

August 19, 2013 Responses from Consultant to Technical Review Committee Request for Additional Information

Responses to items below.

1. Most of the features listed are categorized as adjacent to the spread field and not a part of the parcel. (see map) I have added in the word adjacent in the features column to designate they are not a part of the spread field. The other designation which I added was "Subdivided Dwelling/well" as the majority of the remainder dwellings have been subdivided from the parcel. From discussions with Russ Braun the only dwellings which are not subdivided are on NE15-8-5e and on NE/NW10-8-5e where the parcel has a yard as part of the parcel. For these 2 fields I changed the acreage available to include the yard and acreage available for manure spreading is reflected in a lower number. For all acreages reported in this second column I have drawn the spread acres in a GIS map to calculate acres. I have attached a new map to reflect a boundary change on field NE15-8-5e. I've also attached a new "Manure Application Field Characteristics Table" to reflect the changes.

-Question: If Acreage Available is supposed to reflect the land title or rental agreement acres let me know otherwise I'll assume I have done this correctly.

As also in relation to drains and drain orders: page 46 of the original application "Bronson Dairy Drain Order Map" is attached with the drain order numbers specified. In accordance with Schedule C (Subsection 12(2.1)) of regulation 42/98 there are no setback requirements as the two drains of designation 3 or higher are both bermed. (consulted with Petra Loro on this part)

2. I have attached page 9 of the application to reflect the 2027 acres.

3. New page 13 attached.

(I wasn't sure on the surface watercourse question on this page as there is an area where water flows around the storage in spring runoff. This was not included in the EMS application when the storage was built so I didn't include it here. Also I had a question about an onsite borrow pit but didn't include this in the surface water definition.)

4. Water Rights License Attached

5. I've revised the land base calculator based on changes to "Manure application acres." This also affects the totals on page 10. (so I've attached a new page 10)

Let me know if any other changes are required.



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August 22, 2013 Response from Consultant to Technical Review Committee Request for Additional Information

Bronson Dairy meets the setback of the third and fifth order drain (3 m of permanent vegetation), and there are no 1st or 2nd order drains within any of the spread fields.



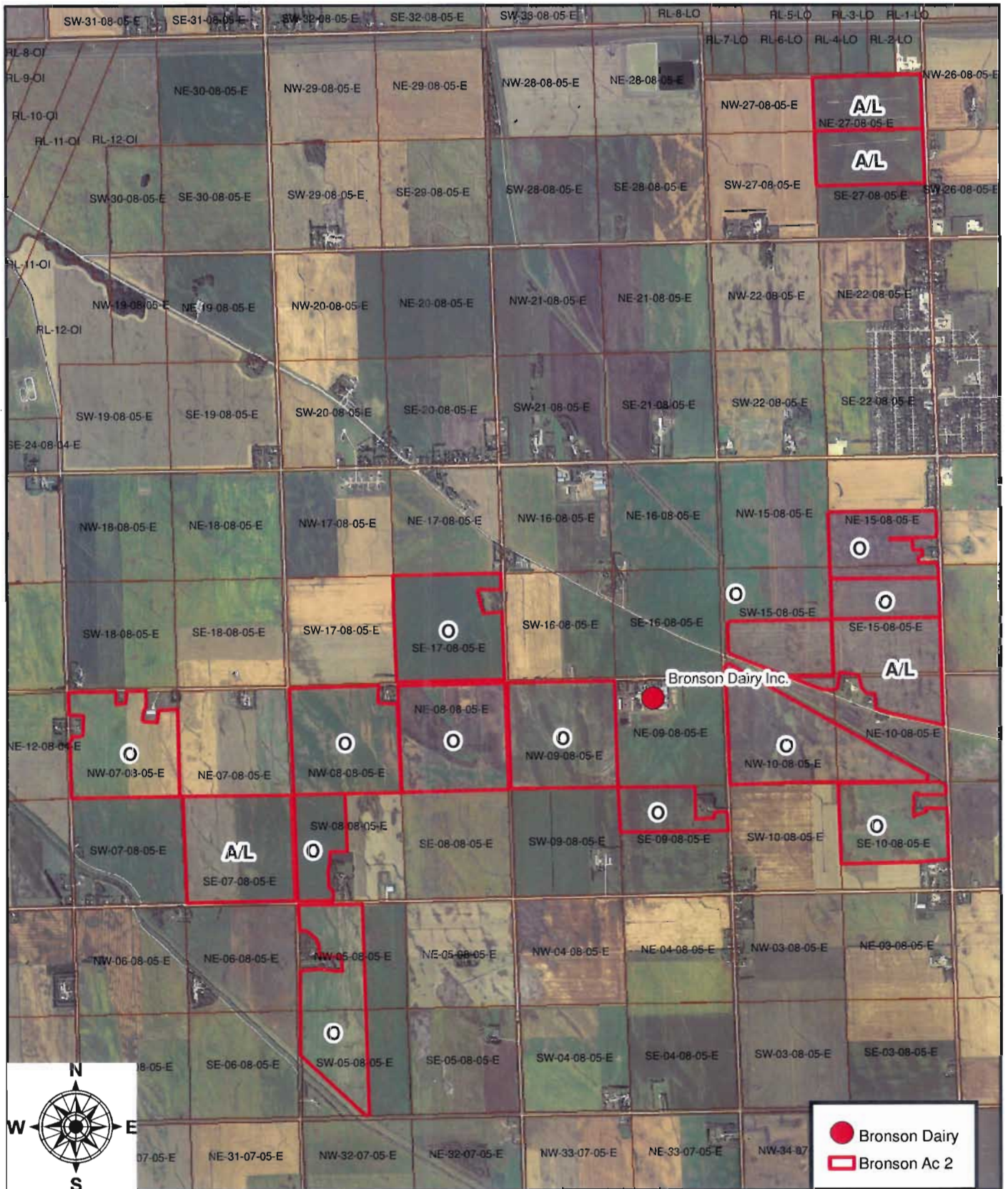
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Bronson Dairy Land Use and Spread Acre Map



0 0.5 1 2 Miles

Aug 19, 2013

- Bronson Dairy
- Bronson Ac 2

Manure Application Field Characteristics Table

Field	Legal Description ¹	Municipality	O/L/A ²	Acres ³ Available	Features ⁴	Expected Crop to be Grown (Historical Yield Average)	Soil Nitrate ^{5,6}	Soil Phosphorus ^{5,7}	Acres Suitable for Manure Spreading ⁸	Development Plan Designation ⁹	Zoning ¹⁰
1	SE27-8-5e	Tache	L/A	84	Adjacent Dwelling/well(s)	Corn	118	44	84	General Ag. Area	AG
2	NE27-8-5e	Tache	L/A	81		alfalfa	18	20	81	General Ag. Area	AG
3	NW9-8-5e	Tache	O	160		alfalfa	35	44	160	General Ag. Area	AG
4	NE8-8-5e	Tache	O	160	Adjacent Dwelling/well(s)	alfalfa	30	46	160	General Ag. Area	AG
5	NW8-8-5e	Tache	O	157	Subdivided Dwelling/well(s)	Alfalfa	95	35	157	General Ag. Area	AG
6	SE17-8-5e	Tache	O	100		Corn	41	38	100	General Ag. Area	AG
7	SE9-8-5e	Tache	O	60	Subdivided Dwelling/well(s) and Dwelling	alfalfa	20	31	60	General Ag. Area	AG
8	NW/SW5-8-5e	Tache	O/L/A	154	Subdivided Dwelling/well(s)	Corn	17	6	154	General Ag. Area	AG
9	NE15-8-5e	Tache	O	96	Dwelling/well(s)	alfalfa	19	22	92	General Ag. Area	AG
10	SE10-8-5e	Tache	O	113	Subdivided Dwelling/well(s)	Corn	52	20	113	General Ag. Area	AG
11	SW8-8-5e	Tache	O	64	Subdivided Dwelling/well(s)	Corn	19	12	64	General Ag. Area	AG
12	SE7-8-5e	Tache	L/A	160		Corn	97	27	160	General Ag. Area	AG
13	NE/NW10-8-5e	Tache	L/A	64	Dwelling/well(s)	alfalfa	19	12	53	General Ag. Area	AG
14	NW/NE10-8-5e	Tache	O	177		Corn	115	19	177	General Ag. Area	AG
15	NW7-8-5e	Tache	O	145	Subdivided Dwelling (s) /well(s)	alfalfa	15	44	145	General Ag. Area	AG
16	SE15-8-5e	Tache	O	60		Corn	71	4	60	General Ag. Area	AG
17	SW15-8-5e	Tache	O	71		Alfalfa	19	12	71	General Ag. Area	AG
18	SSE15-8-5e	Tache	L/A	82		Alfalfa	19	12	82	General Ag. Area	AG
19	SE17-8-5e	Tache	L/A	54		corn	41	38	54	General Ag. Area	AG
20											
TOTAL PROPOSED				2042					2027		

- Indicates Roll Number, Sec, Twshp, Rge or River Lot,
- Indicates how the land has been secured for spreading O – Own / L – Lease / A - Agreement
- Acres available should take into account setbacks from water courses, including ditches, property lines (refer to setback tables in the SA Guide)
- Features Indicate any dwellings, other uses, wells (existing or abandoned), water bodies or other natural features within or adjacent to a spread field (note if any native habitat is proposed for manure application)
- Soil fertility analysis must be completed by an accredited soil-testing laboratory.
- Nitrate concentration N (lb/ac at 0-24 inch depth)
- Phosphorus concentration (ppm P at 0-6 inch depth) based on extraction method specified
- Suitable acreage is to be based on soil, crop and setback calculations

SA Guide not available on web, used Regulation 42/98 Schedule C
 "Setback requirements for Livestock Manure Application on Land adjacent to surface water or surface watercourse"

Manure Application Field Characteristics Table

9. _____ Please reference the Development Plan for the designations

10. _____ Please reference the Zoning Bylaw of your municipality(ies)

Licence to Use Water for

Agricultural-Livestock and Air Heating and Cooling

Purposes

Issued in accordance with the provisions of
The Water Rights Act and regulations made thereunder.

Licence No.: **2008-063**

U.T.M.: Zone 14 655063 E
 5501808 N

Know all men by these presents that in consideration of and subject to the provisos, conditions and restrictions hereinafter contained, the Minister of Water Stewardship for the Province of Manitoba does by these presents give full right and liberty, leave and licence to

Bronson Dairy Inc. of the **Rural Municipality of Tache** in the Province of Manitoba (hereinafter called "the LICENSEE") to divert water from two aquifers, a sandstone aquifer and a fractured-limestone aquifer by means of two water wells, pumps, pipeline(s) and other appurtenances (hereinafter called "the WORKS"), located on the following described lands:

the North East Quarter of Section 9, in Township 8 and Range 5, East of the Principal Meridian in Manitoba, more particularly described on Certificate of Title No. 1800882 WLTO,

and more particularly shown on a plan filed in the office of the Executive Director, Regulatory and Operational Services Division, a copy of which plan is hereto attached and marked Exhibit "A" for **agricultural-livestock and air heating and cooling** purposes on the following described lands:

the North East Quarter of Section 9, in Township 8 and Range 5, East of the Principal Meridian in Manitoba, more particularly described on Certificate of Title No. 1800882 WLTO.

This licence is issued upon the express condition that it shall be subject to the provisions of The Water Rights Act and Regulations and all amendments thereto and, without limiting the generality of the aforesaid, to the following terms and conditions, namely:

1. The water shall be used solely for **agricultural-livestock and air heating and cooling** purposes.
2. The WORKS shall be operated in accordance with the terms herein contained.
3.
 - a) The maximum rate at which water may be diverted from Well No. 1 (1993 well) pursuant hereto shall not exceed 0.003 cubic metres per second (0.1 cubic feet per second).
 - b) The maximum quantity of water to be diverted from Well No. 1 (1993 well) in any one year shall be 31.1 cubic decametres (24.4 acre feet).
 - c) For the Water Use Licensing Section's allocation planning purposes, the amount of water allocated from the sandstone aquifer at Well No. 1 (1993 well) shall be 15.55 cubic decametres (12.2 acre feet) and the amount of water allocated from the limestone aquifer at Well No. 1 (1993 well) shall be 15.55 cubic decametres (12.2 acre feet).
 - d) The maximum rate at which water may be diverted from Well No. 2 (1996 well) pursuant hereto shall not exceed 0.003 cubic metres per second (0.1 cubic feet per second).
 - e) The maximum quantity of water to be diverted from Well No. 2 (1996 well) in any one year shall be 31.1 cubic decametres (24.4 acre feet).
 - f) For the Water Use Licensing Section's allocation planning purposes, the amount of water allocated from the sandstone aquifer at Well No. 2 (1996 well) shall be 15.55 cubic decametres (12.2 acre feet) and the amount of water allocated from the limestone aquifer at Well No. 2 (1996 well) shall be 15.55 cubic decametres (12.2 acre feet).
4. Water shall not be diverted during any period when the water level in the aquifer as measured at:
 - a) Well No. 1 is more than 24.66 metres (80.9 feet) beneath the surface of the ground.
 - b) Well No. 2 is more than 23.77 metres (78.0 feet) beneath the surface of the ground.
5. The LICENSEE does hereby remise, release and forever discharge Her Majesty the Queen in Right of the Province of Manitoba, of and from all manner of action, causes of action, claims and demands whatsoever which against Her Majesty the LICENSEE ever had, now has or may hereafter have, resulting from the use of water for **agricultural-livestock and air heating and cooling** purposes.
6. In the event that the rights of others are infringed upon and/or damage to the property of others is sustained as a result of the operation or maintenance of the WORKS and the rights herein granted, the LICENSEE shall be solely responsible and shall save harmless and fully indemnify Her Majesty the Queen in Right of the Province of Manitoba, from and against any liability to which Her Majesty may become liable by virtue of the issue of this Licence and anything done pursuant hereto.
7. This Licence is not assignable or transferable by the LICENSEE and when no longer required by the LICENSEE this Licence shall be returned to the Executive Director, Regulatory and Operational Services Division, for cancellation on behalf of the Minister.
8. Upon the execution of this Licence the LICENSEE hereby grants the Minister or the Minister's agents the right of ingress and egress to and from the lands on which the WORKS are located for the purpose of inspection of the WORKS and the LICENSEE shall at all times comply with such directions and/or orders that may be given by the Minister or the Minister's agents in writing from time to time with regard to the operation and maintenance of the WORKS.

9. This Licence may be amended, suspended or cancelled by the Minister in accordance with The Water Rights Act by letter addressed to the LICENSEE at **Box 48, Landmark, MB, R0A 0X0, Canada** and thereafter this Licence shall be determined to be at an end.
10. Notwithstanding anything preceding in this Licence, the LICENSEE must have legal control, by ownership or by rental, lease, or other agreement, of the lands on which the WORKS shall be placed and the water shall be used.
11. The term of this Licence shall be **ten (10) years** and this Licence shall become effective only on the date of execution hereof by a person so authorized in the Department of Water Stewardship. The LICENSEE may apply for renewal of this Licence not more than 365 days and not less than 90 days prior to the expiry date.
12. This Licence expires automatically upon the loss of the legal control of any of the lands on which the WORKS are located or on which water is used, unless the Licence is transferred or amended by the Minister upon application for Licence transfer or amendment.
13. The LICENSEE shall keep records of weekly and annual water use and shall provide a copy of such records to the Executive Director, Regulatory and Operational Services Division, not later than February 1st of the following year.
14. A flow meter must be installed, positioned to accurately measure instantaneous pumping rate and accumulative withdrawals from the water source.
15. The LICENSEE does hereby agree to correct, to the satisfaction of the Minister, any water supply problems to other currently existing wells, dugouts, or other forms of supply, which are partly or wholly attributable, in the opinion of the Minister, to the diversion of water as authorized by this Licence.
16. The LICENSEE shall hold and maintain all other regulatory approvals that may be required and shall comply with all other regulatory requirements for the construction, operation, or maintenance of the WORKS or to divert or use water as provided by this Licence.

In witness whereof I the undersigned hereby agree to accept the aforesaid Licence on the terms and conditions set forth therein and hereby set my hand and seal this 6th day of August A.D. 2009.

SIGNED, SEALED AND DELIVERED
in the presence of

N Lambert } [Signature] (Seal)
Witness Licensee

Canada, PROVINCE OF MANITOBA To Wit:

I, Nicole Lambert of the Postal District
of Ste. Anne in the Province of Manitoba, MAKE OATH AND SAY:

1. That I was personally present and did see Russell Braun,
the within named party, execute the within Instrument.
2. That I know the said Russell Braun
and am satisfied that he/she is of the full age of eighteen years.
3. That the said Instrument was executed at Steinbach, Manitoba
aforesaid and that I am subscribing witness thereto.

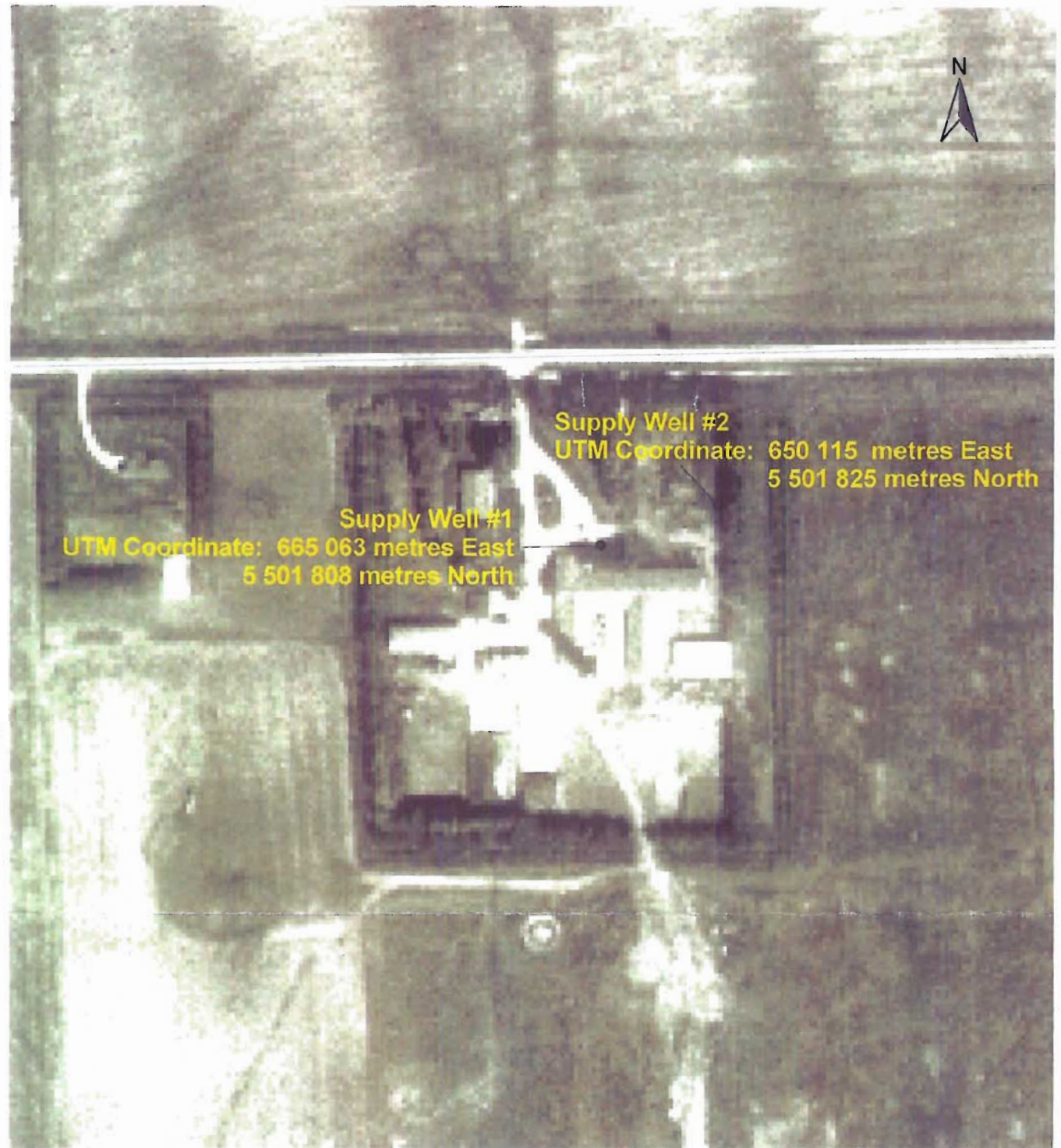
SWORN BEFORE me at the City of Steinbach
in the Province of Manitoba this 6th day of August A.D. 2009.

Celotte Penner } N Lambert
A COMMISSIONER FOR OATHS Witness
in and for the Province of Manitoba

My Commission expires March 23, 2011

Issued at the City of Winnipeg, in the Province of Manitoba, this 18 day of August A.D. 2009.

[Signature]
The Honourable the Minister of Water Stewardship



Supply Well #1
UTM Coordinate: 665 063 metres East
5 501 808 metres North

Supply Well #2
UTM Coordinate: 650 115 metres East
5 501 825 metres North

0 50 100 150 200 Yards

**LOCATION OF SUPPLY WELLS
FOR
BRONSON DAIRY INC.
NE 9-8-5E**

**EXHIBIT "A"
THIS PLAN IS AN INTEGRAL PART OF
LICENCE NO. 2008-063
ISSUED UNDER THE WATER RIGHTS ACT**

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

Total suitable area available for manure application

2027

Manure Application Field Characteristics Table attached

Copies of **soil test reports** that are no more than 12 months old must also be included with this submission.

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

Land Required for Manure Application

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

Phosphorus

The quantity of phosphorus excreted by the livestock depends on the type, number and age of livestock (see [Animal Units Calculation Table](#)), the quantity and availability of phosphorus fed to the livestock and the amount retained by the livestock.

The removal of phosphorus by crops depends on the crops grown and the historical crop yield averages. (See [Manure Application Field Characteristics Table](#).)

The [Livestock Manure and Mortalities Management Regulation](#) requires that the proposal must satisfy Manitoba Conservation that “sufficient land is available to the operator to implement an appropriate manure management plan” for a manure storage facility, before Manitoba Conservation issues a permit.

In areas of high livestock intensity (ex: RMs of Hanover and La Broquerie), it is Manitoba Conservation policy to approve a manure storage facility permit if the operation shows it has access to sufficient suitable land to apply manure at a rate equivalent to one times the crop removal rate of phosphorus.

Are any of the lands for manure application in the RMs of Hanover or La Broquerie? yes no

Separation Distances

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

Indicate the distance from:

- earthen manure storage facility or feedlot **OR** *used EMS as this is what the expansion is related to even though there is solid manure generated on existing operation*
- animal confinement facility or non-earthen manure storage facility

To	Minimum separation distance required (by the zoning bylaw)	If land use feature is within the minimum distance	
		Provide actual distance	Provide location or name of feature (ex: Red River)
Residence/dwelling	2297'	2330'	on SE 9-8-5e
Designated area (non-agricultural)	9186'	3378'	residential area on SE 9-8-5a
Surface water	328'		borrow pit about 250'-but don't think this is considered surface water
Surface watercourse	328'	823' ±	roadside ditch (as original EMS application)
Crown land	1 mile	—	
Wildlife Management Area	1 mile	—	—
Livestock operation	1 mile	3555'	Poultry site on SW 4-8-5e
Other significant features/land uses			

In cases where minimum separation distances are not stated in the zoning bylaw or development plan, the minimum separation distances in the [Provincial Planning Regulation](#) apply.

Operation Name:																					
STEP 1: Livestock Information											Manure Type	Livestock Places	Animal Units	Production Cycle (Days)	Rotation	Output per head		Production-N		Production P ₂ O ₅	
	Species	Type														kg N	kg P	kg	lb	kg	lb
1	Dairy	Dairy Cows (including associated livestock)									Liquid	1080	2160	365	1	154.5	75	166860	367092	81000	178200
2																					
3																					
4																					
5																					
											Total AU	2160									
STEP 2: Crop Rotation Information											Removal (lb/ac)			Base Total N:				166860	367092	81000	178200
											Nitrogen (N)	P ₂ O ₅	2XP ₂ O ₅	Post Manure Application N:				133488	293674	--	--
1. Detailed Rotation (Farm Data)											150	44	88	LAND BASE REQUIRED				Acres		Acres	
STEP 3: Nitrogen Volatilization														2 X P ₂ O ₅ Removal				1 X P ₂ O ₅ Removal			
1.	Manure	Type	Value (%)								Nitrogen (N) based				1960	1960					
	Liquid	Open	20								Phosphorus (P ₂ O ₅) based				2025	4051					
2.	Method of Application	Conditions	Value (%)																		
	Injected	No Data	0																		
STEP 4: Phytase Added																					
1. Was phytase used as an additive in feed?											No										

- Nutrient values excreted by livestock is adapted from Quebec (Le Centre de reference en agriculture et agroalimentaire du Quebec - CREAQ)
- Nutrient excretion for sows is based upon unpublished data for Manitoba
- Nutrient values for turkeys based upon data from "Farm Practices Guidelines for Poultry Producers in Manitoba, 2000"

Operation:

Crop	Example Manitoba Target Yields	Unit	Historical Yield	Unit	Nutrient Removal (lb/ac)			Uptake (lb/ac)		Acres	Total Removal			
					P ₂ O ₅	2(P ₂ O ₅)	Nitrogen (N)	Nitrogen (N)	P ₂ O ₅		2(P ₂ O ₅)	Nitrogen (N)	Nitrogen (N)	
Alfalfa	5	tons/ac	3.31	tons/ac	46	91	192	30	1000	23.92	47.84	100.54	15.71	
Barley Grain	80	bu/ac		bu/ac										
Barley Silage	4.5	tons/ac		tons/ac										
Canola	35	bu/ac		bu/ac	40	80		110						
Corn Grain	100	bu/ac		bu/ac	40	80		150						
Corn Silage	5	tons/ac	3.318	tons/ac	42	84	104	0	964	20.07	40.14	49.31	0.00	
Dry edible beans	18	cwt/ac		cwt/ac	25	50								
Fababeans	34	cwt/ac		cwt/ac										
Flax	24	bu/ac		bu/ac										
Grass hay	3	tons/ac		tons/ac	30	60		100						
Lentils	18	cwt/ac		cwt/ac										
Oats	100	bu/ac		bu/ac										
Peas	50	bu/ac		bu/ac										
Potatoes	400	cwt/ac		cwt/ac										
Rye	55	bu/ac		bu/ac										
Soybeans	35	bu/ac		bu/ac	25	50		30						
Sunflower	22	cwt/ac		cwt/ac										
Wheat - Spring	40	bu/ac		bu/ac										
Wheat - Winter	75	bu/ac		bu/ac										
Total									2024	43.99	87.98	149.85	15.71	

In areas with lower livestock intensity, Manitoba Conservation may issue a manure storage facility permit, if:

- the operation shows it has access to sufficient suitable land to apply manure at a rate equivalent to two times the crop removal rate of phosphorus (and)
- if long-term phosphorus inputs from manure application will be balanced with one times the crop removal rate of phosphorus to prevent build up in soils

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

Total minimum area required for manure application at two times crop removal, for operations outside of Hanover and La Broquerie	2025
Total minimum area required for manure application at one times crop removal, for operations within Hanover and La Broquerie AND For the long-term sustainability of operations outside of Hanover and La Broquerie	4051

For more, call Manitoba Agriculture, Food and Rural Initiatives (MAFRI) at 204-945-3869 in Winnipeg or contact your local [MAFRI GO Office](#).

Land Base Calculator attached

Land Base Requirement Summary

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

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

I acknowledge that over the long term, up to 4051 acres/hectares (which is one times crop removal from table above) may be required for the long term environmental sustainability of the operation.

