Manitoba

SITE ASSESSMENT: Contact Information and Privacy and Publication Notice

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

Operator Contact Information

Name of Operation: Delta II Boar Test Station

Corporation Name (if applicable): Topigs Norsvin Canada Inc.

☒ Contact Name: Mike Shaw

Mailing Address: 201-1465 BUFFALO PLACE

City/Town: Winnipeg Province: Manitoba Postal Code: R3T 1L8

Phone No: 204-954-3822 Fax No: _____ E-mail: mike.shaw@topigsnorsvin.ca

Design Consultant/Advisor Contact Information

Company Name: DGH Engineering

☒ Contact Person: Gary Plohman, P.Eng

Mailing Address: 12 Aviation Boulevard

City/Town: St Andrews Province: Manitoba Postal Code: R1A 3N5

Phone #: _____ Fax #: _____ E-mail: gplohman@dghengineering.com

(204) 334-8846

√ Please indicate the primary project contact above

Privacy and Publication Notice

Why the information is being collected ("purposes")

The Technical Review Committee ("TRC") requires the information (including any personal information) contained in this form, in your Site Assessment and in your Supporting Documents in order to review your submission and to prepare its report.

Our legal authority to collect the information

The authority to collect this information is found in *The Planning Act,* the *Technical Review Committee Regulation* and *The Freedom of Information and Protection of Privacy Act*.

Information collected will not be used or disclosed for other purposes unless you consent or we are authorized to do so by *The Planning Act*, the *Technical Review Committee Regulation* or *The Freedom of Information and Protection of Privacy Act*.

What information will be published and where it will be published

As required by subsection 5(1) of the *Technical Review Committee Regulation* **in order to enable public comment on your application, your complete Site Assessment and Supporting Documents** (Location Map, Animal Unit Calculation Table, Water Requirement Calculation Table, Manure Storage Calculation Table, Existing and Proposed Manure Storage Facility Dimension Tables (if applicable), Manure Application Field Characteristics Table, application field soil sample results, Land Base Calculator, Project Site Plan, Land Use & Spread Field Map, Truck Haul Routes and Access Points Map):

- **will be posted on a public website**; and
- sent to the applicable planning district office or municipal office where any interested member of the public may view it.

Please note: This "Site Assessment: Contact Information and Privacy and Publication Notice" form will not be posted or sent to the applicable planning district or municipality.

If you have questions about the collection, use, disclosure or publication of the information please contact the Technical Review Coordination Unit at Manitoba Local Government, phone number: (204) 945-8353.

Verification of Accuracy of Information

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

Date: 16/01/17

Signature: _____

For Office Use Only

Date of Receipt of completed Site Assessment including all Supporting Documents:

_____

Confirmation of Receipt Sent: _____

Please forward completed Site Assessment and Supporting Documents to:

Technical Review Coordination Unit
Room 604 – 800 Portage Avenue
Winnipeg MB R3G 0N4

SITE ASSESSMENT

FOR LARGE LIVESTOCK OPERATION PROPOSALS
(300 ANIMAL UNITS OR MORE)

Manitoba

1.0 Purpose

The establishment or expansion of a livestock operation that has 300 Animal Units or more is subject to Part 7 of *The Planning Act*. When such proposals are considered a conditional use by a municipal council or planning district board, approval of a conditional use permit is required. This includes a review by the Technical Review Committee (TRC) appointed by the Minister of Indigenous and Municipal Relations. The Technical Review Committee Regulation requires a site assessment be undertaken by the proponent to help the committee complete its review and allow the public affected by the livestock operation to comment on the proposal.

2.0 Assistance

For assistance in completing the Site Assessment Form, the following resources are available:

- Glossary of Terms for definitions
- Manitoba Agriculture for animal unit and suitable spread field acreage calculations
- Manitoba Sustainable Development for information on regulatory requirements
- Government agencies to obtain any required reports. For example, a Conservation Data Centre report is required as per Section 12.0 of the Site Assessment
- Contact the Technical Review Coordination Unit for additional help.

3.0 Description of Livestock Operation

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

Delta II Boar Test Station

Operation location (project site)[1]:

E 1/2 of NE19-14-3 W.P.M

Rural Municipality (RM):

Woodlands

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

E 1/2 of NE19-14-3 W.P.M

Manitoba Premises Identification Number:

MB 1072908

Municipal Tax Roll Number(s):

133600 for NE 19-14-3W, note: subject to future land transfer of 80 acres, new Municipal Tax Roll Number will be issued at a later date for East half of quarter.

Illustrate the location of the operation (project site) on a map. (See Location Map for example).

☒ *Location Map Attached*

4.0 Nature of Project[2]

Please indicate if the proposal is for a new or expanding livestock operation. If the operation is expanding, please identify when the operation was established.

☒ New Operation
☐ Expansion of Existing Operation

Date Established: Summer of 2017

Describe what is being proposed:

Boar test station consisting of hog grower/finishers and boars.

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.

No buildings currently exist on site.

5.0 Current and Proposed Type and Size of Operation[3]

Using the Manitoba Agriculture Animal Units Calculator, indicate the total number of animals and animal units for each animal category associated with the current and proposed operation (if applicable).

Table 5-1: Current and Proposed Operation Animal Unit Summary

	Current Operation		Proposed Operation	
Animal Categories (Column B from Animal Units Calculator)	**Current Number of Animals** (Column D)	**Current Number of Animal Units** (Column E)	**Proposed Number of Animals** (Column F)	**Proposed Number of Animal Units** (Column G)
Pigs - Grower/Finishers	0	0	1872	267.7
Pigs - Boars	0	0	958	191.6
	Total Current	0	**Total Proposed**	459.3

☐ Manitoba Agriculture Animal Units Calculator attached

6.0 Animal Confinement[4]

Based on the nature of the proposed project indicate the type of animal confinement. (Note: Please check more than one category if applicable)

☑ **Animal Confinement Facility** – means a barn or an outdoor area where livestock are confined by fences or other structures, and includes a seasonal feeding area but does not include a feedlot or a grazing area.

☐ **Confined Livestock Area**[5] – means an outdoor, non-grazing area where livestock are confined by fences or other structures, and includes a feedlot, paddock, corral, exercise yard, holding area and hoop structures.

☐ **Other** (Describe what is being proposed)

Does the operation currently use a confined livestock area:

☐ Yes ☐ No

If yes, what is the current capacity (livestock places and animal units)? N/A

To ensure the proposed livestock operation can be built in a way the environment is protected, a permit is required for construction and expansion of confined livestock area(s) for operations with 300 Animal Units or more. Permits are required by the Livestock Manure and Mortalities Management Regulation *(M.R. 42/98)*, under *The Environment Act*.

A permit under the Livestock Manure and Mortalities Management Regulation *(M.R. 42/98)* 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).

Note that agricultural buildings such as barns over 600 meters (6,458 sq ft) require a building permit from the Fire Commissioner's Office under *The Building and Mobile Home Act* and the Manitoba Building Code.

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[6].

☐ *Project Site Plan attached*

7.0 Water

7.1 Project Sites Unsuitable for Development

To protect water quality, the Nutrient Management Regulation *(M.R. 62/2008)*, under *The Water Protection Act*, prohibits the construction 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.

A 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), including their limitations, of the soils for the project site.

Individuals 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.

7.2 Water Source[7]

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

Water source for operation:

- ☐ Pipeline (public)
- ☐ Water cooperative
- ☒ Proposed well
- ☐ Existing well
- ☐ River
- ☐ Lake
- ☐ Dugout - dimensions:___x___x____

If using an existing well, provide a copy of the water well log[8] and logs for other wells on the property. Logs can be obtained from Manitoba Sustainable Development by calling (204) 945-6959 in Winnipeg; 1-800-214-6497 toll free.

7.3 Source Water Analysis Reports

Annual livestock source water quality monitoring reports must be submitted to Manitoba Sustainable Development for any operations of 300 Animal Units or more.

Has the operation submitted an annual source water monitoring report?

- ☐ Yes
- ☐ No
- ☒ N/A (new operation or existing operation <300 AU currently)

If yes, please indicate year of last submission: _____

Will livestock have direct access to surface water (not including dugouts)?

- ☐ Yes
- ☒ No

If yes, identify the name of the surface water feature:

_____

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

Livestock will be confined in a newly constructed barn.

_____

_____

7.4 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 License 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[9]

To calculate the total water use for non-dairy operations, go to the Water Requirement Calculator.

For dairy operations, go to the Dairy Barn Water Requirement Estimator.

Maximum daily use for the operation: 10,393

☒ imperial gallons ☐ litres

Maximum annual use for the operation: 3,793,372

☒ imperial gallons ☐ cubic decameters

☒ *Water Requirement Calculator attached*

☐ *Dairy Barn Water Requirement Estimator attached*

7.5 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.

All unused or abandoned well(s) on site and spread fields should be properly sealed and a seal well report filed with the Groundwater Management Section of Manitoba Sustainable Development. Information on well sealing is available from Manitoba Sustainable Development at (204) 945-6959 or refer to the technical information document. It is recommended that all but the most basic wells should be sealed by a well drilling professional.

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	Not Applicable
Manure is stored in a storage facility built by permit or is registered by Manitoba Sustainable Development	☐	☑	☐
Storage includes leak detection system	☐	☑	☐
Earthen storage has between 400 and 500 days storage	☐	☑	☐
Steel/concrete tank has between 250 and 500 days storage	☐	☐	☑
Manure storage facility meets required setbacks	☐	☑	☐
Field storage (solid manure) locations are changed annually	☐	☐	☑
Field storage meets required setbacks	☐	☐	☑
All fields to receive manure are soil tested annually for nitrate-N and Olsen phosphorus	☐	☑	☐
All manure is applied according to a registered manure management plan	☐	☑	☐
Licensed commercial manure applicator is used to apply manure	☐	☑	☐
Operator applies manure	☐	☐	☑
Abandoned wells have been properly sealed	☐	☐	☑

Other:
Ground monitoring wells are being proposed by Topigs Norvin Canada as required with annual reporting to and oversight monitoring by Manitoba Sustainable Development.

7.6 Building in Flood Areas:

The Livestock Manure and Mortalities Management Regulation prohibits an operator from constructing 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. Contact the Hydrologic Forecasting Branch at (204) 945-2121 in Winnipeg; 1-800-214-6497 toll free, for more information.

The proposed site:

☐ is ☒ is not

located in a Designated Flood Area: Upper Red River Valley Designated Flood Area or Lower Red River Designated Flood Area.

Note: At the time of permit issuance, 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.

7.7 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): West Interlake Watershed

Name of sub-watershed(s): Lake Francis Sub-District

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

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

8.0 Manure

The Livestock Manure and Mortalities Management Regulation *(M.R. 42/98)* 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 Sustainable Development at (204) 945-4384 in Winnipeg.

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

8.1 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

8.2 Manure Volume or Weight

Manure production can be estimated using the Manure Production Calculator. 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 of manure.

What will be the total volume or weight of manure generated annually by the livestock operation?

Liquid volume: 1,826,664 Imp Gal

AND/OR

Solid volume: _____

☒ *Manure Production Calculator attached*

8.3 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.

Is the operation planning to construct, modify or expand a manure storage facility or use an existing manure storage facility?

☒ Construct
☐ Expand
☐ Modify
☐ Use existing
☐ Not applicable

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

- ☐ Concrete tank(s) manure storage facility
- ☒ Earthen manure storage facility
- ☐ Engineered solid manure storage facility
- ☐ Field storage
- ☐ Molehill manure storage facility
- ☐ Steel tank(s) manure storage facility
- ☐ Under-barn concrete manure storage facility

If the proposed operation or expansion will utilize an existing manure storage facility for the new manure, indicate the construction permit number or facility registration number:

_____

Provide the dimensions of the existing and/or proposed manure storage facilities that will be used to store manure from the proposed operation or expansion. (See Existing and Proposed Manure Storage Facility Dimensions Table.)

☒ *Existing and Proposed Manure Storage Facility Dimensions Table attached*

If an existing manure storage facility that will be used to store any of the manure from the proposed expansion has a leak detection system (monitoring wells or sump pit), annual sampling and reporting to Manitoba Sustainable Development is required. Has the system been sampled and results submitted to Manitoba Sustainable Development? ☐ Yes ☐ No ☒ Not applicable

If yes, please indicate year of last submission: _____

If a manure storage facility is proposed in a geologically sensitive area, a leak detection system may be required.

For more information on obtaining a manure storage facility permit, please contact Manitoba Sustainable Development, Environmental Approvals Branch at (204) 945-5081.

8.4 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 ☐ Not Applicable

If yes, type of cover: _____

Shelterbelt planting:

☐ Yes ☐ No ☒ Existing shelterbelt

8.4 Odour Control Measures (Continued)

Other measure (specify):

It is believed that this project does not need a manure storage cover. The storage facility would be located on a remote site with extensive bush cover. It would also be on the eastern edge of the Woodlands Community Pasture which limits future residential development to the north, west and south.

There is only one home located about 6,850 ft away to the SW from the proposed manure storage facility. There are no other homes within a 2 mile radius. Because of the dense shelterbelt and also because of the prevailing NW winds will carry odours away from the nearest neighbour, Topigs is confident odours will be sufficiently mitigated.

The proponent would be prepared to enter into a development agreement that would require it to install a manure storage cover within 2 years of populating the barn if Council requires it in future due to odour complaints.

Other measure (specify):

_____

_____

8.5 Manure Treatment

Pig operations:

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 Sustainable Development. Environmentally sound treatment has been defined in the Hog Production Pilot project. For more information on new or expanding hog operations and the requirements of the Hog Production Pilot project, please contact the Manitoba Pork Council.

Under the Hog Production Pilot project, in addition to existing regulatory requirements, new and expanding pig operations must:

- Subject the manure to treatment using anaerobic digestion or mechanical or gravity separation including multi-celled manure storage structures and settling tanks;
- Have access to sufficient suitable land to accommodate all of the phosphorus generated by the operation;
- Maintain soils below 60 ppm Olsen P; and
- Inject or immediately incorporate pig manure on tilled land. Perennial forages, in-season applications and no-till lands are excluded.

New and expanding pig operations should also consider odour control practices.

If this Site Assessment is for a **pig** operation, does your proposal meet all the criteria outline in the Hog Production Pilot Protocol?

☐ Yes ☐ No

If this Site Assessment is for a **pig** operation, have you included a letter from the Manitoba Pork Council under the Hog Production Pilot Protocol?

☐ Yes ☐ No

☑ *Letter from Manitoba Pork Council attached (if applicable)*

Manure treatment:

Is manure treatment proposed for the operation?

☐ Yes ☐ No

If yes, please describe treatment process, including intended end use of treated manure:

A two cell earthen manure storage will be constructed. A two cell earthen manure storage is an acceptable gravity separation treatment system for the purpose of the Pig Production Special Pilot Project. The treated manure will be applied to cropland in accordance with an approved manure management plan.

Some manure treatment systems will trigger the requirement for an Environment Act License depending on the type of treatment or intended use of the treated products. The requirement for a license is determined by Manitoba Sustainable Development during their review of the permit application for the construction, modification or expansion of a manure treatment facility.

If treated manure is directed to a retailer, additional approvals may be required in advance of establishing the treatment process. Producers should note that no discharge or burning of treated manure products is allowed.

Manitoba Sustainable Development may require additional supporting documentation to be completed by the operator with respect to the treatment facility. Please contact (204) 945-4384 to determine what information will be required.

8.6 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 (MMP) with Manitoba Sustainable Development?

- ☐ Yes
- ☐ No
- ☒ N/A (new operation or existing operation <300 AU currently)

If yes, please indicate most recent MMP Registration #: _____

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 incorporate within 48 hours
- ☒ Injection

8.7 Land Available for Manure Application

Using the Manure Application Field Characteristics Table provide the information requested.

Total land available for manure application: 1217 acres

Suitable Land:

Sufficient suitable land must be available for all of the manure generated by the operation that is to be land applied. Suitable land can be owned, leased or under agreement.

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. In addition, only fields with less than 60 parts per million (ppm) Olsen phosphorus (P) in the top six inches (15 centimeters) of soil will be considered suitable.

The Nutrient Buffer Zones and manure application setback requirements are outlined in the Nutrient Management Regulation (62/2008) and the Livestock Manure and Mortalities Management Regulation (42/98). They have been consolidated in the Setback Requirements from Water Features Table.

Have the setback areas for all water features been observed and excluded from land base calculations for this operation?

☒ Yes ☐ No

Total suitable area available for manure application: 1217 acres

For all suitable lands, copies of soil test reports that are no more than 12 months old and that demonstrate that soil phosphorus levels are below 60 ppm Olsen P in the top six inches (15 centimeters) of soil must be included with this submission.

☒ *Manure Application Field Characteristics Table attached*

☒ *Soil test reports for the required land base for manure application attached*

8.8 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 utilization or removal of nutrients by the proposed crops.

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

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

"Certain Areas":

The Livestock Manure and Mortalities Management Regulation requires the proponent demonstrate sufficient land is available, to the satisfaction of the director, in order to implement an appropriate manure management plan before Manitoba Sustainable Development will issue a permit for a manure storage facility or confined livestock area. Sufficient suitable land must be available for the manure nitrogen and phosphorus that will land applied.

"*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^2 is greater than two times the annual crop removal rate of P_2O_5 in that area.

In "*certain areas*" it is Manitoba Sustainable Development's policy to consider a manure storage facility permit if the operation can demonstrate it has access to sufficient suitable land, within a reasonable distance[10], to apply manure at a rate equivalent to one times the crop removal rate of phosphorus. In areas which are not considered to be "certain areas", Manitoba Sustainable Development may consider a manure storage facility or confined area permit, subject to all applicable legislation, if the operation demonstrates it has access to sufficient suitable land to apply manure at a rate equivalent to two times the crop removal rate of phosphorus.

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 defined 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 field(s).

Is the livestock operation located in "certain areas" (i.e. Hanover or La Broquerie)?

☐ Yes ■ No

Land Base Requirement Calculation:

It is recommended that proponents use Manitoba Agriculture's Land Base Calculator to calculate the minimum area required for manure application and contact Manitoba Agriculture at (204) 945-3869 in Winnipeg for assistance with the land base calculator prior to submitting their site assessments.

Table 8-1: Land Base Requirements

Total acres required for crop utilization of the manure N[a]	acres 549
Total acres required for two times crop P_2O_5 removal[a]	acres 579
Total acres required for one times crop P_2O_5 removal[b,c]	acres 1157

[a]All operations must demonstrate sufficient suitable land for crop N utilization and two times crop P_2O_5.

[b]Due to high livestock density and reduced land availability for manure application, all livestock operations proposed in "*certain areas*" (i.e. Hanover and La Broquerie) must demonstrate

sufficient suitable land to balance phosphorus over the long-term (one times crop P_2O_5).
[c] Under the Hog Production Pilot Project, pig operations must also demonstrate enough land to balance phosphorus over the long-term (one times crop P_2O_5).

- ☒ *Crop Rotation Table attached*
- ☒ *Manitoba Agriculture's Land Base Calculator attached*

8.9 Land Base Requirement Summary

By comparing the total suitable 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 to meet nitrogen utilization
- ☒ has been identified for two times the crop removal rate of phosphorus
- ☒ has been identified for one times the crop removal rate of phosphorus (for pig operations and operations in "certain areas" [i.e. Hanover and La Broquerie])

8.10 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 ppm, but less than 120 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 to waterways 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 so that manure can be applied at no more than one times the crop removal rate.

☒ I acknowledge that up to 1157 acres (one times crop P_2O_5 removal from table above) may be required for the long term environmental sustainability of the operation.

9.0 Mortalities (Dead Animal) Disposal

The Livestock Manure and Mortalities Management Regulation establishes requirements for the use, management and storage of livestock mortalities in agricultural operations. This helps ensure livestock mortalities are handled in an environmentally sound manner. Winter application, between November 10 of one year and April 10 of the following, of composted mortalities is prohibited.

Type of Disposal:

- ☒ Rendering
- ☐ Composting
- ☐ Burial
- ☐ Incineration (in approved incinerator only)

Does the proposal include a permanent site for composting mortalities?

- ☐ Yes
- ☒ No

If yes, a permit to construct a manure treatment facility is required if the composting process utilizes a substantial amount of manure (>15% by weight) as a primary substrate. Please contact Manitoba Sustainable Development at (204) 945-5081 for more information.

9.1 Mass Mortalities

☐ A plan for mass mortalities is in place

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

Manitoba Sustainable Development will be contacted to discuss a suitable plan prior to populating the barn.

Possibilities include placing mortalities in either the Brady Landfill Site or burying on site if appropriate.

10.0 Project Site Description: Land Use Planning Considerations

For assistance contact your Community and Regional Planning Regional Office.

10.1 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 both documents. In the absence of such documents, the Provincial Planning Regulation under *The Planning Act* applies.

10.2 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.

Table 10-1: Development Plan

Name of Planning District	The Rural Municipality of Woodlands
Development Plan by-law number	2643/14
Land use designation of project site	AA - Agriculture Area
Livestock operation policies – quote supportive policy numbers	Policy 6 of 3.4.1
Other Development Plan policies – quote supportive policy numbers	Policy 1 of Section 2.3.1 - Agriculture General Policy and Policy 1 of Section 3.4.1 - Rural Area Policies: Agriculture Area Policies
Non-supportive Development Plan policies	N/A

- 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.

10.3 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 By-law contains specific regulations that govern location and setback of livestock operations.

Identify the minimum project site requirements stated in the Zoning By-law.

Table 10-2: Zoning By-law

	Project Site Dimensions	**Minimum Zoning By-Law Site Requirements**
Minimum Site Area	80 acres	80 acres
Minimum Site Width	1328 ft	600 ft
Minimum Front Yard	200 ft	75 ft
Minimum Side and Rear Yard	300 ft east and 553 ft west side, 1340 ft rear	east side 75 ft adjacent to Gov't Rd Allowance and west side 25 ft, rear 30 ft

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.

10.4 Separation Distances (Zoning By-law or Provincial Planning Regulation)[11]

Using the proposed size of the operation (see Animal Units Calculator) 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…

Table 10-3: Separation Distances

…to the following land use features (if applicable)	**Indicate minimum separation distance required in the Zoning By-law or Provincial Planning Regulation (If applicable)** **Check appropriate box(es)**		**If land use feature is less than the minimum separation distance required in the Zoning By-law or Provincial Planning Regulation**	
	☒ **A** ☐ **B**	☐ **C** ☐ **D**	Provide actual distance	Provide location or name of feature (e.g. Red River)
Residence/ dwelling	1,640 ft		N/A	N/A
Designated area[12] (non-agricultural)	6,561 ft		N/A	N/A
Livestock operation	N/A		N/A	N/A
Other significant features/land uses	N/A		N/A	N/A

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. If any separation distance is less than the Zoning By-law minimum, a Variation Order will be required from the Municipality.

Indicate on a Land Use and Spread Field Map (See Land Use and Spread Field Map Example[13]):

a) location of the project site, location and ownership of spread fields
b) land uses and significant features including dwellings
   i) within a 1 mile radius of the project site
   ii) within and adjacent to each spread field.

10.5 Buffer Area from Crown Lands

Indicate in the table below if the proposed livestock operation (project site and spread fields) is located **within 1 mile** of any designated parcel of Crown land which would include: Provincial Park, Wildlife Management Area, Ecological Reserve, Provincial Forest, and Wildlife Refuge/Sanctuary. If applicable, also indicate the name of the Designated Crown Land.

Please complete the following table.

Table 10-4: Buffer Areas

Type of Designated Crown Land	Distance from perimeter of Designated Crown Land	Name of Designated Crown Land (e.g. Spruce Woods Provincial Park)
Provincial Park	☐ 1 mile or less ■ Greater than 1 mile	N/A
Wildlife Management Area	☐ 1 mile or less ■ Greater than 1 mile	N/A
Ecological Reserve	☐ 1 mile or less ■ Greater than 1 mile	N/A
Provincial Forest	☐ 1 mile or less ■ Greater than 1 mile	N/A
Wildlife Refuge/Sanctuary	☐ 1 mile or less ■ Greater than 1 mile	N/A

If any Crown land parcel is to be utilized as part of the proposed planned works where the proposed works will involve the installation of infrastructure (e.g., pipe/hose) that will be placed on the surface of the land, the appropriate Crown land disposition may be required (e.g., General Permit/Work Permit[14]). The proponent is encouraged to contact the Regional Lands Manager with Manitoba Sustainable Development for further discussion. Contact the Crown Lands and Property Agency at http:\clp.gov.mb.ca or toll free at 1-866-210-9589 or 1-204-239-3510.

10.6 Setback Distances

Use the following table to indicate setback distances, as required under the Livestock Manure and Mortalities Management Regulation *(M.R. 42/98).*

Table 10-5: Setback Distances

Feature	Structures	Minimum setback distance required (m)	Actual Setback distance (m)	Provide location or name of feature (e.g. Red River)
Surface watercourses, sinkholes, spring or well	Manure storage facility	100 m	156.83 m	proposed man-made ditch along east property line and undeveloped road 17W
	Field storage	100 m	N/A	
	Composting site	100 m	N/A	
	Confined livestock area	100 m	N/A	
Property Line	Manure storage facility	100 m	156.83 m to east property line and 177.9 m to west property line	east and west property lines
	Composting site	100 m	N/A	
	Confined livestock area	100 m	N/A	

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

11.0 Truck Haul Routes and Access Points[15]

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.

Table 11-1: Truck Haul Routes and Access Points

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	1	1	X		X			X		X
Tractor Trailer	1	1	X		X			X		X
Other, Employee and Visitor vehicles	11	11	X		X			X		X

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

☒ *Truck Haul Routes and Access Point Map attached*

12.0 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.

Were rare species identified in the Conservation Data Centre Report?

☒ Yes ☐ No

13.0 Supporting Documents

Check the supporting documents included in this submission:

- ☒ Contact Information and Privacy and Publication Notice
- ☒ Location Map (shows proposed project within rural municipality)
- ☒ Project Site Plan (proposed operation showing current and proposed structures)
- ☒ Animal Units Calculator
- ☒ Water Requirement Calculator
- ☐ Dairy Barn Water Requirement Estimator
- ☒ Manure Production Calculator
- ☒ Existing and Proposed Manure Storage Facility Dimension Tables (if applicable)
- ☐ Manure Treatment Supporting Documentation (if applicable)
- ☒ Manure Application Field Characteristics Table
- ☒ Crop Rotation Table
- ☒ Recent manure application field soil sample results (Olsen Phosphorus – ppm at 0-6 inch depth)
- ☒ Manitoba Agriculture Land Base Calculator
- ☒ Letter from the Manitoba Pork Council under the Hog Production Pilot Protocol (pigs only)
- ☒ Land Use and Spread Field Map (location and ownership of operation, 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:

Conservation district map, SW Interlake IWMP Boundary Map, Lake Francis Subdistrict Map, Lake Francis Watershed Overall Map, Lower Red River Designated Flood Area Map, Manure Spread Agreements, Manitoba Agri-Maps Site Location, R.M. of Woodlands Development Plan Map 1, Soils Map, Drains Map, MASC - MMPP fertilizer data records, R.M. of Woodlands copy of council resolution approving Topigs Norsvin Canada Land Purchase.

14.0 Additional Information:

Please include any additional information you deem necessarily in order for the Technical Review Committee to review your proposal.

Added Information to Section 3.0 - Description of Livestock Operation

Why the Site was Chosen:

The proposed Delta II project site was selected after exploring alternative sites suggested by the public at the Project's Public Open House held on September 8, 2016 at the Meadow Lea Community Centre. The 80 acre site on the E1/2 of NE-19-14-3W in the R.M. of Woodlands is located on the eastern edge of the Woodlands Community Pasture.

It is a remote location which provides the 5 mile swine bio-security radius required by the proponent for the boar test station. The adjacent land to the north and west is either in bush or natural pasture (Community Pasture) or under agricultural production for annual crops and improved pasture to the south and east. The proposed agricultural use is compatible and supportive of other rural agricultural land uses in the vicinity.

The site is heavily forested which allows for a shelterbelt perimeter around the proposed barn and earthen manure storage. The prevailing NW wind also provides odour mitigation for the only residence located within a 2 mile radius of the proposed development site. This residence is located to the SW and is more than 1 mile away.

Road access to the site and extension of 3 phase hydro power will be along exiting Road 82N from PTH Highway #6. Some road upgrading will be required to access the proposed site.

A total of 15 new jobs will be created in Manitoba as a result of this project. Of which, 10 jobs will be located at the boar test site, 3 jobs will be located at a nursery barn located outside the Rural Municipality of Woodlands and lastly there will be 2 mobile testing positions.

14.0 Additional Information:

Please include any additional information you deem necessarily in order for the Technical Review Committee to review your proposal.

Added information to Section 7.7 - Name of Integrated Water Management Plan

The name of the Integrated Watershed Management Plan for the proposed site is Southwest Interlake Integrated Watershed Management Plan.

Added information to Section 8.3 - Manure Storage Type and Capacity

An HDPE (High Density Polyethlene) 60 mm liner will be installed on the proposed earthen manure storage facility.

Added information to Section 8.6 - Manure Application Method

Manure will be applied on crop land once per year in the fall over a 2-3 day period on approximately 200 to 300 acres depending on the crops to be grown. The preferred method shall be injection. As outlined in Pig Production Special Pilot Project Evaluation Protocol,

"Manure must be injected into tilled soils, or manure may be otherwise applied as long as it is incorporated into the soil within 48 hours (excluding established perennial forages and no-till fields)."

Added information to Section 8.7 - Land Available for Manure Application

Acreage per spread field totalling 1217 acres as shown in the attached Manure Application Field Characteristics Table is based on GIS Satellite area calculations and not on the estimated acreages from attached soil test reports.

Added information to Section 10.6 - Setback Distances, Table 10-5

In due course, a drainage permit application will be be submitted for provincial approval.

15.0 Declaration

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

Date: 2017/07/16
(YYYY/MMM/DD)

Name: Mike Shaw, Director of Genetic Services
(Please Print Clearly)

Signature: 

Notes

[1] Identifying the location of the project is needed to determine the compliance with zoning and other by-laws. The inclusion of a location map helps to identify the project site within the municipality.

[2] Indicating if the operation is new or expanding helps determine what regulation requirements are needed to be met for the proposal.

[3] The regulatory requirements such as municipal by-laws and provincial regulations will vary with type and size of a livestock operation.

[4] The regulatory requirements such as provincial regulations will vary with the type of housing.

[5] Confined livestock areas most commonly refer to outdoor, open livestock facilities such as beef feedlots or cow-calf operation facilities ("open confined livestock areas"). The LMMMR includes covered structures, open to the elements, used for the rearing of livestock that feature a floor design that constitutes an effective water barrier, such as concrete ("Covered Confined Livestock Areas"). For example biotech shelters for feeder pig production and hoop structures.

[6] The site plan is needed to ensure that required yard and other requirements can be met. Noting other features such as dwellings, shelterbelts, water source locations, drainage patterns, access points and the property dimensions enable the applicant to ensure proper site planning and sufficient separation distances between features to meet provincial regulations.

[7] The province regulates the use of surface and ground water. Identifying the source of water will be required for resource management and licensing purposes.

[8] A water well log is a report completed by the well driller after the construction of the well. Copies of the report are left with the well owner, the well drilling contractor and the Water Science and Management Branch of Manitoba Sustainable Development. Water well logs provide useful information on the geology of the well site and can be used to assess the potential vulnerability of the site to groundwater contamination.

[9] The Province regulates the use of surface and ground water. Identifying the amount of water needed will be required for resource management and licensing purposes.

[10]New or expanding livestock operations **in certain areas** must have access to additional lands suitable for the application of livestock manure located within a reasonable distance, in the opinion of the director of Manitoba Sustainable Development. Reasonable distance is considered to be within a 10 mile radius of the operation for liquid manure. If land is identified beyond the 10 mile radius, a producer must submit a plan to the director of Manitoba Sustainable Development for approval describing the action taken and proposed to be taken to achieve and maintain soil phosphorus levels below 60 ppm.

If a plan is required, the proponent may attach the acceptance letter from the director of Manitoba Sustainable Development in an appendix to the Site Assessment as supporting documentation, demonstrating compliance with section 12.2(1) of the Livestock Manure and Mortalities Management Regulation (M.R. 42/98). For more information, contact Manitoba Sustainable Development at (204) 945-4384.

[11]" Agricultural operations are a source of traffic, noise, dust and odours. One of the key elements to successful siting of a livestock operation is to observe appropriate separation distances between potentially conflicting land uses. This is particularly important for the effective dispersion and dilution of odours from pig production facilities. When deciding where to build a new livestock operation, it is best to choose a site with as few neighbours as possible."

Section 6.2 Setbacks and Other Steps to Avoid Conflicts - Farm Practice Guidelines for Pig Producers in MB (April 2007)

Identifying the distance to the nearest land use features such as a neighbouring agricultural operation or non-agricultural designated uses (such as residential or recreational designated areas in the Development Plan), sensitive areas such as wildlife management areas or critical habitat, individual dwellings and various water bodies and drains

enable the applicant to ensure that minimum separation distances are maintained between those various uses and the proposed animal confinement facility and manure storage facilities.

[12]Is an area identified on a Development Plan Map based on its current or future use?

[13] The mapping of the project site, neighbouring designated residential areas, individual residences and surface water features enables the applicant to describe the geographic setting and general suitability of the area for the project. This may also assist the applicant in determining appropriate setbacks for field storage of manure, composting manure, and composting mortalities. By identifying a 3-kilometer area around the project site, the applicant is made aware of all land owners that will be notified regarding the public Conditional Hearing that will take place as part of the review process.

[14] If undesignated Crown lands will be used for manure spreading purposes; including the laying of pipe, including draglines, or clearing activity, it will require the proponent to obtain a Crown Lands General Permit disposition that will authorize the use and access of the subject Crown Land(s).

Any clearing activity, related construction activity, or works associated with the manure spreading application will also require the appropriate permitting under applicable legislation (e.g., The Crown Lands Act, The Forestry Act etc. Please contact the Regional Lands Manager or Conservation Officer for additional information.

[15]Identifying truck haul routes and access points on municipal and Provincial Roads and/or Provincial Trunk Highways assists the province and municipality in planning and identifies any potential required access permits. The information also allows other stakeholders to determine potential impacts on existing roads and adjacent land uses.

R.M. OF WOODLANDS

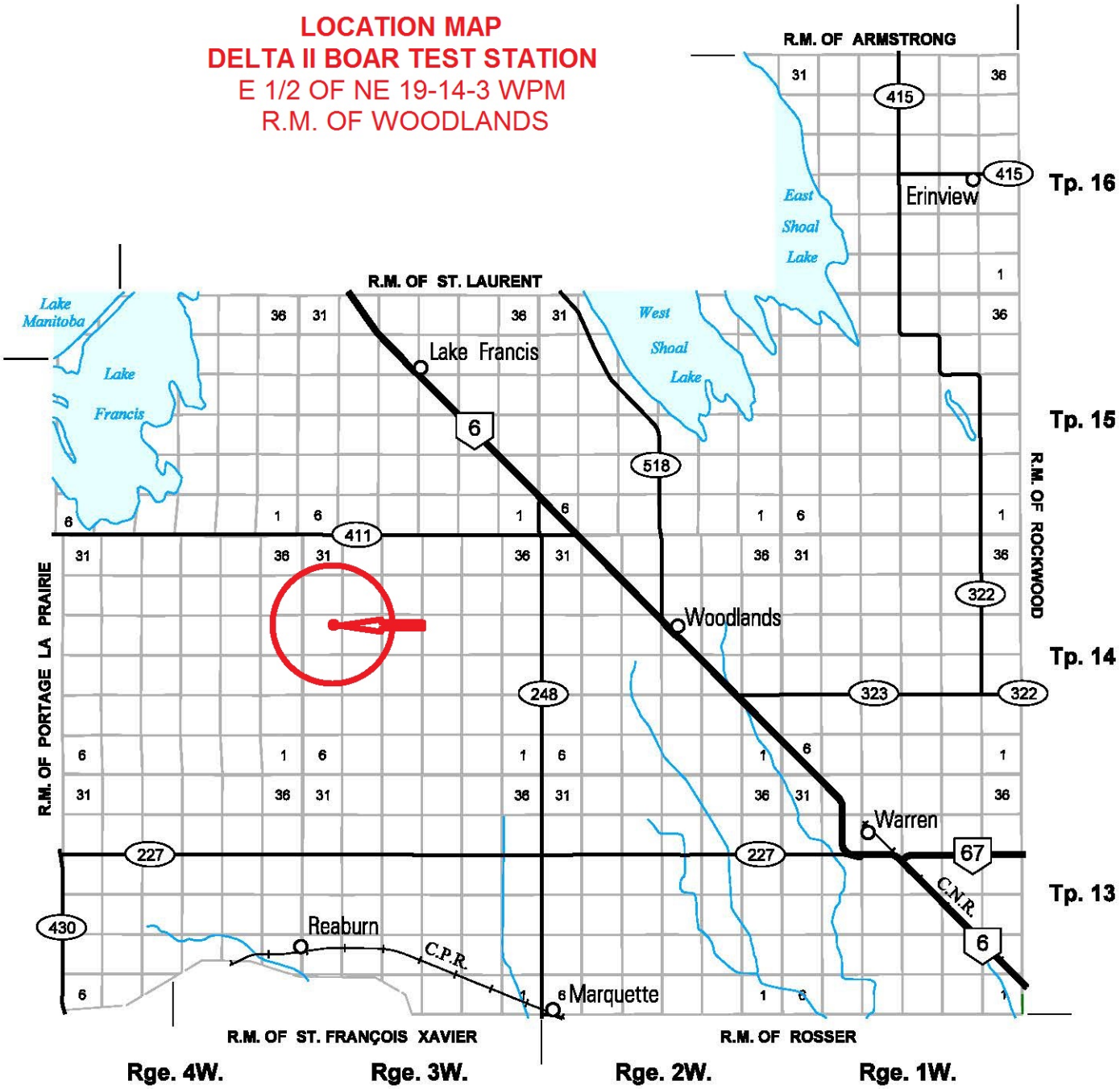
0 5
SCALE IN KILOMETRES

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

LEGEND

PROVINCIAL TRUNK HIGHWAYS 6
PROVINCIAL ROADS 518
ACCESS ROADS .....
RAILWAYS .....

LOCATION MAP
DELTA II BOAR TEST STATION
E 1/2 OF NE 19-14-3 WPM
R.M. OF WOODLANDS



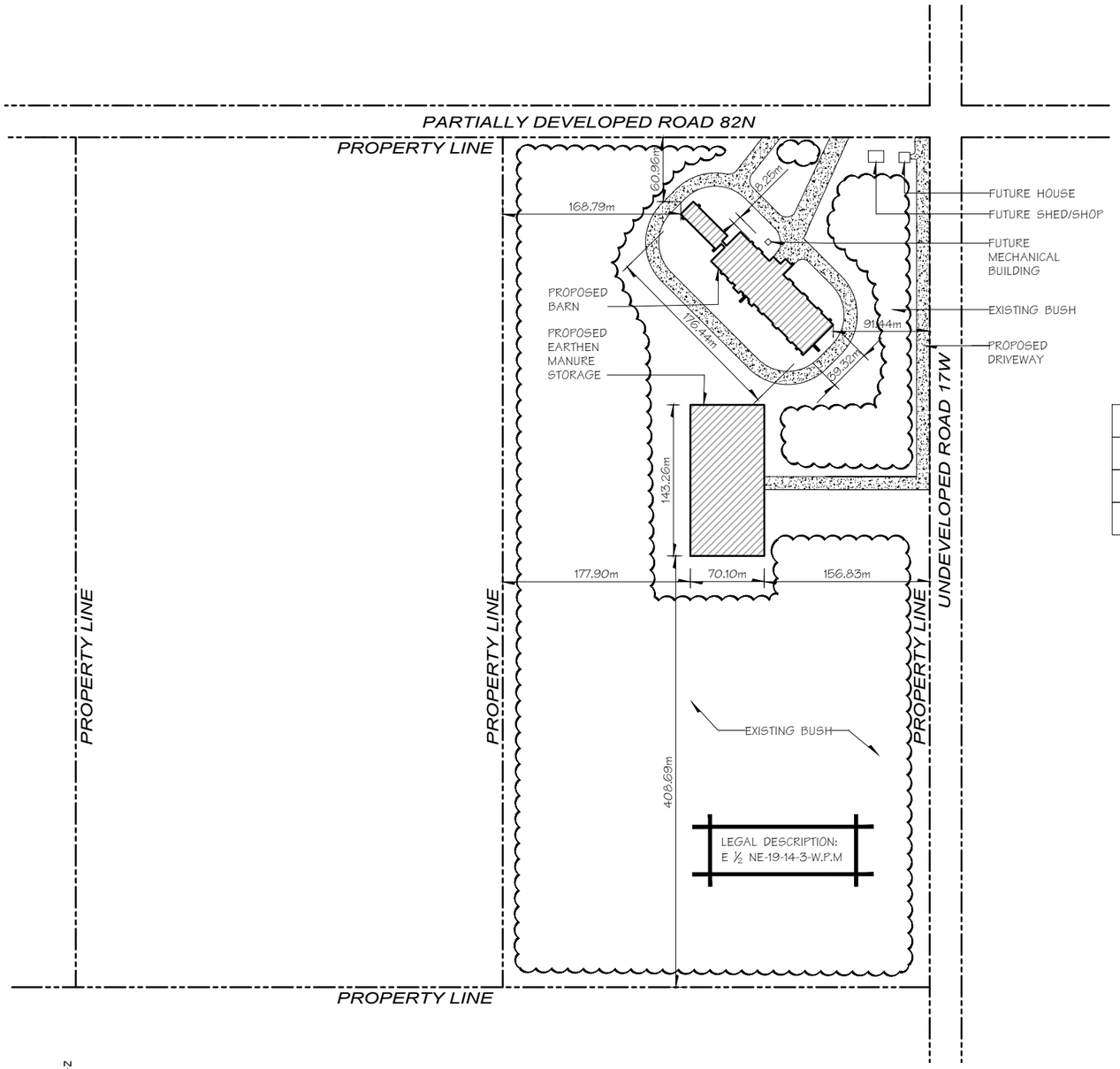
Animal Units Calculation Table

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 [1]	Mature cows (lactating and dry) including associated livestock			2	-	
	Mature cows (lactating and dry)			1.35	-	
	Heifers (0 to 3 months)			0.16	-	
	Heifers (4 to 13 months)			0.41	-	
	Heifers (> 13 months)			0.87	-	
	Bulls			1.35	-	
	Veal calves			0.13	-	
Beef	Beef cows including associated livestock			1.25	-	
	Backgrounder			0.5	-	
	Summer pasture / replacement heifers			0.625	-	
	Feeder cattle			0.769	-	
Pigs	Sows - farrow to finish (234-254 lbs)			1.25	-	
	Sows - farrow to weanling (up to 11 lbs)			0.25	-	
	Sows - farrow to nursery (51 lbs)			0.313	-	
	Boars (artificial insemination units)		958	0.2	191.60	
	Weanlings, Nursery (11-51 lbs)			0.033		
	Growers / Finishers (51-249 lbs)		1,872	0.143	267.70	
Chickens	Broilers			0.005	-	
	Roasters			0.01	-	
	Layers			0.0083	-	
	Pullets			0.0033	-	
	Broiler breeder pullets			0.0033	-	
	Broiler breeder hens			0.01	-	
Turkeys	Broilers			0.01	-	
	Heavy Toms			0.02	-	
	Heavy Hens			0.01	-	
Horses	Mares			1.333	-	
Sheep	Ewes			0.2	-	
	Feeder lambs			0.063	-	
Other Livestock	Type:				-	
	Type:				-	
				Total AUs	**459.30**	

Footnotes:

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

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



SITE DEVELOPMENT - GENERAL SITE & LANDSCAPING	
ITEM	SYMBOL
PROPERTY LINE	
GRAVEL AREA	

N NE E SE S SW W NW

SITE LAYOUT

SCALE: 1:5000

REVISION			
NO.	DATE	DESCRIPTION	INITIAL
01	16/12/12	ISSUED FOR CU PERMIT	KJT

ISSUE

PRINTED DATE: 1/13/2017 8:55:28 AM

ENGINEER'S SEAL

ISSUED FOR CU PERMIT

DGH ENGINEERING LTD.
PROFESSIONAL SERVICE - PRACTICAL SOLUTIONS
12 AVIATION BLVD, ST. ANDREWS, MB R1A 3N5
PHONE (204) 334-6048 FAX (204) 334-6035

CLIENT
TOPIGS NORSVIN
.
201-1465 BUFFALO PLACE
WINNIPEG, MB R3T 1L8

PROJECT TITLE
DELTA II BOAR TEST STATION
PROJECT LOCATION
RM OF WOODLANDS, MB
PROJECT NUMBER: 16-1-3303-007-10

DESIGNED	DRAWN	COORDINATOR
CL/KJT	KJT	KJT
DATE	SCALE	XREF PATH(S)
NOV/2016	AS NOTED	P:\CLIENT\PROJECT.DWG

SITE LAYOUT
.
.

C1
REV. R00

0 10 20 30 40 50 60 70 80 90 100mm

Water Requirement Calculation Table

Livestock	Number	IG/day per animal in winter	IG/day per animal in summer	IG/day (Imperial gallons per day)
Beef/Dairy/Bison *				
Feeder/heifer/steer (600 lb.)		5	9	-
Feeder (900 lb.)		7	12	-
Feeder (1250 lb.)		10	15	-
Cow/calf pair		12	15	-
Dry milking cow **		10	12	-
Lactating cow **		25	30	-
Bison		8	10	-
Horses				
Horses		8	11	-
Hogs				
Sow (Farrow/wean)		6.5		-
Dry Sow/Boar	958	4		3,832
Feeder	1,872	3		5,616
Nursery (33 lb.)		2		-
Chickens				
Broilers		0.035		-
Roasters/Pullets		0.04		-
Layers		0.055		-
Breeders		0.07		-
Turkeys				
Turkey Growers		0.13		-
Turkey Heavies		0.16		-
Sheep/Goats				
Sheep/Goats		2		-
Ewes/Does		3		-
Lambs/Kids (90 lb.)		1.6		-
		TOTAL (IG/day)		**9,448**
	***	**TOTAL with 10% wash water**		**10,393**

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

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

Enter this number on page 7 of Application Form.

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

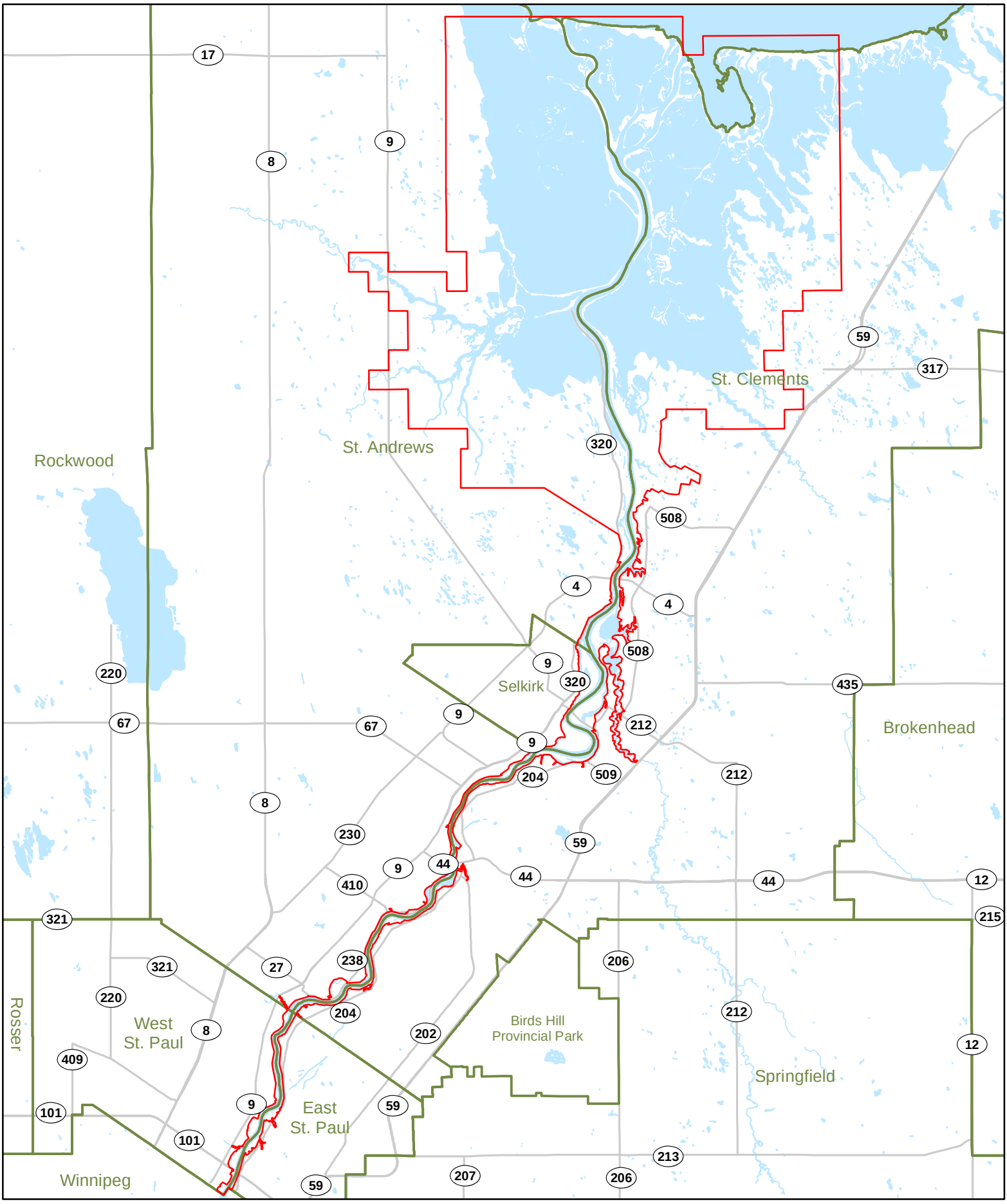
Other consumption:

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

Unit Conversions		
Total per day	**Total per year**	**Unit**
10,393	**3,793,372**	**IG**
42,951	**15,676,972**	**litres**
0.043	**16**	**cubic decametres (dam^3)**

Enter this number on page 7 of Application Form.

Conversion Factor: 1 IGPM = 4.546 l/m



Lower Red River Designated Flood Area

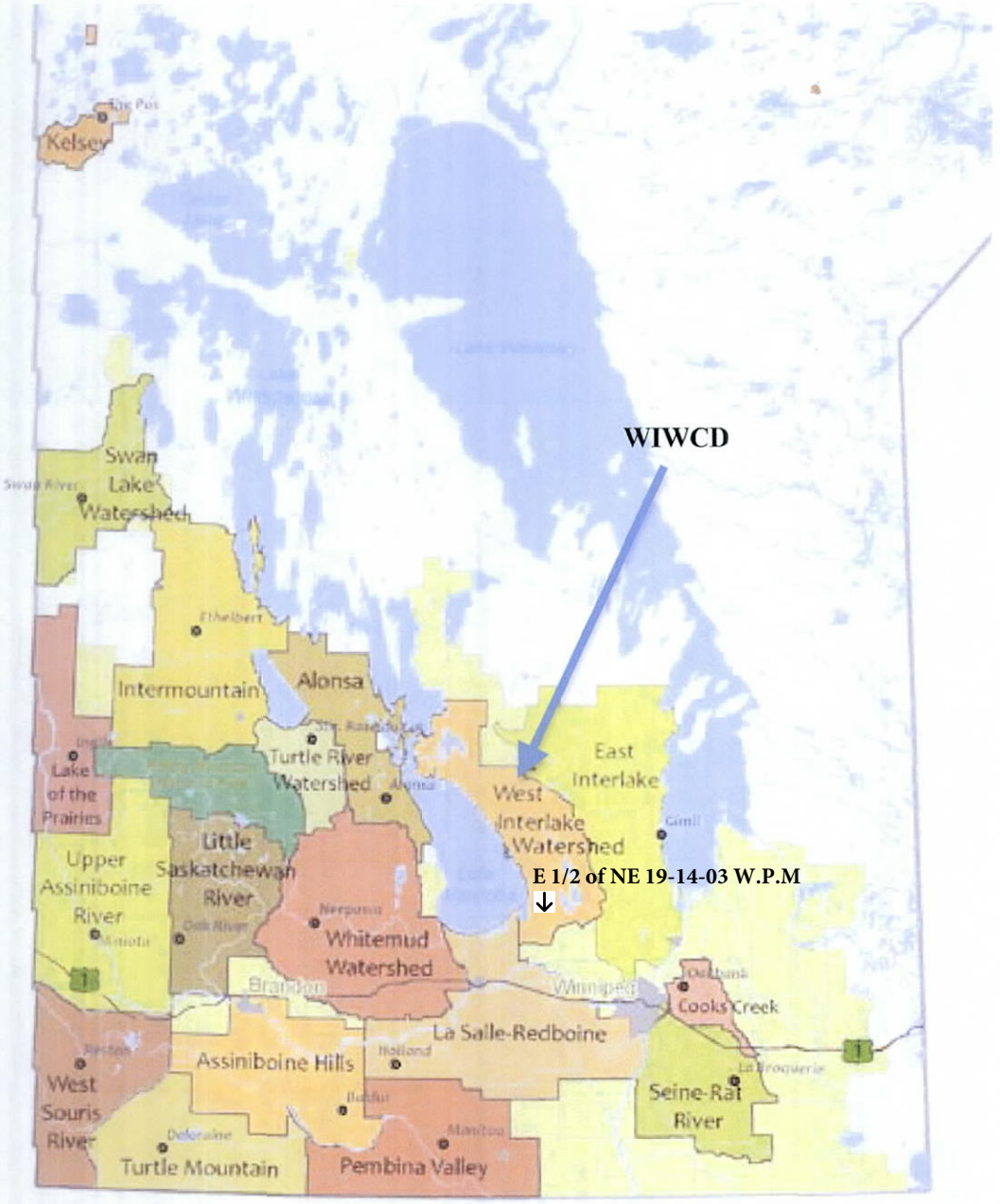


Figure 1. Map of the Manitoba Conservation District boundaries. WIWCD is located on the east shore of Lake Manitoba.

↓ E 1/2 of NE 19-14-03 W.P.M

LAKE FRANCIS SUB-DISTRICT

Armstrong

Coldwell

St. Laurent

Woodlands

E 1/2 of NE 19-14-03 W.P.M

Portage La Prairie

St. François Xavier

19-5-W
18-6-W
18-5-W
18-4-W
18-3-W
18-2-W
17-6-W
17-5-W
17-4-W
17-3-W
17-2-W
16-6-W
16-5-W
16-4-W
16-3-W
16-2-W
15-6-W
15-5-W
15-4-W
15-3-W
15-2-W
14-6-W
14-5-W
14-4-W
14-3-W
14-2-W
13-6-W
13-5-W
13-4-W
13-3-W
13-2-W

Animal Type (A)	Animal Sub-type (B)	Daily Manure Production				Production Period [2] (Days) (G)	Number of Animals [3] (Capacity) (H)	Total Manure Volume (ft^3) (FxGxH)	Total Manure Volume for Semi-Solid and Liquid Manure (Imp Gal)
		References (C)	Manure Type (D)	Default Manure Production (ft^3/animal/day) (E)	Operation Manure Production [1] (ft^3/animal/day) (F)				
Dairy (milking cows[4] and associated livestock)	Free Stall	Table 6, pg 59, FPGs for Dairy 1995	Semi-Solid [5]	3.5				-	0.0
			Solid	3.4				-	
			Liquid [5]	3.5				-	0.0
	Tie Stall		Semi-Solid [5]	3.6				-	0.0
			Solid	3.5				-	
			Liquid [5]	3.6				-	0.0
	Loose Housing		Solid	3.0				-	
	Milking Parlour Manure and Washwater		Liquid	0.5					
Beef	Beef cows including associated livestock	pg 117, FPGs for Hogs 1998	Solid	1.2				-	
	Backgrounder (200 day)		Solid	0.73				-	
	Summer pasture / replacement heifers		Solid	0.85				-	
	Feeder cattle		Solid	1.1				-	
Pigs	Sows - farrow to finish (234 - 254 lbs)	MAFRI website, FPGs for Pigs 2007	Liquid	2.3				-	0.0
	Sows - farrow to wean (up to 11 lbs)		Liquid	0.8				-	0.0
	Sows - farrow to nursery (51 lbs)		Liquid	1				-	0.0
	Boars AI (estimated)		Liquid	0.35	0.35	365.00	958	122,384.50	762,455.4
	Grower / Finisher (51 - 249 lbs)		Liquid	0.25	0.25	365.00	1,872	170,820.00	1,064,208.6

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

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

Instructions and footnotes:

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

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

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

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

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

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

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

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

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

Proposed Manure Storage Facility Dimension Table

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

CELL	Proposed Manure Storage Facility Dimensions						Storage Capacity (days)
	Width	Length	Depth	Height (Above Grade)	Slope (H:L)		
					Inside	Outside	
Primary	160 ft	140 ft	14 ft	5 ft	4:1	5:1	138
Secondary	160 ft	250 ft	12 ft	5 ft	4:1	5:1	281
Tertiary	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Circular Tank		Diameter	Height	Depth			
		N/A	N/A	N/A			

Note: Primary and Secondary Cell dimensions are their inner cell dimensions. Overall Manure Storage Facility dimension is 470 ft in Length by 299 ft in Width.

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

December 6, 2016

Mr Mike Shaw
Director of Genetic Services
Topigs Norsvin Canada
201-1465 Buffalo Place
Winnipeg, MB R3T 1L8

E-mail: mike.shaw@topigsnorsvin.ca
SENT BY E-MAIL

Manitoba Pork Council
28 Terracon Place
Winnipeg, Manitoba
Canada R2J 4G7

Tel: (204) 237-7447
Fax: (204) 237-9831
www.manitobapork.com

Dear Mr Shaw:

This is CONFIRMATION that in the opinion of *Manitoba Pork*, the proposed new pig operation (Delta II) described below, appears to meet the criteria of the *Pig Production Special Pilot Project – Evaluation Protocol,* based on the information provided by the applicant.

Re: Proposal to build a new pig barn, *Manitoba Pork* File Number: **002-16/04-Topigs Norsvin (Mike Shaw)-Delta II Boar Test Station-RM Woodlands - Revised**

Please accept this as your confirmation letter stating that in the opinion of Manitoba Pork, your proposed pig barn (Delta II Boar Test Station), meets the criteria of the *Pig Production Special Pilot Project – Evaluation Protocol (Protocol)*. This confirmation is based upon the revised information you provided, as outlined below. Submit this letter along with your conditional use application to the TRC review.

In accordance with the *Protocol*, we understand the following about your proposed new pig operation:

1. That a new pig barn/boar test station is proposed to be constructed.
2. Owner of the proposed pig barn: *Topigs Norsvin Canada Inc.*
3. Applicant's name, if different from owner: same as above, (Mike Shaw applying on behalf of *Topigs Norsvin Canada*).
4. Location of proposed operation: E ½ of NE 19-14-3 WPM, RM of Woodlands.
5. Type of operation being proposed: Boar test station consisting of grower/finishers and AI boars.
6. The animals are proposed to be marketed at a Manitoba processing plant and domestic and international markets for semen and AI boars.
7. Maximum size of the proposed operation by number of AUs: 1875 growers finisher and 960 boars, approximately 460 AUs. Proposing to hold some pigs to a heavy weight of 150 kgs and up (calculated at an AI Boar animal unit) which is why a higher than normal AU rating is shown.

8. Approximate size of proposed new barn: Approx. 75,400 ft^2 (7010 m^2), approx. 130'x580' (40m x 177m).

9. Type of manure storage facility being proposed: Earthen manure storage, 2 cells.

10. Size of manure storage facility being proposed: Approx. 2.1 million gallons, with a holding capacity of approx. 419 days.

11. Type of odour control measures being proposed: Shelter belts and significant distance from neighbouring residences.

It is understood that you will comply with the attached *Protocol* in the ongoing management of your operation, including that:

- all manure from your operation will be injected and/or incorporated within 48 hours of application,
- you will require long term access to manure spread fields at a 1x phosphorous application rate (even though you do not have to apply the manure at that rate) – and all of these fields must be identified as a part of your full application process,
- all manure spread fields will be permanently maintained below 60 ppm, and
- other requirements as outlined in the *Protocol*.

If you make any significant changes to your proposed project during the application process which alters any of the information as stated above, or alters any of the numbers by 10% or more, please notify our office.

As we understand it, your next step is to apply for a Conditional Use permit from the municipality which will include a Technical Review Committee (TRC) process – you will need considerably more detailed information for that process. You may wish to contact **Don Malinowski**, Technical Review Coordinator (204-945-8353), for the requirements of the TRC review – or you can go to their website: gov.mb.ca/ia/livestock/index . For additional information, see our booklet *'Building a Pig Barn in Manitoba-A Step by Step Guide'*, on our website (www.manitobapork.com) which outlines the main steps of what is required to build a new barn.

Yours sincerely,

A.T. Dickson

Andrew Dickson
General Manager

Pig Production *Special Pilot Project*
EVALUATION PROTOCOL

In December 2014, the Government of Manitoba agreed to review a pilot project proposal for limited expansion of the pig industry in the province under a Pilot Project that incorporates a number of strengthened environmental criteria. Meetings between industry and government officials were held between January and March of 2015 to further clarify the criteria.

New and expanding operations will be encouraged to lead to the production of **market hogs** to assist the existing pig processing plants in Manitoba.

New sites must be located **west of the Red River** and outside of the major flood zone. Expansion of existing sites will be considered province-wide, except in the Rural Municipalities of Hanover and La Broquerie, but will be strongly encouraged to occur **west of the Red River** and outside of the major flood zone.

Any potential site within the pilot project will be **vetted through *Manitoba Pork***. *Manitoba Pork* will not approve proposals, nor will it act as an agent or applicant. However, the provincial government has indicated that it wants all proposals to be reviewed first by *Manitoba Pork*. *Manitoba Pork* has agreed to do so, but only to state whether or not in its opinion the proposal meets the criteria as stated herein. *Manitoba Pork* believes its evaluation will have a very quick turn-around (targeted at 10 working days or less). After evaluating a proposal against these criteria, *Manitoba Pork* will issue a letter to the applicant stating in its opinion whether or not the proposal appears to meet these criteria. If the proposal appears to meet the criteria, the letter will indicate that *Manitoba Pork* would like the proposal to be considered as part of the pilot project. This letter is to be submitted by the applicant to Manitoba Conservation Water Stewardship (Director of Environmental Programs & Strategies). Applicants are requested to submit the letter prior to participating in the provincial livestock technical review.

Strengthened Environmental Criteria for new and expanding pig barns in Manitoba within the Pilot Project

The following criteria are in addition to existing regulatory requirements for new and expanding pig barns.

1. Proposals for expansion must include manure treatment using anaerobic digestion, mechanical separation OR gravity separation. A two (or more) cell earthen manure storage is an acceptable gravity separation treatment system for the purpose of the Pilot Project.

2. Soils for all manure spread fields are to be maintained at levels of less than 60 ppm Olsen phosphorus.

3. Manure must be injected into tilled soils, or manure may be otherwise applied as long as it is incorporated into the soil within 48 hours (excluding established perennial forages and no-till fields).

4. The land base required for manure application must equal or exceed the crop land required to remove all phosphorus generated by the pigs.

5. Site-specific odour control measures should be a part of any expansion proposal. These might include shelter belts, covers, separation distances, etc.

Special Pilot Project Permit and other requirements

Other than the normal manure storage permit(s) required, applicants will be required to obtain a special pilot project permit from Manitoba Conservation and Water Stewardship in order to be approved by the Province as a part of the overall pilot project. The application for a special pilot project permit must include the above criteria. The proponent must also commit to submitting at least 2 annual manure analysis reports and calculating a minimum of 2 manure application rates in order to be issued the permit. A permit for construction or expansion of a manure storage facility will not be issued unless the proponent has been issued a Special Pilot Project Permit. Details are provided below:

- A minimum of two composite manure samples must be collected and analysed each year during pump out of the manure storage facility. Analysis reports must be submitted in the next crop year's Manure Management Plan.

- A minimum of two manure application rates per manure storage facility must be included in future manure management plans which will consider anticipated nutrient composition of the manure. Anticipated phosphorus application rates shall be provided in the manure management plan as the number of years worth of P2O5 applied (i.e. multi-year application rate).

All other usual permits and approvals will still be required, such as, but not necessarily limited to:

- Local (municipal) approvals including Conditional Use approval, and if the application will result in an operation involving 300 or more animal units, a provincial review by the Technical Review Committee will be required;

- A provincial building permit for the barn(s) will be required from the Office of the Fire Commissioner;

- The barn and manure storage facilities must be engineered by a professional engineer;

- Annual manure management plans must be filed for the operation; and

- A water license will be required from Manitoba Conservation and Water Stewardship if the operation will be using more than 25,000 litres of water per day.

MANURE APPLICATION FIELD CHARACTERISTICS TABLE

	A	B	C	D	E	F	G	H	I	J
Field	**Legal Description**	**Rural Municipality**	**O/C/L/ A**	**Total Acreage**	**Setbacks, including features**	**Net Acreage for Manure Application**	**Agriculture Capability Class and Subclass**	**Soil Phosphorus (ppm Olsen P) 0-6 inches**	**Development Plan Designation**	**Zoning**
1	SE20-14-3w (East)	Woodlands	A	43		43	4DP	42	Agricultural Area “AA” 2643-14	Rural Area Zone “RA” 2648/14
2	SE20-14-3w (West)	Woodlands	A	57		57	4DP	29	Agricultural Area “AA” 2643-14	Rural Area Zone “RA” 2648/14
3	NW28-14-3w (West)	Woodlands	A	77		77	4DP	7	Agricultural Area “AA” 2643-14	Rural Area Zone “RA” 2648/14
4	NE33-14-3w	Woodlands	A	145		145	5M	14	Agricultural Area “AA” 2643-14	Rural Area Zone “RA” 2648/14
5	NW33-14-3w	Woodlands	A	145		145	4DP	11	Agricultural Area “AA” 2643-14	Rural Area Zone “RA” 2648/14
6	NE28-14-3w (East)	Woodlands	A	85		85	4DP	15	Agricultural Area “AA” 2643-14	Rural Area Zone “RA” 2648/14
7	NE29-14-3w -1 (NN)	Woodlands	A	37		37	4DP	8	Agricultural Area “AA” 2643-14	Rural Area Zone “RA” 2648/14
8	NE29-14-3w -2 (NS)	Woodlands	A	40		40	4DP	5	Agricultural Area “AA” 2643-14	Rural Area Zone “RA” 2648/14
9	NE29-14-3w -3 (SN)	Woodlands	A	35		35	4DP	5	Agricultural Area “AA” 2643-14	Rural Area Zone “RA” 2648/14
10	NE29-14-3w -4 (SS)	Woodlands	A	35		35	4DP	8	Agricultural Area “AA” 2643-14	Rural Area Zone “RA” 2648/14
11	NW29-14-3w -10	Woodlands	A	138		138	4DP	8	Agricultural Area “AA” 2643-14	Rural Area Zone “RA” 2648/14
12	SE29-14-3w -5 (NN)	Woodlands	A	38		38	4DP	6	Agricultural Area “AA” 2643-14	Rural Area Zone “RA” 2648/14
13	SE29-14-3w -6 (NS)	Woodlands	A	39		39	4DP	9	Agricultural Area “AA” 2643-14	Rural Area Zone “RA” 2648/14
14	SE29-14-3w -7 (SN)	Woodlands	A	42		42	4DP	10	Agricultural Area “AA” 2643-14	Rural Area Zone “RA” 2648/14
15	SE29-14-3w -8 (SS)	Woodlands	A	36		36	4DP	10	Agricultural Area “AA” 2643-14	Rural Area Zone “RA” 2648/14
16	SW29-14-3w -9a	Woodlands	A	74		74	4DP	6	Agricultural Area “AA” 2643-14	Rural Area Zone “RA” 2648/14
17	SW29-14-3w -9b	Woodlands	A	77		77	4DP	9	Agricultural Area “AA” 2643-14	Rural Area Zone “RA” 2648/14
18	SW33-14-3w (South)	Woodlands	A	74		74	4DP	5	Agricultural Area “AA” 2643-14	Rural Area Zone “RA” 2648/14
19										
20										
					Total Net Acreage for Manure Application:	1217				

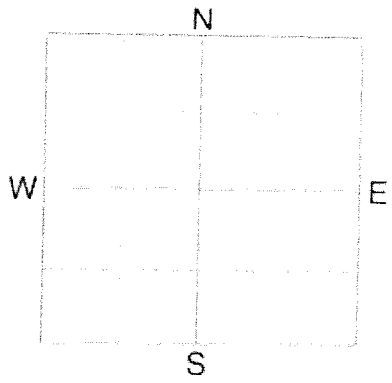
A. _____ Enter the legal description for each parcel of land that will receive manure: Sec, Twp, Rge or River Lot (including parish).
B. _____ Identify the Rural Municipality in which the parcel is located.
C. _____ Indicate how the land has been secured for manure application: O – Own / C-Crown / L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

AGVISE LABORATORIES

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

SOIL TEST REPORT

FIELD ID **8123**
SAMPLE ID
FIELD NAME **Delta 3**
COUNTY
TWP **SE 20-14-3w (E)** RANGE
SECTION QTR ACRES **43**
PREV. CROP **Grass/Pasture**



SUBMITTED FOR:
Delta 3

SUBMITTED BY: **EL1911**
AGRA-GOLD CONSULTING LTD
CLIFF LOEWEN
33020 ROAD 40 N
BLUMENORT, MB **R0A 0C1**

REF # **1797110** BOX # **0**
LAB # **NW171405**

Date Sampled **11/09/2016** Date Received **11/10/2016** Date Reported **11/24/2016**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" / 6-15" Nitrate	26 lb/ac / 10 lb/ac	*******			
0-15" Nitrate	36 lb/ac				
Olsen Phosphorus	42 ppm	**********	**********	**********	**********
Potassium	417 ppm	**********	**********	**********	**********
Chloride					
0-6" / 6-15" Sulfur	44 lb/ac / 57 lb/ac	**********	**********	**********	**********
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
0-6" / 6-15" Sol. Salts	0.62 mmho/cm / 0.34 mmho/cm	**********	********		

1st Crop Choice		
Grass/Pasture		
YIELD GOAL		
4 Tons		
SUGGESTED GUIDELINES		
Band		
LB/ACRE		APPLICATION
N	**84**	
P_2O_5	**0**	
K_2O	**0**	
Cl		
S	**0**	
B		
Zn		
Fe		
Mn		
Cu		
Mg		
Lime		

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

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

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **8.0** 6-24" **8.5**							

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

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
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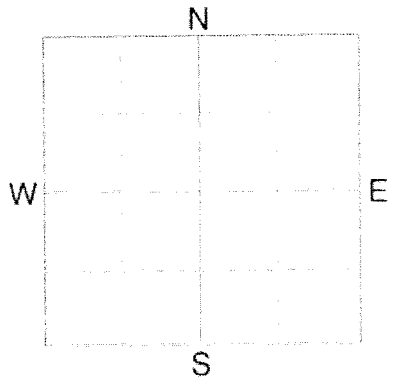
SOIL TEST REPORT

FIELD ID **8124**
SAMPLE ID
FIELD NAME **Delta 3** 2
COUNTY
TWP **SE 20-14-3w (W)** RANGE
SECTION QTR ACRES **57**
PREV. CROP **Grass/Pasture**



SUBMITTED FOR:
Delta 3

SUBMITTED BY: **EL1911**
AGRA-GOLD CONSULTING LTD
CLIFF LOEWEN
33020 ROAD 40 N
BLUMENORT, MB **R0A 0C1**

REF # **1797182** BOX # **0**
LAB # **NW171433**

Date Sampled **11/09/2016** Date Received **11/10/2016** Date Reported **11/24/2016**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" Nitrate	6 lb/ac	**			
6-13" Nitrate	5 lb/ac				
0-13" Nitrate	11 lb/ac				
Olsen Phosphorus	29 ppm	**********			
Potassium	289 ppm	**********			
Chloride					
0-6" Sulfur	34 lb/ac	**********			
6-13" Sulfur	61 lb/ac	**********			
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
0-6" Sol. Salts	0.41 mmho/cm	**********			
6-13" Sol. Salts	0.3 mmho/cm	*******			

1st Crop Choice		
Grass/Pasture		
YIELD GOAL		
4 Tons		
SUGGESTED GUIDELINES		
Band		
LB/ACRE		APPLICATION
N	**109**	
P_2O_5	**0**	
K_2O	**0**	
Cl		
S	**0**	
B		
Zn		
Fe		
Mn		
Cu		
Mg		
Lime		

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

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

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **8.1** 6-24" **8.3**							

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

AGVISE LABORATORIES

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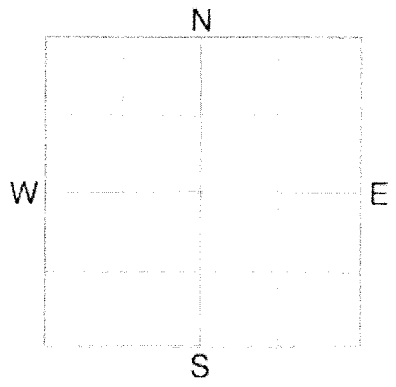
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **8120**
SAMPLE ID
FIELD NAME **Delta 3**
COUNTY 3
TWP **NW 28-14-3w (W)** RANGE
SECTION QTR ACRES **77**
PREV. CROP **Grass/Pasture**



SUBMITTED FOR:
Delta 3

SUBMITTED BY: **EL1911**
AGRA-GOLD CONSULTING LTD
CLIFF LOEWEN
33020 ROAD 40 N
BLUMENORT, MB **R0A 0C1**

REF # **1797157** BOX # **0**
LAB # **NW171430**

Date Sampled **11/09/2016** Date Received **11/10/2016** Date Reported **11/24/2016**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" / 6-18" Nitrate	8 lb/ac / 2 lb/ac	**			
0-18" Nitrate	10 lb/ac				
Olsen Phosphorus	7 ppm	**********			
Potassium	115 ppm	**********	**********		
Chloride					
0-6" / 6-18" Sulfur	14 lb/ac / 24 lb/ac	**********	**********		
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
0-6" / 6-18" Sol. Salts	0.33 mmho/cm / 0.18 mmho/cm	******** / ****			

1st Crop Choice		
Grass/Pasture		
YIELD GOAL		
4 Tons		
SUGGESTED GUIDELINES		
Band		
LB/ACRE		APPLICATION
N	**110**	
P_2O_5	**31**	**Band ***
K_2O	**37**	**Band ***
Cl		
S	**7**	**Band (Trial)**
B		
Zn		
Fe		
Mn		
Cu		
Mg		
Lime		

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

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

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **8.1** 6-24" **8.4**							

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

AGVISE LABORATORIES

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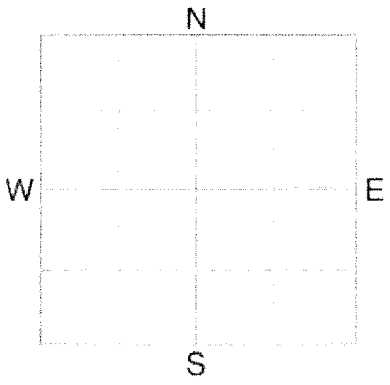
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **8117**
SAMPLE ID
FIELD NAME **Delta 3** 4
COUNTY
TWP **NE 33-14-3w** RANGE
SECTION QTR ACRES **145**
PREV. CROP **Grass/Pasture**



SUBMITTED FOR:
Delta 3

SUBMITTED BY: **EL1911**
AGRA-GOLD CONSULTING LTD
CLIFF LOEWEN
33020 ROAD 40 N
BLUMENORT, MB R0A 0C1

REF # **1797162** BOX # **0**
LAB # **NW171376**

Date Sampled **11/09/2016** Date Received **11/10/2016** Date Reported **11/24/2016**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" / 6-18" Nitrate	6 lb/ac / 52 lb/ac	**********			
0-18" Nitrate	58 lb/ac				
Olsen Phosphorus	14 ppm	**********	**********	**********	**********
Potassium	183 ppm	**********	**********	**********	**********
Chloride					
0-6" / 6-18" Sulfur	24 lb/ac / 96 lb/ac	**********	**********	**********	**********
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
0-6" / 6-18" Sol. Salts	0.42 mmho/cm / 0.35 mmho/cm	**********	**********		

1st Crop Choice		
Grass/Pasture		
YIELD GOAL		
4 Tons		
SUGGESTED GUIDELINES		
Band		
LB/ACRE		APPLICATION
N	62	
P_2O_5	13	Band *
K_2O	19	Band *
Cl		
S	0	
B		
Zn		
Fe		
Mn		
Cu		
Mg		
Lime		

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

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

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **8.2** 6-24" **8.6**							

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

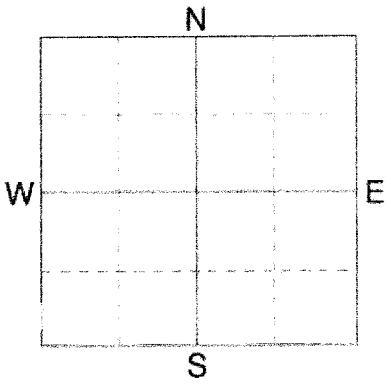
FIELDSMART PRODUCTION SOLUTIONS

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

SOIL TEST REPORT

FIELD ID **15-West of Bens**
SAMPLE ID
FIELD NAME
COUNTY **3**
TWP **14** RANGE
SECTION **33** QTR **NW** ACRES **140**
PREV. CROP **Corn-Silage**

5



SUBMITTED FOR:
Elskamp

Woodlands, MB **R0C3H0**

SUBMITTED BY: **EN5402**
ENNS BROTHERS LTD
CHERYL BARTMANOVIC
310-400 FORT WHYTE W
OAK BLUFF, MB **R4G 0B1**

REF # **1636358** BOX # **0**
LAB # **NW72201**

Date Sampled | Date Received **09/16/2016** | Date Reported **11/17/2016**

Nutrient In The Soil		Interpretation (Very Low / Low / Med / High)
Nitrate **0-6"**	**40 lb/ac**	
Phosphorus **Olsen**	**11 ppm**	
Potassium	**166 ppm**	
Chloride **0-6"**	**26 lb/ac**	
Sulfur **0-6"**	**22 lb/ac**	
Boron	**1.6 ppm**	
Zinc	**1.12 ppm**	
Iron	**29.6 ppm**	
Manganese	**3.8 ppm**	
Copper	**0.97 ppm**	
Magnesium	**1539 ppm**	
Calcium	**5525 ppm**	
Sodium	**40 ppm**	
Org.Matter	**8.3 %**	
Carbonate(CCE)	**8.4 %**	
Sol. Salts **0-6"**	**0.54 mmho/cm**	

1st Crop Choice		
Corn-Silage		
YIELD GOAL		
12 Tons		
SUGGESTED GUIDELINES		
Broadcast		
LB/ACRE		APPLICATION
N	**55**	
P_2O_5	**61**	**Broadcast**
K_2O	**46**	**Broadcast**
Cl		**Not Available**
S	**10**	**Broadcast (Trial)**
B	**0**	
Zn	**2**	**Broadcast(Trial)**
Fe	**0**	
Mn	**0**	
Cu	**0**	
Mg	**0**	
Lime		

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

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

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **8.2**		**41.0 meq**	(65-75) **67.3**	(15-20) **31.2**	(1-7) **1.0**	(0-5) **0.4**	(0-5)

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

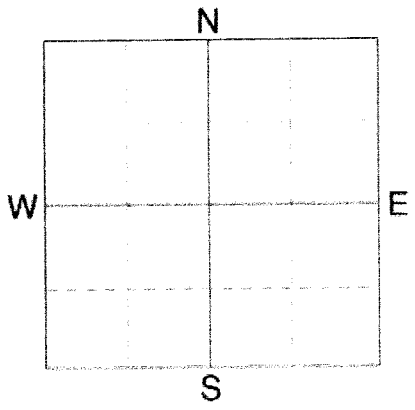
Crop 1: ** Chloride yield data is limited for this crop. Soil Nitrogen level is estimated at 70 lbs/acre. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 43 K2O = 100 AGVISE Broadcast guidelines will build P & K test levels to the high range over several years.

AGVISE LABORATORIES

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

SOIL TEST REPORT

FIELD ID **8112**
SAMPLE ID
FIELD NAME **Delta 3**
COUNTY
TWP **NE 28-14-3w (E)** RANGE
SECTION QTR ACRES **85**
PREV. CROP **Grass/Pasture**



SUBMITTED FOR:
Delta 3

SUBMITTED BY: **EL1911**
AGRA-GOLD CONSULTING LTD
CLIFF LOEWEN
33020 ROAD 40 N
BLUMENORT, MB **R0A 0C1**

REF # **1785283** BOX # **0**
LAB # **NW171448**

Date Sampled **10/31/2016** Date Received **11/10/2016** Date Reported **11/24/20**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
Nitrate	**0-6" 16 lb/ac**	*********			
Phosphorus	**Olsen 15 ppm**	**********	**********	**********	**********
Potassium	**108 ppm**	**********	**********	**********	
Chloride					
Sulfur	**0-6" 34 lb/ac**	**********	**********	**********	
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
Sol. Salts	**0-6" 0.42 mmho/cm**	**********	**********		

1st Crop Choice		
Grass/Pasture		
YIELD GOAL		
4 Tons		
SUGGESTED GUIDELINES		
Band		
LB/ACRE		APPLICATION
N	**88**	
P_2O_5	**11**	**Band ***
K_2O	**38**	**Band ***
Cl		
S	**0**	
B		
Zn		
Fe		
Mn		
Cu		
Mg		
Lime		

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

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

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **8.1**							

Crop 1: Soil Nitrogen level is estimated at 32 lbs/acre. * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 48 K2O = 180 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

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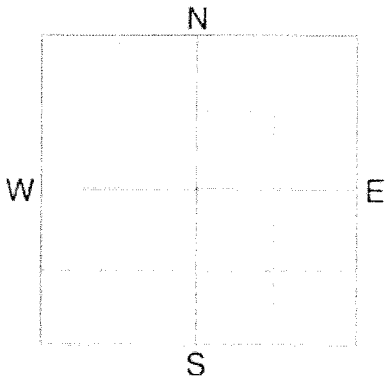
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **8113**
SAMPLE ID
FIELD NAME **1** 7
COUNTY
TWP **NE 29-14-3w - 1** RANGE
SECTION QTR ACRES **37**
PREV. CROP **Grass/Pasture**



SUBMITTED FOR:
Delta 3

SUBMITTED BY: **EL1911**
AGRA-GOLD CONSULTING LTD
CLIFF LOEWEN
33020 ROAD 40 N
BLUMENORT, MB R0A 0C1

REF # **1797160** BOX # **0**
LAB # **NW171401**

Date Sampled **11/09/2016** Date Received **11/10/2016** Date Reported **11/24/2016**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" 6-24" Nitrate	7 lb/ac 18 lb/ac	*****			
0-24" Nitrate	25 lb/ac				
Olsen Phosphorus	8 ppm	**********			
Potassium	110 ppm	**********			
Chloride					
0-6" 6-24" Sulfur	82 lb/ac 138 lb/ac	**********	**********	**********	**********
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
0-6" 6-24" Sol. Salts	0.46 mmho/cm 0.25 mmho/cm	********** ******			

1st Crop Choice		
Grass/Pasture		
YIELD GOAL		
4 Tons		
SUGGESTED GUIDELINES		
Band		
LB/ACRE		APPLICATION
N	**95**	
P_2O_5	**28**	**Band ***
K_2O	**38**	**Band ***
Cl		
S	**0**	
B		
Zn		
Fe		
Mn		
Cu		
Mg		
Lime		

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

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

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **8.2** 6-24" **8.5**							

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

AGVISE LABORATORIES

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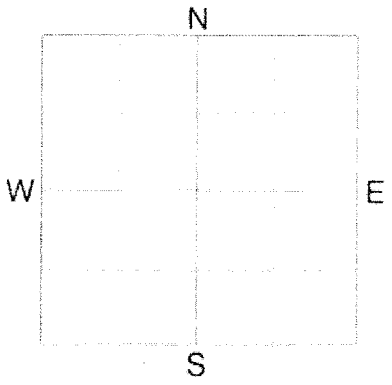
SOIL TEST REPORT

FIELD ID **8115 & 8114**
SAMPLE ID 8+9
FIELD NAME **2 and 3**
COUNTY
TWP **NE 29-14-3w - 3 and 2** RANGE
SECTION QTR ACRES **76**
PREV. CROP **Grass/Pasture**



SUBMITTED FOR:
Delta 3

SUBMITTED BY: **EL1911**
AGRA-GOLD CONSULTING LTD
CLIFF LOEWEN
33020 ROAD 40 N
BLUMENORT, MB R0A 0C1

REF # **1797148** BOX # **0**
LAB # **NW171427**

Date Sampled **11/09/2016** Date Received **11/10/2016** Date Reported **11/24/2016**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" Nitrate	**6 lb/ac**	**			
6-18" Nitrate	**4 lb/ac**	**			
0-18" Nitrate	**10 lb/ac**	**			
Olsen Phosphorus	**5 ppm**	********			
Potassium	**92 ppm**	**********			
Chloride					
0-6" Sulfur	**18 lb/ac**	**********			
6-18" Sulfur	**44 lb/ac**	**********	**********	**********	**********
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
0-6" Sol. Salts	**0.36 mmho/cm**	********			
6-18" Sol. Salts	**0.24 mmho/cm**	******			

1st Crop Choice		
Grass/Pasture		
YIELD GOAL		
4 Tons		
SUGGESTED GUIDELINES		
Band		
LB/ACRE		APPLICATION
N	**110**	
P_2O_5	**36**	**Band ***
K_2O	**42**	**Band ***
Cl		
S	**5**	**Band (Trial)**
B		
Zn		
Fe		
Mn		
Cu		
Mg		
Lime		

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

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

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **8.1** 6-24" **8.5**							

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

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
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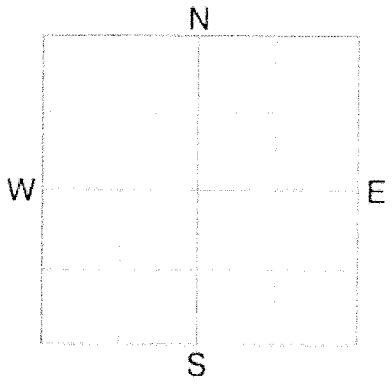
SOIL TEST REPORT

FIELD ID **8116**
SAMPLE ID
FIELD NAME **4** 10
COUNTY
TWP **NE 29-14-3w - 4** RANGE
SECTION QTR ACRES **35**
PREV. CROP **Grass/Pasture**



SUBMITTED FOR:
Delta 3

SUBMITTED BY: **EL1911**
AGRA-GOLD CONSULTING LTD
CLIFF LOEWEN
33020 ROAD 40 N
BLUMENORT, MB **R0A 0C1**

REF # **1797159** BOX # **0**
LAB # **NW171404**

Date Sampled **11/09/2016** Date Received **11/10/2016** Date Reported **11/24/2016**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" Nitrate	**8 lb/ac**	******			
6-18" Nitrate	**22 lb/ac**				
0-18" Nitrate	**30 lb/ac**				
Olsen Phosphorus	**8 ppm**	**********			
Potassium	**99 ppm**	**********			
Chloride					
0-6" Sulfur	**22 lb/ac**	**********			
6-18" Sulfur	**68 lb/ac**	**********	**********	**********	
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
0-6" Sol. Salts	**0.29 mmho/cm**	*******			
6-18" Sol. Salts	**0.21 mmho/cm**	*****			

1st Crop Choice		
Grass/Pasture		
YIELD GOAL		
4 Tons		
SUGGESTED GUIDELINES		
Band		
LB/ACRE		APPLICATION
N	**90**	
P_2O_5	**28**	**Band ***
K_2O	**41**	**Band ***
Cl		
S	**0**	
B		
Zn		
Fe		
Mn		
Cu		
Mg		
Lime		

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

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

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **8.2** 6-24" **8.7**							

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

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
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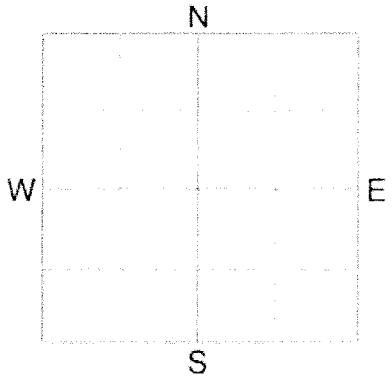
SOIL TEST REPORT

FIELD ID **8121**
SAMPLE ID
FIELD NAME **10** 11
COUNTY
TWP **NW 29-14-3w -10** RANGE
SECTION QTR ACRES **138**
PREV. CROP **Grass/Pasture**



SUBMITTED FOR:
Delta 3

SUBMITTED BY: **EL1911**
AGRA-GOLD CONSULTING LTD
CLIFF LOEWEN
33020 ROAD 40 N
BLUMENORT, MB R0A 0C1

REF # **1797158** BOX # **0**
LAB # **NW171811**

Date Sampled **11/09/2016** Date Received **11/11/2016** Date Reported **11/24/2016**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" 6-18"	8 lb/ac 4 lb/ac	**			
0-18" Nitrate	12 lb/ac				
Olsen Phosphorus	8 ppm	**********			
Potassium	122 ppm	**********	**********		
Chloride					
0-6"	12 lb/ac	**********			
6-18" Sulfur	68 lb/ac	**********	**********	**********	**********
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
0-6" 6-18" Sol. Salts	0.35 mmho/cm 0.34 mmho/cm	******** ********			

1st Crop Choice		
Grass/Pasture		
YIELD GOAL		
4 Tons		
SUGGESTED GUIDELINES		
Band		
LB/ACRE		APPLICATION
N	**108**	
P_2O_5	**28**	**Band ***
K_2O	**35**	**Band ***
Cl		
S	**0**	
B		
Zn		
Fe		
Mn		
Cu		
Mg		
Lime		

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

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

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **7.9** 6-24" **8.2**							

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

AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
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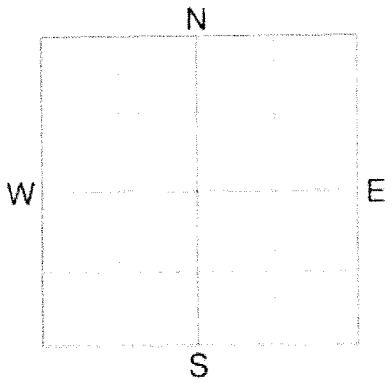
SOIL TEST REPORT

FIELD ID **8129**
SAMPLE ID
FIELD NAME **5** 12
COUNTY
TWP **SE 29-14-3w - 5** RANGE
SECTION QTR ACRES **38**
PREV. CROP **Grass/Pasture**



SUBMITTED FOR:
Delta 3

SUBMITTED BY: **EL1911**
AGRA-GOLD CONSULTING LTD
CLIFF LOEWEN
33020 ROAD 40 N
BLUMENORT, MB R0A 0C1

REF # **1797149** BOX # **0**
LAB # **NW171429**

Date Sampled **11/09/2016** Date Received **11/10/2016** Date Reported **11/24/2016**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" 6-18" Nitrate	4 lb/ac 8 lb/ac	**			
0-18" Nitrate	12 lb/ac				
Olsen Phosphorus	6 ppm	**********			
Potassium	125 ppm	**********	**********		
Chloride					
0-6" Sulfur	14 lb/ac	**********			
6-18" Sulfur	88 lb/ac	**********	**********	**********	
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
0-6" Sol. Salts	0.3 mmho/cm	*******			
6-18" Sol. Salts	0.25 mmho/cm	******			

1st Crop Choice		
Grass/Pasture		
YIELD GOAL		
4 Tons		
SUGGESTED GUIDELINES		
Band		
LB/ACRE		APPLICATION
N	**108**	
P_2O_5	**33**	**Band ***
K_2O	**34**	**Band ***
Cl		
S	**0**	
B		
Zn		
Fe		
Mn		
Cu		
Mg		
Lime		

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

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

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **8.2** 6-24" **8.5**							

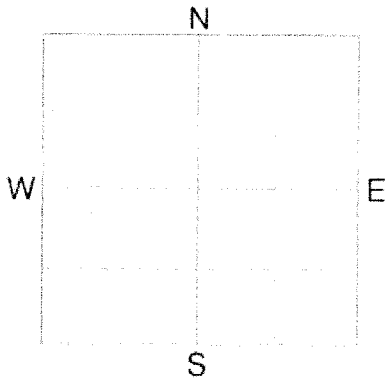
Crop 1: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 48 K2O = 180 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

AGVISE LABORATORIES

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

SOIL TEST REPORT

FIELD ID **8130**
SAMPLE ID
FIELD NAME **6** 13
COUNTY
TWP **SE 29-14-3w - 6** RANGE
SECTION QTR ACRES **39**
PREV. CROP **Grass/Pasture**



SUBMITTED FOR:
Delta 3

SUBMITTED BY: **EL1911**
AGRA-GOLD CONSULTING LTD
CLIFF LOEWEN
33020 ROAD 40 N
BLUMENORT, MB R0A 0C1

REF # **1797194** BOX # **0**
LAB # **NW171375**

Date Sampled **11/09/2016** Date Received **11/10/2016** Date Reported **11/24/2016**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
	0-6" 5 lb/ac **6-18" 14 lb/ac**	****			
Nitrate	**0-18" 19 lb/ac**				
Phosphorus	**Olsen 9 ppm**	**********			
Potassium	**116 ppm**	**********	**********		
Chloride					
Sulfur	**0-6" 16 lb/ac** **6-18" 28 lb/ac**	**********	**********		
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
Sol. Salts	**0-6" 0.33 mmho/cm** **6-18" 0.25 mmho/cm**	********	******		

1st Crop Choice		
Grass/Pasture		
YIELD GOAL		
4 Tons		
SUGGESTED GUIDELINES		
Band		
LB/ACRE		APPLICATION
N	**101**	
P_2O_5	**26**	**Band ***
K_2O	**36**	**Band ***
Cl		
S	**5**	**Band (Trial)**
B		
Zn		
Fe		
Mn		
Cu		
Mg		
Lime		

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

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

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **8.1** 6-24" **8.5**							

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

AGVISE LABORATORIES

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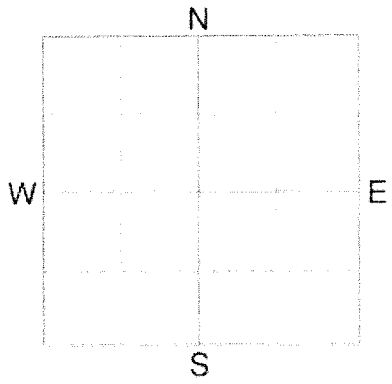
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **8131 & 8132**
SAMPLE ID
FIELD NAME **7 and 8** 14+15
COUNTY
TWP **SE 29-14-3w - 7 and 8** RANGE
SECTION QTR ACRES **78**
PREV. CROP **Grass/Pasture**



SUBMITTED FOR:
Delta 3

SUBMITTED BY: **EL1911**
AGRA-GOLD CONSULTING LTD
CLIFF LOEWEN
33020 ROAD 40 N
BLUMENORT, MB R0A 0C1

REF # **1797179** BOX # **0**
LAB # **NW171378**

Date Sampled **11/09/2016** Date Received **11/10/2016** Date Reported **11/24/2016**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
Nitrate	0-6" **4 lb/ac** 6-15" **2 lb/ac** 0-15" **6 lb/ac**	*			
Phosphorus	**Olsen** **10 ppm**	**********			
Potassium	**109 ppm**	**********			
Chloride					
Sulfur	0-6" **16 lb/ac** 6-15" **21 lb/ac**	**********	**********		
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
Sol. Salts	0-6" **0.39 mmho/cm** 6-15" **0.18 mmho/cm**	**********	****		

1st Crop Choice		
Grass/Pasture		
YIELD GOAL		
4 Tons		
SUGGESTED GUIDELINES		
Band		
LB/ACRE		APPLICATION
N	**114**	
P_2O_5	**23**	**Band ***
K_2O	**38**	**Band ***
Cl		
S	**5**	**Band (Trial)**
B		
Zn		
Fe		
Mn		
Cu		
Mg		
Lime		

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

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

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **8.1** 6-24" **8.6**							

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

AGVISE LABORATORIES

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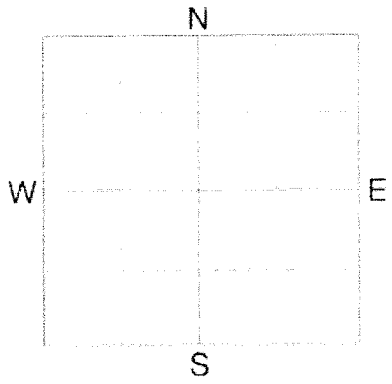
Northwood: (701) 587-6010
Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **8137**
SAMPLE ID
FIELD NAME **9a** 16
COUNTY
TWP **SW 29-14-3w-9a** RANGE
SECTION east QTR ACRES **74**
PREV. CROP **Grass/Pasture**



SUBMITTED FOR:
Delta 3

SUBMITTED BY: **EL1911**
AGRA-GOLD CONSULTING LTD
CLIFF LOEWEN
33020 ROAD 40 N
BLUMENORT, MB **R0A 0C1**

REF # **1797106** BOX # **0**
LAB # **NW171431**

Date Sampled **11/09/2016** Date Received **11/10/2016** Date Reported **11/24/2016**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" / 6-20" Nitrate	4 lb/ac / 12 lb/ac	***			
0-20'' Nitrate	16 lb/ac				
Olsen Phosphorus	6 ppm	**********			
Potassium	106 ppm	**********			
Chloride					
0-6" / 6-20" Sulfur	16 lb/ac / 19 lb/ac	********** / **********			
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
0-6" / 6-20" Sol. Salts	0.35 mmho/cm / 0.23 mmho/cm	******** / ******			

1st Crop Choice		
Grass/Pasture		
YIELD GOAL		
4 Tons		
SUGGESTED GUIDELINES		
Band		
LB/ACRE		APPLICATION
N	**104**	
P_2O_5	**33**	**Band ***
K_2O	**39**	**Band ***
Cl		
S	**5**	**Band (Trial)**
B		
Zn		
Fe		
Mn		
Cu		
Mg		
Lime		

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

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

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **8.0** 6-24" **8.4**							

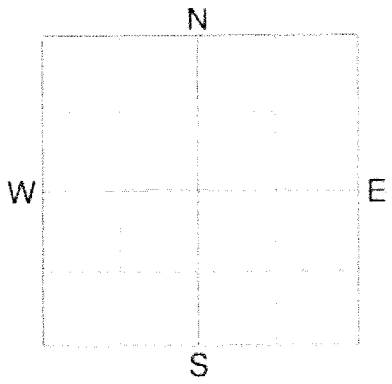
Crop 1: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 48 K2O = 180 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

AGVISE LABORATORIES

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

SOIL TEST REPORT

FIELD ID **8138**
SAMPLE ID
FIELD NAME **9b** 17
COUNTY
TWP **SW 29-14-** RANGE **3w-9b**
SECTION west QTR ACRES **77**
PREV. CROP **Grass/Pasture**



SUBMITTED FOR:
Delta 3

SUBMITTED BY: **EL1911**
AGRA-GOLD CONSULTING LTD
CLIFF LOEWEN
33020 ROAD 40 N
BLUMENORT, MB **R0A 0C1**

REF # **1797164** BOX # **0**
LAB # **NW171428**

Date Sampled **11/09/2016** Date Received **11/10/2016** Date Reported **11/24/2016**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" / 6-18" Nitrate	4 lb/ac / 22 lb/ac	*****			
0-18" Nitrate	26 lb/ac				
Olsen Phosphorus	9 ppm	**********			
Potassium	143 ppm	**********	**********		
Chloride					
0-6" / 6-18" Sulfur	28 lb/ac / 40 lb/ac	**********	**********	**********	
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
0-6" / 6-18" Sol. Salts	0.32 mmho/cm / 0.25 mmho/cm	******** / ******			

1st Crop Choice		
Grass/Pasture		
YIELD GOAL		
4 Tons		
SUGGESTED GUIDELINES		
Band		
LB/ACRE		APPLICATION
N	94	
P_2O_5	26	Band *
K_2O	29	Band *
Cl		
S	5	Band (Trial)
B		
Zn		
Fe		
Mn		
Cu		
Mg		
Lime		

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

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

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **8.2** 6-24" **8.4**							

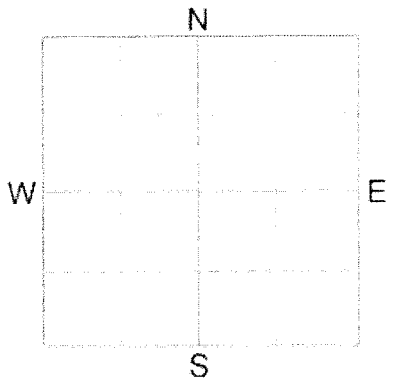
Crop 1: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 48 K2O = 180 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

AGVISE LABORATORIES

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

SOIL TEST REPORT

FIELD ID **8140**
SAMPLE ID
FIELD NAME **Delta 3** 18
COUNTY
TWP **SW 33-14-3w (S)** RANGE
SECTION QTR ACRES **70**
PREV. CROP **Grass/Pasture**



SUBMITTED FOR:
Delta 3

SUBMITTED BY: **EL1911**
AGRA-GOLD CONSULTING LTD
CLIFF LOEWEN
33020 ROAD 40 N
BLUMENORT, MB **R0A 0C1**

REF # **1797188** BOX # **0**
LAB # **NW171435**

Date Sampled **11/09/2016** Date Received **11/10/2016** Date Reported **11/24/2016**

Nutrient In The Soil		Interpretation			
		VLow	Low	Med	High
0-6" Nitrate	15 lb/ac	***			
6-18" Nitrate	2 lb/ac				
0-18" Nitrate	17 lb/ac				
Olsen Phosphorus	5 ppm	********			
Potassium	132 ppm			**********	
Chloride					
0-6" Sulfur	24 lb/ac	**********			
6-18" Sulfur	44 lb/ac				**********
Boron					
Zinc					
Iron					
Manganese					
Copper					
Magnesium					
Calcium					
Sodium					
Org.Matter					
Carbonate(CCE)					
0-6" Sol. Salts	0.37 mmho/cm	*********			
6-18" Sol. Salts	0.17 mmho/cm	****			

1st Crop Choice		
Grass/Pasture		
YIELD GOAL		
4 Tons		
SUGGESTED GUIDELINES		
Band		
LB/ACRE		APPLICATION
N	**103**	
P_2O_5	**36**	**Band ***
K_2O	**32**	**Band ***
Cl		
S	**5**	**Band (Trial)**
B		
Zn		
Fe		
Mn		
Cu		
Mg		
Lime		

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

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

Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
0-6" **8.1** 6-24" **8.6**							

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

Primary Acres

Field #	Legal Land Desc.	Producer	Acres	Corn	Corn Silage	Alfalfa	Barley Silage	Pasture	Hay	Canola	Soybeans	Oats	Soil Test P 0-6"	CI Soil Zone / Risk Area 11	Ag Capability	Development Plan Des	Zoning
1	SE20-14-3w (East)	Arnold Voth	43			36.9	6.1						**42**	**h**	**4DP**	Agricultural Area "AA" 2643-14	Rural Area Zone "RA" 2648/14
2	SE20-14-3w (West)	Arnold Voth	57			48.9	8.1						**29**	**h**	**4DP**	Agricultural Area "AA" 2643-14	Rural Area Zone "RA" 2648/14
3	NW28-14-3w (West)	Woodview Farms Inc.	77	23.1	7.7	38.5	7.7						**7**	**h**	**4DP**	Agricultural Area "AA" 2643-14	Rural Area Zone "RA" 2648/14
4	NE33-14-3w	Elskamp Dairy Farms Inc.	145	43.5	14.5	72.5	14.5						**14**	**h**	**5M**	Agricultural Area "AA" 2643-14	Rural Area Zone "RA" 2648/14
5	NW33-14-3w	Benjamin Elskamp & Ashley Munro	145	43.5	14.5	72.5	14.5						**11**	**h**	**4DP**	Agricultural Area "AA" 2643-14	Rural Area Zone "RA" 2648/14
6	NE28-14-3w (East)	Woodview Farms Inc.	85	25.5	8.5	42.5	8.5						**15**	**h**	**4DP**	Agricultural Area "AA" 2643-14	Rural Area Zone "RA" 2648/14
7	NE29-14-3w -1 (NN)	David Gareau	37								37.0		**8**	**h**	**4DP**	Agricultural Area "AA" 2643-14	Rural Area Zone "RA" 2648/14
8	NE29-14-3w -2 (NS)	David Gareau	40			22.2				8.9		8.9	**5**	**h**	**4DP**	Agricultural Area "AA" 2643-14	Rural Area Zone "RA" 2648/14
9	NE29-14-3w -3 (SN)	David Gareau	35			19.4				7.8		7.8	**5**	**h**	**4DP**	Agricultural Area "AA" 2643-14	Rural Area Zone "RA" 2648/14
10	NE29-14-3w -4 (SS)	David Gareau	35			19.4				7.8		7.8	**8**	**h**	**4DP**	Agricultural Area "AA" 2643-14	Rural Area Zone "RA" 2648/14
11	NW29-14-3w -10	David Gareau	138			76.7				30.7		30.7	**8**	**h**	**4DP**	Agricultural Area "AA" 2643-14	Rural Area Zone "RA" 2648/14
12	SE29-14-3w -5 (NN)	David Gareau	38			21.1				8.4		8.4	**6**	**h**	**4DP**	Agricultural Area "AA" 2643-14	Rural Area Zone "RA" 2648/14
13	SE29-14-3w -6 (NS)	David Gareau	39			21.7				8.7		8.7	**9**	**h**	**4DP**	Agricultural Area "AA" 2643-14	Rural Area Zone "RA" 2648/14
14	SE29-14-3w -7 (SN)	David Gareau	42			23.3				9.3		9.3	**10**	**h**	**4DP**	Agricultural Area "AA" 2643-14	Rural Area Zone "RA" 2648/14
15	SE29-14-3w -8 (SS)	David Gareau	36			20.0				8.0		8.0	**10**	**h**	**4DP**	Agricultural Area "AA" 2643-14	Rural Area Zone "RA" 2648/14
16	SW29-14-3w -9a	David Gareau	74			41.1				16.4		16.4	**6**	**h**	**4DP**	Agricultural Area "AA" 2643-14	Rural Area Zone "RA" 2648/14
17	SW29-14-3w -9b	David Gareau	77			42.8				17.1		17.1	**9**	**h**	**4DP**	Agricultural Area "AA" 2643-14	Rural Area Zone "RA" 2648/14
18	SW33-14-3w (South)	David Gareau	74			41.1				16.4		16.4	**5**	**h**	**4DP**	Agricultural Area "AA" 2643-14	Rural Area Zone "RA" 2648/14
			1217	135.6	45.2	660.6	59.5	0.0		139.6	37.0	139.6		Risk Area 11			

Secondary Acres (Additionally Signed and Under Agreement)

Producer	Acres
David Gareau	364
Bernie Elskamp	908
Wayne Blankenborg	411
	1683

Pig/Operation Type	Storage Type	Volatilization	Animal Numbers (Places)	Weight In (lb)	Weight Out (lb)	Average Animal Wt (lb)	Days on Feed per Cycle (days)	Number of Cycles for the Place per Year (days)	Feed Consumed Per Pig Per Day (kg/day)	Protein %	N Excreted Per Herd Adjusted for Storage N Loss (lb/yr/herd)	Phosphorus Content of Feed (DM) %	P2O5 Excreted Per Herd Per Year (lb/yr/herd)
Gestating Sow	Liquid Uncovered Earthen	30%		447	630	539	121	3	2.3	14%	0	0.53%	0
Nursing Sow	Liquid Uncovered Earthen	30%		539	539	539	21	15.2	6.5	20%	0	0.63%	0
Nursing Litter	Liquid Uncovered Earthen	30%		3.1	13.6	8	21	15.2	0	n/a	0	n/a	0
Live Cull Sow	Liquid Uncovered Earthen	30%		630	630	630	14	26.1	2.3	14%	0	0.46%	0
Bred Gilt	Liquid Uncovered Earthen	30%		340	447	394	121	3	2.3	14%	0	0.53%	0
Gilts (Purchased)	Liquid Uncovered Earthen	30%		290	340	315	28	13.0	3.2	16%	0	0.46%	0
Boars (Purchased)	Liquid Uncovered Earthen	30%		270	660	465	365	1	2.5	14%	0	0.46%	0
Weanlings	Liquid Uncovered Earthen	30%		13.6	61.6	38	52	6.9	0.7	20%	0	0.64%	0
Topigs Grower Boar	Liquid Uncovered Earthen	30%	1872	92.6	313	203	91	4.0	2.56	17.5%	48690	0.535%	25309
Topigs Maintenance Boar	Liquid Uncovered Earthen	30%	958	313	357	335	28	13	2.50	15.3%	25416	0.500%	14765
Sows, farrow to 6.2 kg	Liquid Uncovered Earthen	30%		n/a	n/a	n/a	365	1	n/a	n/a	0	n/a	0
Sows, farrow to 28 kg	Liquid Uncovered Earthen	30%		n/a	n/a	n/a	365	1	n/a	n/a	0	n/a	0
Sows, farrow to finish	Liquid Uncovered Earthen	30%		n/a	n/a	n/a	365	1	n/a	n/a	0	n/a	0

Topigs specific data
16-Nov-16

Crop	Removal P2O5	Removal N	Uptake N	Units	Yield	Units	Acreage	Removal P2O5 (lb)	Removal N (lb)	Uptake N (lb)
Alfalfa	13.8	58	58	lb/ton	2.768	ton/ac	660.5	25230	106039	106039
Barley Grain	0.42	0.97	1.39	lb/bu		bu/ac		-	-	-
Barley Silage	11.8	34.4	34.4	lb/ton	1.401	ton/ac	59.5	984	2868	2868
Canola	1.04	1.93	3.19	lb/bu	28.7	bu/ac	139.6	4167	7733	12781
Corn Grain	0.44	0.97	1.53	lb/bu	101.2	bu/ac	135.6	6038	13311	20996
Corn Silage	12.7	31.2	31.2	lb/ton	4.178	tons/ac	45.2	2398	5892	5892
Dry Edible Beans	1.39	4.17		lb/cwt		cwt/ac		-	-	-
Fababeans	1.79	5.02	8.4	lb/cwt		cwt/ac		-	-	-
Flax	0.65	2.13	2.88	lb/bu		bu/ac		-	-	-
Grass Hay	10	34.2	34.2	lb/ton		tons/ac		-	-	-
Lentils	1.03	3.39	5.08	lb/cwt		cwt/ac		-	-	-
Oats	0.26	0.62	1.07	lb/bu	64.8	bu/ac	139.6	2352	5609	9679
Pasture (grazed)	10	34.2	34.2	lb/ton	0.5	ton/ac		-	-	-
Peas	0.69	2.34	3.06	lb/bu		bu/ac		-	-	-
Potatoes	0.09	0.32	0.57	lb/cwt		cwt/ac		-	-	-
Rye	0.45	1.06	1.67	lb/bu		bu/ac		-	-	-
Soybeans	0.84	3.87	5.2	lb/bu	31.1	bu/ac	37	967	4453	5984
Sunflower	1.1	2.8		lb/cwt		cwt/ac		-	-	-
Wheat - Spring	0.59	1.5	2.11	lb/bu		bu/ac		-	-	-
Wheat - Winter	0.51	1.04	1.35	lb/bu		bu/ac		-	-	-
						Sub Total	1217	42135	145904	164238
						Estimated Average Removal/Uptake (lb/ac)		34.6	119.9	135.0
						Additional Acres				
						Crop Planned on Additional Acres				
						Total Acreage	1217			

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

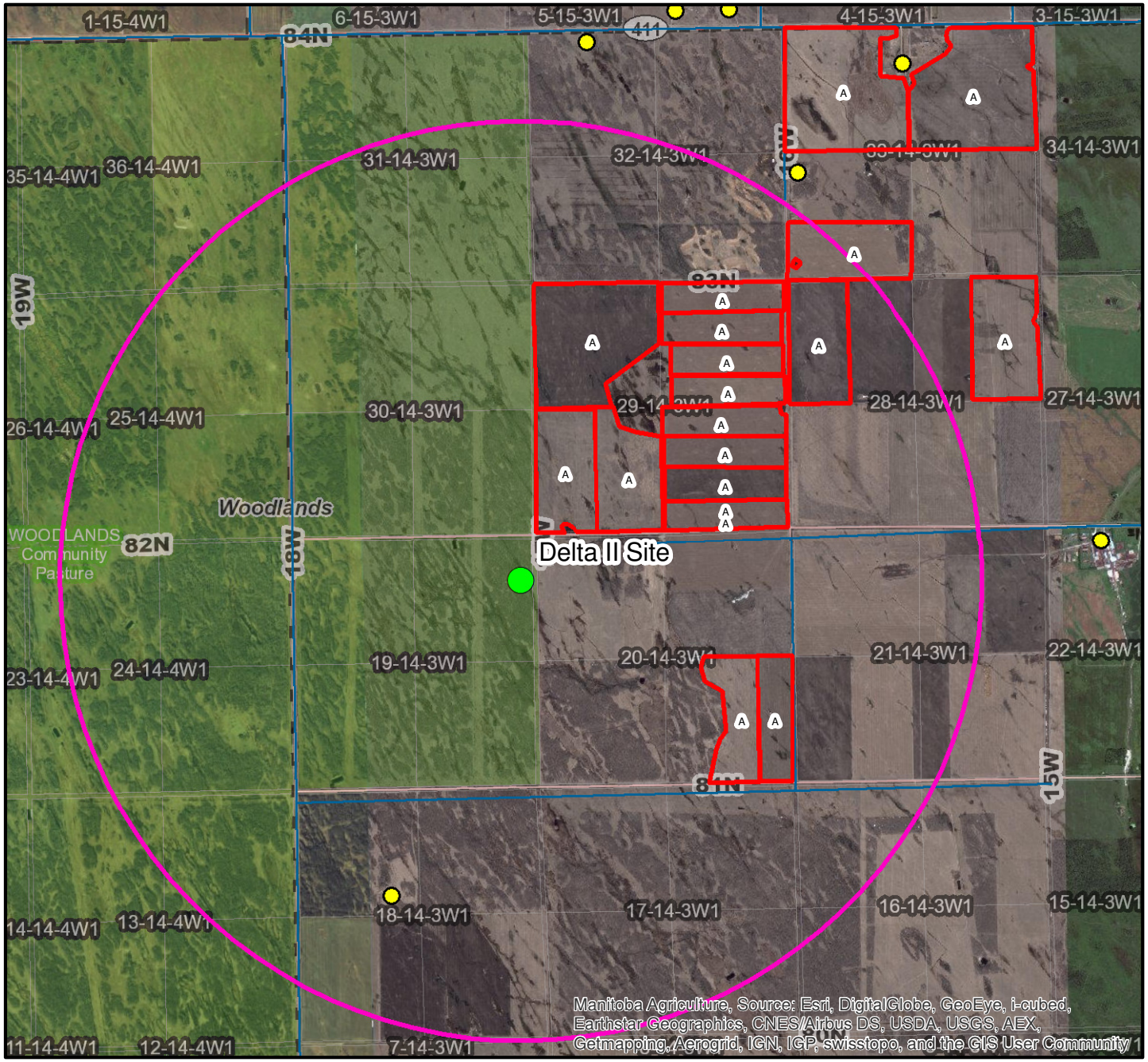
Last revised August 20, 2014

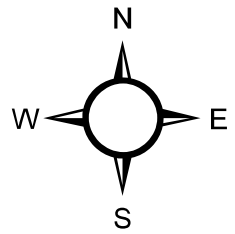
Species	Animal Category/Operation type	N (lb/year)	P2O5 (lb/year)
Pigs	Gestating Sow	0	0
	Nursing Sow	0	0
	Nursing Litter	0	0
	Live Cull Sows	0	0
	Bred Gilts	0	0
	Gilts	0	0
	Boars	0	0
	Weanlings	0	0
	Topigs Grower Boar	48690	25309
	Topigs Maintenance Boar	25416	14765
	Sows, farrow to 5 kg	0	0
	Sows, farrow to 23 kg	0	0
	Sows, farrow to finish	0	0
Beef	Mature Cows (>2 years old)	0	0
	Bred Heifer (14 mo - 2 years)	0	0
	Replacement Heifers (7 mo-14 mo)	0	0
	Unweaned Calves (0-7 mo)	0	0
	Bulls	0	0
	Mature Cows and Bred Heifers, plus associated livestock	0	0
	Feedlot Cattle - long keep	0	0
	Feedlot Cattle - short keep	0	0
	Backgrounders - pasture	0	0
	Backgrounders - confined	0	0
Dairy	Lactating cow	0	0
	Dry cow	0	0
	Calf, 0-3 months	0	0
	Calf, 4-13 months	0	0
	Replacements, >13 months	0	0
	Mature Cows, plus assoc livestock	0	0
Sheep	Ewes	0	0
	Replacement Ewes	0	0
	Rams	0	0
	Lambs	0	0
	Ewes, plus assoc livestock	0	0
	Feeder	0	0
Chickens	Broilers	0	0
	Broiler Breeder Pullets	0	0
	Broiler Breeder Hens	0	0
Layers	Layer Pullets	0	0
	Layer Hens	0	0
	Breeder Pullets	0	0
	Breeder Hens	0	0
Turkeys	Broiler Hens (0-9 wks)	0	0
	Hens (0-11 wks)	0	0
	Heavy Hens (0-14 wks)	0	0
	Light Toms (0-12 wks)	0	0
	Toms (0-13 wks)	0	0
	Heavy Toms (0-15 wks)	0	0
	Breeding Hen Growers (0-30 wks)	0	0
	Breeding Hens (30-60 wks)	0	0
	Breeding Tom Grower (0-18 wks)	0	0
	Breeding Tom Grower (0-30 wks)	0	0
	Breeding Tom (30-60 wks)	0	0
	Total	**74106**	**40075**

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

Nutrients Excreted	lbs
Nitrogen	74106
P2O5	40075
Crop Nutrient Use	**lb/ac**
Nitrogen Uptake	135.0
P2O5 Removal	34.6
Land Base Requirements	**acres**
Acres for Nitrogen Uptake	**549**
Acres for 2 x P2O5 Removal	**579**
Acres for 1 x P2O5 Removal	**1157**

Topigs Norsvin Delta II Boar Test Station - Land Use





Legend

- Delta II Site
- Dwelling Unit
- Spread Fields
- 3 km Notification

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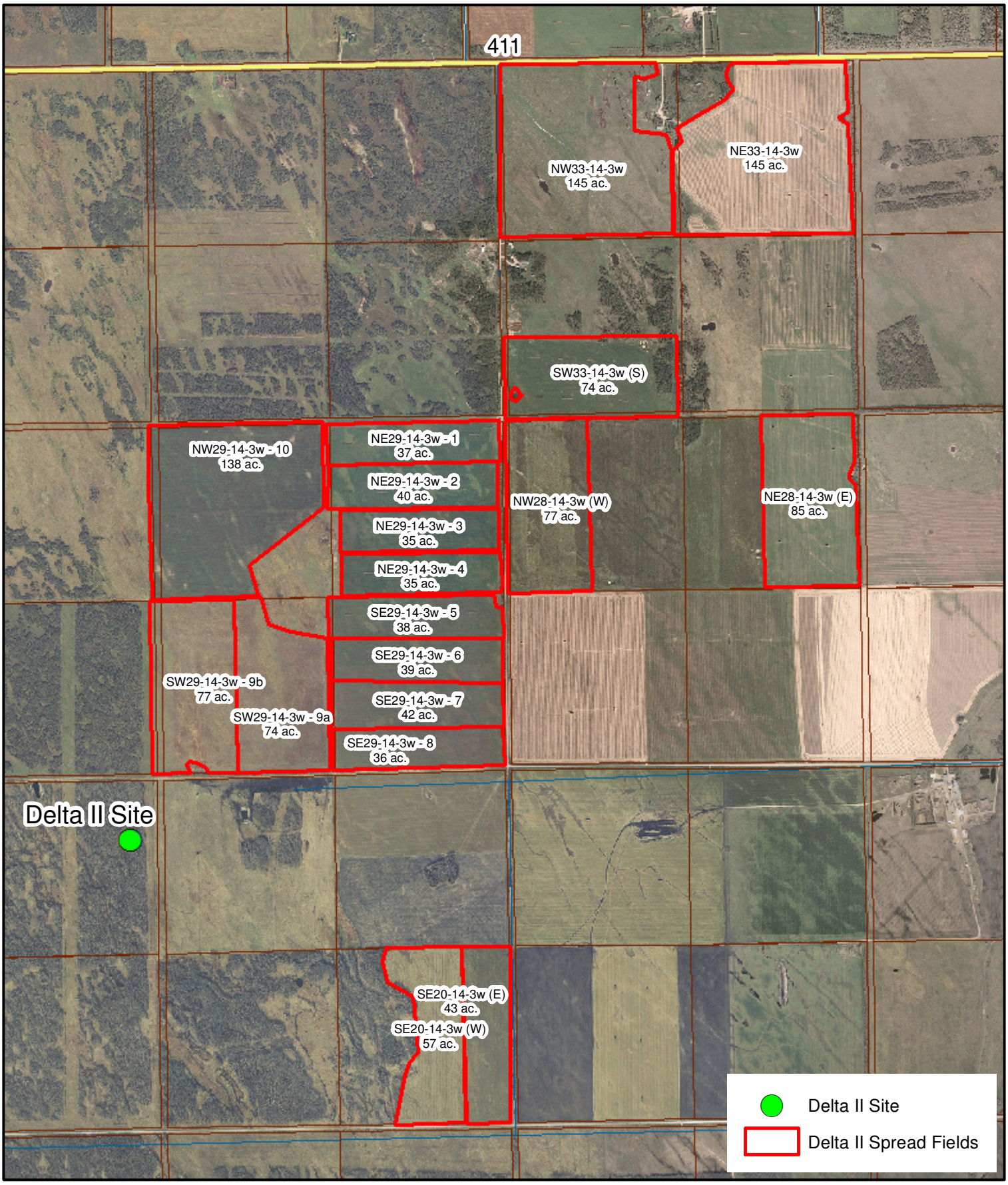
Topigs Norsvin Delta II Boar Test Station



N
W E
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0 0.25 0.5 1 1.5 Miles

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R.M. OF WOODLANDS

0 5
SCALE IN KILOMETRES

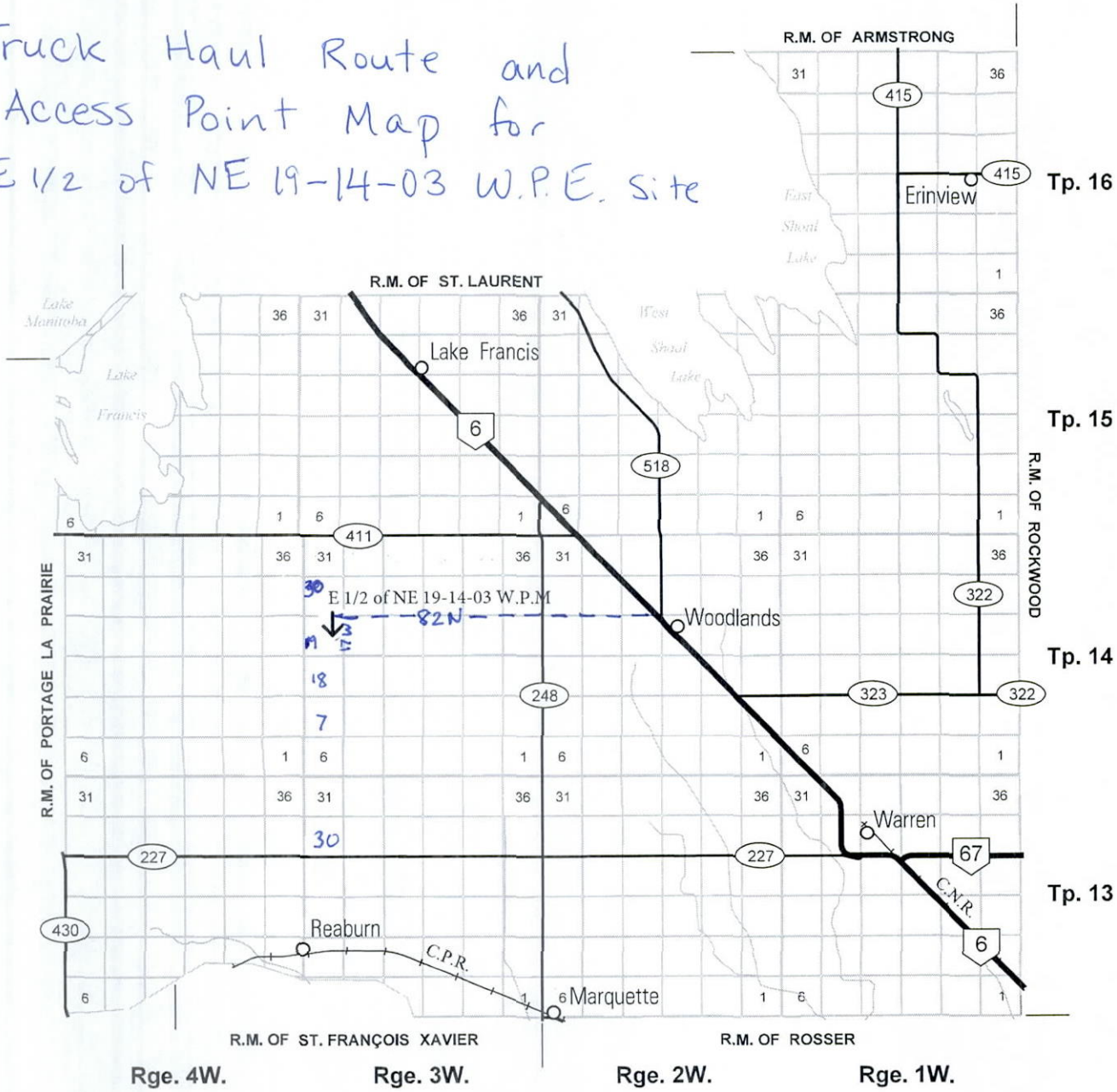
PROVINCE OF MANITOBA
INFRASTRUCTURE
HIGHWAY PLANNING AND DESIGN BRANCH
GEOGRAPHIC & RECORDS MANAGEMENT SECTION
WINNIPEG
JANUARY, 2015

LEGEND

PROVINCIAL TRUNK HIGHWAYS 6
PROVINCIAL ROADS 518
ACCESS ROADS .....
RAILWAYS .....

TRUCK HAUL ROUTE - - - -

Truck Haul Route and Access Point Map for E 1/2 of NE 19-14-03 W.P.E. Site



SHEET 1 OF 1

From:	Friesen, Chris (SD)
To:	"Peter Mah"; Kyla Turanli
Cc:	Chunhe Liu; Gary Plohman (srossing@mymts.net); Doug Small
Subject:	RE: identification of rare species
Date:	November-30-16 8:52:10 AM

Peter and Kyla

Given the information you have provided, no further mitigation is required.

Thanks for your consideration of species-at-risk in Manitoba.

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

From: Peter Mah [mailto:petermahinc@gmail.com]
Sent: November-29-16 5:22 PM
To: Kyla Turanli
Cc: Friesen, Chris (SD); Chunhe Liu; Gary Plohman (srossing@mymts.net); Doug Small
Subject: Re: identification of rare species

Kyla. Thanks for sending this to me.

Just for added clarity there will be **only 100 acres of the 180 acre quarter section in the SE 20-14-3W which are to receive organic manure nutrient.** The other 80 acres is forested and will not receive manure application. There is no building or road construction activity planned by the project proponent on the subject quarter section.

It is expected that this specific crop field will receive manure fertilizer only once on a 4 to 5 year rotation based on annual manure management planning and regulations pursuant to Manitoba's Livestock Manure & Mortalities Management Regulation. There is a total of 1217 acres of cropland available under spread field agreements for this proposed project.

The preferred method of application of the liquid manure is by injection. However in some instances, (e.g hay land) broadcasting may be required in consultation with the landowner/ producer. Only about 250-300 acres of spread fields will be required in any given year. **Manure fertilizer spreading operations will be GIS located and mapped and is expected to be done over 2 days; once a year, in the fall only.**

I hope that this added information will help in determining appropriate and measured consideration for the Delta II project in response to the Bobolink threatened species status as noted by Manitoba's Conservation Data Centre, Wildlife and Fisheries Branch.

Peter Mah, Project Consultant
for Topigs Norsvin Canada

On Tue, Nov 29, 2016 at 4:31 PM, Kyla Turanli <kturanli@dghengineering.com> wrote:
Hi Chris,

Thanks for getting back to Gary and I with the rare species identification. We will include your response in the Site Assessment Technical Review. I am reading the link you sent (http://www.gov.mb.ca/conservation/cdc/pubs.html) titled "Recommended Development Setback Distances from Birds…", it explains that if there have been species recorded, an environmental protection plan is to be submitted to the MBCDC for review.

One of the land titles you have listed "SE 20-14-3W" is one of our spread fields listed for our project. Is it okay if we keep this as a spread field? The manure will be spread in the fall so I can't see this affecting when the bird eggs will be mating then hatching in the spring/summer (The restricted activity period for the Bobolink bird is from May 15 to August 15 according to the recommendations and guidelines from the link above). Do we still need to prepare an environmental protection plan for you guys to review, even though the site SE 20-14-3W won't have any impact on the species' nest site during our manure spread time period?

Please let me know thanks,

Kyla Turanli, EIT
DGH Engineering Ltd.
12 Aviation Boulevard
St. Andrews, Manitoba, Canada
R1A 3N5
Ph: (204) 334-8846 ext. 209
kturanli@dghengineering.com

From: Friesen, Chris (SD) [mailto:Chris.Friesen@gov.mb.ca]
Sent: November-29-16 9:16 AM
To: Gary Plohman (srossing@mymts.net) <srossing@mymts.net>

Cc: Kyla Turanli <kturanli@dghengineering.com>
Subject: RE: identification of rare species

Gary

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

SE 20-14-3W

Bobolink (Dolichonyx oryzivorus), S4B, COSEWIC: Threatened

SW 22-14-3W

Bobolink (Dolichonyx oryzivorus), S4B, COSEWIC: Threatened

Further information on this ranking system can be found on our website at http://www.gov.mb.ca/conservation/cdc/consranks.html and these designations can be found at http://web2.gov.mb.ca/laws/statutes/ccsm/e111e.php, http://www.cosewic.gc.ca/ and http://www.sararegistry.gc.ca/default_e.cfm.

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

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

Please contact the Manitoba CDC for an update on this natural heritage information if more than six months passes before it is utilised.

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

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

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

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

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

From: Gary & Shaunda [mailto:srossing@mymts.net]
Sent: November-14-16 10:37 AM
To: Friesen, Chris (SD)
Cc: Kyla Turanli
Subject: re: identification of rare species

Good day Chris
I am currently working on a Technical Review for Topigs Norsvin Canada who are interested in establishing a boar test facility near Woodlands, Manitoba.
I understand that part of the process for the Technical Review is having your section identify any species at risk in the associated manure spread fields. I have attached a list of the spread fields that they propose to use. The yard site for the operation will be located on the east half of NE19-14-03W.
I am planning to be away for three weeks starting November 21/16 so Kyla Turani with DGH Engineering will be looking after the file and submitting it on behalf of the client at the end of November. Her phone number is (204) 334-8846.
Thank you.
Gary Plohman, P.Eng
DGH Engineering
204 334-8846
204 266-1689

From: Bloom, Pauline (SD) [mailto:Pauline.Bloom@gov.mb.ca]
Sent: Tuesday, January 10, 2017 1:46 PM
To: Kaitlyn Fleury <planning@rmwoodlands.ca>
Cc: Firlotte, Nicole (SD) <Nicole.Firlotte@gov.mb.ca>
Subject: FW: NE 19-14-3W, R.M. of Woodlands

Hi Kaitlyn,

Your letter found its way to me and I have reviewed this parcel with my colleagues and we aren't aware of any rare species that occur on or adjacent to this parcel. You may be aware that the endangered Rough Agalinis plant inhabits this type of habitat and occurs elsewhere in Woodlands Community Pasture, however the nearest occurrence is about a mile to the south.

As a result we have no opposition to the sale of the eastern half of NE19-14-3W.

Thank you for letting us know and please let me know if you have any questions.

Pauline

Pauline Bloom

Regional Wildlife Manager, Central Region

Department of Sustainable Development

75 7th Avenue, Box 6000, Gimli, MB

Office: 204-642-6077

Cell: 204-641-2113

Fax: 204-642-6108

Topigs Norsvin
PROGRESS IN PIGS

Manure Spread Agreement

This agreement made this 25 day of OCTOBER, 2016

Between: Topigs Norsvin Canada (Livestock Operator)

And David J Gareau (Landowner/Land Manager)

Hereby Agree:

The Landowner/Manager grants the Livestock Operator full and exclusive rights to apply hog manure onto the herein described land subject to the following terms and agreements.

1. The Livestock Operator agrees to apply manure nutrients in such a way that it complies with Environmental Regulations and that it follows general soil fertility recommendations.

2. The Landowner/Manager agrees to allow the Livestock Operator or its agents full rights of access to the described land for the purpose of soil testing, manure application and other related activities.

3. Should the Landowner/Manager decide to sell the land described, The Landowner/Manager shall notify the Livestock Operator prior to selling so that the Livestock Operator can transfer the existing manure spread agreement to the new Landowner/Manager, if desired.

4. This agreement will remain in effect for a period of 3 years; effective immediately.

5. This agreement is conditional to obtaining all required approvals to construct the Topigs Norsvin Delta II Boar Test Station project including the accessory manure storage facility.

Described Land List:

- NE 29-14-3W & NW 32-14-3W
- NW 29-14-3W & SW 32-14-3W
- SE 29-14-3W & SE 32-14-3W
- SW 29-14-3W & SW 33-14-3W

per: Landowner/ Manager Name: DAVID GAREAU

Signature: David Gareau Date: 25/10/16

per: Livestock Operator Name: MIKE SHAW

Signature: [signature] Date: 25/10/16

Topigs Norsvin
PROGRESS IN PIGS

Manure Spread Agreement

This agreement made this 25 day of OCTOBER, 2016

Between: Topigs Norsvin Canada (Livestock Operator)

And Arnold & Ruth Voth (Landowner/Land Manager)

Hereby Agree:

The Landowner/Manager grants the Livestock Operator full and exclusive rights to apply hog manure onto the herein described land subject to the following terms and agreements.

1. The Livestock Operator agrees to apply manure nutrients in such a way that it complies with Environmental Regulations and that it follows general soil fertility recommendations.

2. The Landowner/Manager agrees to allow the Livestock Operator or its agents full rights of access to the described land for the purpose of soil testing, manure application and other related activities.

3. Should the Landowner/Manager decide to sell the land described, The Landowner/Manager shall notify the Livestock Operator prior to selling so that the Livestock Operator can transfer the existing manure spread agreement to the new Landowner/Manager, if desired.

4. This agreement will remain in effect for a period of 3 years; effective immediately.

5. This agreement is conditional to obtaining all required approvals to construct the Topigs Norsvin Delta II Boar Test Station project including the accessory manure storage facility.

Described Land List:

- SE 20-14-3W

per: Landowner/ Manager Name: ARNOLD VOTH

Signature: _____ Date: Oct. 25/16

per: Livestock Operator Name: MIKE SHAW

Signature: _____ Date: 25/10/16

Topigs Norsvin
PROGRESS IN PIGS

Manure Spread Agreement

This agreement made this 22 day of Novmbr, 2016

Between: Topigs Norsvin Canada (Livestock Operator)

And Aaron Elskamp (Landowner/Land Manager) for Woodview Farms Inc.

Hereby Agree:

The Landowner/Manager grants the Livestock Operator full and exclusive rights to apply hog manure onto the herein described land subject to the following terms and agreements.

1. The Livestock Operator agrees to apply manure nutrients in such a way that it complies with Environmental Regulations and that it follows general soil fertility recommendations.

2. The Landowner/Manager agrees to allow the Livestock Operator or its agents full rights of access to the described land for the purpose of soil testing, manure application and other related activities.

3. Should the Landowner/Manager decide to sell the land described, The Landowner/Manager shall notify the Livestock Operator prior to selling so that the Livestock Operator can transfer the existing manure spread agreement to the new Landowner/Manager, if desired.

4. This agreement will remain in effect for a period of 3 years; effective immediately.

5. This agreement is conditional to obtaining all required approvals to construct the Topigs Norsvin Delta II Boar Test Station project including the accessory manure storage facility.

Described Land List:

- NE 28-14-3W
- NW 28-14-3W
- SE 33-14-3W

per: Landowner/ Manager Name: Aaron Elskamp

Signature: _____ Date: Nov 22/2016

per: Livestock Operator Name: MIKE STARK

Signature: _____ Date: Nov 24/16

Topigs Norsvin
PROGRESS IN PIGS

Manure Spread Agreement

This agreement made this 22 day of Nov, 2016

Between: Topigs Norsvin Canada (Livestock Operator)

And Aaron Elskamp (Landowner/Land Manager)
for Elskamp Dairy Farms Inc. ; and Benjamin Elskamp and Ashley Munro.

Hereby Agree:

The Landowner/Manager grants the Livestock Operator full and exclusive rights to apply hog manure onto the herein described land subject to the following terms and agreements.

1. The Livestock Operator agrees to apply manure nutrients in such a way that it complies with Environmental Regulations and that it follows general soil fertility recommendations.

2. The Landowner/Manager agrees to allow the Livestock Operator or its agents full rights of access to the described land for the purpose of soil testing, manure application and other related activities.

3. Should the Landowner/Manager decide to sell the land described, The Landowner/Manager shall notify the Livestock Operator prior to selling so that the Livestock Operator can transfer the existing manure spread agreement to the new Landowner/Manager, if desired.

4. This agreement will remain in effect for a period of 3 years; effective immediately.

5. This agreement is conditional to obtaining all required approvals to construct the Topigs Norsvin Delta II Boar Test Station project including the accessory manure storage facility.

Described Land List:

- NW 20-14-3W
- NW 33-14-3W
- NE 33-14-3W

per: Landowner/ Manager Name: Aaron Elskamp

Signature: _____ Date: Nov 22/16

per: Livestock Operator Name: MIKE JOHNS

Signature: _____ Date: NOV 24/16

Topigs Norsvin
PROGRESS IN PIGS

Manure Spread Agreement

This agreement made this 25 day of OCTOBER, 2016

Between: Topigs Norsvin Canada (Livestock Operator)

And Wayne Blankenborg (Landowner/Land Manager)

Hereby Agree:

The Landowner/Manager grants the Livestock Operator full and exclusive rights to apply hog manure onto the herein described land subject to the following terms and agreements.

1. The Livestock Operator agrees to apply manure nutrients in such a way that it complies with Environmental Regulations and that it follows general soil fertility recommendations.

2. The Landowner/Manager agrees to allow the Livestock Operator or its agents full rights of access to the described land for the purpose of soil testing, manure application and other related activities.

3. Should the Landowner/Manager decide to sell the land described, The Landowner/Manager shall notify the Livestock Operator prior to selling so that the Livestock Operator can transfer the existing manure spread agreement to the new Landowner/Manager, if desired.

4. This agreement will remain in effect for a period of 3 years; effective immediately.

5. This agreement is conditional to obtaining all required approvals to construct the Topigs Norsvin Delta II Boar Test Station project including the accessory manure storage facility.

Described Land List:

- NE 22-14-3W
- SE 22-14-3W
- SW 22-14-3W

per: Landowner/ Manager Name: Wayne Blankenborg

Signature: Wayne Blankenborg Date: Oct 25, 2016

per: Livestock Operator Name: MIKE SHAW

Signature: [signature] Date: 25/10/16

Topigs Norsvin
PROGRESS IN PIGS

Manure Spread Agreement

This agreement made this 22 day of Nov, 2016

Between: Topigs Norsvin Canada (Livestock Operator)

And Aaron Elskamp (Landowner/Land Manager)
for Bernfried & Betsy Elskamp ; and Rebecca C. Elskamp.

Hereby Agree:

The Landowner/Manager grants the Livestock Operator full and exclusive rights to apply hog manure onto the herein described land subject to the following terms and agreements.

1. The Livestock Operator agrees to apply manure nutrients in such a way that it complies with Environmental Regulations and that it follows general soil fertility recommendations.

2. The Landowner/Manager agrees to allow the Livestock Operator or its agents full rights of access to the described land for the purpose of soil testing, manure application and other related activities.

3. Should the Landowner/Manager decide to sell the land described, The Landowner/Manager shall notify the Livestock Operator prior to selling so that the Livestock Operator can transfer the existing manure spread agreement to the new Landowner/Manager, if desired.

4. This agreement will remain in effect for a period of 3 years; effective immediately.

5. This agreement is conditional to obtaining all required approvals to construct the Topigs Norsvin Delta II Boar Test Station project including the accessory manure storage facility.

Described Land List:

- SE 26-14-3W
- NE 23-14-3W
- SE 23-14-3W

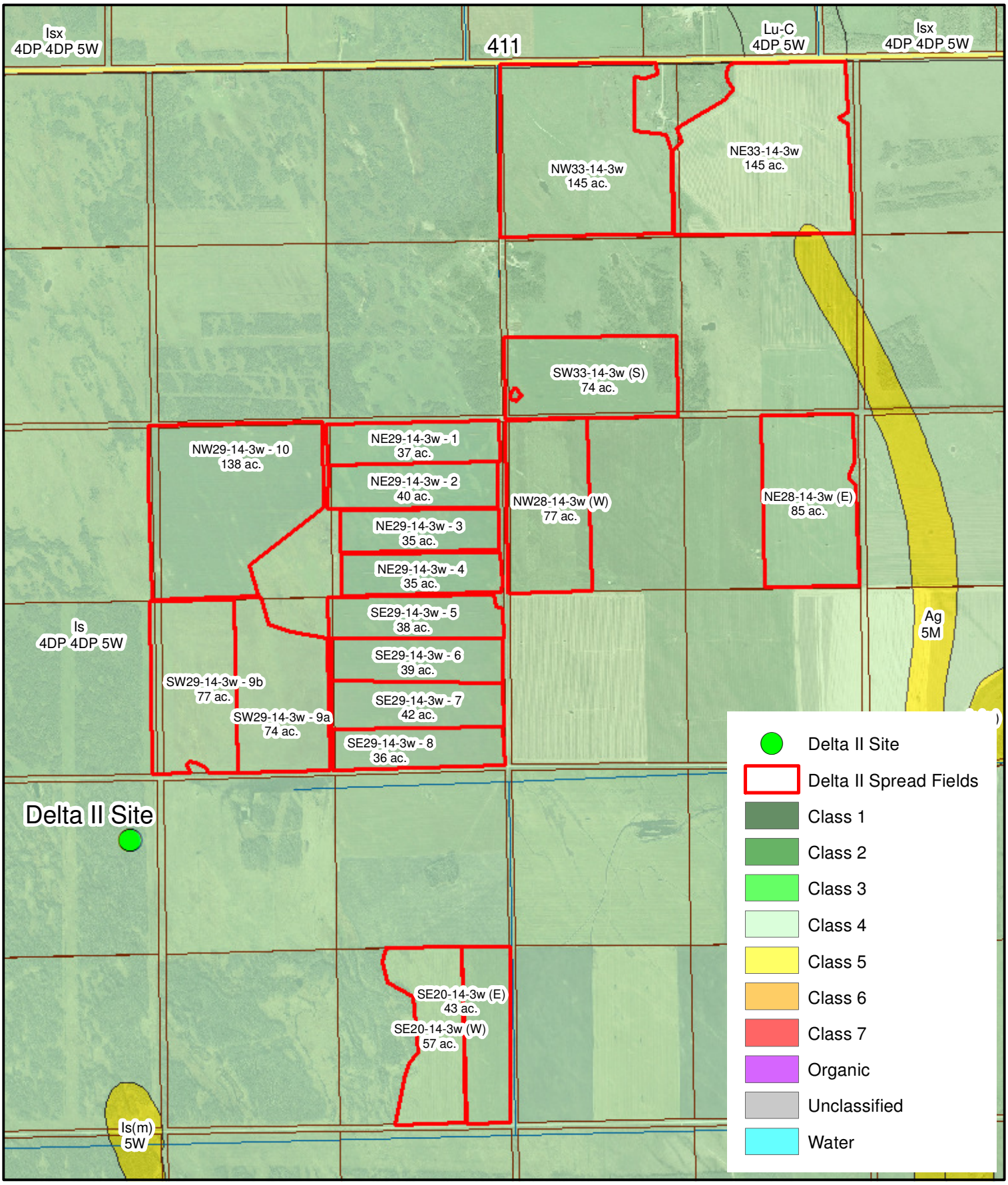
per: Landowner/ Manager Name: Aaron Elskamp

Signature: _____ Date: Nov 22/16

per: Livestock Operator Name: MIKE SMITH

Signature: _____ Date: Nov 24/16

Topigs Norsvin Delta II Boar Test Station - Soils



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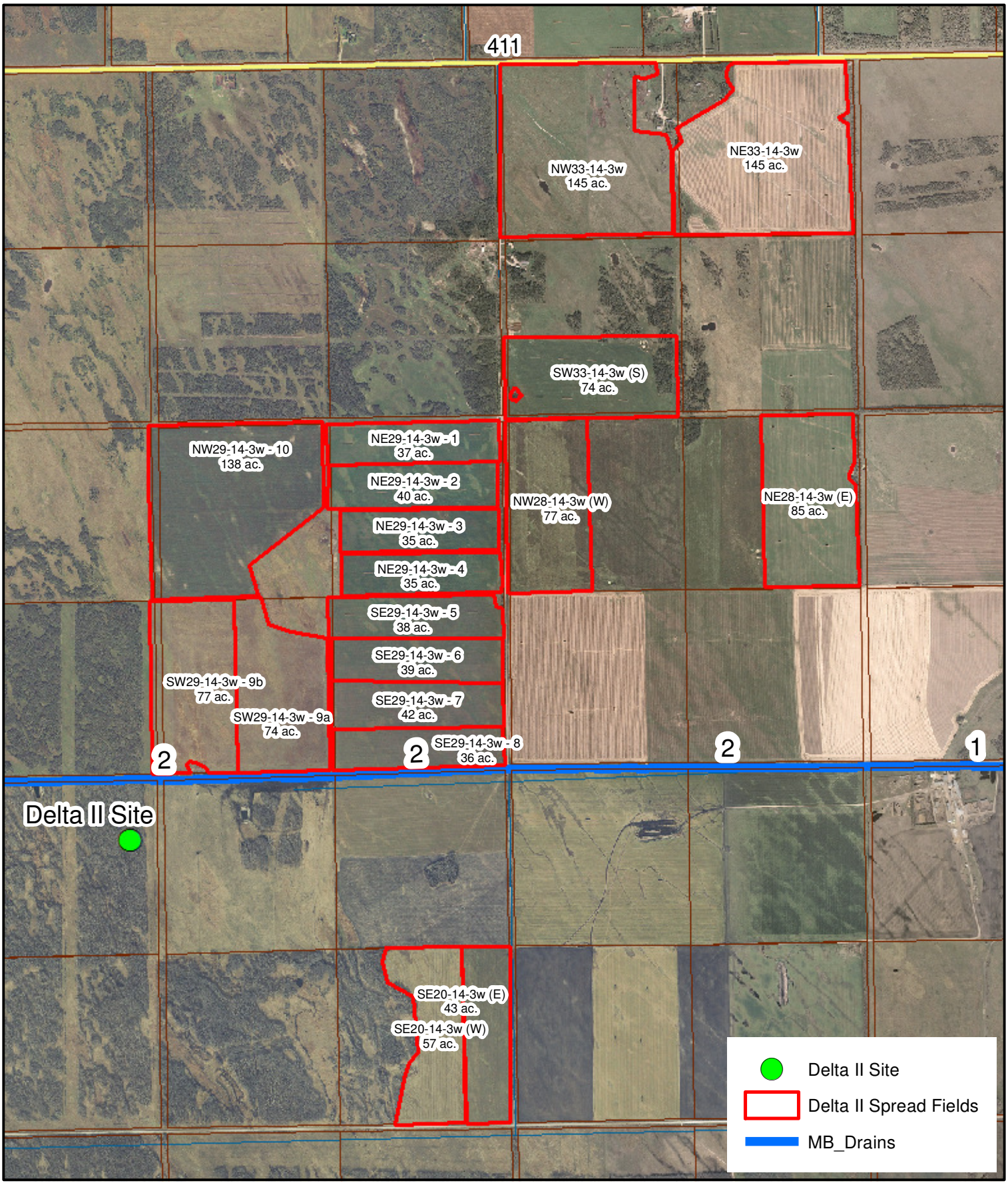
0 0.25 0.5 1 1.5 Miles

AGRA - GOLD Consulting Ltd.

Topigs Norsvin Delta II Boar Test Station - Drains



N
W
E
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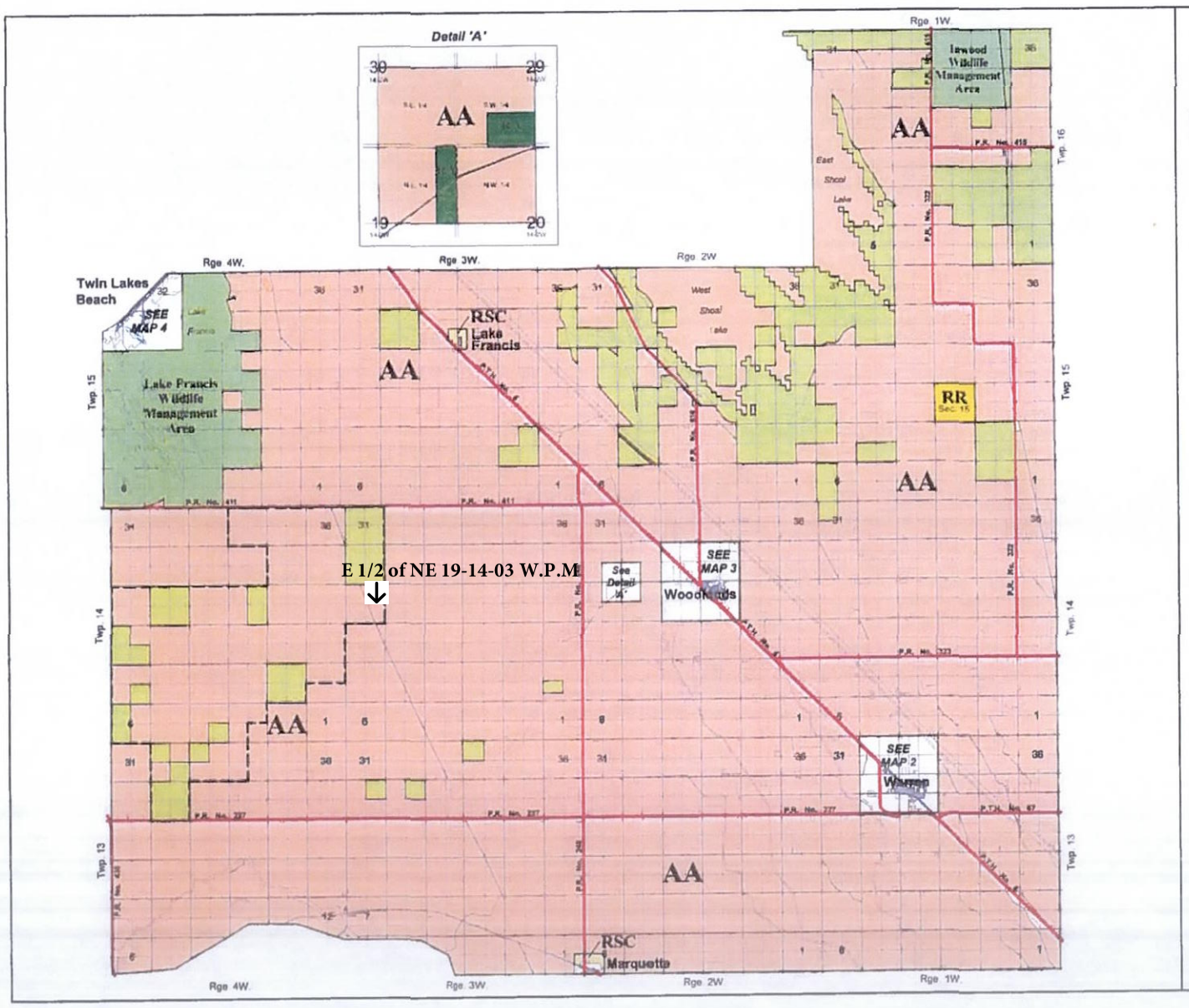
0 0.25 0.5 1 1.5 Miles

AGRA - GOLD Consulting Ltd.



R.M. OF WOODLANDS DEVELOPMENT PLAN

MAP 1

LAND USE POLICY AREAS

Legend:

- AA — Agricultural Area
- Recreational Area
- RR — Rural Residential Area
- RSC — Rural Settlement Centre
- Wildlife Management Area
- *Crown Land Areas Of 80 Acres Or More (as of May 23, 2014)*
- Woodlands Community Pasture Limits

Date - May, 2014

Manitoba
Department of Municipal Government
Community and Regional Planning Branch

Manitoba AgriMaps

Legend

- Towns and Places
- Riding Mountain National Park

Provincial Trunk Highways

- Provincial Trunk Highways

Provincial Roads and Access Roads

- Provincial Roads
- Access Roads
- Municipal Roads and Trails
- Manitoba Boundary
- Municipal Boundaries
- Mile Markers
- Township Boundaries
- Quarter Section Lines and River Lots
- Section Grid
- Provincial Parks

0 0.5 1 1.5 2 Kms

1:36,112 **11/11/2016**

WGS 1984 Web Mercator Auxiliary Sphere

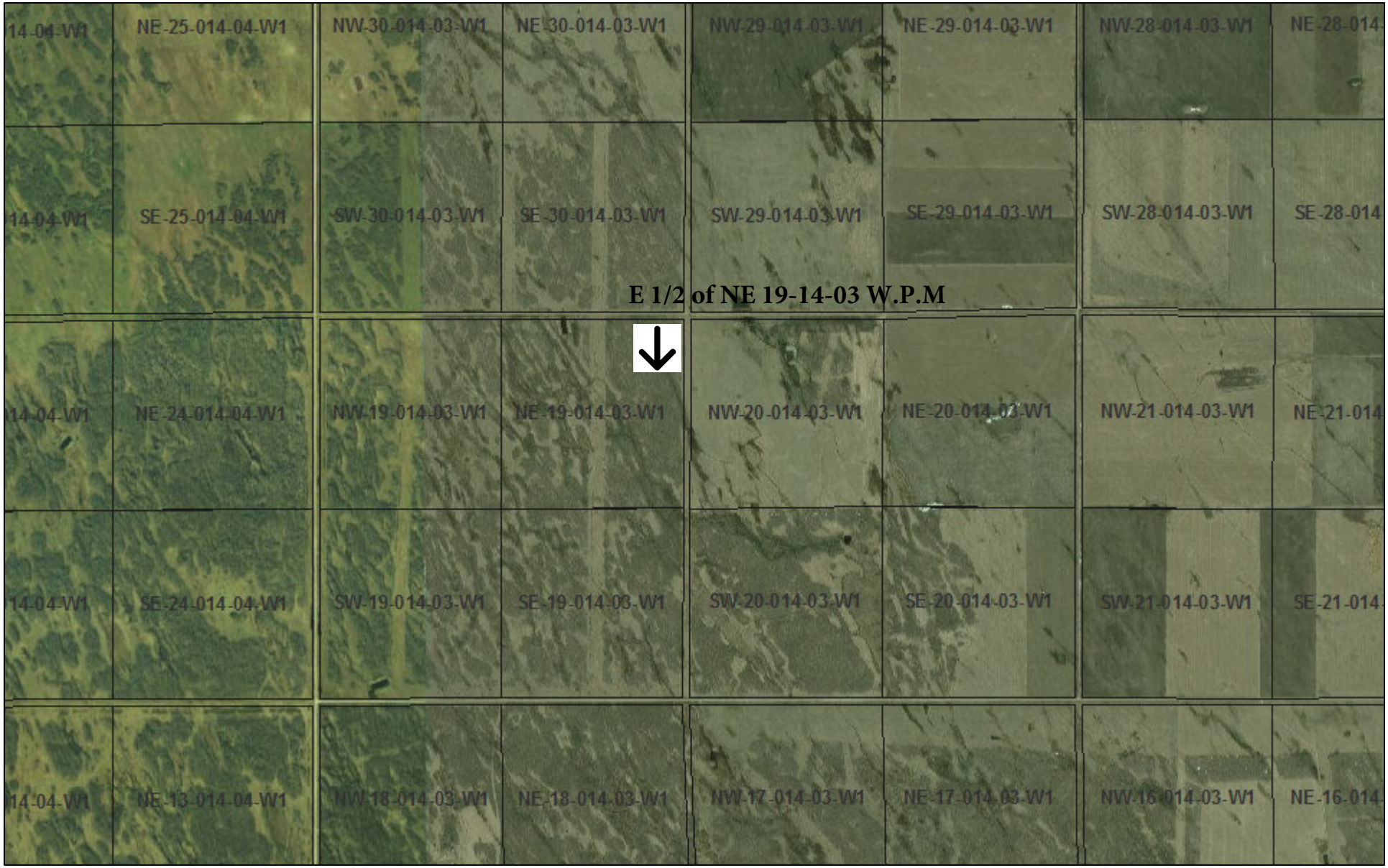
N

Manitoba Agriculture makes every effort to ensure that soil survey data and interpretations are accurate, verified, and up-to-date. However, as data is continuously updated, sorted and verified, future updates may contain additional information.

Manitoba


N
FISHER
Poplarfield
Eriksdale
WEST INTERLAKE
Lundar Beach
Provincial Park
Sugar Point
6
68
Lundar
17
Narcisse
COLDWELL
ARMSTRONG
Clarkleigh
Sandridge
Oak Point
Inwood
North
Shoal
Lake
ST. LAURENT
Lake
Manitoba
Laurentia
Beach
St. Laurent
Teulon
Rocky Point
East
Shoal
Lake
West
Shoal
Lake
Twin Lakes Beach
6
ROCKWOOD
St. Ambroise
WOODLANDS
Woodlands
E 1/2 of NE 19-14-03 W P.M
PORTAGE
LA PRAIRIE
Stonewall
Warren
LEGEND
SW Interlake IWMP Boundary
Municipal Boundaries

19-14-3W



November 10, 2016

WiwcdQuarterSections

Sub Districts

Lake Francis

1:36,112

0 0.3 0.6 1.2 mi

0 0.35 0.7 1.4 km

mmpp.com Benchmarks for Better Farm Management

Web address: http://www.mmpp.com/mmpp.nsf/mmpp_browser_fertilizer.html

MMPP Fertilizer Data Browser - (Query Help)

Save Raw Data | New Search

Search Summary

Your selected search:

Region(s) Selected: RISK AREA 11

Crop(s) Selected: GRAIN CORN

Soil Zone(s) Selected: SOIL TYPE H

Period Selected: 2006 to 2015

This search returned 6 records from the MASC database, summarized below:

Total Acres:	**1,391 acres**	
Yield per Acre:	**101.2 Bushels / acre**	(2.572 tonnes / acre)

Fertilizer Applied per Acre (actual product):

Nitrogen:	**113.8 lbs / acre**	(0.052 tonnes / acre)
Phosphorus:	**34.5 lbs / acre**	(0.016 tonnes / acre)
Potassium:	**22.9 lbs / acre**	(0.010 tonnes / acre)
Sulfur:	**12.3 lbs / acre**	(0.006 tonnes / acre)

View Raw Data

Save Raw Data | New Search

Canada MASC Manitoba

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Save Raw Data | New Search

Search Summary

Your selected search:

Region(s) Selected: RISK AREA 11

Crop(s) Selected: SILAGE CORN

Soil Zone(s) Selected: SOIL TYPE H

Period Selected: 2006 to 2015

This search returned 9 records from the MASC database, summarized below:

Total Acres:	**8,390 acres**	
Yield per Acre:	**11.937 Tons / acre**	(10.832 tonnes / acre)

Fertilizer Applied per Acre (actual product):

Nitrogen:	**80.5 lbs / acre**	(0.037 tonnes / acre)
Phosphorus:	**27.9 lbs / acre**	(0.013 tonnes / acre)
Potassium:	**18.8 lbs / acre**	(0.009 tonnes / acre)
Sulfur:	**8.9 lbs / acre**	(0.004 tonnes / acre)

View Raw Data

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MMPP Fertilizer Data Browser - (Query Help)

Save Raw Data | New Search

Search Summary

Your selected search:

Region(s) Selected: RISK AREA 11

Crop(s) Selected: ALFALFA

Soil Zone(s) Selected: SOIL TYPE H

Period Selected: 2006 to 2015

This search returned 9 records from the MASC database, summarized below:

Total Acres:	**17,039 acres**	
Yield per Acre:	**2.768 Tons / acre**	(2.512 tonnes / acre)

Fertilizer Applied per Acre (actual product):

Nitrogen:	**12.6 lbs / acre**	(0.006 tonnes / acre)
Phosphorus:	**41.7 lbs / acre**	(0.019 tonnes / acre)
Potassium:	**33.9 lbs / acre**	(0.015 tonnes / acre)
Sulfur:	**10.5 lbs / acre**	(0.005 tonnes / acre)

View Raw Data

Save Raw Data | New Search

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MMPP Fertilizer Data Browser - (Query Help)

Save Raw Data | New Search

Search Summary

Your selected search:

Region(s) Selected: RISK AREA 11

Crop(s) Selected: GREENFEED

Soil Zone(s) Selected: SOIL TYPE H

Period Selected: 2006 to 2015

This search returned 9 records from the MASC database, summarized below:

Total Acres:	**4,990 acres**	
Yield per Acre:	**1.401 Tons / acre**	(1.271 tonnes / acre)

Fertilizer Applied per Acre (actual product):

Nitrogen:	**39.6 lbs / acre**	(0.018 tonnes / acre)
Phosphorus:	**23.8 lbs / acre**	(0.011 tonnes / acre)
Potassium:	**15.3 lbs / acre**	(0.007 tonnes / acre)
Sulfur:	**6.5 lbs / acre**	(0.003 tonnes / acre)

View Raw Data

Save Raw Data | New Search

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MMPP Fertilizer Data Browser - (Query Help)

Save Raw Data | New Search

Search Summary

Your selected search:

Region(s) Selected: RISK AREA 11

Crop(s) Selected: ARGENTINE CANOLA

Soil Zone(s) Selected: SOIL TYPE H

Period Selected: 2006 to 2015

This search returned 9 records from the MASC database, summarized below:

Total Acres:	**90,456 acres**	
Yield per Acre:	**28.7 Bushels / acre**	(0.650 tonnes / acre)

Fertilizer Applied per Acre (actual product):

Nitrogen:	**87.6 lbs / acre**	(0.040 tonnes / acre)
Phosphorus:	**31.0 lbs / acre**	(0.014 tonnes / acre)
Potassium:	**13.9 lbs / acre**	(0.006 tonnes / acre)
Sulfur:	**13.7 lbs / acre**	(0.006 tonnes / acre)

View Raw Data

Save Raw Data | New Search

Canada MASC Manitoba

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MMPP Fertilizer Data Browser - (Query Help)

Save Raw Data | New Search

Search Summary

Your selected search:

Region(s) Selected: RISK AREA 11

Crop(s) Selected: SOYBEANS

Soil Zone(s) Selected: SOIL TYPE H

Period Selected: 2006 to 2015

This search returned 7 records from the MASC database, summarized below:

Total Acres:	**9,310 acres**	
Yield per Acre:	**31.1 Bushels / acre**	(0.847 tonnes / acre)

Fertilizer Applied per Acre (actual product):

Nitrogen:	**1.6 lbs / acre**	(0.001 tonnes / acre)
Phosphorus:	**29.7 lbs / acre**	(0.013 tonnes / acre)
Potassium:	**12.9 lbs / acre**	(0.006 tonnes / acre)
Sulfur:	**2.3 lbs / acre**	(0.001 tonnes / acre)

View Raw Data

Save Raw Data | New Search

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MMPP Fertilizer Data Browser - (Query Help)

Save Raw Data | New Search

Search Summary

Your selected search:

Region(s) Selected: RISK AREA 11

Crop(s) Selected: OATS

Soil Zone(s) Selected: SOIL TYPE H

Period Selected: 2006 to 2015

This search returned 10 records from the MASC database, summarized below:

Total Acres:	**29,474 acres**	
Yield per Acre:	**64.8 Bushels / acre**	(0.999 tonnes / acre)

Fertilizer Applied per Acre (actual product):

Nitrogen:	**57.0 lbs / acre**	(0.026 tonnes / acre)
Phosphorus:	**29.9 lbs / acre**	(0.014 tonnes / acre)
Potassium:	**12.6 lbs / acre**	(0.006 tonnes / acre)
Sulfur:	**2.9 lbs / acre**	(0.001 tonnes / acre)

View Raw Data

Save Raw Data | New Search

Canada MASC Manitoba

RM of Woodlands
P.O. Box 10 Woodlands, MB , Manitoba, R0C 3H0
Tel: (204) 383-5679
http://www.rmwoodlands.info

10 January, 2017

RESOLUTION

Resolution # 2017/019

Moved by: Ila Buchanan

Seconded by: Wayne Yule

WHEREAS Topigs Norsvin Canada Inc. has offered to purchase (Dated January 5, 2017) E1/2 of NE 1/4 19-14-3W for the purpose of developing a Boar Testing Station; and

WHEREAS 19-14-3W is land within the Woodlands Community Pasture Limits as identified on Zoning Map 1 in RM of Woodlands Zoning By-law 2648/14; and

WHEREAS the RM of Woodlands has contacted the Province of Manitoba Sustainable Development Department as required in Zoning By-law 2648/14, section 3.6; and

WHEREAS the sale of this land will have minimal to no impact to the operations of the RM of Woodlands Community Pastures Inc.;

THEREFORE IT BE RESOLVED THAT Council of the Rural Municipality of Woodlands accept this offer to purchase E1/2 of NE 1/4 19-14-3W by Topigs Norsvin Canada Inc.; and

FURTHER BE IT RESOLVED THAT the Reeve and Chief Administrative Officer be authorized to execute this agreement, Agreement No. 544/17; and

FURTHER BE IT RESOLVED THAT the proceeds from the sale of this land be deposited into the Economic Development Reserve Fund for the purchase of Federal or Provincial owned land within the Woodlands Community Pasture Limits, when the opportunity arises.

6 For
1 Absent

Carried

I, Adam Turner, Chief Administrative Officer of the Rural Municipality of Woodlands, certify this to be a true and correct copy of Resolution No. 2017/019 passed by the Council of the Rural Municipality of Woodlands, on January 10, 2017.

Chief Administrative Officer