



**TECHNICAL REVIEW COMMITTEE**

**A TECHNICAL REVIEW REPORT  
PREPARED FOR THE**

**Municipality of Lorne**

**KAMSLEY COLONY LTD.**

**19-6-9 WPM**

**TRC 12-110**

**May 21, 2025**

## **A. INTRODUCTION – THE TEAM**

The Technical Review Committee (TRC) is supported by the following department personnel:

### Agriculture (AGR)

- Agri-Resource Engineer
- Business Development Specialists
- Veterinarians
- Agri-Ecosystem Specialists

### Natural Resources and Indigenous Futures (NRIF)

- Crown Lands Manager
- Fish Habitat Specialist
- Habitat Mitigation Biologist

### Environment and Climate Change (ECC)

- Environmental Engineer
- Environment Officer
- Water Rights Licensing Technologist
- Land-Water Specialist
- Groundwater Specialist

### Manitoba Transportation and Infrastructure (MTI)

- Senior Development Review Technologist
- Senior Flood Protection Planning Officer

### Municipal and Northern Relations (MNR)

- Community Planners

And any other specialist or department that may have an interest or is consulted during the TRC process.

## **THE TECHNICAL REVIEW COMMITTEE (TRC) REPORT**

### Purpose of TRC Reports

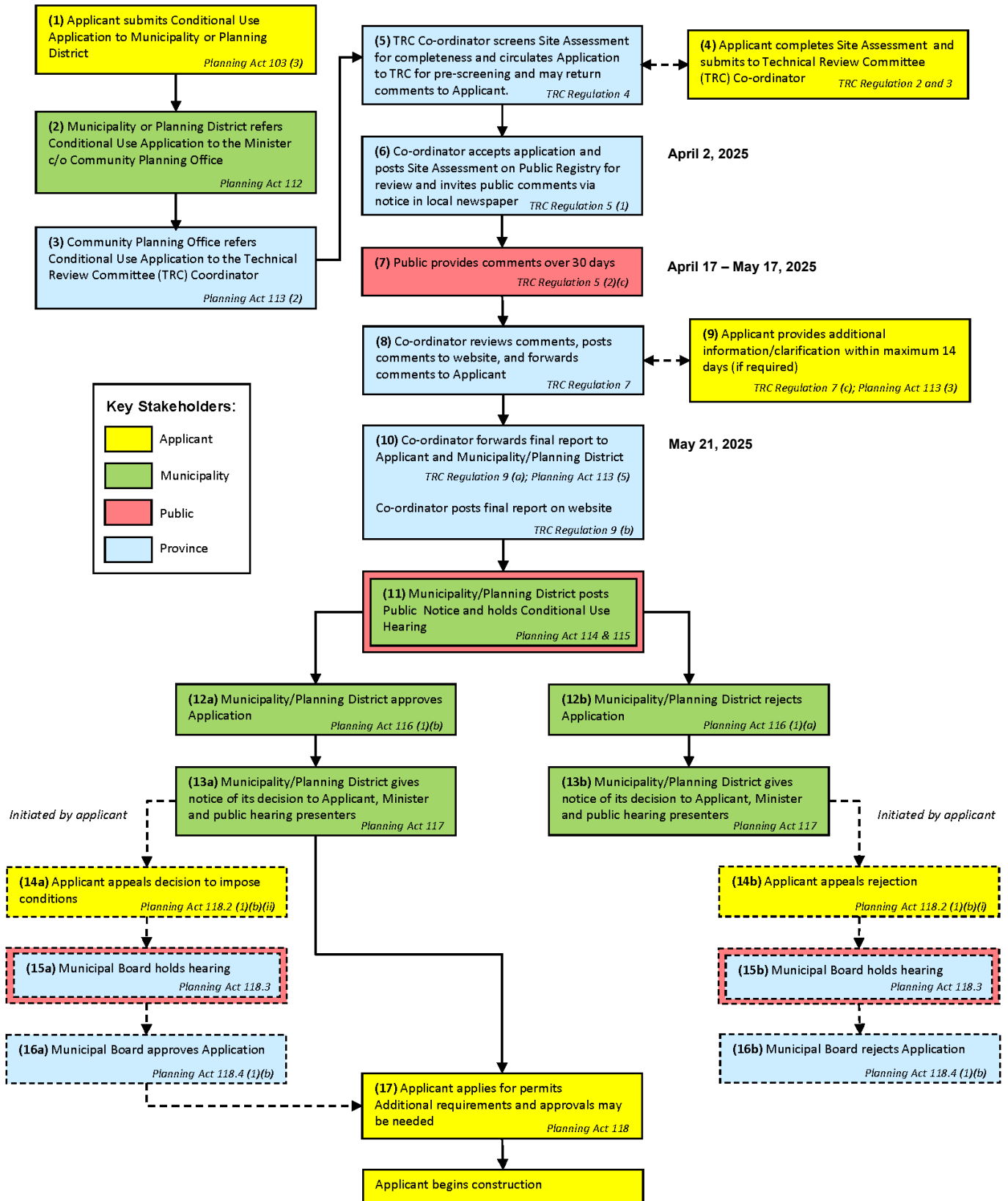
To provide objective, credible, technically-based assessments that:

- a) Enable municipal councils or planning district boards to make informed decisions regarding Conditional Use applications;
- b) Create common stakeholder understanding regarding livestock proposals, their potential impacts, and related regulatory requirements and safeguards;
- c) Provide a vehicle/forum that enables the sharing of public concerns and proponent responses;
- d) Offer recommendations to both councils/boards and proponents; and
- e) Represent the fulfillment of the TRC's role, as per 116(1)(b)(i) of The Planning Act – to determine, based on available information, that the proposed operation will not create a risk to health, safety or the environment, or that any risk can be minimized through the use of appropriate practices, measure and safeguards.

Should a municipal council or planning district board provide conditional approval of a proposal, the project proponent may be required to obtain various permits and licenses from the Province to address in greater detail environmental aspects of the proposal. As of November 1, 2019, a proponent may appeal a council/board's rejection of their application or appeal a condition imposed on the approval of a council/board to the Municipal Board.

# Livestock Technical Review Process

(June 19, 2024)



## B. DESCRIPTION OF PROPOSED LIVESTOCK OPERATION

Further information may be found at [https://www.gov.mb.ca/mr/livestock/public\\_registries.html](https://www.gov.mb.ca/mr/livestock/public_registries.html)

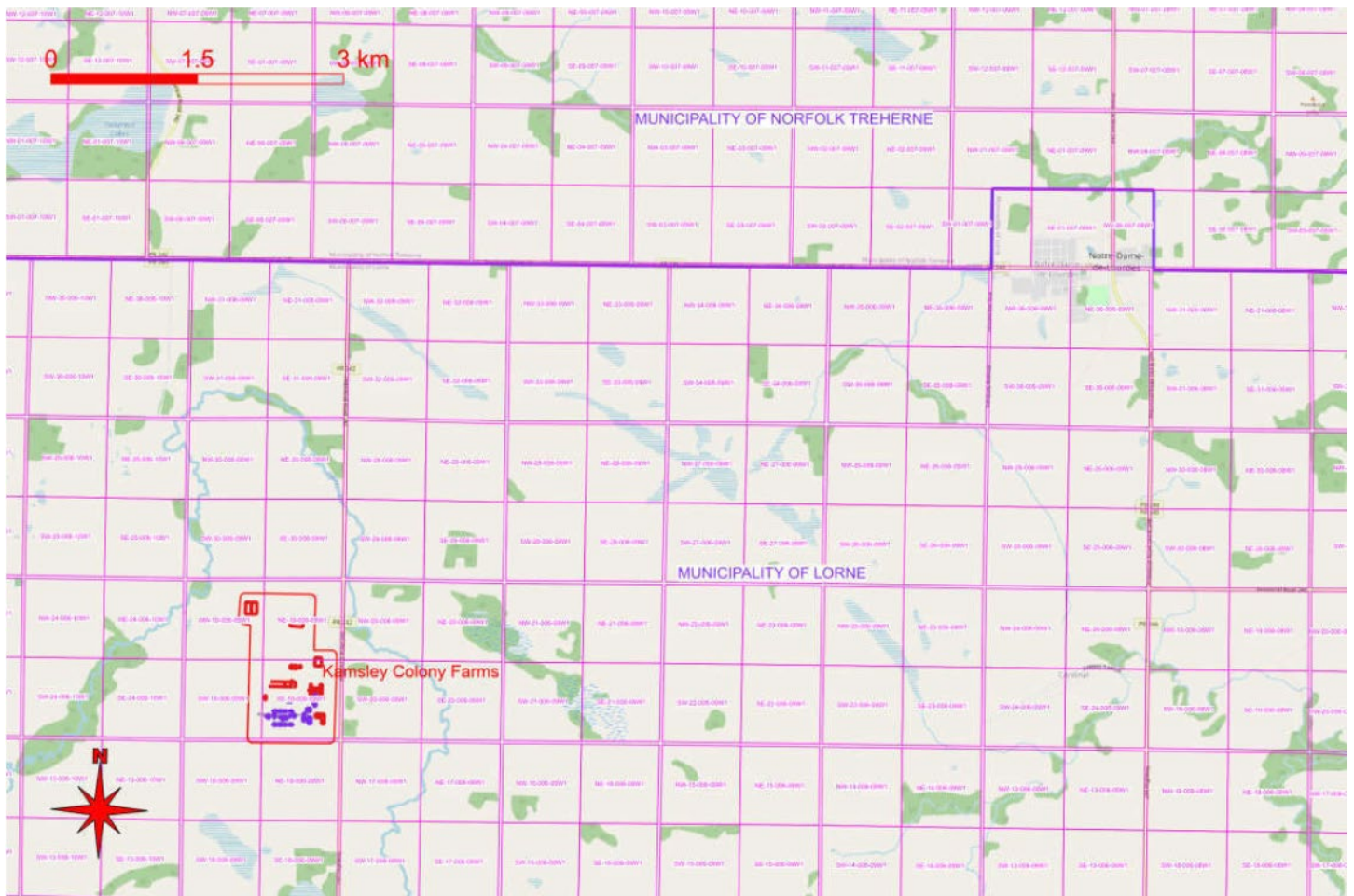
**Applicant:** Kamsley Colony Ltd.

**Site Location:** SE, NE & NW ¼ 19-6-9 WPM (Refer to map below)

**Proposal:** The applicant proposes to expand an existing livestock operation. The proposal involves growing the colony hog operation from 650 to 1000 sows – farrow to finish, while maintaining existing poultry operations, representing an increase from 1,076 to 1,513 animal units.

This will involve the following:

- The expansion of one existing pig barn, decommissioning of another pig barn, and continued use of three existing poultry barns, unaltered;
- Expansion of existing earthen manure storage (pigs) and use of existing manure composting facility (poultry);
- Estimated daily water use of 33,758 imperial gallons from an existing well;
- Composting (pig/chicken) and incineration of mortalities (turkey); and
- Truck haul routes as shown in map below.

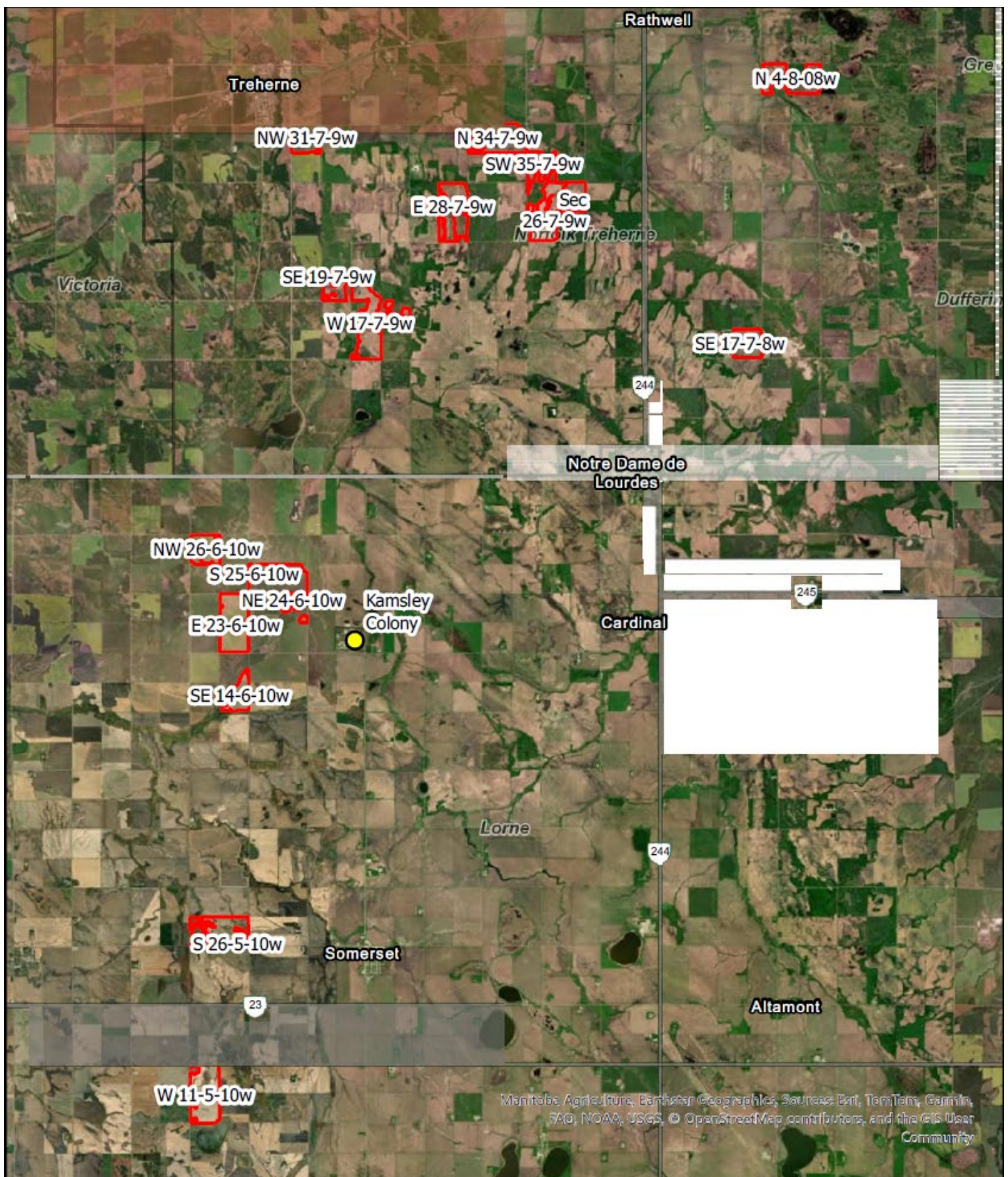


Location Map



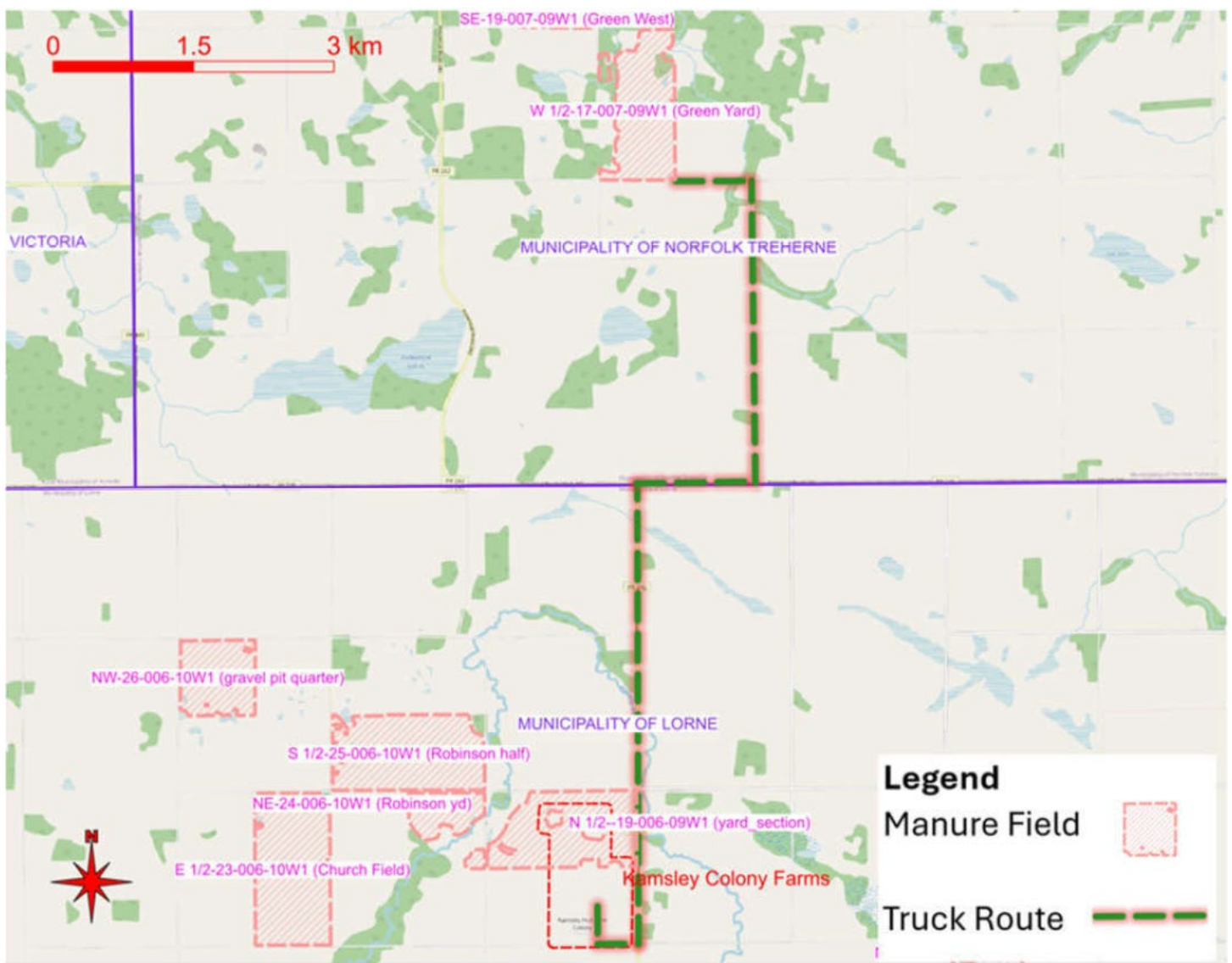
Site Map





Spread Field Map





Truck Haul Route Map



## C. SITE ASSESSMENT OVERVIEW

Related Section in the Site Assessment		Related Provincial Requirements and Safeguards	Dept.
1	Description of Operation and Nature of Project	<p>The Planning Act requires that that an application to approve a conditional use for a livestock operation involving 300 or more animal units must be referred to the Livestock Technical Review Committee (TRC) for review.</p> <p>The South Central Planning District Development Plan By-law No. 35-2019 states that new or expanding livestock operations of 300 or more animal units will be a conditional use in the Municipality of Lorne and that Council must refer all applications involving 300 or more animal units to the TRC for review.</p> <p>Kamsley Colony Ltd's application is for an expanding mixed livestock operation of more than 300 animal units. As such, it has been referred to the TRC for review.</p> <p>The Technical Review Committee Regulation 119/2011 requires an applicant to submit a completed site assessment.</p> <p>The TRC has received and accepted for review a complete site assessment from Kamsley Colony Ltd., including all information necessary to review the application.</p>	MNR
2	Type and Size of Operation	Kamsley Colony is seeking Conditional Use approval from the Municipality of Lorne to expand their pig operation to 1000 sows, farrow to finish. Their existing poultry operation consists of 30,000 broiler chickens, 9,500 heavy turkey hens and 600 ducks and geese. The total proposed animal units are 1513 AU.	AGR
3	Animal Confinement Facilities	<p>The proposed expanded livestock operation will require the expansion of one existing pig barn, decommissioning of another pig barn, and continued use of three existing poultry barns, unaltered.</p> <p>The proposed expanded hog barn will have a structure size of 140,000 ft<sup>2</sup>. It will replace a 75,000 ft<sup>2</sup> hog barn to be decommissioned. The existing poultry barns have structure sizes of 50,000 ft<sup>2</sup>, 25,000 ft<sup>2</sup>, and 7,600 ft<sup>2</sup>.</p> <p>As all buildings proposed for construction exceed 6,458 ft<sup>2</sup> (600 m<sup>2</sup>), building permits must first be issued by South Central Planning District, as required by the Inspection and Technical Services Branch, Department of Labour and Immigration, under Manitoba Building Code Regulation M.R. 78/2023. Please contact South Central Planning District at (204) 526-2800 or check their website at <a href="#">South Central Planning District</a>.</p> <p>For more information, see the Inspection and Technical Services Branch website: <a href="#">Province of Manitoba   Labour   Labour and Immigration   Permits and Inspections</a>.</p>	MNR
4	Confined Livestock Areas	Proposed facilities are not considered Confined Livestock Areas and are not regulated under the Livestock Manure and Mortalities Management Regulation.	ECC
5	Project Sites Unsuitable for Development	The manure storage facility is not located within Nutrient Management Zone N4 or in any Nutrient Buffer Zone	ECC

Related Section in the Site Assessment		Related Provincial Requirements and Safeguards	Dept.
6	Water Source: <b>Existing Groundwater well</b> Water Requirements of 33,758 imperial gallons per day	Based on the water consumption information provided, the proponent is required to apply for a Water Use Rights Licence under The Water Rights Act.  An application can be submitted via the online portal at <a href="https://web22.gov.mb.ca/Sso/Account/LogOn">https://web22.gov.mb.ca/Sso/Account/LogOn</a> .	ECC
7	Development Plan	The Planning Act requires that development plans include a livestock operation policy that guides zoning by-laws dealing with livestock operations.  The Planning Act requires that municipalities issue a development permit before any development takes place on a site. All development must comply with the Zoning By-law and Development Plan. Any proposed development that does not comply with required separation distances or setbacks must obtain Council approval following public hearing to vary those requirements.  <b>Designation</b>  The site of the proposed livestock operation, located in the SE ¼ and NW ¼ 16-6-9 WPM in the Municipality of Lorne, is designated Rural Policy Area (South Central Planning District Development Plan By-law No. 35-2019). The proposed operation complies with <i>3.5 Livestock Operation Policies</i> .  <b>Note:</b> The South Central Planning District Development Plan By-law No. 35-2019 was approved on February 12, 2020 to allow existing operations to expand beyond 300 AU within the Rural Policy Area as a Conditional Use.	MNR
8	Zoning By-Law	<b>Zoning</b>  The site of the proposed livestock operation is zoned “AG” Agricultural General (Municipality of Lorne Zoning By-law No. 0070-22) with a minimum site area requirement of 80 acres and a minimum site width requirement of 200 ft.  The proposed operation complies with the Zoning By-law.  <b>Note:</b> The Municipality of Lorne Zoning By-law No. 0070-22 was approved on June 14, 2022, to allow existing operations to expand beyond 300 AU within the “AG” Zone as a Conditional Use.	MNR
9	Separation Distances	The proponent’s proposed livestock operation expansion meets all the minimum separation distances for an animal confinement facility and earthen manure storage facility to the nearest single residence and the nearest designated area (Cardinal). It is consistent with the standards in <i>4.15 Livestock Operations</i> and <i>Appendix B: Mutual Separation Distances</i> in the Municipality of Lorne Zoning By-law No. 0070-22.	MNR

Related Section in the Site Assessment		Related Provincial Requirements and Safeguards	Dept.
10	Abandoned Wells	<p>The proposal indicates that water for the proposed livestock operation is from the existing well located at NW ¼ 19-6-9 WPM.</p> <p>The provincial wells database contains information for a well associated with the proposed livestock operation. The proposal also references the presence of abandoned wells on the project site and on manure spread fields, indicating they have been decommissioned and buried. However, well decommissioning reports have not been provided to Groundwater Management nor are they available in the provincial wells database.</p> <p>If additional unused or abandoned well are identified on the project site or manure spread fields in the future, they must be properly sealed and a sealed well report submitted to Manitoba Environment and Climate Change, Groundwater Management.</p> <p>For information on well sealing and obtaining a sealed well report, please contact Manitoba Environment and Climate Change at (204) 945-6959 or <a href="https://www.gov.mb.ca/water/groundwater/wells_groundwater/index.html">https://www.gov.mb.ca/water/groundwater/wells_groundwater/index.html</a>.</p> <p>A well drilling professional should seal all but the most basic wells. A list of currently licensed well drilling professionals can be accessed from the above web page.</p> <p>During manure spreading, the setback distances to all groundwater features as prescribed under the Livestock Manure and Mortalities Management Regulation should be considered as a minimum required setback distance.</p>	ECC
11	Water Control Works	<p>There are no new water control works proposed. If water control works are proposed, an authorization under The Water Rights Act is required.</p> <p>Please note, any filling or draining of regulated wetlands (Class 3, 4 or 5) constitutes the construction of water control works. Also, Class 6, 7 and unimproved organic soils (ag capability) cannot be drained.</p>	ECC
12	Manure Type and Storage: <b>Solid and liquid</b>	<p>The proponent will modify or expand an existing manure storage. Under the Livestock Manure and Mortalities Management Regulation, the proponent must obtain a permit from Manitoba Environment and Climate Change to modify or expand the storage. Once in operation the proponent must:</p> <ul style="list-style-type: none"> <li>• Ensure there is sufficient capacity to store all manure through the winter;</li> <li>• Maintain the structural integrity of the storage; and</li> <li>• Operate the storage so that it does not pollute surface water, ground water or soil.</li> </ul> <p>The proponent will decommission an old manure storage facility. Under the Livestock Manure and Mortalities Management Regulation, the proponent must submit a decommissioning plan to Manitoba Environment and Climate Change for approval, prior to starting the decommissioning works. The plan must follow the specifications and procedures described in the <a href="#">Technical Reference Documents for Decommissioning Manure Storage Facilities</a>.</p>	ECC



Related Section in the Site Assessment		Related Provincial Requirements and Safeguards	Dept.
13	Mortalities disposal methods identified: <b>Composting/ Incineration</b>	<p>The proponent will compost mortalities. Under the Livestock Manure and Mortalities Management Regulation, the proponent must:</p> <ul style="list-style-type: none"> <li>• Ensure the composting does not pollute surface water, groundwater, or soil;</li> <li>• Locate the composting site at least 100 m from any surface watercourse, well, or the operation's boundaries; and</li> <li>• Ensure the composting facilities and process are acceptable to the director.</li> </ul> <p>The proponent will incinerate mortalities. Under the Livestock Manure and Mortalities Management Regulation, the proponent must use an incinerator that is installed and operated in compliance with the Incinerators Regulation.</p>	ECC
14	Setback Distances from Manure, Livestock, and Mortalities to Water and Operation Boundaries	The proponent has indicated that all setback distances meet minimum requirements set out in the Livestock Manure and Mortalities Management Regulation	ECC
15	Building in Designated Flood Areas	<p>The project site is not within a Designated Flood Area.</p> <p>The Boyne River, which runs through the proposed manure spread field at NW ¼ 4-8-8 WPM, is provincial water infrastructure. Any activities which have the potential to impact provincial water infrastructure will require a provincial water infrastructure permit. This permit <b>must</b> be obtained prior to undertaking any activities which may impact the provincial water infrastructure.</p>	MTI
16	Odour control measures (project site)	<p>Kamsley Colony has indicated that the expanded pig barn will lie within the existing shelterbelt.</p> <p>Should odour become a problem for neighbouring residents, there is a complaints process under The Farm Practices Protection Act. A person who is disturbed by any odour, noise, dust, smoke or other disturbance resulting from an agricultural operation may make a complaint, in writing, to the Manitoba Farm Industry Board. The Act is intended to provide for a quicker, less expensive and more effective way than lawsuits to resolve nuisance complaints about farm practices. It may create an understanding of the nature and circumstances of an agricultural operation, as well as bring about changes to the mutual benefit of all concerned, without the confrontation and the expense of the courts.</p>	AGR
		<p>There is no manure storage cover. The proposed expanded pig barn and existing barns lie within the existing shelterbelt established for operation yard site.</p> <p>Section 116(1) of The Planning Act allows municipal councils to require a manure storage cover and the planting of a shelterbelt as conditions of conditional use approval.</p>	MNR
17	Land Available for Manure Application	The estimated land requirement for Kamsley Colony is 2232 acres for the phosphorus or 2058 acres for the nitrogen, whichever is higher. Kamsley Colony has exceeded the land requirement by demonstrating that they have access to 3681 suitable acres. Additional details can be found in Appendix A on p. 19.	AGR

Related Section in the Site Assessment		Related Provincial Requirements and Safeguards	Dept.
		<p>The proponent's proposed spread fields are located within the municipalities of Lorne and Norfolk Treherne. All locations are designated Rural Policy Areas and comply with Livestock Policies (South Central Planning District Development Plan By-law No. 35-2019, 3.5 <i>Livestock Operation Policies</i>).</p> <p>The proposed spread field locations are zoned "AG" General Agricultural Zone (Municipality of Lorne Zoning By-law No. 0070-22, Municipality of Norfolk Treherne Zoning By-law No. 83-22) and support existing agricultural activity.</p>	MNR
18	Setbacks for Manure Application	Under the Livestock Manure and Mortalities Management Regulation, manure spreading must meet setback distances to all surface watercourse and groundwater features.	ECC
19	Manure Transportation and Application	<p>Please be advised that any structures placed within the controlled area of a Provincial Road (125 ft from the edge of the right-of-way) require a permit from our office. For permit information, please contact Juanita Mowbray at (204) 583-2433 or by email at <a href="mailto:Juanita.Mowbray@gov.mb.ca">Juanita.Mowbray@gov.mb.ca</a>. Permit information can also be found at <a href="https://forms.gov.mb.ca/highway-permits-application/index.html">https://forms.gov.mb.ca/highway-permits-application/index.html</a>.</p> <p>The placements of temporary drag lines or any other temporary machinery/equipment for manure application within the right-of-way of any Provincial Trunk Highway (PTH) or Provincial Road (PR) require permission from Manitoba Transportation and Infrastructure's Steinbach Office. Please contact the Regional Planning Technologist, Robert Fender, at (204) 346-6266 or <a href="mailto:Robert.Fender@gov.mb.ca">Robert.Fender@gov.mb.ca</a>. In addition, please notify the Regional Planning Technologist for the placement of temporary draglines or other temporary equipment for manure application within the controlled area of a PR and PTH (125 ft from the edge of the right-of-way).</p>	MTI
		<p>Under the Livestock Manure and Mortalities Management Regulation, the proponent must:</p> <ul style="list-style-type: none"> <li>Operate with an annual manure management plan which includes: <ul style="list-style-type: none"> <li>Manure type, volume, and nutrient values</li> <li>Spread field location and soil class</li> <li>Soil tests showing nitrogen and phosphorus levels</li> <li>Crops to be grown</li> <li>Manure application rate</li> </ul> </li> <li>Ensure manure does not pollute groundwater, soil or escape the operation's boundaries.</li> <li>Follow requirements for the land application of manure, including nitrogen limits and phosphorus thresholds.</li> </ul>	ECC
20	Manure Application on Lands Subject to Frequent Flooding or Inundation	The proponent has indicated that no spread fields are located within the Red River Valley Special Management Area or any other regularly inundated area.	ECC
21		The proposed truck haul route uses existing municipal roads connecting onto PR 242 and PR 245. MTI has no concerns.	MTI

Related Section in the Site Assessment		Related Provincial Requirements and Safeguards	Dept.
	Projected Truck Haul Routes and Access Points	<p>The proposed site is accessed from by Municipal Road 33N. the proposed truck haul routes use PR 242 and PR 245.</p> <p>As per Section 116(2) of The Planning Act, municipalities, as a condition of approval, may require proponent to enter into a development agreement regarding the condition and upkeep of local roads used as truck haul routes.</p>	<b>MNR</b>
<b>22</b>	Conservation Data Centre Report	<p>The information provided in the assessment suggest that there will not be any conflicts with species protected under the Endangered Species and Ecosystems Act and/or Species at Risk Act or designated as rare or uncommon by the Manitoba Conservation Data Centre (MBCDC).</p> <p>NRIF's review is based on existing data known to the MBCDC of the Wildlife Branch at the time of the review. 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.</p> <p>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. All future observations of rare or endangered species made by the proponent should be reported to the MBCDC for further review.</p>	<b>NRIF</b>

**Provincial Departments:** Agriculture (AGR); Environment and Climate Change (ECC); Transportation and Infrastructure (MTI); Municipal and Northern Relations (MNR); Natural Resources and Indigenous Futures (NRIF)



## **D. PUBLIC COMMENTS AND DISPOSITIONS**

No comments were provided by the public to the Livestock Technical Review Committee concerning the proposed expansion of a mixed operation by Kamsley Colony Ltd.

## **E. CONCLUSIONS AND RECOMMENDATIONS**

### **Conclusion**

The information contained in the Site Assessment submitted by the proponent generally meets provincial requirements. Based on available information, it has been determined that the proposed operation will not create a risk to health, safety or the environment, or that any risk can be minimized through the use of appropriate practices, measures and safeguards.

### **Recommended Actions to Council**

1. As per Section 114(2) of The Planning Act, at least 14 days before the date of the hearing, Council must:
  - a) send notice of the hearing to
    - i. the applicant,
    - ii. the Minister (c/o the Portage Community Planning Office),
    - iii. all adjacent planning districts and municipalities, and
    - iv. every owner of property located within three kilometres of the site of the proposed livestock operation, even if the property is located outside the boundaries of the planning district or municipality; and
  - b) publish the notice of hearing in one issue of a newspaper with a general circulation in the planning district or municipality or, when there is no newspaper with a general circulation in the area, post the notice in the office of the planning district or municipality and at least two other public places in the district or municipality; and
  - c) post a copy of the notice of hearing on the affected property in accordance with the Posting Requirements outlined in Section 170 of The Planning Act.
2. Council should specify the type of operation, legal land location, number of animals in each livestock category, total animal units, and expiration date (as per Planning Act section 110(1)) in its Conditional Use Order.
3. As per Section 117 of The Planning Act, Council must send a copy of its Conditional Use Order to
  - a) the applicant,
  - b) the Minister (c/o the Portage Community Planning Office), and
  - c) every person who made representation at the hearing.
4. Council is requested to include in their resolution and/or Conditional Use Order notification that, as per Section 118.2(1) of The Planning Act, an applicant may appeal the following decisions of a board or council to the Municipal Board:
  - b) for an application for approval of a conditional use made in respect of a large-scale livestock operation,
    - i. a decision to reject the application,
    - ii. a decision to impose conditions.
5. As per Section 118, no development or expansion of a livestock operation that is the subject of an application under Part 7, Division 2 of The Planning Act may take place until
  - a) the application is approved and the applicant complies, or agrees to comply, with any condition imposed on the approval under this Division; and
  - b) the applicant obtains every approval, including any permit or licence, required under an Act, regulation or by-law in respect of the proposed operation or expansion, and complies with, or agrees to comply with, any condition attached to the approval.

6. Council is welcome to contact Manitoba Environment and Climate Change, Environmental Approvals Branch, or Regional Environmental Compliance and Enforcement staff with respect to the Livestock Manure and Mortalities Management Regulation (M.R. 42/98), including compliance and enforcement issues.

#### **Recommended Actions to Proponent**

1. That any additional measures identified through subsequent provincial licencing or permitting in order to minimize any identified risks to health, safety and the environment be undertaken.
2. That as per Section 118.2(2)(b), an applicant may appeal the following decisions of a board or council to the Municipal Board respecting an application for approval of a conditional use:
  - i. a decision to reject the application,
  - ii. a decision to impose conditions.



## F. TECHNICAL REVIEW COMMITTEE MEMBERS

Name	Department	Title <i>Branch</i>	Contact
Holly Ervick-Knote	Municipal and Northern Relations	Senior Planner <i>Community Planning Services Branch</i>	204-945-1312 holly.ervick-knote@gov.mb.ca
Petra Loro	Agriculture	Livestock Environment Specialist <i>Sustainable Agriculture Branch</i>	204-918-0325 petra.loro@gov.mb.ca
Julie Froese	Environment and Climate Change	Environmental Livestock Coordinator <i>Environmental Approvals Branch</i>	204-945-7104 julie.froese@gov.mb.ca
Colin Murray	Natural Resources and Indigenous Futures	Information Manager- Manitoba Conservation Data Centre <i>Fish and Wildlife Branch</i>	204-945-7760 colin.murray@gov.mb.ca
Jeff DiNella	Transportation and Infrastructure	Senior Development Review Technologist <i>Highway Planning and Design Branch</i>	204-430-7176

## **Appendix A**

### **Manitoba Natural Resources and Indigenous Futures – Lands and Planning Branch**

A review of the information provided suggests there is no impact to Crown land administered under The Crown Lands Act. This review is based on information known to the Lands and Planning Branch as documented in the Crown Lands Registry System.

### **Manitoba Natural Resources and Indigenous Futures – Fisheries Branch**

Fisheries Branch has reviewed the proposal. If the proponent adheres to all mitigative measures prescribed by Manitoba Environment and Climate Change to protect surface waters and riparian habitats, Fisheries has no concerns with the proposal as described.

### **Manitoba Agriculture – Sustainable Agriculture Branch**

In areas of lower livestock intensity, such as the municipalities of Lorne and Norfolk Treherne, it is currently the Province of Manitoba's policy to require sufficient suitable land for all of the nitrogen and half of the phosphorus generated by the livestock. This policy assumes that more land is available in areas of lower livestock intensity to balance manure phosphorus with crop phosphorus removal, should it be necessary in the future.

Typical, modern feeding practices for poultry and pigs were used to estimate nutrient excretion by the livestock at Kamsley Colony. Ten-year crop yield averages from the Manitoba Agricultural Services Corporation (MASC) for the municipalities of Lorne and Norfolk Treherne were used to estimate crop nitrogen uptake and phosphorus removal rates for the crop rotation specified in the proposal.

Land suitability is determined using soil testing for phosphorus and soil survey to establish the agriculture capability. Soils must be below 60 ppm Olsen P to be considered suitable. Detailed and semi-detailed soil surveys are available in the area to determine the agriculture capability of the land. The soil survey indicates the land is Classes 1 to 5. The limitations in the area are slope (T), lack of moisture (M), wetness (W) and eroded soils (E).

The estimated land requirement for Kamsley Colony Ltd. is 2232 acres for the phosphorus or 2058 acres for the nitrogen, whichever is higher. Kamsley Colony Ltd. has exceeded the land requirement by demonstrating that they have access to 3681 suitable acres.

### **Manitoba Environment and Climate Change – Water Science and Watershed Management Branch**

Proper nutrient management applications that avoid excess loss of nutrients to surface waters are needed on lands receiving manure in southern Manitoba because long-term trend analysis of total phosphorus and total nitrogen has shown significant increases in these nutrients in the Assiniboine and Red rivers (Jones and Armstrong 2001).

The proponent is planning to apply manure in spring and in fall by either full injection (liquid manure) or broadcast and incorporated within 48 hours (solid manure). Full injection and broadcast with incorporation will reduce the risk to surface water when compared to broadcast only application methods. Spring applications will also have a lower risk to surface water than fall application in most years.

For most crops, manure contains an excess of phosphorus (P) compared to nitrogen (N) and as a result, application at N-based rates causes a buildup of soil P. Practices which reduce N losses from the manure improve the N:P ratio in the manure and help slow P buildup when manure is applied at N-based rates. Injection and incorporation are both practices which reduces N loss when compared to broadcast only application methods.

The Province of Manitoba has included phosphorus as a nutrient by which fertilizer application through manure, synthetic fertilizer, and municipal waste sludge to agricultural lands may be limited. Many agricultural soils in Manitoba, especially areas with low livestock intensity, are considered phosphorus deficient and therefore, manure is an ideal fertilizer to support crop production. However, manure application can increase soil phosphorus over time and other spread fields may need to be added to prevent excessive soil phosphorus build up. As excess phosphorus levels build up in soils, greater losses occur to surface and ground water. It should be noted that Olsen soil-test phosphorus levels of 60 ppm are well above phosphorus needs for most crops (over 20 ppm is usually considered agronomically very high). In areas of lower livestock intensity, such as the Municipality of Lorne, it is currently the province's policy to require sufficient suitable land for all the nitrogen and half the phosphorus generated by the livestock. This policy assumes that more land is available in the region to balance manure phosphorus with crop phosphorus removal, should it be necessary in the future for long-term sustainability. To remain environmentally sustainable over a long-term planning horizon of 25 years or more the proponent acknowledges that 4465 acres may be required for the operation. The proponent has identified 3681 acres with suitable soil test for manure application at this time. Application to meet crop N requirements is estimated to use 2058 acres. Application at 2 times the crop removal of P is estimated to use 2232 acres (4465 acres is estimated to achieve P balance [phosphorus removal equal to phosphorus application] with current crop choices and yield potential).

As phosphorus levels build up in soils, the concentration of phosphorus in runoff to surface waters increases. It is important to rotate manure application across all spread fields and whenever possible focus manure applications on fields with low Olsen-P soil test levels to prevent excessive P buildup when applying manure at rates above P balance (P removal by harvested crops).

The proponent has acknowledged the setback areas for all water features have been observed and excluded from land base calculations. Setbacks should be clearly communicated to and observed by those involved in manure application to minimize the risk of nutrients entering surface and groundwater. During manure spreading, setback distances to all groundwater features as prescribed under the Livestock Manure and Mortalities Management Regulation should be considered as a minimum distance.