

Technical Document



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 type="checkbox"/> Approval	<input type="checkbox"/> Registration	<input checked="" type="checkbox"/> Authorization	
<input type="checkbox"/> Amendment		LA23046	NE 12-12-23.W4

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 understand the statements above, and I acknowledge that the information provided in this application is true to the best of my knowledge.

JAN 31 - 2024 _____
 Date of signing _____
 Hutterian Bretern Keho Lake Colony _____
 Corporate name (if applicable) _____

 Signature _____
 George Würz _____
 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)
New lagoon (Expand Hog Lagoon)	140 m x 46m 6m deep.

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

Existing facilities	Dimensions (m) (length, width, and depth)	NRCB USE ONLY

NRCB USE ONLY

All facilities are listed on the next page. Dimensions confirmed.
 The application proposes to modify the existing hog lagoon to the dimensions listed above (permitted in LA02039A/LA15009)

Existing permitted facilities

LA12016	<ul style="list-style-type: none"> • Swine finisher barn extension - 27.0 m x 25.0 m • Swine quarantine barn - 6.0 m x 9.0 m
LA02039A To be modified	<ul style="list-style-type: none"> • 2 cell system (compacted clay/synthetic lined) cell 1: 36.5 m x 45.7 m x 4.2 m deep; cell 2: 55.0 m x 45.7 m x 4.2 m deep • This 2 cell system will be modified into a 1 cell system (Approval LA15009)
Development permit 95-80	<ul style="list-style-type: none"> • 'Barns' (no quantity or dimensions) Listed below
Grandfathered facilities	<ul style="list-style-type: none"> • Swine finisher barn – 36.5 m 61.0 m • Swine farrowing barn – 77.3 m x 27.0 m • Concrete manure storage for swine – 26.0 m in diameter, 3.0 m deep • Poultry broiler barn – 43.5 m x 11.5 m • Poultry layer barn – 43.5 m x 10.0 m • Turkey barn – 20.5 m x 13.0 m • Duck/Geese pen – 27.0 m x 25.0 m (with shelter) • Dairy barn – 68.0 m x 17.5 m • Dairy dry cow area – 61.7 m x 60.0 m • Calf barn – 30.0 m x 15.5 m • Calf/heifer pen 50.5 m x 28.0 m • Earthen manure storage for dairy – 41.0 m x 37.0 m x 2.4 m deep • Feedlot pens – 32.5 m x 123.0 m (with shelter) and 96.0 m x 57.0 m • Sheep barn (two) – 35.7 m x 13.5 m and 30.0 m x 12.0 m • Sheep pens – 32.0 m x 31.0 m, 39.0 m x 28.0 m, 16.0 m x 29.0 m



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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 End of June 2024

Additional information

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

No changes in animal numbers or manure production

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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 _____ (AO comment: See below)

Signed this 4 day of Dec, 2023.

Signature of Applicant or Agent

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)

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*).
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7. **Provide:** Water license number(s) or water conveyance agreement details _____

Signed this ____ day of _____, 20____.

Signature of Applicant or Agent

THIS AGREEMENT IS MADE AND EFFECTIVE the 15th day of June, 2001.

BETWEEN:

LETHBRIDGE NORTHERN IRRIGATION DISTRICT

A Body Corporate duly constituted pursuant to
the provisions of the Irrigation Districts Act.
(hereinafter called the "District").

- and -

HUTTERIAN BRETHERN CHURCH OF KEHO LAKE

Box 125
BARONS, ALBERTA
T0L 0G0

(hereinafter called the "Applicant")

WATER CONVEYANCE AGREEMENT – TYPE 2

(Irrigation Districts Act, Section 21)

BACKGROUND

- ❖ The District owns an extensive system of irrigation works (the "irrigation works of the District"), and operates those pursuant to the provisions of the Irrigation Districts Act.
- ❖ The Applicant is the owner (or purchaser or lessee) of a parcel of land legally described as:

The South East Quarter of Section Twelve (12) Township Twelve (12) Range Twenty Three (23) West of the Fourth Meridian containing 160.0 Acres More or Less

- ❖ The Applicant desires to divert water from the irrigation works of the District at a designated point of delivery ("Point of Delivery") as shown on Schedule "A", for **Agricultural** purposes.
- ❖ The District has agreed to allow the Applicant to divert a maximum of **20.0 acre-feet** of water (the "Volume Allocation"), on a yearly basis, from the irrigation works of the District, subject to and upon the terms and conditions herein contained.

Turnout. The Applicant shall be responsible for the costs of the design, installation, operation and maintenance of a turnout at the Point of Delivery and for all additions and modifications to the irrigation works of the District required to accommodate the turnout. The design, installation, operation and maintenance of the turnout shall comply with District specifications and standards and require the prior written approval of the District prior to the installation or any maintenance thereof.

In the event the Applicant fails to install, operate or maintain the turnout in compliance with District specifications the District may serve written notice to that effect upon the Applicant in which the District shall state the nature of the deficiency and set out a reasonable time period within which the Applicant shall correct the deficiency failing which the District, at its sole discretion, may terminate this Agreement in accordance with Clause 9, or effect the required repairs or maintenance and the costs of which shall form a debt due to the District by the Applicant.

At the conclusion of the term of this Agreement or premature termination thereof in accordance with Clause 9, all work and structures installed in accordance with this Clause 2 shall become the property of the District and the Applicant shall have no further rights thereto.

3. **Rights-of-Way.** The Applicant shall be responsible for securing all rights-of-way, easements, and authorities to carry the water from the Point of Delivery as designated herein to the point of use and for the provision of any conveyance works necessary to carry the water from the Point of Delivery to the point of use.
4. **Water Measuring Devices.** During the continuance of the Agreement the District may request that a water measuring device be installed to record the water volume diverted from the District's irrigation works by the Applicant. The Applicant shall, within one (1) year upon receipt of such a request install such water measuring devices, which must first be approved by the District, acting reasonably both as to suitability and as to location. The Applicant shall bear the entire cost of supply, installation by the District, repair, alteration and maintenance of such water measuring devices.
5. **Water Quality.** The Applicant acknowledges and agrees that the water in the irrigation system of the District may not be potable or may not be suitable for irrigation or other purposes, and the District makes no representation, warranty or guarantee, express or implied that the water delivered under this Agreement is potable and fit for human consumption or suitable for irrigation purposes, livestock watering or recreational use.

The Applicant agrees to accept the water delivered in the condition in which it may be found at the Point of Delivery from time to time and to provide such additional treatment or filtering as the Applicant considers necessary.

The Applicant acknowledges that the irrigation system of the district is an open ditch system subjecting the water therein to contamination from all manner of environmental, human and animal factors beyond the control of the District and that the District does not regulate, control or monitor the quality of the water in its system.

6. **District Water Delivery Policies.** The Applicant agrees to comply with and be bound by all by-laws, regulations, policies, procedures and directives of the District in effect from time to time which includes, but is not limited to:

- a. the date of the commencement of the Irrigation Season and the date of termination thereof;

Liability and Indemnity.

Each party (the "Indemnifying Party") agrees to indemnify and save harmless the other party, its agents and employees from and against any and all damage, injury, loss, costs, causes of action, and claims suffered or incurred by the other party, its agents or employees and which are caused either directly or indirectly or contributed to in whole or in part by the negligence or breach of this Agreement by the Indemnifying Party, its agents and employees and in respect of which the Indemnifying Party, its agents or employees is held liable or is otherwise responsible in law and to the extent to that responsibility in whole or in part.

The Applicant assumes sole responsibility for the control of all water diverted at the Point of Delivery and for all damage caused by that water in any manner however caused, including the malfunction, failure, or destruction of the turnout or associated irrigation works of the District that were subject to work or modification during the installation of the turnout and releases and indemnifies the District from all liability with respect to any losses or damage incurred by anyone as a direct or indirect result thereof, including costs as between solicitor and own client.

The Applicant assumes full responsibility for and agrees to indemnify and save harmless the District and its agents and employees from all claims for bodily injury or property damage arising out of the discharge, dispersal, release or escape of smoke, vapours, soot, fumes, acids, alkalis, toxic chemicals, fossil fuels, fossil or synthetic lubricants, liquids or gases, waste materials or other irritants, contaminants or pollutants into or upon the Parcel, the atmosphere or any water of any description no matter where located or how contained, or into any watercourse whether natural or artificial, including the irrigation works of the District, or a drainage or sewage system.

8. **Payment.** The Applicant shall pay to the District, on or before December 31st each year during the currency of this Agreement, such amounts as are from time to time prescribed under the District's Water Conveyance Agreement - Type 2 fee established under Section 115 of the Irrigation Districts Act. Should the Applicant fail to pay to the District all or any portion of these fees payable pursuant to this Agreement by the close of business on December 31st of any year, the Applicant shall pay to the District an additional interest charge as prescribed by District Resolution. Should the Applicant fail to pay all amounts outstanding, including interest charges, by the close of business February 28th of the following year, this Agreement will be terminated pursuant to Clause 9 of this Agreement.
9. **Termination.** Should the Applicant at any time or from time to time fail to comply with each and every one of the covenants, conditions or obligations to be observed and performed by the Applicant under this Agreement, the District shall be entitled to terminate this Agreement upon providing thirty (30) days notice in writing to the Applicant.

In the event that the Applicant diverts in excess of the Volume Allocation pursuant to Section 1 hereof, however, the District shall be entitled to immediately terminate this Agreement by providing notice in writing of such termination to the Applicant.

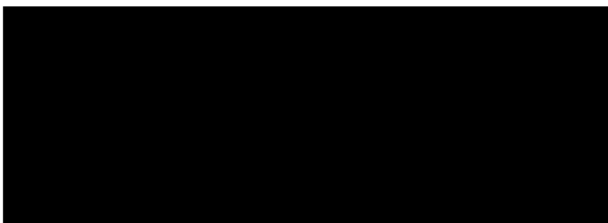
Termination of this Agreement resulting from non-payment of fees and interest charges shall not relieve the Applicant from its obligations herein, including without limitation, the payment of fees and interest charges.

- 12. **Entire Agreement.** Other than the matters described herein, this Agreement constitutes the entire Agreement between the parties hereto with respect to the subject matter hereof and supersedes all prior negotiations, proposals, and Agreements, whether oral or written with respect to the subject matter hereof.
- 13. **Notices.** Any notices required to be given under the terms hereof shall be given by any party hereto by delivering such notice personally to the addressee wherever he or she may be found, or sent by registered mail to the address set out in the heading to this Agreement. In the event that such notice is sent by registered mail, it shall be deemed to have been received seven (7) days from the date of mailing.
- 14. **Governing Law and Attornment.** This Agreement shall be governed by the laws of the Province of Alberta and the parties hereto agree to irrevocably attorn to the jurisdiction of the Courts of Alberta and agree that any proceedings taken in respect of this Agreement shall be taken in such Courts and in no other.
- 15. **Severability.** The unlawfulness, invalidity or unenforceability of any provision in this Agreement or of any covenant herein contained on the part of any party shall not affect the validity or enforceability of any other provisions or covenant hereof or herein contained.
- 16. **Further Acts.** Each of the parties to this Agreement shall at the request of the other party hereto, and at their own expense, execute and deliver any further documents and do all acts and things as that party may reasonably require to carry out the true intent and meaning of this Agreement.
- 17. **Amendments.** No term or provision hereof may be amended except by an instrument in writing signed by all of the parties to this Agreement.
- 18. **Assignment or Transfer.** This Agreement cannot be transferred or assigned to any other party.

LETHBRIDGE NORTHERN IRRIGATION DISTRICT

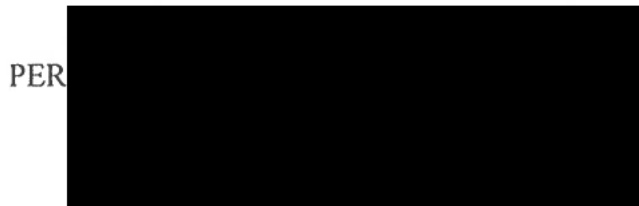


WITNESS



(print name)

**HUTTERIAN BRETHREN CHURCH
OF KEHO LAKE**



CONSENT of LESSOR

BETWEEN:

LETHBRIDGE NORTHERN IRRIGATION DISTRICT

A Body Corporate duly constituted pursuant to
the provisions of the Irrigation Districts Act.
(hereinafter called the "District").

- and -

HUTTERIAN BRETHREN CHURCH OF KEHO LAKE

Box 125
BARONS, ALBERTA
T0L 0G0

(hereinafter called the "Applicant")

23-12-12-40W
C2-23-12-12-40-SW

WATER CONVEYANCE AGREEMENT – TYPE 2

(Irrigation Districts Act, Section 21)

BACKGROUND

- ❖ The District owns an extensive system of irrigation works (the "irrigation works of the District"), and operates those pursuant to the provisions of the Irrigation Districts Act.
- ❖ The Applicant is the owner (or purchaser or lessee) of a parcel of land legally described as:

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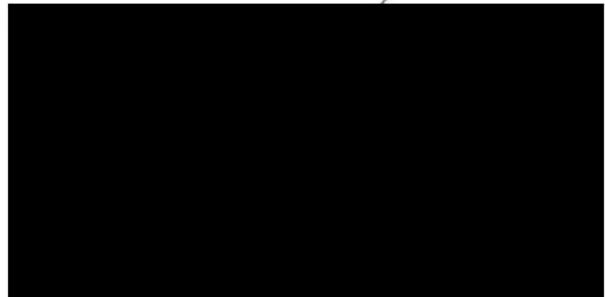
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In the event that the Applicant diverts in excess of the Volume Allocation pursuant to Section 1 hereof, however, the District shall be entitled to immediately terminate this Agreement by providing notice in writing of such termination to the Applicant.

Termination of this Agreement resulting from non-payment of fees and interest charges shall not relieve the Applicant from its obligations herein, including without limitations, the payment of fees and interest charges.

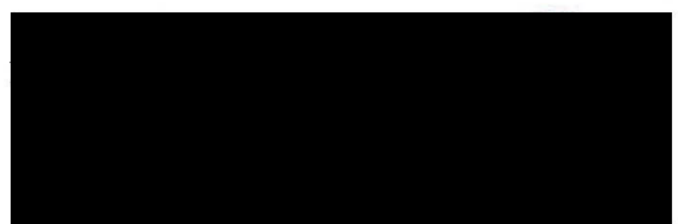
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- 13. **Notices.** Any notices required to be given under the terms hereof shall be given by any party hereto by delivering such notice personally to the addressee wherever he or she may be found, or sent by registered mail to the address set out in the heading to this Agreement. In the event that such notice is sent by registered mail, it shall be deemed to have been received seven (7) days from the date of mailing.
- 14. **Governing Law and Attornment.** This Agreement shall be governed by the laws of the Province of Alberta and the parties hereto agree to irrevocably attorn to the jurisdiction of the Courts of Alberta and agree that any proceedings taken in respect of this Agreement shall be taken in such Courts and in no other.
- 15. **Severability.** The unlawfulness, invalidity or unenforceability of any provision in this Agreement or of any covenant herein contained on the part of any party shall not affect the validity or enforceability of any other provisions or covenant hereof or herein contained.
- 16. **Further Acts.** Each of the parties to this Agreement shall at the request of the other party hereto, and at their own expense, execute and deliver any further documents and do all acts and things as that party may reasonably require to carry out the true intent and meaning of this Agreement.
- 17. **Amendments.** No term or provision hereof may be amended except by an instrument in writing signed by all of the parties to this Agreement.
- 18. **Assignment or Transfer.** This Agreement cannot be transferred or assigned to any other party.

LETHBRIDGE NORTHERN IRRIGATION DISTRICT



**HUTTERIAN BRETHREN CHURCH
OF KEHO LAKE**

WITNESS



(print name)

CONSENT of LESSOR

SCHEDULE "A"
LOCATION PLAN



12-

S.W. 12-12-23-4

NOTE: THE WATER FOR THIS AGREEMENT
IS DIVERTED FROM THE MAIN CANAL
IN S.W. 3-12-23-4.

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)

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: Lagoon Proposed 1: _____

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 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 type="checkbox"/> ≤ 1 m	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> YES with exemption	Not located in flood plain
	How many springs are within 100 m of the manure storage facility or manure collection area?	None				<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> YES with exemption	None observed or recorded in EPA database
Surface water information	How many water wells are within 100 m of the manure storage facility or manure collection area?	None				<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> YES with exemption	Confirmed
	What is the shortest distance from the manure collection or storage facility to a surface water body? (e.g., lake, creek, slough, seasonal)	180m				<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> YES with exemption	Confirmed (CBW is a small creek flowing into Keho Lake with surrounding wetlands. Distance approximately 100 m)
Groundwater information	What is the depth to the water table?	?				<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> YES with exemption	Below 9 m (measured by applicant)
	What is the depth to the groundwater resource/aquifer you draw water from?	40m				<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> YES with exemption	Shallowest well is #194153 with UGR at 16.76 m below ground level

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

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NRCB USE ONLY
ENVIRONMENTAL RISK SCREENING INFORMATION

ERST for proposed facilities

Facility	Groundwater score	Surface water score	File number
Modified EMS	low	low	LA23046

ERST for existing facilities

Facility	Groundwater score	Surface water score	File number
airy	low	low	12/9/2022
feedlot	low	low	12/9/2022

ERST related comments:

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NRCB USE ONLY

WATER WELL AND SURFACE WATER INFORMATION

Well IDs: Water wells ID: 194153, 194160/ -63/ -67 No wells within 400 m of a MSF/MCA

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:

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)

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

Neighbour name(s)	Legal land description	Distance (m)	NRCB USE ONLY				
			Zoning (LUB) category	MDS category (1-4)	Distance (m)	Waiver attached (if required)	Meets regulations
Fleming	NE 3-12-24 W4	3,500m	RA	1	> 3 km		yes
			(Rural Agriculture)				

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)
				NA --> no increase in annual manure production	
			Total		

* 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)

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

MINIMUM DISTANCE SEPARATION

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

Margin of error (if applicable): +/- 2 m

Requirements (m): Category 1: 553 m Category 2: 738 m Category 3: 922 m Category 4: 1475 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: _____

NA (no increase in annual manure production)

Land base listed: _____

Area not suitable: _____

Available area: _____

Requirement met: YES NO

Land spreading agreements required: YES NO

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 Approval LA15009

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

January 29, 2024	

CORRESPONDENCE WITH MUNICIPALITIES AND REFERRAL AGENCIES

Date deeming letters sent: February 27, 2024

Municipality: Lethbridge County

letter sent response received written/email verbal no comments received

Alberta Health Services:

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: Little Bow Gas Coop 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)

LIQUID MANURE STORAGE: Earthen manure storage (EMS): Compacted soil liner

(complete a copy of this section for EACH proposed earthen liquid manure storage facility with a compacted soil liner)

Facility description / name (as indicated on site plan) 1. Modified liquid manure storage
 2. _____

Manure storage capacity (complete a separate row of this table for each cell of the EMS)

	Length (m)	Width (m)	Total depth (m)	Depth below ground level (m)	Slope run:rise			NRCB USE ONLY	
					Inside end walls	Inside side walls	Outside walls	Calculated storage capacity (excl. 0.5 m freeboard) (m ³)	Filled in lower ¼? Y/N
1.	140m	46m	6m	6m	3to1	3to1	N/C	16,668 m ³	yes
2.									
TOTAL CAPACITY									

Surface water control systems

Describe the run-on and runoff control system

Build a berm.

Sealing

Describe sealing practices for piping, etc. that penetrates the liner

Seal of with concreat.

NRCB USE ONLY

Requirements met: YES NO

Liner protection

Describe how the inside walls, bottom and outside walls are protected from erosion

Concret splash pad

Describe how the physical integrity of the liner will be maintained from other damage

Build a concret pad.

NRCB USE ONLY

Requirements met: YES NO

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)

LIQUID MANURE STORAGE: Earthen manure storage (EMS): Compacted soil liner (cont.)

Compacted soil liner details

Thickness of compacted liner _____ (m)		Provide compacted liner details (as required)	
Soil texture	_____ %	_____ % silt	_____ % clay
Atterberg limits	Plast _____	liquid limit _____	Plasticity index _____
Hydraulic conductivity	Hydraulic conductiv _____	_____	
	Describe test standi _____		

see next page

Additional information (attach copies of soil test reports)

NRCB USE ONLY

see below

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

NRCB USE ONLY

Liquid manure storage volume calculator attached: YES NO

Depth to water table: below 9 m bgl

Requirements met: YES NO

Depth to uppermost groundwater resource: below 16.76 m

Requirements met: YES NO

ERST completed: see ERST page for details

Surface water control systems

Requirements met: YES NO Details/comments:

Condition is required stating that soil moisture must remain within 2% of optimum moisture content, to test compaction density for every lift and have an engineer on site during construction (according to Technical Guideline Agdex 096-64)

Compacted soil liner details

Liner specification comments (e.g. compaction, moisture content, thickness):

optimum moisture content: 18%, medium plastic clay
silty: 63%, clay 19%

Leakage detection system required: YES NO

If yes, please explain why.

Liquid Manure Storage Volume Calculator

Construction Dimensions of Liquid Manure Storage

* Only cells in blue can be changed.

	Metric	Imperial Units
Size of Liquid Manure Storage		
<u>Size of Liquid MS</u>		
Total Length* ₄	140.0 m	459 ft
Total Width* ₄	43.0 m	151 ft
Total Depth* ₄	5.0 m	16 ft
Design Capacity Depth	4.50 m	15 ft
End Slope* ₄	3 run:rise	3 run:rise
Side Slope* ₄	3 run:rise	3 run:rise
Length of Bottom	110.0	
Width of Bottom	16.0	
Total Capacity @ top of Bank	19,750 m³	Total Capacity (@top) 697,465 ft³ 4,344,391 Imp. Gal.

	Metric	Imperial Units
Design Capacity of Liquid Manure Storage (freeboard level)		
<u>Design Capacity (freeboard level)</u>		
Length (design capacity depth)	137.0 m	449 ft
Width (design capacity depth)	43.0 m	141 ft
Total Depth	5.0 m	16 ft
Design Capacity Depth	4.50 m	15 ft
End Slope	3 run:rise	3 run:rise
Side Slope	3 run:rise	3 run:rise
Design Capacity (freeboard level)	16,668 m³	588,625 ft³ 3,666,446 Imp. Gal.
Surface Area of Liquid Manure	5,891 m ²	63,410 ft ²

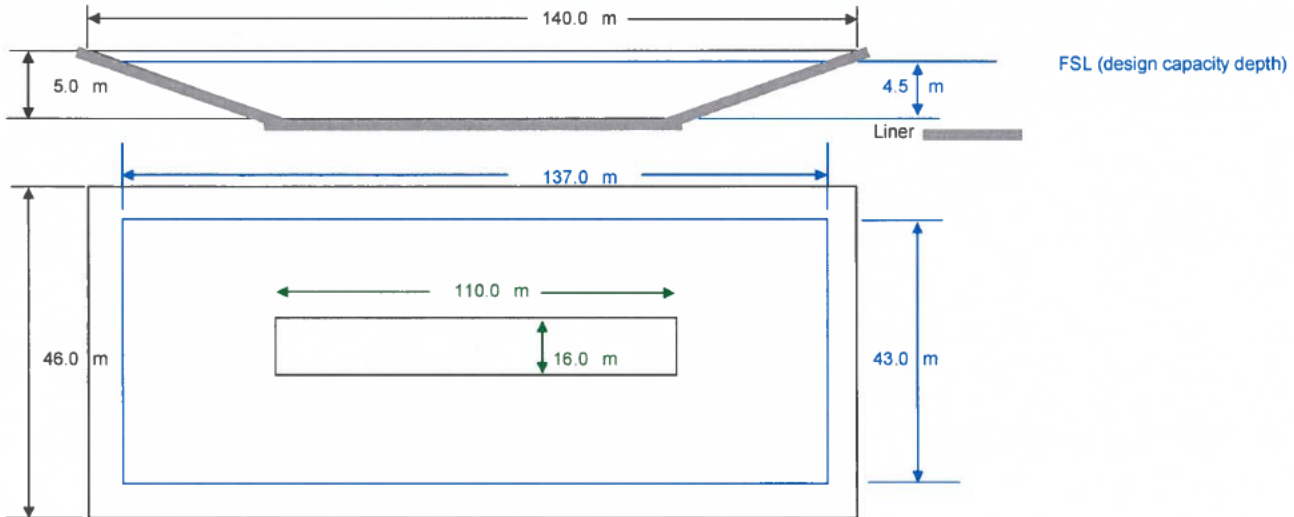
CFO Name ₁ Kaho Colony
Land Location ₁

Type of Livestock ₂
Free Stall Lactating Cow Only
Annual manure production / hd 36.0 m³/hd
9 month manure production / hd 27.00 m³/hd

Number of Livestock ₃ head

Minimum Liquid Manure Storage Volume Required
- m³** - ft³
- Imp. Gal.

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



— Lines in Black - Overall liquid manure storage 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	
LIQUID MANURE STORAGE VOLUME CALCULATOR (if applicable)	
Facility 1	
Name / description modified lagoon (hogs)	Capacity 16,668 m³
Facility 2	
Name / description dairy lagoon	Capacity 1,757 m³
Facility 3	
Name / description	Capacity
Facility 4	
Name / description	Capacity
TOTAL CAPACITY	
	18,425 m³
REQUIRED 9 MONTH STORAGE CAPACITY	
	6,345 m³
MEETS THE REQUIREMENTS FOR A MINIMUM OF 9 MONTHS STORAGE	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO

Moisture - Density Relationship Report



WSP Canada Inc.
 3102 12 Avenue North
 Lethbridge, AB T1H 5V1
 Tel: +1-403-327-7474

TO: Hutterian Brethren of Keho Lake
 Box 125
 Barons, AB T0L 0G0

Project No.: BX30312

ATTENTION: Henry
PROJECT: Geotechnical Consulting Services
 Earthen Storage Lagoon

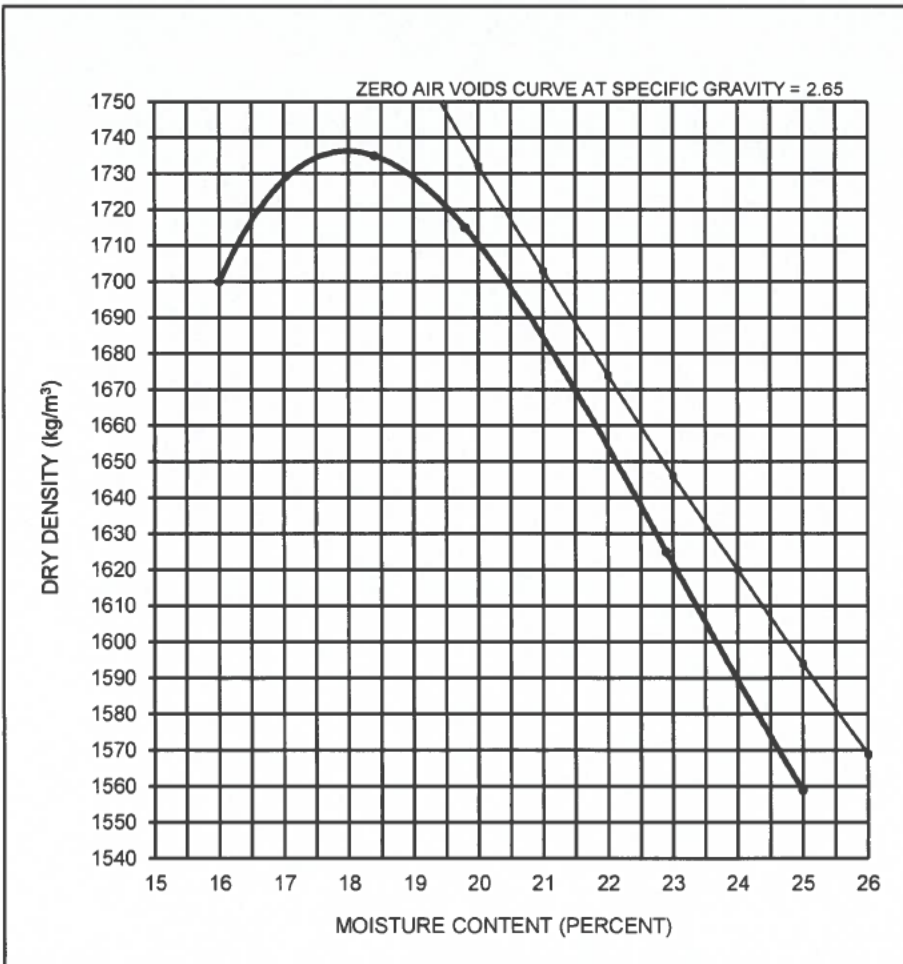
Email: keholakecolony@gmail.com

COMPACTION STANDARD ASTM D698 ASTM D1557 ASTM D558 METHOD: A

DRY DENSITY kg/m ³	1700	1735	1715	1625	1559		
MOISTURE CONTENT (%)	16.0	18.4	19.8	22.9	25.0		

MAXIMUM DRY DENSITY: $\frac{1736}{18.0}$ kg/m³
 OPTIMUM MOISTURE CONTENT: 18.0 %

SOURCE: Dugout Excavation



DATE SAMPLED: 20-Feb-24
 SAMPLED BY: CLIENT
 DATE RECEIVED: 20-Feb-24
 SAMPLE NO.: 1

RAMMER TYPE
 AUTO
 MANUAL

PREPARATION
 MOIST
 DRY

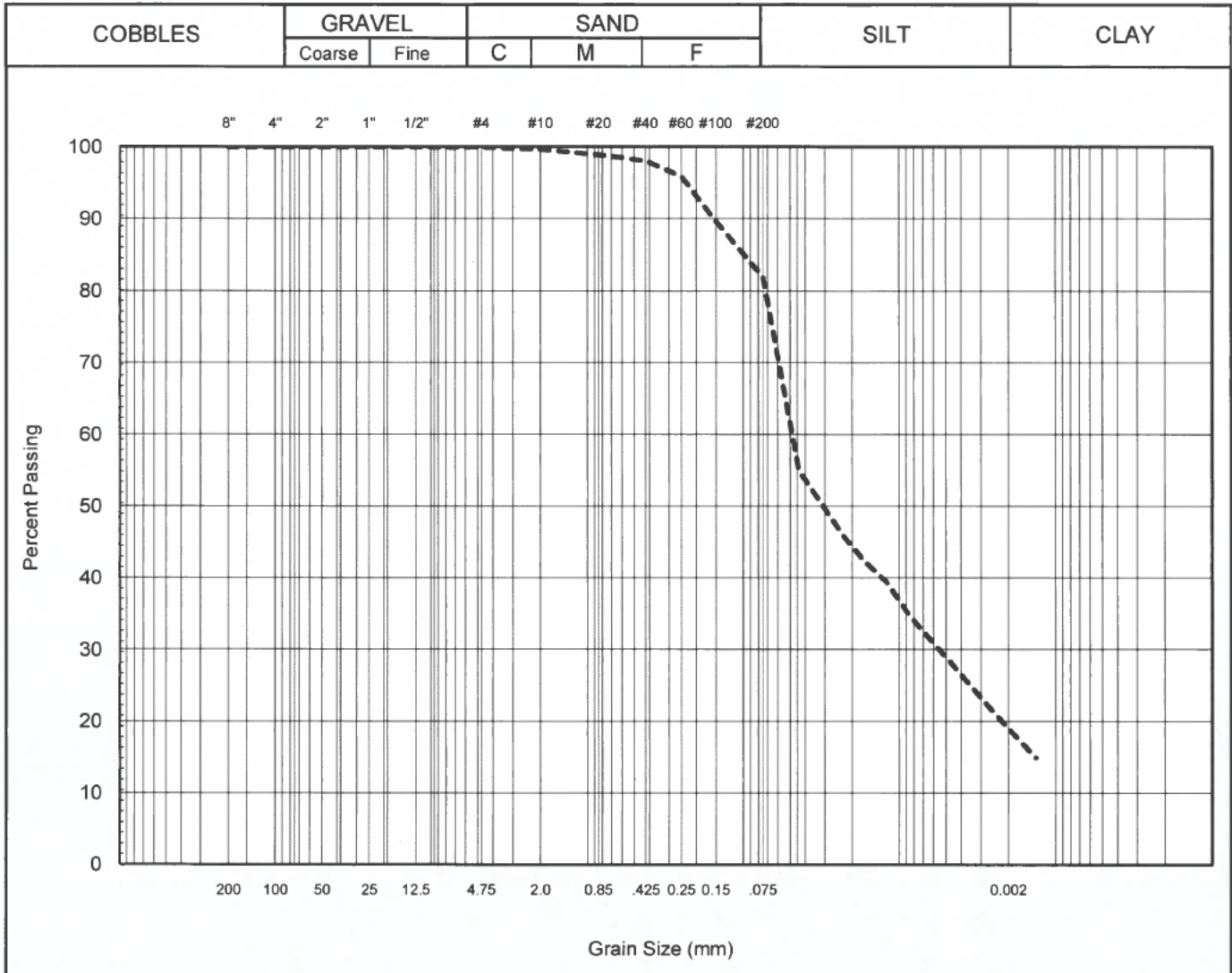
PERCENT RETAINED
 <5% 4.75 mm SCREEN
 9.50 mm SCREEN
 19.0 mm SCREEN

SOIL DESCRIPTION:
 Clay

Per:
 John Lobbezoo, P.Eng.

HYDROMETER TEST

WSP Environment & Infrastructure Solutions



Remarks:

Summary				
D10 =	#N/A	mm	Gravel	0 %
D30 =	0.0056	mm	Sand	18 %
D60 =	0.0497	mm	Silt	63 %
Cu =	#N/A		Clay	19 %
Cc =	#N/A			

Project No: BX30312-100
Hole No: Dugout #2
Depth (m): 0.0

Client: Keho Lake Colony
Sample: Sample # 1
Date: January 22, 2024 **Tech:** EC