

TECHNICAL REVIEW COMMITTEE

A TECHNICAL REVIEW REPORT PREPARED FOR

THE RURAL MUNICIPALITY OF HANOVER

PRAIRIE ORGANIC LAYER FARMS LTD. SW 18-04-06E

TRC 12-013

NOVEMBER 20, 2014

A. INTRODUCTION

The Technical Review Committee (TRC) consists of representatives from the following provincial departments:

- Agriculture, Food and Rural Development (MAFRD);
- Conservation & Water Stewardship (CWS);
- Infrastructure & Transportation (MIT);
- Municipal Government (MMG); and
- Any other department that may have an interest, which may be consulted during the process.

The Technical Review Coordinator, Manitoba Municipal Government, chairs the committee.

The Technical Review Committee Report includes the following:

- An assessment of completeness and nature of the information contained in the Site Assessment provided by the project proponent that enables the TRC to conduct its review.
- A summary of public comments along with proponent and departmental responses, if any.
- Recommendations to the Municipal Council and the proponent based upon a review of the information provided by the proponent.
- Should the Municipal Council provide conditional approval of the proposal, the project proponent will be required to obtain various permits and licenses from the Province to address in greater detail environmental aspects of the proposal.

B. DESCRIPTION OF PROPOSED LIVESTOCK OPERATION

To view a detailed description go to

www.gov.mb.ca/ia/programs/livestock/public registries.html

Applicant: Prairie Organic Layer Farms Ltd..

Site Location: Approximately 6 kms south west of Pansy R.M. of Hanover (SW 18-04-06 EPM) Refer to map below.

Proposal: To expand a 265 Animal Unit layer operation to 1,062 Animal Units. This will involve the following:

- Constructing 3 additional barns and 2 additional related confined livestock areas
- Storing manure in concrete tanks (currently manure is field stored)
- Consuming 7,040 imperial gallons of water per day
- Removing mortalities from the site via pick up service
- Using the truck haul routes as shown below



Truck Haul and Access Routes Map

Truck Haul Route

NW 18-4-6E (W 1/2 and E 1/2 W 200F OF N 400F) and SW 18-4-6E (W 1/2)

RM of Hanover

C.SITE ASSESSMENT AUDIT

Site Assessment Sections	Meets Requirements for TRC Review (type "X")	Comment	Reviewing Department
2.0 Description of Operation	X	The applicant has provided a detailed description of the current operation.	MMG
3.0 Nature of Project	X	The applicant has clearly defined the nature of the project.	MMG
4.0 Proposed Type and Size of Operation	х	The applicant has indicated that this is an organic egg laying operation with 180,000 layers housed in 4 barns.	MAFRD
Approvals Branch; Mines & Wasteward Environmental Approvals Branch does of this site assessment. The proponent is permit prior to construction of the proposed facility and confined livestock areas. 5.0 Animal Confinement Facilities X Environmental Stewardship Divis Programs & Strategies Branch; Lives Manitoba Conservation and Water Stew construction of manure storage facilities the proponent to submit an "Applie Construct, Modify or Expand a Manure definition of MSF does not include gutter barn storage) used to contain liquid or		Approvals Branch; Mines & Wastewater Section Environmental Approvals Branch does not have concerns with this site assessment. The proponent is required to obtain a permit prior to construction of the proposed manure storage facility and confined livestock areas. Environmental Stewardship Division; Environmental Programs & Strategies Branch; Livestock section Manitoba Conservation and Water Stewardship regulates the construction of manure storage facilities (MSF) by requiring the proponent to submit an "Application for Permit to Construct, Modify or Expand a Manure Storage Facility". The definition of MSF does not include gutter or pit (including under barn storage) used to contain liquid or semi-solid manure for less than 30 days for the purpose of moving the manure to a	cws
6.0 Environmental Farm Planning	x	This operation has not completed an Environmental Farm Plan.	MAFRD
7.0 Water X		Environmental Stewardship Division; Environmental Programs & Strategies Branch; Livestock section The proposed operation is an existing facility but has been below the 300 animal unit threshold; therefore the producer has not submitted Source Water Monitoring analysis.	cws

Site Assessment Sections	Meets Requirements for TRC Review (type "X")	Comment	Reviewing Department
		Water Stewardship Division; Water Science & Management Branch Water well logs from the new wells are required to be sent to the Groundwater Management Section. Information on existing wells for which well logs do not exist should also be forwarded. All unused and abandoned wells on the site and spread fields should be properly sealed and a sealed well report filed with the Groundwater Management Section of Conservation and Water Stewardship. Information on well sealing is available from Conservation and Water Stewardship (204-945-6959) or: www.gov.mb.ca/waterstewardship/water_informisc/abandoned _wells.pdf. It is recommended that all but the most basic wells should be sealed by a well drilling professional. A list of currently licensed well drilling professionals is located http://www.gov.mb.ca/conservation/waterstewardship/water_q uality/wells_groundwater/well_drillers.html. During manure field storage and application all groundwater features, including water wells, should be given as a minimum, the amount of buffer as outlined in the regulations. Proper nutrient management applications that avoid excess loss of nutrients to surface waters are needed on lands receiving nutrients including 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 2002); The proponent has acknowledged that the setback areas for all water features have been observed and excluded from land base calculations for this operation. It is important that these setbacks be clearly communicated and observed by everyone involved in manure application so as to minimize the risk of nutrients entering surface waters. Water Stewardship Division; Water Use Licensing Branch; Groundwater Licensing section No concerns from Water Use Licensing – the proponent has already applied for a Water Rights License and has been issued a Groundwater Exploration Permit in August.	
8.0 Manure Related	X	Environmental Stewardship Division; Environmental Compliance & Enforcement branch; Eastern Region Construction of the manure storage facilities and confined	cws

Site Assessment Sections	Meets Requirements for TRC Review (type "X")	Comment	Reviewing Department
		livestock areas identified in the proposal would require a permit issued by the director. Environmental Stewardship Division; Environmental Programs & Strategies Branch; Livestock section Based on the number of proposed Animal Units for the expansion, Prairie Organic Layer Farms Ltd. will be required to submit an annual Manure Management Plan by the regulated deadline for the storage, handling, disposing, or application of any livestock manure.	
8.1 Land Available/Required for Manure Application	X	Environmental Stewardship Division; Environmental Programs & Strategies Branch; Livestock section Manitoba Conservation and Water Stewardship has obtained information on average phosphorus output from livestock and expected crop removal rates of phosphorus as well as Census data in order to estimate the phosphorus budget in each Rural Municipality within agro-Manitoba. "Certain Areas", are defined by the Livestock Manure and Mortalities Management Regulation as areas where the amount of phosphorus in the manure produced annually by livestock in an area of not less than 93.24 km² is greater than two times the annual crop removal rate of P2O5 in that area. The Rural Municipality of Hanover is considered to be a "certain area". Manitoba Conservation and Water Stewardship requires permits for construction of manure storage facilities. As part of the review operators must identify manure spreadfields. In areas of Manitoba which are considered to be "certain areas" as defined above, Manitoba Conservation and Water Stewardship's current policy for the construction permit is to require an operation to demonstrate access to sufficient land to apply manure at a rate equivalent to 1 X the crop removal rate of phosphorus. The proponent has indicated sufficient land is available however it falls outside what is considered to be a reasonable distance as required under Section 12.2(1) of the Livestock Manure and Mortalities Management Regulation. The proponent will be required to submit a plan to the director for approval prior to issuance of a manure storage facility permit demonstrating compliance with Section 12.2(1) (b). Numerous spreadfields identified in the Site Assessment to be used by Prairie Organic Layer Farms Ltd. have been identified on Manure Management Plans for other operations as confirmed spreadfields, specifically: NE 14-03-05 E, NW 01-06-03 E, SW 01-06-03 E, NE 11-06-04 E, SW 25-03-04 E, NW 18-04-06 E, SW 19-03-05 E, NE 18-06-04 E, NW 19-04-06 E, NW 27-05-04 E, SE 18-06-04 E, SW 18-06-04 E, SE 15-05-	CWS MMG MAFRD

Site Assessment Sections	Meets Requirements for TRC Review (type "X")	Comment	Reviewing Department
		04 E, SE 07-06-04 E, SW 07-06-04 E, NE 07-06-04 E, NW 07-06-04 E, and NW 18-06-04 E. In order for sustainable use of these fields for manure application on a 1X application rate basis, the fields should only be used by one operation for land base calculations. The proponent should confirm long term access by Prairie Organic Layer Farms Ltd.	
		The Site Assessment has identified proposed spread field(s) located in the Red River Valley Special Management Area (RRVSMA). Application of manure to spread fields in the RRVSMA must be done in compliance with Section 14.2 of the Livestock Manure and Mortalities Management Regulation (M.R. 42/98).	
		Water Stewardship Division; Water Science & Management Branch It is recommended that manure be incorporated within 48 hours following broadcast application to minimize nitrogen volatilization losses.	
		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. To remain environmentally sustainable over a long-term planning horizon of 25 years or more, the proponent must be able to balance phosphorus inputs from applied manure and other nutrient sources such as commercial fertilizers with crop removal rates to avoid excessive build-up in soils. Consequently, sufficient land base or economically achievable treatment technologies must be available so that manure can be applied at no more than 1 times crop removal rates. It should be noted that soil-test phosphorus levels of 60 ppm are well above phosphorus needs for most crops (over 20 ppm is usually considered very high), and that as excess phosphorus levels build up in soils, greater losses occur to surface and ground water. For long-term planning purposes, the proponent needs to have sufficient land available to ensure that manure can be applied at 1 times crop removal.	
		Sufficient land (4138 acres) has been identified by the proponent to ensure that manure can be applied at 1 times crop removal over the long term (3947 acres).	
		MAFRD Detailed explanation of MAFRD's land assessment can be found in Appendix A.	
		In order to satisfy the Province's requirement to balance P excretion from the layers with crop P removal over the course of a rotation in the RM of Hanover, MAFRD estimates that Prairie Organic Layer Farms requires a total land base of	

Site Assessment Sections	Meets Requirements for TRC Review (type "X")	Comment	Reviewing Department
		approximately 3947 acres of suitable land. This is also enough land for the layer manure N. MAFRD's land estimate considers only the N and P from the layers and does not consider nutrients from any other sources.	
		Prairie Organic Layer Farms Ltd has identified 4138 suitable acres for manure application. As such, sufficient suitable land is available for the sustainable management of the layer manure N and P.	
9.0 Mortalities Disposal	X	Environmental Stewardship Division; Environmental Programs & Strategies Branch; Livestock section In accordance with the Livestock Manure and Mortalities Management Regulation (M.R. 42/98), mortalities must be kept in a secure storage room, covered container or secure location; and continuously frozen or refrigerated, if not disposed of within 48 hours after death. Rendering mortalities is acceptable method of disposal. The proponent should prepare a contingency plan in case of a catastrophic event resulting in mass mortalities.	cws
10.0 Project Site Description		The proposed site in question is designated "GA" General Agriculture Area in the RM of Hanover Development Plan No. 2170. Designated as such, policies 3.3.5, 3.3.6, and 3.3.9 – 3.3.15 contained within the General Agriculture Area section of the Development Plan are supportive of the location for both the development of the proposed livestock operation and use of the proposed spread fields. The proposed site in question is zoned "A" Agricultural Zone in the RM of Hanover Zoning By-Law No. 2171. The proposed livestock operation is in compliance with the site requirements outlined for agricultural developments (such as site area, site width, front, rear, and side yard, etc.) as listed in the Bulk Requirements table of the Zoning By-Law. The proposed livestock operation in question is also in compliance with the minimum setback and separation distance requirements outlined in the Zoning By-Law for such agricultural operations.	MMG (CRP Regional Office)

Site Assessment Sections	Meets Requirements for TRC Review (type "X")	Comment	Reviewing Department
10.0 Project Site Description (Native Prairie, Wildlife Mgt Areas, Crown Land)	X	Biodiversity & Land Use Division; Wildlife Branch; Habitat, Biodiversity & Endangered Species section A search of the Manitoba Conservation Data Centre's rare species database was completed and found no occurrences at this time for your area of interest. Biodiversity & Land Use Division; Lands Branch; Provincial & Regional Land Management Planning section Based on a review of the available information, Land Management & Planning Section has no concerns as the proposal does not appear to impact or involve any Crown lands. If /where Crown lands are or will be impacted, the proponent is required to obtain all applicable dispositions and authorizations as per the Crown Lands Act.	cws
11.0 Truck Haul Routes and Access Points	X	No frontage onto a provincial highway, no direct access onto a provincial highway, and low traffic volumes means no concerns on our part.	MIT

CWS - Conservation and Water Stewardship

MAFRD- Manitoba Agriculture, Food and Rural Development

MIT – Manitoba Infrastructure and Transportation

MMG- Municipal Government

D. PUBLIC COMMENTS & DISPOSITIONS

N/A

E.CONCLUSIONS & RECOMMENDATIONS

Overall Conclusion

Based on the Site Assessment submitted by the producer and available information, the TRC recommends the following appropriate practices, measures and safeguards be taken;

Recommended Actions to Council

- As per Section 114(1) of The Planning Act, Council must set a date for a Conditional Use hearing which must be at least 30 days after it receives this report
- 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
 - (1) the applicant,
 - (2) the minister, (c/o the Steinbach Community & Regional Planning Office)
 - (3) all adjacent planning districts and municipalities, and
 - (4) 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;
 - b) publish the notice of hearing in one issue of a newspaper with a general circulation in the planning district or municipality; and
 - c) post a copy of the notice of hearing on the affected property in accordance with Section 170 of The Planning Act.
- Council should specify the type(s) of operation, legal land location, number of animals in each livestock category and total animals units in its Conditional Use Order.
- 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 Steinbach Community & Regional Planning Office); and
 - c) every person who made representation at the hearing.

Recommended Actions to Proponent

• The proponent is required to submit an ``Application for Permit to Construct, Modify, or Expand a Manure Storage Facility" to Manitoba Conservation and Water Stewardship for each Manure Storage Facility (MSF) to be constructed;

- Construction of a MSF shall not commence until a permit is granted by the Director, and adequate notification is given to Manitoba Conservation and Water Stewardship;
- The proponent shall ensure the MSF, alone or in combination with other MSFs located on the property of the agricultural operation, is/are of sufficient capacity to store all livestock manure produced and used by the agricultural operation;
- Livestock manure shall be stored until such a time that it can be applied as fertilizer:
- It is recommended that manure be incorporated within 48 hours following broadcast application to minimize nitrogen volatilization losses;
- Application of manure to spread fields in the RRVSMA must be done in compliance with Section 14.2 of the Livestock Manure and Mortalities Management Regulation (M.R. 42/98);
- The proponent is required to submit an "Application for Permit to Construct, Modify, or Expand a Confined Livestock Area" to Manitoba Conservation and Water Stewardship for each Confined Livestock Area (CLA) to be constructed;
- Construction of a CLA shall not commence until a permit is granted by the Director, and adequate notification is given to Manitoba Conservation and Water Stewardship:
- The proponent will be required to submit a plan to the director for approval prior to issuance of a manure storage facility permit or confined livestock area construction permit demonstrating compliance with Section 12.2(1) (b) of the Livestock Manure and Mortalities Management Regulation (MR 42/98);
- The proponent must submit a Manure Management Plan (MMP) annually to Manitoba Conservation and Water Stewardship in accordance with the Livestock Manure and Mortalities Management Regulation (MR 42/98);
- Any unused and abandoned wells on the site and spread fields should be properly sealed and a sealed well report filed with the Groundwater Management Section of Conservation and Water Stewardship;
- In accordance with the Livestock Manure and Mortalities Management Regulation, the proponent must annually submit to Manitoba Conservation and Water Stewardship analytical results from samples of drinking water provided to their livestock;
- The proponent should prepare a contingency plan in the event of a catastrophic event resulting in mass mortalities;
- If /where Crown lands are or will be impacted, the proponent is required to obtain all applicable dispositions and authorizations as per the Crown Lands Act.

*and any additional measures identified through subsequent Provincial and Federal licensing or permitting in order to minimize any identified risks to health, safety and the environment.

The overall conclusion represents the consensus of the TRC Members.

F. TECHNICAL REVIEW COMMITTEE MEMBERS

Name	Department	Title	Address	Telephone
Don Malinowski Chair	Municipal Government	Senior Planner, TRC Community & Regional Planning Branch	604-800 Portage Avenue Winnipeg	945-8353
Petra Loro	Agriculture Food and Rural Development	Livestock Environment Specialist	545 University Crescent Winnipeg	945-3869
Andrea Bergman	Conservation and Water Stewardship	Technical Review Officer Environmental Programs & Strategies Branch	1007 Century Street Winnipeg	945-4384
Heinz Lausmann	Infrastructure and Transportation	Senior Highway Planning Engineer Highway Planning and Design Branch	1420-215 Garry Street Winnipeg	945-2664

Appendix A

Land Base Assessment Prairie Organic Layer Farms Ltd November 10, 2014 Petra Loro, Livestock Environment Specialist

Manitoba Agriculture, Food and Rural Development (MAFRD) assessed the land base for manure application as provided by the proponent in order to provide Council with the assurance that adequate suitable land is available for this operation. The Province will require sufficient suitable land when the proponent applies for the manure storage facility permit.

In the Rural Municipality of Hanover, it is currently the Government of Manitoba's policy to require enough suitable land to allow manure application at a rate that does not exceed the nitrogen (N) uptake or phosphorus (P) that will be removed from the field in the harvested portion of the crop over the course of a rotation. Only lands with Agriculture Capability Class 1 to 5 and recent soil tests demonstrating P levels below 60 ppm Olsen P are considered suitable. Buffer strips and setbacks must be excluded.

Prairie Organic Layer Farms Ltd has submitted 4138 acres of land for manure application. This land is located in the RMs of Hanover, Franklin and De Salaberry. These parcels have an Agriculture Capability Class of 2 and 3 (prime agricultural land) with some areas of lower class 5 land. The soil survey information indicates the land has slight to severe limitations due to lack of moisture (M), wetness (W), inundation (I) and stoniness (P).

Prairie Organic Layer Farms will house 128,000 layers. The manure from these birds will be mechanically dried using forced air resulting in up to 40 % of the N being lost through ammonia volatilization. Using the August 20, 2014 version of the land calculator available on the MAFRD website, it is estimated that these birds will generate approximately 104741 lbs N and 119929 lbs P₂O₅ to be land applied.

Using the crops and acreages provided in the site assessment in conjunction with 10 year (2004-2013) MASC yield averages for the dominant soil zones and RMs (as summarized in the table below), MAFRD estimates the average annual crop N uptake to be 107.7 lb/acre and the average annual crop P₂O₅ removal to be 30.4 lb/acre.

Therefore, in order to satisfy the Province's requirement to balance P excretion from the layers with crop P removal over the course of a rotation in the RM of Hanover, MAFRD estimates that Prairie Organic Layer Farms requires a total land base of approximately 3947 acres of suitable land. This is also enough land for the layer manure N. MAFRD's land estimate considers only the N and P from the layers and does not consider nutrients from any other sources.

Prairie Organic Layer Farms Ltd has identified 4138 suitable acres for manure application. As such, sufficient suitable land is available for the sustainable management of the layer manure N and P.

Crop	RM	Soil Zone	Yield	Notes
Alfalfa	Franklin	Н	1.866 tons/acre	
Grass mix	Franklin Hanover	H	1.83 tons/acre	Based on alfalfa grass mix as MASC yields reflect large acreages of unfertilized grass which is not representative of this system. Fertilized grass should be closer to alfalfa yield potential. Based on MASC soil zone H only as all land classified as MASC soil zone H with the exception of one parcel in Hanover with soil zones I, J.
Canola	DeSalaberry	C, D, E	32.3 bu/acre	Assumes rotation.
Corn	DeSalaberry	C, D, E	87.1 bu/acre	Based on MASC soil zones C, D
Soybeans	DeSalaberry	C, D, E	30.1 bu/acre	and E for DeSalaberry as only 2
Wheat	DeSalaberry	C, D, E	46.4 bu/acre	parcels were in Hanover.

MAFRD also reviewed the soil test reports. In Manitoba, manure application to land is regulated on the basis of residual soil nitrate-N limits and P thresholds. The fields identified for manure application include Class 2 and 3 soils (except 3M and 3MW) for which the residual soil nitrate-N limit is 140 lbs/acre and Class 3M soils for which the residual soil nitrate-N limit is 90 lbs/acre. There are also Class 5 soils identified for which the residual soil nitrate-N limit is 30 lbs/acre. Manure application must be managed to ensure that soils do not exceed the residual soil nitrate-N limits. All of the fields identified for manure application are currently below 60 ppm Olsen P with some of the fields testing under 10 ppm Olsen P. The fields under 10 ppm Olsen P will respond well to fertilizer or manure P in most years and are excellent recipients for manure, particularly if they are Agriculture Capability Class 2 and 3. Manure can be applied to meet the nitrogen requirements of the crop on these fields. This often results in more P being applied than is removed from the field and a build-up of soil test P. These fields will also benefit from moderate build-up in soil test P.

Two of the fields in the RM of Hanover are 45 and 49 ppm Olsen P. Further increasing soil test P on this field is not recommended because no more than 2 times crop removal rates for P can be applied when soil-test P is between 60 ppm and 120 ppm. If soil test levels reach 120 ppm Olsen P, manure application rates will be further restricted to no more P than what is removed in the harvested portion of the crop over the course of a rotation.

Actual manure application rates will be determined in the manure management plan submitted to Manitoba Conservation and Water Stewardship. It is recommended that Prairie Organic Layer Farms Ltd and the partnering crop land owners manage the fertility of the fields that receive manure to keep all soil tests below 60 ppm P over the long-term in order to maintain flexibility in the manure management plan and to reduce the risk of P being lost to surface water in runoff.

MAFRD provides extension support and computer software to help producers complete manure management plans. If the operation uses professional services to prepare the

plan, manure management planners must successfully complete the Manure Management Planners Course offered by the Assiniboine Community College and be a member in good standing in the Manitoba Institute of Agrologists or a Certified Crop Advisor. If the services of a Commercial Manure Applicator are obtained to apply the manure, the applicator must be trained by the Assiniboine Community College and licenced by MAFRD.

Under *The Farm Practices Protection Act*, any complaints about odour or other disturbances (such as flies, smoke, noise or dust) can be directed 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 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.