether the area is known as a habitat for endangered species, and if so, what mitigation procedures would be required to minimize any impacts. At the same time, we need to know if there would be any protected habitats in the RM of Rhineland.

Format Requested: MS Word, Excell, or maps are acceptable formats

Location: MW15-2-3W inm RM of Rhineland

action: Submit

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**MANURE APPLICATION FIELD CHARACTERISTICS TABLE**

	A	B	C	D	E	F	G	H	I	J	K
Field	Legal Description	Rural Municipality	O/L/A	Total Acreage	Setbacks, including features	Net Acreage for Manure Application	Agriculture Capability Class and Subclass	Soil Nitrate (lb/acre) 0-24	Soil Phosphorus (ppm Olsen P) 0-6 inches	Development Plan Designation	Zoning
1N	S20-2-3W	Rhineland	O	150	Prop. Lines, Surf Water	150	1	116	37	AG	A40
3	S21-2-3W	Rhineland	O	320	Prop. Lines, Surf Water	306	2W/1	96	23	AG	A40
10	SW26-2-3W	Rhineland	O	160	Prop. Lines, Surf Water	160	1	88	31	AG	A40
13	SE26-2-3W	Rhineland	O	160	Prop. Lines, Surf Water	160	1/31	64	26	AG	A40
27	NW24-2-3W	Rhineland	O	80	Prop. Lines, Surf Water	79	1	52	18	AG	A40
110	NE26-2-3W	Rhineland	O	160	Prop. Lines, Surf Water	160	1	50	11	AG	A40
114	W36-3-3W	Rhineland	O	320	Prop. Lines, Surf Water	320	2W/1	76	12	AG	A40
115	SW27-2-3W	Rhineland	O	160	Prop. Lines, Surf Water	160	1/2W	16	19	AG	A40
118	SE11-4-3W	Roland	O	80	Prop. Lines, Surf Water	79	2W/3W	36	48	AG	AG
140	S18-5-2W	Morris	O	320	Prop. Lines, Surf Water	317	2W/3W	29	15	AG	AG
153	SE16-3-2W	Rhineland	O	80	Prop. Lines, Surf Water	65	3W/2W	28	12	AG	A40
154	E8-3-2W	Rhineland	O	240	Prop. Lines, Surf Water	178	2W	48	16	AG	A40
150N	NE20-3-2W	Rhineland	O	240	Prop. Lines, Surf Water	230	2W/1	8	19	AG	A40
15N	SW22-2-3W (N)	Rhineland	O	80	Prop. Lines, Surf Water	65	2W/1	32	52	AG	A40
19W	SW16-2-3W	Rhineland	O	120	Prop. Lines, Surf Water	120	1	28	14	AG	A40
8	SE28-2-3W	Rhineland	O	160	Prop. Lines, Surf Water	158	2W/31	60	41	AG	A40
2W	SW20-2-3W	Rhineland	O	50	Prop. Lines, Surf Water	50	1/31	48	28	AG	A40
5E	NE21-2-3W	Rhineland	O	160	Prop. Lines, Surf Water	158	2W/31	60	33	AG	A40
150S	S20-3-2W	Rhineland	O	240	Prop. Lines, Surf Water	146	2W	32	29	AG	A40
<b>Total Net Acreage for Manure Application:</b>						<b>3061</b>					

- A. Enter the legal description for each parcel of land that will receive manure: Sec, Twp, Rge or River Lot (including parish).
- B. Identify the Rural Municipality in which the parcel is located.
- C. Indicate how the land has been secured for manure application: O – Own / L – Lease / A – Agreement
- D. Enter the total acreage for the parcel.
- E. Enter setbacks from surface water or groundwater features that reduce the land available for manure application; include identification of type of feature (e.g. 8m, Order 3
- F. Enter the net long-term acreage available for manure application for the parcel after taking into account setbacks and excluding Class 6, 7 and unimproved organic soils.
- G. Enter the agriculture capability class and subclass ratings for the acreage available for manure application.
- H. Provide soil test results for nitrate-N in lb/ac at the 0-24 inch depth. Soil test results must be no more than 12 months old and must be completed by an accredited soil-testing
- I. Provide soil test results for phosphorus ppm Olsen P at 0-6 inch depth. Soil test results must be no more than 12 months old and must be completed by an accredited soil-
- J. Please indicate the Development Plan and its by-law number in addition to the map designation for each field
- K. Please indicate the Zoning By-law and its by-law number in addition to the zoning for each field

**MANURE APPLICATION FIELD CHARACTERISTICS TABLE**

Field	A Legal Description	B Rural Municipality	C OM/LA	D Total Acreage	E Setbacks, including features	F Net Acreage for Manure Application	G Agriculture Capability Class and Subclass	H Soil Nitrate (lb/acre) 0-24	I Soil Phosphorus (ppm Olsen P) 0-6 inches	J Development Plan Designation	K Zoning
9	SW3-4-3W	Roland	O	160	Prop. Lines, Surf Water	154	2W	16	26	AG	AG
18	W15-2-3W	Rhineland	O	320	Prop. Lines, Surf Water	238	2M/1	48	34	AG	AA0
20	N16-2-3W	Rhineland	O	240	Prop. Lines, Surf Water	231	1/2W	108	51	AG	AA0
24	NW17-2-3W	Rhineland	O	118	Prop. Lines, Surf Water	118	1	60	39	AG	AA0
25	NW10-2-3W	Rhineland	O	80	Prop. Lines, Surf Water	79	2M/3M	48	42	AG	AA0
26	NW10-2-3W	Rhineland	O	80	Prop. Lines, Surf Water	79	2M/3M	52	34	AG	AA0
28	NW25-2-3W	Rhineland	O	52	Prop. Lines, Surf Water	52	1/2W	40	12	AG	AA0
19E	SE16-2-3W	Rhineland	O	160	Prop. Lines, Surf Water	170	1	44	43	AG	AA0
111	NW26-3-3W	Rhineland	O	160	Prop. Lines, Surf Water	150	1/2W	41	9	AG	AA0
112	NE35-3-3W	Rhineland	O	80	Prop. Lines, Surf Water	78	2W/1	24	30	AG	AA0
116	SW35-3-3W	Rhineland	O	160	Prop. Lines, Surf Water	150	2W	51	20	AG	AA0
117	NE2-4-3W	Roland	O	80	Prop. Lines, Surf Water	80	2W/3W	72	20	AG	AG
119	NW10-3-3W	Rhineland	O	160	Prop. Lines, Surf Water	137	2W/1	64	29	AG	AR40
155	SW30-3-2W	Rhineland	O	80	Prop. Lines, Surf Water	78	1/2W	33	10	AG	AA0
211	NW19-1-3W	Rhineland	O	160	Prop. Lines, Surf Water	160	1/2W	44	15	AG	AA0
212	NE19-1-3W	Rhineland	O	160	Prop. Lines, Surf Water	160	1/2W	43	9	AG	AA0
214	SE30-1-3W	Rhineland	O	40	Prop. Lines, Surf Water	40	1	64	12	AG	AA0
215	NW30-1-3W	Rhineland	O	80	Prop. Lines, Surf Water	75	2W/3I	84	16	AG	AA0
216	SE6-2-3W	Rhineland	O	80	Prop. Lines, Surf Water	53	2W/1	92	15	AG	AA0
15S	SW22-2-3W	Rhineland	O	80	Prop. Lines, Surf Water	65	2W/1	40	54	AG	AA0
<b>Total Net Acreage for Manure Application:</b>						<b>2347</b>					

- A. Enter the legal description for each parcel of land that will receive manure: Sec, Twp, Rge or River Lot (including parish).
- B. Identify the Rural Municipality in which the parcel is located.
- C. Indicate how the land has been secured for manure application: O – Own / L – Lease / A – Agreement
- D. Enter the total acreage for the parcel.
- E. Enter setbacks from surface water or groundwater features that reduce the land available for manure application; include identification of type of feature (e.g. 8m, Order 3
- F. Enter the net long-term acreage available for manure application for the parcel after taking into account setbacks and excluding Class 6, 7 and unimproved organic soils.
- G. Enter the agriculture capability class and subclass ratings for the acreage available for manure application.
- H. Provide soil test results for nitrate-N in lb/ac at the 0-24 inch depth. Soil test results must be no more than 12 months old and must be completed by an accredited soil-testing
- I. Provide soil test results for phosphorus ppm Olsen P at 0-6 inch depth. Soil test results must be no more than 12 months old and must be completed by an accredited soil-
- J. Please indicate the Development Plan and its by-law number in addition to the map designation for each field
- K. Please indicate the Zoning By-law and its by-law number in addition to the zoning for each field

**MANURE APPLICATION FIELD CHARACTERISTICS TABLE**

Field	A Legal Description	B Rural Municipality	C O/L/A	D Total Acreage	E Setbacks, Including features	F Net Acreage for Manure Application	G Agriculture Capability Class and Subclass	H Soil Nitrate (lb/acre) 0-24	I Soil Phosphorus (ppm Olsen P) 0-6 inches	J Development Plan Designation	K Zoning
11	NE22-2-3W	Rhineland	O	160	Prop. Lines, Surf Water	160	1/2W	48	36	AG	A40
14	SE22-2-3W	Rhineland	O	160	Prop. Lines, Surf Water	150	2W/1	76	39	AG	A40
16	NW22-2-3W	Rhineland	O	160	Prop. Lines, Surf Water	160	1/2W	32	39	AG	A40
17	E15-2-3W	Rhineland	O	320	Prop. Lines, Surf Water	188	1/2W	24	22	AG	A40
22	NE17-2-3W	Rhineland	O	160	Prop. Lines, Surf Water	160	3M/1	60	57	AG	A40
23	SW17-2-3W	Rhineland	O	120	Prop. Lines, Surf Water	120	1/3M	32	21	AG	A40
152	SE8-4-2W	Morris	O	160	Prop. Lines, Surf Water	152	3W/2W	8	18	AG	AG
157	NW10-4-2W	Morris	O	160	Prop. Lines, Surf Water	151	3W	25	12	AG	AG
158	SE16-4-2W	Morris	O	160	Prop. Lines, Surf Water	160	3W/2W	12	17	AG	AG
210	NE3-1-4W	Stanley	O	160	Prop. Lines, Surf Water	153	1/3I	56	13	AG	AG
213	S19-1-2W	Rhineland	O	80	Prop. Lines, Surf Water	80	2W	24	8	AG	A40
<b>Total Net Acreage for Manure Application:</b>						<b>1634</b>					

- A. Enter the legal description for each parcel of land that will receive manure: Sec, Twp, Rge or River Lot (including parish).
- B. Identify the Rural Municipality in which the parcel is located.
- C. Indicate how the land has been secured for manure application: O -- Own / L -- Lease / A -- Agreement
- D. Enter the total acreage for the parcel.
- E. Enter setbacks from surface water or groundwater features that reduce the land available for manure application; include identification of type of feature (e.g. 8m, Order 3
- F. Enter the net long-term acreage available for manure application for the parcel after taking into account setbacks and excluding Class 6, 7 and unimproved organic soils.
- G. Enter the agriculture capability class and subclass ratings for the acreage available for manure application.
- H. Provide soil test results for nitrate-N in lb/ac at the 0-24 inch depth. Soil test results must be no more than 12 months old and must be completed by an accredited soil-testing
- I. Provide soil test results for phosphorus ppm Olsen P at 0-6 inch depth. Soil test results must be no more than 12 months old and must be completed by an accredited soil-
- J. Please indicate the Development Plan and its by-law number in addition to the map designation for each field
- K. Please indicate the Zoning By-law and its by-law number in addition to the zoning for each field