




TECHNICAL REVIEW COMMITTEE

**A TECHNICAL REVIEW REPORT
PREPARED FOR**

**THE RURAL MUNICIPALITY
OF
TACHE**

Bronson Dairy Inc

NE 09-08-05E



November 5, 2013

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 (MG); 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

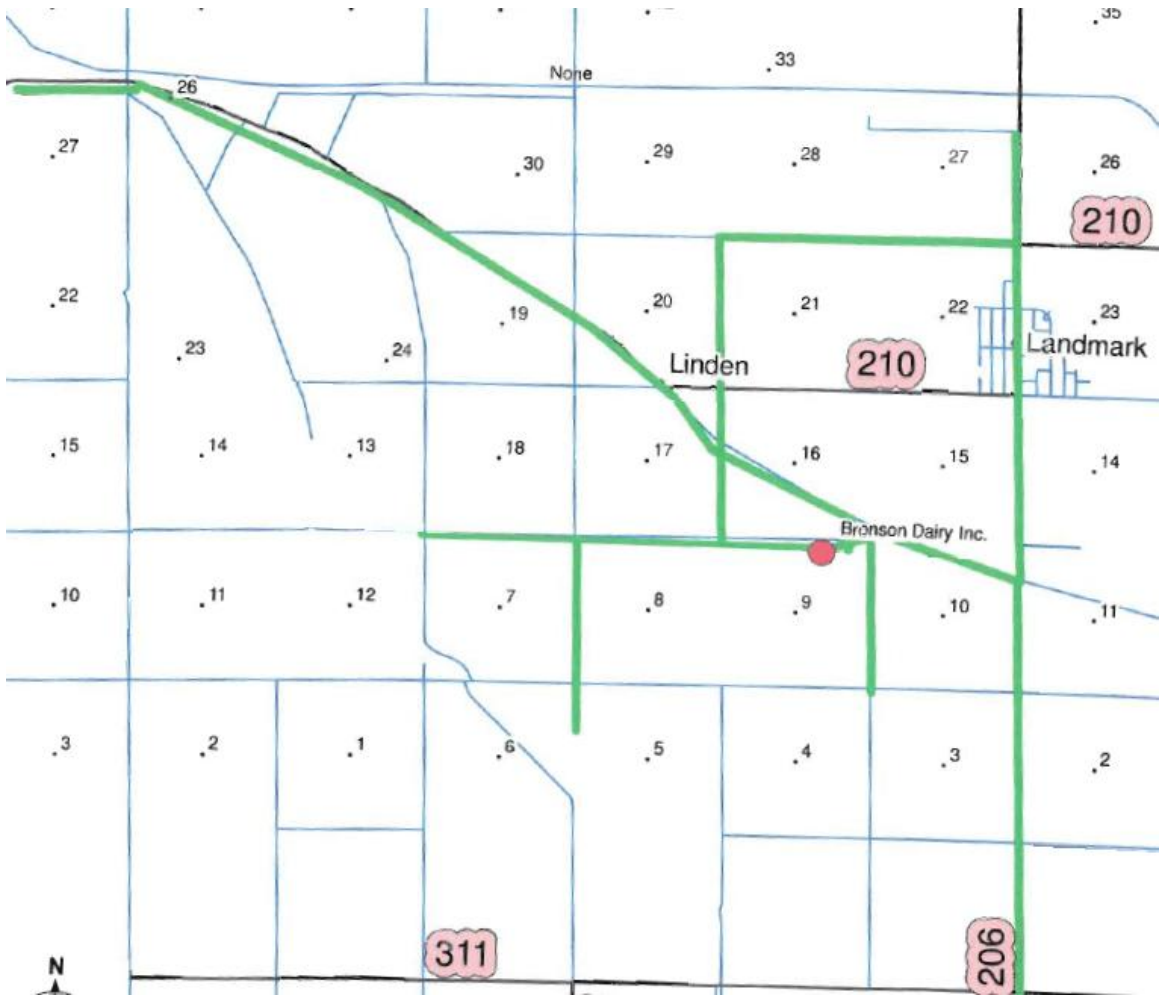
www.gov.mb.ca/ia/programs/livestock/public_registries.html

Applicant: Bronson Dairy Inc

Site Location: Approximately 2 miles south west of Landmark, in the R.M. of Tache (NE 09-08-05EPM) Refer to map below.

Proposal: To expand an existing dairy operation to 1080 mature cows (lactating and dry) for a total of 2160 Animal Units. This will involve the following:

- Constructing 3 new barns
- Converting the existing dairy barn for young stock
- Using the existing earthen lagoon
- Consuming 38,346 imperial gallons of water per day
- Spreading manure over 2,027 suitable acres
- Composting dead animals on site
- Using the truck haul routes as shown below



C.SITE ASSESSMENT AUDIT

The Audit of: Bronson Dairy Inc

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 and proposed expansion.	MG
3.0 Nature of Project	X	The applicant has clearly defined the nature of the project.	MG
4.0 Proposed Type and Size of Operation	X	Bronson Dairy Inc is proposing to expand their dairy operation to a total of 1080 mature cows (lactating and dry) for a total of 2160 Animal Units.	MAFRD
5.0 Animal Confinement Facilities	X	Climate Change & Environmental Protection – Environmental Programs and Strategies: 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 storage facility.	CWS
6.0 Environmental Farm Planning	X	Bronson Dairy Inc completed the Environmental Farm Plan in 2007.	MAFRD
7.0 Water	X	Climate Change & Environmental Protection - Environmental Programs and Strategies: Bronson Dairy Inc. has submitted the annually required source water analysis report for the 2013. No deficiency was identified. Water Stewardship - Water Science and Management: It is important that nutrients not be applied within the Nutrient Buffer Zone as outlined in the Nutrient Management Regulation (62/2008) (appended Table 1). Agri-Maps indicate a (3) third order drain through section NW and NE 10-08-05e, and a (5) fifth order drain through section SW 5-8-5e. 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 2002);	CWS

The Audit of: Bronson Dairy Inc

Site Assessment Sections	Meets Requirements for TRC Review (type "X")	Comment	Reviewing Department
		<p>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 or: www.gov.mb.ca/waterstewardship/water_info/misc/abandoned_wells.pdf. It is recommended that all but the most basic wells should be sealed by a well drilling professional.</p> <p>Water Stewardship - Water Use Licensing: Bronson Dairy holds water rights license 2008-063 for 39.5 acre-feet per year from two wells interconnecting the limestone and sandstone aquifer. With the expansion, Bronson Dairy will need to apply for an amendment to their annual allocation from 39.5 acre-feet per year to 51.5 acre-feet per year.</p>	
8.0 Manure Related	X	<p>Climate Change & Environmental Protection - Environmental Approvals: Bronson Dairy has an existing EMS that was constructed for 1000 AU and two under barn concrete pits providing adequate storage capacity. The operation will have to apply to obtain permit for the bedding recovery unit system (treatment facility) that is intended for inclusion in the expansion. If it is also intended to store the solid manure in the same place year after year, Bronson Dairy will be required to submit a permit application for a manure storage facility.</p> <p>Climate Change & Environmental Protection - Environmental Compliance and Enforcement: During a routine inspection of the earthen manure storage conducted in October 2009, the facility and grounds were observed to be generally well maintained and no important physical damages to the structure were observed. There have been public concerns regarding potential nutrient run-off associated with the current configuration of the existing operation. The proposal, which removes the outdoor confined livestock area and moves all livestock indoors, and reduces the amount of solid manure to be handled on site, should reduce nutrient run-off from the site. The proposal indicates that 114,245 cubic feet per year of solid manure will continue to be generated by the operation, and that the manure will be piled outside the barn until it is hauled away to field storage. There are concerns with the manure piled outside the barn with regard to leachate runoff and the substrate below the pile. Section 3(1) of the Livestock Manure and Mortalities Management Regulation (MR 42/98) requires that solid manure be stored in a manure storage facility or in field storage. As such, when manure is removed from the barn it must be transported directly into field storage, or a solid manure storage facility should be constructed to hold the manure until it is placed into field storage or field applied.</p>	CWS

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Site Assessment Sections	Meets Requirements for TRC Review (type "X")	Comment	Reviewing Department
		<p>Climate Change & Environmental Protection - Environmental Programs and Strategies: Bronson Dairy Inc. has submitted the annually required Manure Management Plan for the 2014 crop year. No deficiency was identified.</p>	
8.1 Land Available/Required for Manure Application	X	<p>Manitoba Agriculture, Food and Rural Development In order to satisfy the Province's land base requirement, Bronson Dairy Inc requires a minimum of 2025 acres of suitable land. Bronson Dairy Inc has identified 2027 suitable acres for manure application. As such, Bronson Dairy Inc has met the current Provincial land base requirement for phosphorus. A detailed write-up of the land assessment is provided in the Appendix at the end of this document.</p> <p>Climate Change & Environmental Protection - Environmental Programs and Strategies: 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 Tache is not considered to be a "certain area".</p> <p>Manitoba Conservation and Water Stewardship requires permits for construction of manure storage facilities. It is the operator's responsibility to identify land and submit the land base calculation necessary for application of manure. In addition, operators must identify manure spread fields and demonstrate that the application meets the minimum regulated requirement. In areas of Manitoba which are not 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 2 X the crop removal rate of phosphorus. The proponent has indicated that 2027 acres are available and suitable for manure application; therefore Manitoba Conservation and Water Stewardship is sufficiently satisfied with the proposal for the dairy operation expansion in this respect.</p> <p>The proponent has identified that spread fields are located within the Red River Valley Special Management Area and therefore the Livestock Manure and Mortalities Management Regulation 42/98 restricts fall application of manure in this area.</p>	CWS MG MAFRD

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Site Assessment Sections	Meets Requirements for TRC Review (type "X")	Comment	Reviewing Department
		<p>Water Stewardship - Water Science and Management: <i>The proponent proposes a manure application method of spreading and incorporating within a week. To reduce nutrient runoff, manure should be incorporated within 48 hours.</i></p> <p><i>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. Over the short-term, regulations allow manure to be applied at no more than 2 times crop removal rates when soil-test phosphorus is between 60 ppm and 120 ppm. Once phosphorus levels reach 120 ppm, applications of manure would be restricted to 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;</i></p> <p><i>Please note that insufficient land (2027 acres) has been identified by the proponent to ensure that manure can be applied at 1 times crop removal over the long term. To ensure that manure can be applied at 1 times the crop removal 4051 acres is needed. An additional 2024 acres will be required for manure application to land over the long term planning horizon. The proponent has acknowledged that over the long term, up to 4051 acres may be required for the long term environmental sustainability of the operation.</i></p> <p>Department of Municipal Government</p> <p><i>The proposed expanded operation falls entirely within the RM of Tache. According to the Rural Municipality of Tache Development Plan, the proposed spread fields are designated "GENERAL AGRICULTURE AREA". Policies associated with this designation accommodate a full range of agricultural uses, including livestock production operations and manure application. The proposed livestock operation expansion generally complies with the applicable policies of the RM of Tache Development Plans.</i></p>	

The Audit of: Bronson Dairy Inc

Site Assessment Sections	Meets Requirements for TRC Review (type "X")	Comment	Reviewing Department
		The spread fields are located within the "AG" Agriculture General Zone of the RM of Tache Zoning By-law and are a permitted use.	
9.0 Mortalities Disposal	X	<p>Climate Change & Environmental Protection - Environmental Compliance and Enforcement: <i>The Proposal indicates routine mortality disposal will consist of composting on permanent concrete pads. Composting mortalities is an acceptable method of disposal for routine mortalities provided the composting site is located at least 100 m from any surface watercourse, sinkhole, spring or well, and the operations boundaries, and does not cause pollution of surface water, groundwater or soil as per Section 15.1(1) of MR 42/98. The location of the concrete compost pads are not illustrated on the site plan provided.</i></p> <p>Climate Change & Environmental Protection - Environmental Programs and Strategies: <i>In accordance with the Livestock Manure and Mortalities Management Regulation 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.</i></p> <p><i>Application of composted mortalities to land is prohibited between November 10 of one year and April 10 of the following year.</i></p> <p><i>In the event of a mass mortality, operators should contact the local Manitoba Conservation and Water Stewardship office.</i></p> <p><i>The proponent should prepare a contingency plan in case of a catastrophic event resulting in mass mortalities.</i></p>	CWS
10.0 Project Site Description	X	<p>The proposed expanded operation falls entirely within the jurisdiction of the RM of Tache. According to the <i>Rural Municipality of Tache Development Plan</i>, these areas are designated "GENERAL AGRICULTURE AREA". Policies associated with this designation accommodate a full range of agricultural uses, including livestock production operations and manure application. The proposed livestock operation expansion generally complies with the applicable policies of the RM of Tache Development Plans.</p> <p>The property is zoned "AG" Agriculture General Zone within the RM of Tache Zoning By-law. The existing operation satisfies the minimum site area and site width requirements of 80 acres and 600 feet.</p> <p>The nearest single residence not associated with the operation</p>	MG (CRP Regional Office)

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Site Assessment Sections	Meets Requirements for TRC Review (type "X")	Comment	Reviewing Department
		is located 2400 feet from the barn, which meets the current minimum separation distance of 2,297 feet. The nearest designated residential area is approximately 3,436 feet which does not satisfy the minimum separation distance of 9,186 feet. The appropriate variation would need to be obtained.	
10.0 Project Site Description (Native Prairie, Wildlife Mgt Areas, Crown Land)	X	Conservation Programs - Wildlife & Ecosystem Protection: <i>The Manitoba Conservation Data Centre has no concerns.</i> Lands Management & Planning Section: <i>Please be advised that Land Management & Planning Section of Manitoba Conservation has no concerns as the parcels of land required for spreading purposes does not impact any Crown lands.</i>	CWS
11.0 Truck Haul Routes and Access Points	X	As the operation has no frontage or direct access onto a provincial highway we have no concerns with this proposal.	MIT

CWS – Conservation and Water Stewardship

MAFRD- Manitoba Agriculture, Food and Rural Development

MIT – Manitoba Infrastructure and Transportation

MG- Municipal Government

D. PUBLIC COMMENTS & DISPOSITIONS

N/A

E. CONCLUSIONS & RECOMMENDATIONS

Overall Conclusion

- Bronson Dairy Inc has met the current Provincial land base requirement for phosphorus.

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.
- The proposed expansion does not meet the minimum separation distance between the earthen manure storage facility and a designated area (Rural Residential). Therefore the appropriate variation order should be obtained.

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, modified or expanded;

- The operation will have to apply to obtain permit for the bedding recovery unit system (treatment facility) that is intended for inclusion in the expansion. If it is also intended to store the solid manure in the same place year after year, Bronson Dairy will be required to submit a permit application for a manure storage facility.
- 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.
- The proponent will need to apply to Manitoba Conservation and Water Stewardship for an amendment to their water rights licence.
- 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.
- The proponent should prepare a contingency plan in the event of a catastrophic event resulting in mass mortalities.

*** 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
Andrea Bergman	Conservation and Water Stewardship	Technical Review Officer Environmental Programs & Strategies Branch	1007 Century St Winnipeg	945-4384
Petra Loro	Manitoba Agriculture Food and Rural Development	Livestock Environment Specialist	545 University Crescent Winnipeg	945-3869
Heinz Lausmann	Infrastructure and Transportation	Senior Highway Planning Engineer Highway Planning and Design Branch	1420-215 Garry Street Winnipeg	945-2664

APPENDIX

Land Base Assessment for the Bronson Dairy Inc TRC Report October 1, 2013 Petra Loro, Livestock Environment Specialist, MAFRD

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 Tache, 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 2 times the phosphorus that will be removed from the field in the harvested portion of the crop. Phosphorus typically determines the land base requirement. Only lands with Agriculture Capability Class 1 to 5 and recent soil tests demonstrating phosphorus (P) levels below 60 ppm Olsen P are considered suitable. Buffer strips and setbacks must be excluded.

All of this land included in the site assessment is below 60 ppm Olsen P and is Agriculture Capability Class 2 and 3 (prime agricultural land) based on detailed and reconnaissance soil survey. The soil survey information indicates the land has slight to moderate limitations due to wetness (W).

MAFRD has reviewed the land base requirement calculation provided by Bronson Dairy Inc and is in agreement with their approach. 1080 mature cows (lactating and dry) and associated livestock are estimated to excrete about 367092 lb N per year and 178200 lb P₂O₅ per year. The crop yields used to estimate nutrient removal are long-term, 10-year (2003-1012) MASC yield averages for soil zone E in the RM of Tache and the adjacent RMs of Hanover and Ste. Anne. The majority of the land base associated with the operation is soil zone E. Based on the crop rotation indicated in the land calculator and the 10-year MASC yield averages, the average crop N removal rate is estimated to be 154 lb N per acre per year and the average crop P₂O₅ removal rate is estimated to be 44 lb P₂O₅ per acre per year.

In order to satisfy the Province's land base requirement, Bronson Dairy Inc requires a minimum of 2025 acres of suitable land. Bronson Dairy Inc has identified 2027 suitable acres for manure application. As such, Bronson Dairy Inc has met the current Provincial land base requirement for phosphorus. To ensure the long-term environmental sustainability of the operation, however, Bronson Dairy Inc may require up to a total of 4051 acres to balance manure P with crop P removal over the life of the operation.

MAFRD also reviewed the soil test reports provided by the operation. In Manitoba, manure application to land is regulated on the basis of residual soil nitrate-N limits and phosphorus thresholds. The fields identified for manure application include Class 2 and 3 soils (excluding 3M and 3MW) for which the residual soil nitrate-N limit is 140 lbs/acre.

None of the soil test reports exceeded this limit. All of the fields identified for manure application are currently below 60 ppm Olsen P. Manure can be applied to meet the nitrogen requirements of the crop on these fields. However, this often results in more phosphorus being applied than is removed from the field and a build-up of soil test phosphorus. To slow the build-up of soil test P, no more than 2 times crop removal rates for phosphorus can be applied when soil-test phosphorus is between 60 ppm and 120 ppm. MAFRD recommends annual applications of manure to meet the N requirements of the crop and then rotation of fields that receive manure to meet this requirement. If soil test levels reach 120 ppm Olsen P, manure application rates will be restricted to no more phosphorus 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. MAFRD provides extension support and computer software to help producers complete manure management plans. If professional services are used 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. Under *The Pesticides and Fertilizers Control Act*, commercial manure applicators and producers that are over 300 AU in size that apply manure to land that they do not own or lease must be trained by the Assiniboine Community College and licensed by MAFRD.