

Technical Document LA24037



Part 2 – Technical Requirements

Application under the *Agricultural Operation Practices Act* for a confined feeding operation, manure collection area, and/or manure storage facility(ies)

NRCB USE ONLY	Application number	Legal land description
	<input checked="" type="checkbox"/> Approval <input type="checkbox"/> Registration <input type="checkbox"/> Authorization <input type="checkbox"/> Amendment	LA24037


APPLICATION DISCLOSURE

This information is collected under the authority of the *Agricultural Operation Practices Act* (AOPA), and is subject to the provisions of the *Freedom of Information and Protection of Privacy Act*. This information is public unless the NRCB grants a written request that certain sections remain private.

Any construction prior to obtaining an NRCB permit is an offence and is subject to enforcement action, including prosecution.

I, the applicant, or applicant's agent, have read and understood the statements above, and I acknowledge that the information provided in this application is true to the best of my knowledge.

15/08/24
 Date of signing
 Favour Holsteins LTD
 Corporate name (if applicable)


 Signature
 Eric Vander Veer
 Print name

GENERAL INFORMATION REQUIREMENTS

Proposed facilities: list all proposed confined feeding operation facilities and their dimensions. Indicate whether any of the proposed facilities are additions to existing facilities. (attach additional pages if needed)

Proposed facilities	Dimensions (m) (length, width, and depth)
Convert Dairy barn into brot barn	
Build new Corrals - Pen 1+2	60 x 91 (together)
Pen 3+4	80 x 213 (together)
Convert emg into catch basin	

Existing facilities: list ALL existing confined feeding operation facilities and their dimensions

Existing facilities	Dimensions (m) (length, width, and depth)	NRCB USE ONLY
Corrals (includes shelters)	60 x 91	confirmed (LA20049)
(dry cow pens) Corrals (includes shelters)	45 x 91	confirmed (LA20049)
Barn (converted dairy barn)	29 x 91	confirmed

NRCB USE ONLY

There are also:
 a calf section attached to the barn (LA20049): 19 m x 13 m
 and an existing liquid manure storage that is proposed to be converted
 into a catch basin: 67 m x 59 m x 6 m deep

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If a new facility is replacing an old facility, please explain what will happen to the old facility and when. N/A

Construction completion date for proposed facilities Dec/27

Additional information

want to convert Dairy units to feeder units

Livestock numbers: Complete only if livestock numbers are different from what was identified in the Part 1 application. Note: if livestock numbers increase in your Part 2 application, a new Part 1 application must be submitted which may result in a loss of priority for minimum distance separation (MDS).

Livestock category and type (Available in the Schedule 2 of the Part 2 Matters Regulation)	Permitted number	Proposed increase or decrease in number (if applicable)	Total
<i>Beef feeders</i>	<i>0</i>	<i>2700</i>	<i>2700</i>

The 200 milking cows (plus associated dries and replacements will be eliminated and replaced by 2700 feeder cattle

AO comment: 200 milking cows plus dries and replacements would equal 1,450 beef feeders.

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DECLARATION AND ACKNOWLEDGMENT OF APPLICANT CONCERNING WATER ACT LICENCE

issued by Alberta Environment and Protected Areas (EPA) for a confined feeding operation (CFO)

Date and sign one of the following four options

OPTION 1: Applying through the NRCB for both the AOPA permit and the Water Act licence

I **DO** want my water licence application coupled to my AOPA permit application.

Signed this ____ day of _____, 20____.

Signature of Applicant or Agent

OPTION 2: Processing the AOPA permit and Water Act licence separately

1. I (we) acknowledge that the CFO will need a new water licence from EPA under the *Water Act* for the development or activity proposed in this AOPA application.
2. I (we) request that the NRCB process the AOPA application **independently of** EPA's processing of the CFO's application for a water licence.
3. In making this request, I (we) recognize that, if this AOPA application is granted by the NRCB, the NRCB's decision will not be considered by EPA as improving or enhancing the CFO's eligibility for a water licence under the *Water Act*.
4. I (we) acknowledge that any construction or actions to populate the CFO with livestock pursuant to an AOPA permit in the absence of a *Water Act* licence will **not** be relevant to EPA's consideration of whether to grant the *Water Act* licence application.
5. I (we) acknowledge that any such construction or livestock populating will be at the CFO's sole risk if the *Water Act* licence application is denied or if the operation of the CFO is otherwise deemed to be in violation of the *Water Act*. This risk includes being required to depopulate the CFO and/or to cease further construction, or to remove "works" or "undertakings" (as defined in the *Water Act*).
6. **AS RELEVANT:** I (we) acknowledge that the CFO is located in the South Saskatchewan River Basin and that, pursuant to the *Bow, Oldman and South Saskatchewan River Basin Water Allocation Order* [Alta. Reg. 171/2007], this basin is currently closed to new surface water allocations.
7. **Provide:** Water licence application number(s) _____

Signed this ____ day of _____, 20____.

Signature of Applicant or Agent

OPTION 3: Additional water licence not required

1. I (we) declare that the CFO will not need a new licence from EPA under the *Water Act* for the development or activity proposed in this AOPA application.
2. **Provide:** Water license number(s) or water conveyance agreement details Water conveyance agreement on file

Signed this 15 day of 08, 2024.

Signature of Applicant or Agent

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OPTION 4: Uncertain if *Water Act* licence is needed; acknowledgement of risk (for existing CFOs only)

1. At this time, I (we) do not know whether a new water licence is needed from EPA under the *Water Act* for the development or activity proposed in this AOPA application.
2. If a new *Water Act* licence is needed, I (we) request that the NRCB process the AOPA application **independently of** EPA's processing of the CFO's application for a water licence.
3. In making this request, I (we) recognize that, if this AOPA application is granted by the NRCB, the NRCB's decision will not be considered by EPA as improving or enhancing the CFO's eligibility for a water licence under the *Water Act*.
4. I (we) acknowledge that any construction or actions to populate the CFO with additional livestock pursuant to an AOPA permit in the absence of a *Water Act* licence will **not** be relevant to EPA's consideration of whether to grant my *Water Act* licence application, if a new water licence is needed.
5. I (we) acknowledge that any such construction or livestock increase will be at the CFO's sole risk if the *Water Act* licence application is denied or if the operation of the CFO is otherwise deemed to be in violation of the *Water Act*. This risk includes being required to depopulate the CFO and/or to cease further construction, or to remove "works" or "undertakings" (as defined in the *Water Act*).
6. **AS RELEVANT:** I (we) acknowledge that the CFO is located in the South Saskatchewan River Basin and that, pursuant to the *Bow, Oldman and South Saskatchewan River Basin Water Allocation Order* [Alta. Reg. 171/2007], this basin is currently closed to new surface water allocations.
7. **Provide:** Water license number(s) or water conveyance agreement details _____

Signed this ____ day of _____, 20____.

Signature of Applicant or Agent

N
NW-36-10-22 W4



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Application under the Agricultural Operation Practices Act for a confined feeding operation, manure collection area, and/or manure storage facility(ies)

GENERAL ENVIRONMENTAL INFORMATION

(complete this section for the worst case of the existing facility which is the closest to water bodies or water wells and for each of the proposed facilities)

Facility description / name (as indicated on site plan)

Existing: Corrals (feedlot pens) Proposed 1: New Corral (feedlot pens)
 Proposed 2: _____ Proposed 3: _____

Facility and environmental risk information		Facilities				NRCB USE ONLY	
		Existing	Proposed 1	Proposed 2	Proposed 3	Meets requirements	Comments
Flood plain information	What is the elevation of the floor of the lowest manure storage or collection facility above the 1:25 year flood plain or the highest known flood level?	<input checked="" type="checkbox"/> >1 m <input type="checkbox"/> ≤ 1 m	<input checked="" type="checkbox"/> >1 m <input type="checkbox"/> ≤ 1 m	<input type="checkbox"/> >1 m <input type="checkbox"/> ≤ 1 m	<input type="checkbox"/> > 1 m <input type="checkbox"/> ≤ 1 m	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> YES with exemption	not located in known flood plain
	Surface water information	How many springs are within 100 m of the manure storage facility or manure collection area?	0	0			<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> YES with exemption
	How many water wells are within 100 m of the manure storage facility or manure collection area?	0	0			<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> YES with exemption	None observed during site visit or noted in EPA database
	What is the shortest distance from the manure collection or storage facility to a surface water body? (e.g., lake, creek, slough, seasonal)	270	170			<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> YES with exemption	170 m to Pyiami Drain to the east 114 m to canal to the west
Groundwater information	What is the depth to the water table?		on file			<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> YES with exemption	below drilling depth of 4.5 m
	What is the depth to the groundwater resource/aquifer you draw water from?	Below 300 ft.				<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> YES with exemption	No water wells within 1 km of CFO

Additional information (attach supporting information, e.g. borehole logs, records, etc. you consider relevant to your application)

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NRCB USE ONLY
WATER WELL AND SURFACE WATER INFORMATION

Well IDs: No water well within 500 m of the CFO

Surface water related concerns from directly affected parties or referral agencies: YES NO

Groundwater related concerns from directly affected parties or referral agencies: YES NO

Water wells N/A

If applicable, exemption for 100 m distance requirements applied: YES NO Condition required: YES NO

Surface water N/A

If applicable, exemption for 30 m distance requirements applied: YES NO Condition required: YES NO

Water Well Exemption Screening Tool N/A

Water Well ID	Preliminary Screening Score	Secondary Screening Score	Facility

Groundwater or surface water related comments:

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DISTANCE OF ANY MANURE STORAGE FACILITY (EXISTING OR PROPOSED) TO NEIGHBOURING RESIDENCES

The two residences that require a survey are encircled in red in the following site photo and labeled survey (blue) (NE36-10-22 and NE36-10-21)

Neighbour name(s)	Legal land description	Distance (m)	Zoning (LUB) category	MDS category (1-4)	Distance (m)	NRCB USE ONLY	
						Waiver attached (if required)	Meets regulations
Mitchel Dekok	SW-6-11-21	250	RA	1	233 m	yes	yes w. waiver
Richard Vander Veem	SE-1-11-22	717	RA	1	1260 m		yes
Ben Vandenberg	SE-6-11-21	560	RA	1	538 m		yes
Matt Avey	SE-6-11-21	950	RA	1	744 m		yes
Group country residential (Cat 2)	NE 36-10-22	734 m	GCR	2	734 m		yes

RA=Rural Agriculture GCR Group country residential

LAND BASE FOR MANURE AND COMPOST APPLICATION (complete only if an increase in livestock or manure production will occur)

Name of land owner(s)*	Legal land description	Usable area** (ha)	Soil zone ***	NRCB USE ONLY	
				Usable area (ha)	Agreement attached (if required)
Favour Holsteins	NW-36-10-22	140 acres	irrigated	94 acres irrigated	
	SW-6-11-21	130 acres	irrigated	119 acres irrigated	
Groten Hay Farms	SW13-11-22 W4	100	irrigated	100 acres irrigated	yes
Total				313 acres irrigated	

* If you are not the registered landowner, you must attach copies of land use agreements signed by all landowners.

** Available manure spreading area (excluding setback areas from residences, common bodies of water, water wells, etc. as identified in Agdex 096-5 [Manure Spreading Regulations](#))

*** Brown, dark brown, black, grey wooded, or irrigated

Additional information (attach any additional information as required)

Untitled Map

Write a description for your map.

Legend



715 m

manure spreading land

Dairy
1256 m

Pyiami Drain

573 m

Dairy

Dairy

Dairy

231 m

590 m
Survey

758 m

734 m

735 m

741 m

764 m

GCR (cat.2)

canal

Vander Veen CFO

Manure spreading land

manure spreading land

684 m

842 m

Pyiami Drain

Deer Run Estates

See comment on previous page about the two residences that require a survey

962 m

1201 m

1179 m

Survey

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Google Earth

Image © 2024 Airbus

1 km



Minimum Distance Separation (MDS) Waiver (declaration)

Applicant information

NRCB application number: LA24037

Operator/operation name: Favour Holsteins LTD.

Address: Box 1118 Picture Butte AB Postal Code: T0K 1V0

Legal land location of confined feeding operation: NW-36-10-22 W4

I have requested the residence owner(s) named below to waive the required minimum distance separation (MDS) to their residence for the *Agricultural Operation Practices Act* (AOPA) permit application identified above. In making this request, I have provided the owner(s) with an opportunity to review my permit application and a copy of the Natural Resources Conservation Board (NRCB) Fact Sheet "Minimum Distance Separation (MDS) Waivers" available on the NRCB website at www.nrcb.ca. I have also explained:

- The MDS requirement set out in section 3 of the Standards and Administration Regulation of AOPA. I have advised the owner(s) that section 3(6)(a) of the Standards and Administration Regulation allows this requirement to be waived by the owners of residences, if they agree in writing to grant a waiver;
- That my proposed development does not meet the required MDS to the owner's residence; and,
- That this waiver applies only to this application as described. An increase in livestock capacity, annual manure production, level of odour production, change to the site plan or change to a facility that would increase the MDS would require a new waiver.

Following is a summary of the proposed development:

- The current scope of my confined feeding operation (CFO), including the type, number, and category of livestock, if any, is:

200 Dairy units

- My application for a new AOPA permit proposes the following changes to the existing livestock category, type and/or capacity at my CFO:

convert to 2700 beef feeder units

- The proposed new CFO facility(ies), or changes to the existing CFO facilities, including manure storage, manure storage volume and any other pertinent details, if any, are (attach a site layout plan if available):

convert lagoon to catch pond

I the applicant understand that the waiver is not valid unless ALL registered owners of the residence sign this document.

Permit Applicant:

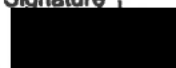


Date:

Sep 5 / 2024

Signature

Residence owner(s) to Initial:



Minimum Distance Separation (MDS) Waiver (declaration)

Residence owner(s) information

ALL Names on land title: Mitchell de Kok

Legal land location of residence(s): SEU 6-11-21-WC1

Telephone number(s): 

Address(es)¹ and Postal code(s): Box 1239 Picture Butte
TK 1V0

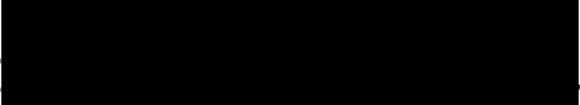
¹ Please note that personal contact information is for NRCB use ONLY and not publicly released

I am/we are the legal landowner(s) of a residence(s) located at the above noted legal land location/address:

- I/we have read the NRCB Fact Sheet "Minimum Distance Separation (MDS) Waivers";
- I/we have discussed this application with the applicant and understand its potential impacts to our residence(s);
- I/we understand that the application does not meet the MDS requirement to my/our residence(s), under the *Agricultural Operation Practices Act (AOPA)*;
- I/we understand that this waiver is not valid unless signed by ALL parties identified on the land title as owners;
- I/we are not obligated to waive the MDS requirement to our residence(s);
- I/we understand that if I/we choose to waive the MDS requirement, I/we can revoke the waiver, by providing written notice to the NRCB approval officer, as set out in the "Minimum Distance Separation (MDS) Waivers" Fact Sheet; and
- I/we understand that this waiver is a public document.

Having considered my/our rights, I/we hereby waive the MDS requirement to my/our residence, with respect to

Application number LA 24037



Mitchell de Kok

Printed names of all residence owner(s) on title

Date: Sept 5 / 2024

Manure Agreement

Groten Hay Farms agrees to allow Favour Holsteins LTD. To spread their manure in 2024 and 2025 on land location SW-13-11-22 W4 which is 100 acres of irrigation.

Harry Groten

Eric Vanderv

Nov 5 2024



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MINIMUM DISTANCE SEPARATION

Methods used to determine distance (if applicable): google earth

Margin of error (if applicable): (+/- 3 m)

Requirements (m): Category 1: 439 m Category 2: 586 m Category 3: 732 m Category 4: 1171 m

Technology factor: YES NO

Expansion factor: YES NO

MDS related concerns from directly affected parties or referral agencies: YES NO

LAND BASE FOR MANURE AND COMPOST APPLICATION

Land base required: 267 acres irrigated

Land base listed: 370 acres irrigated

Area not suitable: 57 acres irrigated (Part of a drainage area contributing surface water to Pyiami drain)

Available area: 313 acres irrigated

Requirement met: YES NO

Land spreading agreements required: YES NO attached

Manure management plan: YES NO If yes, plan is attached:

PLANS

Submitted and attached construction plans: YES NO

Submitted aerial photos: YES NO

Submitted photos: YES NO

GRANDFATHERING

Already completed: YES NO N/A

If already completed, see LA17003

Name
Address
Legal Land
Location

MDS Spreadsheet based on 2006 AOPA Regulations

Category of Livestock	Type of Livestock	Factor A	Technology Factor	MU	LSU Factor	Number of Animals	LSU
Beef	Cows/Finishers (900+ lbs)	0.700	0.700	0.910	0.446		-
	Feeders (450 - 900 lbs)	0.700	0.700	0.500	0.245	2,700	661.5
	Feeder Calves (<550 lbs)	0.700	0.700	0.275	0.135		-
	Other						-
Dairy (*count lactating cows only)	*Free Stall - Lactating Cows with all associated dries, heifers, and calves	0.800	1.100	2.000	1.760		-
	*Free Stall - Lactating cows with Dry Cows only	0.800	1.100	1.640	1.443		-
	Free Stall - Lactating Cows only	0.800	1.100	1.400	1.232		-
	Tie Stall - Lactating cows only	0.800	1.000	1.400	1.120		-
	Loose Housing - Lactating cows only	0.800	1.000	1.400	1.120		-
	Dry Cow (Solid manure)	0.800	0.700	1.000	0.560		-
	Dry Cow (Liquid manure)						-
	Replacements - Bred Heifers (Breeding to Calving)	0.800	0.700	0.875	0.490		-
	Replacements - Growing Heifers (350 lbs to breeding)	0.800	0.700	0.525	0.294		-
	Calves (< 350 lbs)	0.800	0.700	0.200	0.112		-
Other						-	
Swine Liquid (*count sows only)	Farrow to finish *	2.000	1.100	1.780	3.916		-
	Farrow to wean *	2.000	1.100	0.670	1.474		-
	Farrow only *	2.000	1.100	0.530	1.166		-
	Feeders/Boars	2.000	1.100	0.200	0.440		-
	Growers/Roasters	2.000	1.100	0.118	0.260		-
	Weaners	2.000	1.100	0.055	0.121		-
Other						-	
Swine Solid (*Count sows only)	Farrow to finish *	2.000	0.800	1.780	2.848		-
	Farrow to wean *	2.000	0.800	0.670	1.072		-
	Farrow only *	2.000	0.800	0.530	0.848		-
	Feeders/Boars	2.000	0.800	0.200	0.320		-
	Growers/Roasters	2.000	0.800	0.118	0.189		-
	Weaners	2.000	0.800	0.055	0.088		-
Other						-	
Poultry	Chicken - Breeders - Solid	1.000	0.700	0.010	0.007		-
	Chicken - Layers - Liquid (includes associated pullets)	2.000	1.100	0.008	0.018		-
	Chicken - Layers - (Belt Cage)	2.000	0.700	0.008	0.011		-
	Chicken - Layers - (Deep Pit)	2.000	0.700	0.008	0.011		-
	Chicken - Pullets/Broilers	1.000	0.700	0.002	0.001		-
	Turkey - Toms/Breeders	1.000	0.700	0.020	0.014		-
	Turkey - Hens (light)	1.000	0.700	0.013	0.009		-
	Turkey - Broilers	1.000	0.700	0.010	0.007		-
	Ducks	1.000	0.700	0.010	0.007		-
	Geese	1.000	0.700	0.020	0.014		-
	Other						-
Horses	PMU	0.650	0.700	1.000	0.455		-
	Feeders > 750 lbs	0.650	0.700	1.000	0.455		-
	Foals < 750 lbs	0.650	0.700	0.300	0.137		-
	Mules	0.600	0.700	1.000	0.420		-
	Donkeys	0.600	0.700	0.670	0.281		-
	Other						-
Sheep	Ewes/Rams	0.600	0.700	0.200	0.084		-
	Ewes with lambs	0.600	0.700	0.250	0.105		-
	Lambs	0.600	0.700	0.050	0.021		-
	Feeders	0.600	0.700	0.100	0.042		-
	Other						-
Goats	Meat/Milk (per Ewe)	0.700	0.700	0.170	0.083		-
	Nannies/Billies	0.700	0.700	0.140	0.069		-
	Feeders	0.700	0.700	0.077	0.038		-
	Other						-
Bison	Bison	0.600	0.700	1.000	0.420		-
	Other						-
Cervid	Elk	0.600	0.700	0.600	0.252		-
	Deer	0.600	0.700	0.200	0.084		-
	Other						-
Wild Boar	Feeders	2.000	0.800	0.140	0.224		-
	Sow (farrowing)	2.000	0.800	0.371	0.594		-
	Other						-

Total 661.5

For New Operations

Dispersion Factor 1

Category	Odour Objective	Distance	
		Feet	Metres
1	41.04	1,441	439
2	54.72	1,921	586
3	68.4	2,402	732
4	109.44	3,843	1,171

For Expanding Operations

Dispersion Factor 1
Expansion Factor 0.77

Category	Odour Objective	Distance	
		Feet	Metres
1	41.04	1,110	338
2	54.72	1,480	451
3	68.40	1,849	564
4	109.44	2,959	902

Name 0
 Address 0
 Legal Land
 Location 0

Landbase Requirements (hectares) based on 2006 AOPA requirements

Category of Livestock	Type of Livestock	Number of Animals	Dark Brown & Brown (ha)	Grey Wooded (ha)	Black (ha)	Irrigated (ha)
Beef	Cows/Finishers (900+ lbs)	0	0	0	0	0
	Feeders (450 - 900 lbs)	2700	216	180.9	135	108
	Feeder Calves (<550 lbs)	0	-	-	-	-
	Other	0	-	-	-	-
Dairy (*count lactating cows only)	*Free Stall - Lactating Cows with all associated dries, heifers, and calves	0	0	0	0	0
	*Free Stall - Lactating cows with Dry Cows only	0	-	-	-	-
	Free Stall - Lactating Cows only	0	-	-	-	-
	Tie Stall - Lactating cows only	0	-	-	0	0
	Loose Housing - Lactating cows only	0	-	-	-	-
	Dry Cow (Solid manure)	0	-	-	-	-
	Dry Cow (Liquid manure)	0	-	-	-	-
	Replacements - Bred Heifers (Breeding to Calving)	0	-	-	-	-
	Replacements - Growing Heifers (350 lbs to breeding)	0	-	-	-	-
	Calves (< 350 lbs)	0	-	-	-	-
	Other	0	-	-	-	-
Swine Liquid (*count sows only)	Farrow to finish *	0	-	0	-	-
	Farrow to wean *	0	-	-	-	-
	Farrow only *	0	-	-	-	-
	Feeders/Boars	0	-	0	0	0
	Growers/Roasters	0	-	-	-	-
	Weaners	0	-	-	-	-
Swine Solid (*Count sows only)	Farrow to finish *	0	-	-	-	-
	Farrow to wean *	0	-	-	-	-
	Farrow only *	0	-	-	-	-
	Feeders/Boars	0	-	-	-	-
	Growers/Roasters	0	-	-	-	-
	Weaners	0	-	-	-	-
Poultry	Chicken - Breeders - Solid	0	-	-	-	-
	Chicken - Layers - Liquid (includes associated pullets)	0	-	0	0	0
	Chicken - Layers - (Belt Cage)	0	-	-	-	-
	Chicken - Layers - (Deep Pit)	0	-	-	-	-
	Chicken - Pullets/Broilers	0	-	0	0	0
	Turkey - Toms/Broilers	0	0	0	0	0
	Turkey - Hens (light)	0	-	-	-	-
	Turkey - Broilers	0	-	-	-	-
	Ducks	0	0	0	0	0
	Geese	0	0	0	0	0
	Other	0	-	-	-	-
Horses	PMU	0	0	0	0	0
	Feeders > 750 lbs	0	-	0	-	-
	Foals < 750 lbs	0	-	-	-	-
	Mules	0	-	-	-	-
	Donkeys	0	-	-	-	-
	Other	0	-	-	-	-
Sheep	Ewes/Rams	0	-	0	0	0
	Ewes with lambs	0	-	-	-	-
	Lambs	0	-	-	-	-
	Feeders	0	-	-	-	-
Goats	Meat/Milk (per Ewe)	0	0	0	0	0
	Nannies/Billies	0	-	-	-	-
	Feeders	0	-	-	-	-
	Other	0	-	-	-	-
Bison	Bison	0	0	0	0	0
	Other	0	-	-	-	-
Cervid	Elk	0	0	0	0	0
	Deer	0	0	0	0	0
Wild Boar	Other	0	-	-	-	-
	Feeders	0	-	0	0	0
	Sow (farrowing)	0	-	-	-	-
	Other	0	-	-	-	-
Total Hectares			216.0	180.9	135.0	108.0
Total Acres			533.7	447.0	333.6	266.9

Part 2 – Technical Requirements

Application under the *Agricultural Operation Practices Act* for a confined feeding operation, manure collection area, and/or manure storage facility(ies)

NRCB USE ONLY

ALL SIGNATURES IN FILE YES NO

DATES OF APPROVAL OFFICER SITE VISITS

August 27, 2024	

CORRESPONDENCE WITH MUNICIPALITIES AND REFERRAL AGENCIES

Date deeming letters sent: September 10, 2024

Municipality: Lethbridge County

letter sent response received written/email verbal no comments received

Alberta Health Services: Concern forwarded as per NRCB policy

letter sent response received written/email verbal no comments received

Alberta Environment and Parks: N/A

letter sent response received written/email verbal no comments received

Alberta Transportation: N/A

letter sent response received written/email verbal no comments received

Alberta Regulatory Services: N/A

letter sent response received written/email verbal no comments received

Other: LNID N/A

letter sent response received written/email verbal no comments received

Other: ROW holder (Lethbridge North County Potable Water Co-Op Ltd N/A

letter sent response received written/email verbal no comments received

Part 2 – Technical Requirements



Application under the Agricultural Operation Practices Act for a confined feeding operation, manure collection area and/or manure storage facility(ies)

SOLID MANURE, COMPOST, & COMPOSTING MATERIALS: Barns, feedlots, & storage facilities - Naturally occurring protective layer

(complete a copy of this section for EACH barn, feedlot, and storage facility for solid manure, composting materials, or compost with a naturally occurring protective layer for the liner)

Facility description / name (as indicated on site plan)

1. Pen 1+2
2. Pen 3+4

Manure storage capacity

	Length (m)	Width (m)	Depth below ground level (m)	NRCB USE ONLY Estimated storage capacity (m ³)
1.	68	91		
2.	80	213		
TOTAL CAPACITY				Storage capacity within pens

I plan to use a short-term solid manure storage (STMS) as part of my manure storage and handling plan for this CFO. (The AOPA requirements for STMS are set out in the NRCB [Short-Term Solid Manure Storage Requirements Fact Sheet](#).)

Surface water control systems

Describe the run-on and runoff control system

Catch basin (Calculator attached)

Naturally occurring protective layer details

Thickness of naturally occurring protective layer	Provide details (as required)		
	> 1.6 m (m)	on file	
Soil texture	% sand	% silt	% clay
Hydraulic conductivity - naturally occurring protective layer	Depth and type of soil tested	Hydraulic conductivity (cm/s)	Describe test standard used
	clay loam	5 x 10 ⁻⁸ cm/ssec	Modified falling head

Additional information (attach copies of soil test reports)

NRCB USE ONLY

Requirements met: YES NO
 Condition required: YES NO
 Report attached: YES NO

Last updated: 31 Mar 2020

Page ___ of ___

NRCB USE ONLY

Part 2 – Technical Requirements

Application under the *Agricultural Operation Practices Act* for a confined feeding operation, manure collection area and/or manure storage facility(ies)

SOLID MANURE, COMPOST, & COMPOSTING MATERIALS: Barns, feedlots, & storage facilities - Naturally occurring protective layer (cont.)

NRCB USE ONLY

Nine month manure storage volume requirements met: YES YES With STMS NO

Depth to water table: below 4.5 m (drillign depth) Requirements met: YES NO

Depth to uppermost groundwater resource: No water wells in area depth to UGR unknown Requirements met: YES NO

ERST completed: see ERST page for details

Surface water control systems

Requirements met: YES NO Details/comments:

Converted EMS has sufficient volume to accommodate more than a 1 in 30 year rainfall event

Naturally occurring protective layer details

Layer specification comments (e.g. sand lenses; layering uniform or irregular; number and location of boreholes):

Uniform layers of stiff, medium plastic lacustrin material (clay loam)

Part 2 – Technical Requirements



Application under the Agricultural Operation Practices Act for a confined feeding operation, manure collection area and/or manure storage facility(ies)

RUNOFF CONTROL CATCH BASIN: Naturally occurring protective layer

(complete a copy of this section for EACH proposed runoff control catch basin with a naturally occurring protective layer)

- Facility description / name (as indicated on site plan)
1. Converted EMS
 2. _____
 3. _____

Determination of runoff area

Provide a plan and show how you calculated the area contributing to runoff for each catch basin

catch pond will be existing Lagoon

(The area contributing runoff is 32055 m²)

Catch basin capacity

	Length (m)	Width (m)	Total depth (m)	Depth below ground level (m)	Slope run:rise			NRCB USE ONLY Calculated storage capacity (excl. 0.5 m freeboard) (m ³)
					Inside end walls	Inside side walls	Outside walls	
1.	67	59	6	6				
2.								
3.								
TOTAL CAPACITY								10819 m ³

Naturally occurring protective layer details *- on file*

Thickness of naturally occurring protective layer	_____ (m)	Provide details (as required) EMS is a grandfathered facility. The conversion from EMS to catch basin does not entail changes to the existing liner.	
Soil texture	_____ % sand	_____ % silt	_____ % clay
Hydraulic conductivity - naturally occurring protective layer	Depth and type of soil tested	Hydraulic conductivity (cm/s)	Describe test standard used

Catch Basin - Design and management requirements can be found in Technical Guideline Agdex 096-101

If soil info differs per facility include additional soils page.

NRCB USE ONLY

- Requirements met: YES NO
 Condition required: YES NO
 Report attached: YES NO

Catch Basin Storage Volume Calculator

Construction Dimensions of Catch Basin			
Only cells in blue can be changed.			
Overall Dimensions of Catch Basin			
Total Length* ₄	67.0 m		
Total Width* ₄	59.0 m		
Total Depth* ₄	6.0 m		
Design Capacity Depth	5.50 m		
End Slope* ₄	3 run:rise		
Side Slope* ₄	3 run:rise		
Length of Bottom	31.0 m		
Width of Bottom	23.0 m		
Capacity @ top of Bank	12,702 m ³		
Design Capacity of Catch Basin (freeboard level)			
Length (design capacity depth)	64.0 m		
Width (design capacity depth)	56.0 m		
Total Depth	6.0 m		
Design Capacity Depth	5.50 m		
End Slope	3 run:rise		
Side Slope	3 run:rise		
Design Capacity (freeboard level)	10,819 m ³		
level)	3,584 m ²		

CFO Name ₁	(Enter CFO Name Here)
Land Location ₁	1-1-4-W5

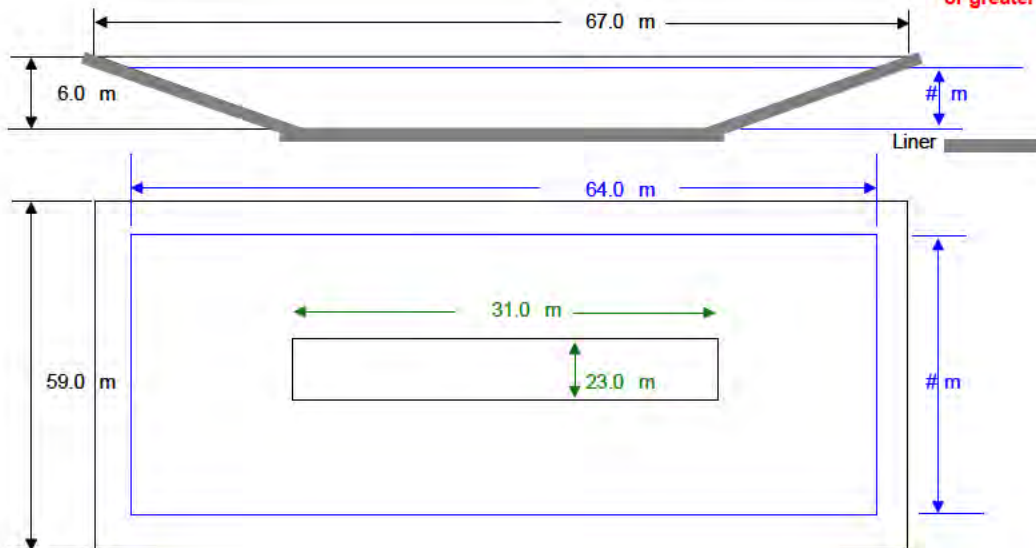
Paved Runoff Catchment Area(s)			
Area ₂	Length (m)	Width (m)	Area (m ²)
1			0.0
2			0.0
3			0.0
4			0.0
5			0.0
Total Area (m ²)			0

Unpaved Runoff Catchment Area(s)			
Area ₂	Length (m)	Width (m)	Area (m ²)
6	60	91	5,460.0
7	45	91	4,095.0
8	60	91	5,460.0
9	80	213	17,040.0
10			0.0
Total Area (m ²)			32,055

Rainfall (Select Town ₃)	
Picture Butte 85	
AOPA Design Rainfall	85 mm

Minimum Catchbasin Storage Volume Required	
1,635 m ³ **	57732.594 ft ³
	359606.68 Imp. Gal.

** Design capacity of catch basin should be equal to or greater than, minimum storage volume required.



— Lines in Black - Overall catch basin dimensions
 — Lines in Blue - Design capacity depth dimensions (excludes freeboard)

NTS - Not To Scale

Part 2 – Technical Requirements

Application under the *Agricultural Operation Practices Act* for a confined feeding operation, manure collection area and/or manure storage facility(ies)

NRCB USE ONLY	
RUNOFF CONTROL CATCH BASIN CAPACITY SUMMARY (if applicable)	
Facility 1	
Name / description converted EMS	Capacity 10,819 m³
Facility 2	
Name / description	Capacity
Facility 3	
Name / description	Capacity
Facility 4	
Name / description	Capacity
TOTAL CAPACITY	10,819 m³
RUNOFF VOLUME FROM CONTRIBUTING AREAS	1,635 m³
MEETS AOPA RUNOFF CONTROL VOLUME REQUIREMENTS	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO



3102 – 12 Avenue South
Lethbridge, Alberta T1H 5V1
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www.woodplc.com

18 January 2021

Wood File: BX30670

Eric Vanderveen
Favour Holsteins
P.O. Box 1118
Picture Butte, Alberta T0K 1V0

Attention: Mr. Vanderveen:

**Re: Geotechnical Review and Evaluation
 Proposed Pen Expansion
 NW-36-010-22-W4M, near Picture Butte, Alberta**

As requested, Wood Environment & Infrastructure Solutions (Wood) has carried out a geotechnical review and evaluation of the above-captioned site relative to the required protection of the groundwater resource, as required by the Agricultural Operation Practices Act, AB Reg. 267/2001 (hereinafter referred to as "AOPA"). This letter describes site soil conditions for inclusion with a permit application related to a series of proposed cattle pens to be located east of the existing pens, barn and lagoon.

In order to demonstrate the suitability of the naturally existing soils for consideration as a naturally occurring protective layer to the groundwater, four (4) boreholes were advanced at the site on November 25, 2020. The boreholes were advanced at the approximate locations illustrated on Figure 1 as VD1-20 to VD4-20, inclusive.

The boreholes were advanced by a truck-mounted drill rig owned and operated by Chilako Drilling Services and extended to depths of 3.0 m to 4.5 m below existing grades. The boreholes were logged by Larry Delong of Chilako Drilling Services.

In general, the natural mineral soils encountered within the boreholes comprised of medium plastic clay till, with minor lacustrine clay loam soils near the surface. No groundwater resource (as defined by the AOPA) was identified within the 4.5 m drilling depth at the site.

In order to demonstrate the permeability of the subsurface soils, a 50 mm diameter PVC monitoring well was constructed in borehole VD3-20. The test well was screened from 1.4 m to 3.0 m depth. Well saturation of the 50 mm diameter monitoring well was carried out by filling the monitoring well to the top for several consecutive days. After several days, the average 24-hour water drop at VD3-20 was about 0.28 m.

In order to calculate the permeability of the screened portion of the clay till strata at the test well location, a modified falling head test (as outlined in the USBR Engineering Geology Field Manual Volume 2 [2001]) was used. The input variables and output data are outlined on the In Situ Permeability Test report, attached. As outlined on the report, the results of the *in situ* permeability testing indicate a hydraulic conductivity, k_s , of 5.0×10^{-8} cm/s at VD3-20.

Using the measured permeability of the clay stratum, the 1.6 m of clay screened at VD3-20 is estimated to represent the equivalent of over 30 m of naturally occurring materials having a hydraulic conductivity of 1×10^{-6} cm/s (the reference standard in AOPA). This represents natural material protection in excess of the minimum requirements outlined by the AOPA for solid manure storage (minimum 2 m, Section 9.5-c).


Conclusion

Based on the results of the current investigation, permeability testing, and our understanding of the site and proposed development at the site, it is Wood's opinion that the naturally occurring materials at the site satisfy the AOPA requirements for permitting the proposed pen expansion.

We trust that this report satisfies your present requirements. Should you have any questions, please contact the undersigned at your convenience.

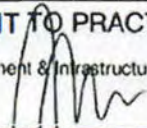
Yours truly,

**Wood Environment and Infrastructure Solutions,
A Division of Wood Canada Limited**


John Lobbezoo, P.Eng.
Associate Engineer, Geotechnical
Lethbridge & Medicine Hat Area Lead



Reviewed by:
Kevin Spencer, M.Eng., P.Eng.
Sr. Associate Geotechnical Engineer

PERMIT TO PRACTICE	
Wood Environment & Infrastructure Solutions	
Signature	
Date	19 January 2021
PERMIT NUMBER: P-04546	
The Association of Professional Engineers and Geoscientists of Alberta	

Attachments

- Figure 1 Borehole Locations
- In Situ Permeability Test Calculations
- Soil Profile and Parent Material Description, Chilako Drilling Services

Untitled Map

Write a description for your map.

Legend

- Feature 1
- 📍 Gas line
- 📍 Gas Line
- 📍 VD3-20



Google Earth

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Image © 2020, © Esri, Airphoto

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100 m

VD3-20



In Situ Permeability Test

Modified Falling Head Permeability Equation

$$K_s = \frac{r^2}{2\ell\Delta t} \left[\frac{\sinh^{-1} \frac{\ell}{r_e}}{2} \ln \left[\frac{2H_1 - \ell}{2H_2 - \ell} \right] - \ln \left[\frac{2H_1 H_2 - \ell H_2}{2H_1 H_2 - \ell H_1} \right] \right]$$

taken from USBR Engineering Geology Field Manual Volume 2 (2001)

VD3-20 - Favour Holsteins

Wood File: BX30670

INPUT VARIABLES	Terms	Value	Definition
	D	0.0520	diameter of standpipe (m)
	De	0.1500	diameter of borehole (m)
	L	1.60	length of sand section (m)
	h1	3.15	initial height of water above base of hole (m)
	h2	2.87	final height of water above base of hole (m)
	t	24.0	time of test (h)

Ks = 5.0E-08 cm/sec



CHILAKO DRILLING SERVICES LTD

Box 942 Coaldale, Alberta, T1M 1M8
(403) 345-3710

SOIL PROFILE AND PARENT MATERIAL DESCRIPTION

Site Location: NW36-10-22W4, Favour Holsteins

Date: 25-Nov-20

Hole #	Location	Depth	Texture	Moisture	Geological	Sample	Remarks
VD1-20	0366389 5525853	0-0.15	CL	M	Topsoil		Stiff, med plastic, brown
		0.15-0.3	CL	M	Lac		
		0.3-0.8	SiCL	M	Lac		
		0.8-3.0	CL	M	Till		
VD2-20	0366434 5525917	0-0.15	CL	M	Topsoil		Stiff, med plastic, olive brown Stiff, med plastic, olive brown Stiff, med plastic, yellow brown, trace sand
		0.15-0.3	CL	M	Lac		
		0.3-2.6	SiCL-SiC	M	Lac		
		2.6-3.3	SiCL	M	Lac		
		3.3-4.5	CL	M	Till		
VD3-20	0366407 5525884	0-0.15	CL	M	Topsoil		Stiff, med plastic, brown Stiff med plastic, trace sand, iron staining 50mm H.C. well installed to 3.0m Screen: 3.0-1.5m Sand: 3.0-1.4m Bentonite: 1.4-0.0m Stickup: 0.35m Hole Diameter: 0.15m
		0.15-0.3	CL	M	Lac		
		0.3-1.0	CL-SiCL	M	Lac		
		1.0-3.0	CL	M	Till		
VD4-20	0366442 5525866	0-0.15	CL	M	Topsoil		Stiff, med plastic, brown Stiff, med plastic, brown-yellow brown, some silt Stiff, med plastic, brown, trace sand
		0.15-1.2	CL-SiCL	M	Lac		
		1.2-1.8	CL-C	M	Lac		
		1.8-3.0	CL	M	Till		

Legend: L Loam
C Clay
S Sand
Gr. Gravel
Si Silt
F Fine (sand)
VF Very Fine (sand)

Eg. VFSCl = Very Fine Sandy Clay Loam