Part 2 — Technical Requirements

NRCB Natural Resources Conservation Board

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
☒ Approval ☐ Registration ☐ Authorization ☐ Amendment	LA25002	NW 22-10-22 W4M

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.

Date of signing

Signature [redacted]

PRAIRIE VIEW FEEDERS
Corporate name (if applicable)

HENRY VAN HEERDEN
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)
PERPOSED FEEDLOT PENS (6 PENS)	980' - 226' (299 m x 69 m)
CATCH BASIN	25 m x 55 m x 4 m deep

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

Existing facilities	Dimensions (m) (length, width, and depth)	NRCB USE ONLY
CATH BASIN 46 x 36 x 4.5 m deep		
37 x 173 m + 222 x 40 m	FEEDLOT PENS	
+ 47 x 88 m + 86 x 44 m	FEEDLOT PENS	
61 x 200 m	FEELOT PENS	

NRCB USE ONLY

Confirmed existing facilities

Last updated September 11, 2023

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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 31/25

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**
The site is currently permitted for 4,000 beef feeders. The application seeks to increase permitted livestock numbers by 2,000 beef finishers.			

Last updated September 11, 2023

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)

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 27 day of Jan, 20 25. [redacted]

Signature of Applicant or Agent

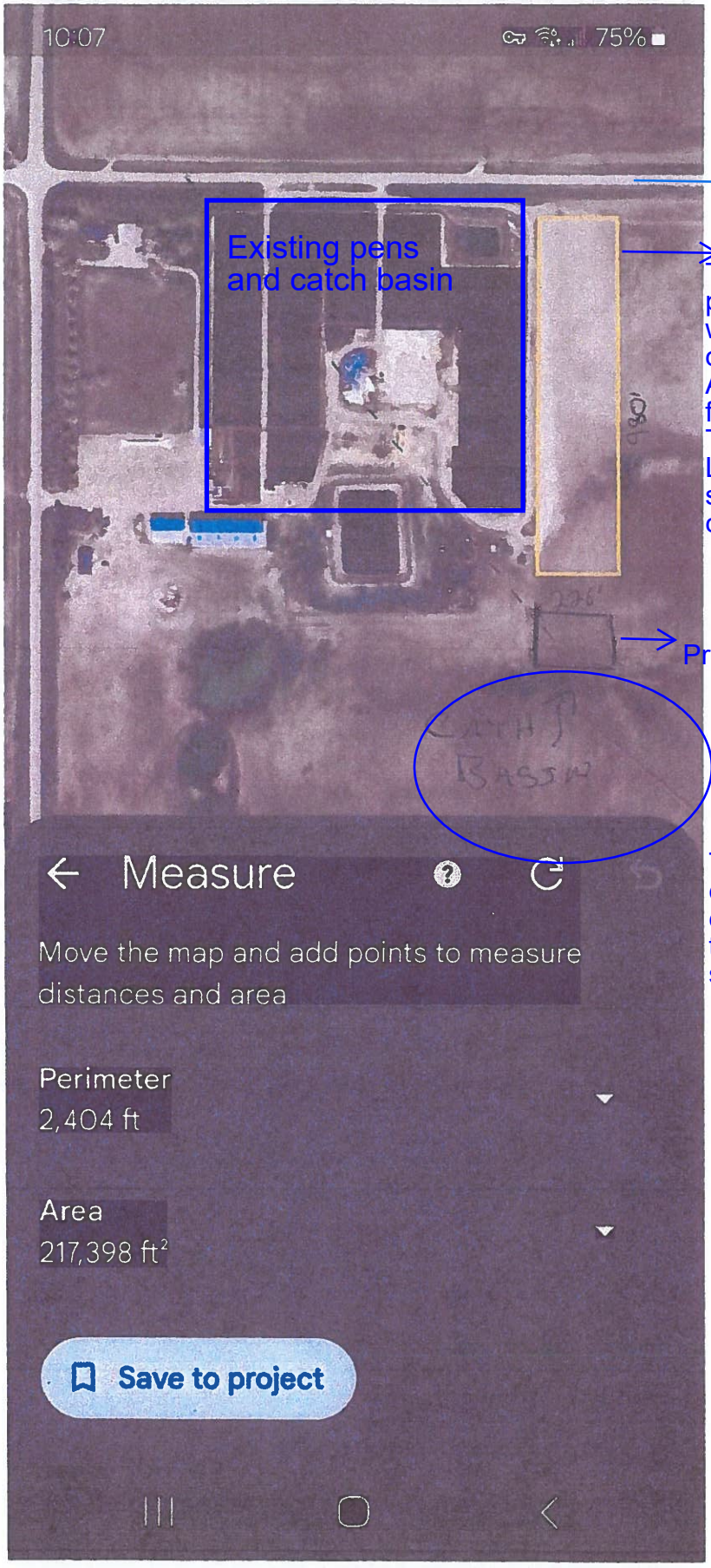
Applicant stated that they would apply for more water from the LNID.

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 _____

Signed this ____ day of _____, 20____. _____

Signature of Applicant or Agent



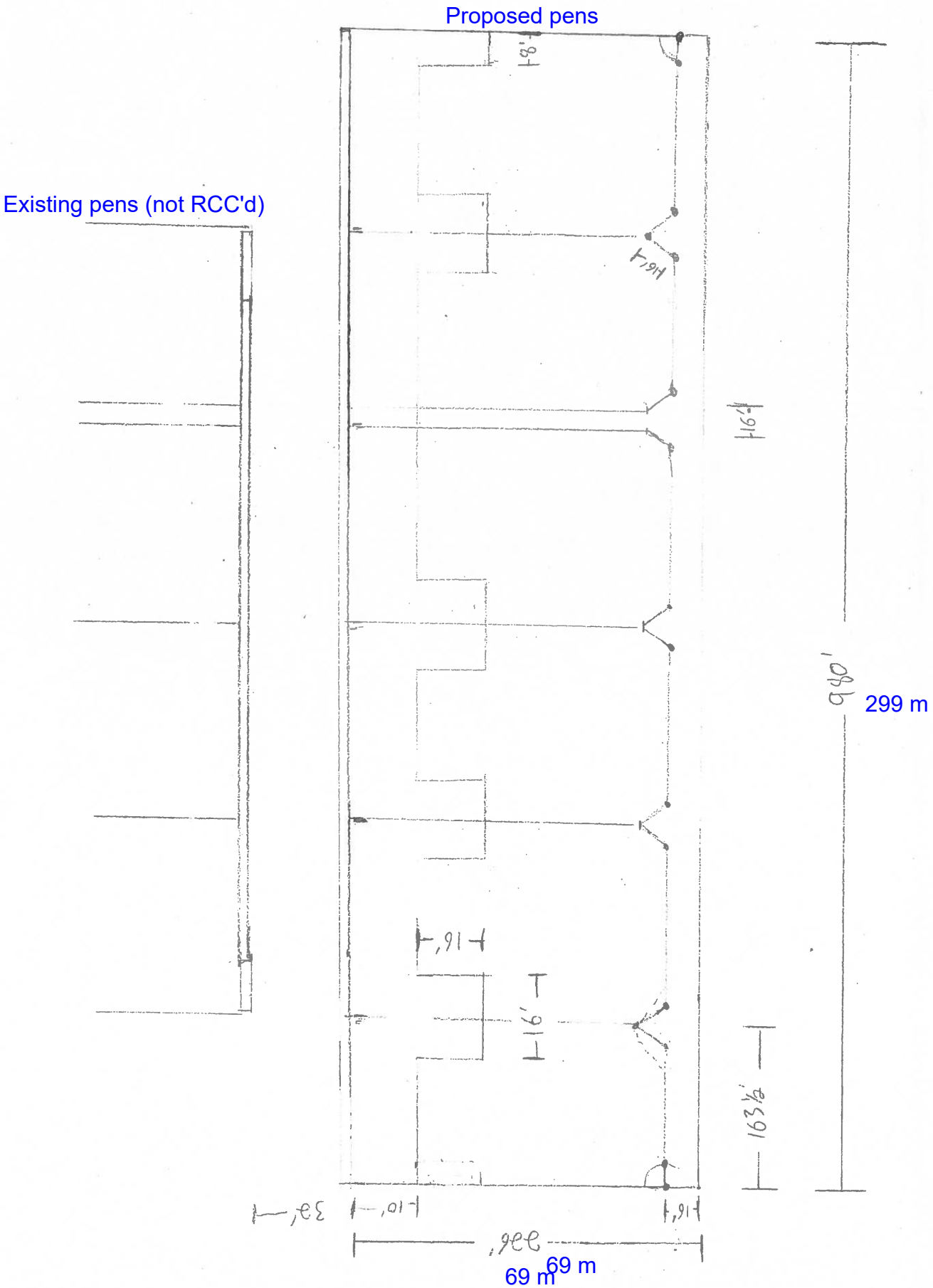
Township road 10-4

The pens are proposed to be built east of, and parallel to, the existing feedlot pens. This area will be comprised of six pens (total dimensions of 299 m x 69 m). Additionally, this would put the proposed feedlot pens 33.1 m from the centre of Township Road 10-4. See Decision Summary LA25002 for a discussion of the county road setback and an explantion of the permit conditions.

Proposed catch basin (25 m x 55 m x 4 m deep)

There is an LNID pipeline approximately in the circled area, in close proximity to the proposed construction. It is the operators responsibility to contact the LNID and adhere to the 15 m setback required.

Construction plans for proposed pens. Additionally, pens will have roller compacted concrete as a secondary liner



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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: CATCH BASIN **Proposed 1:** FEEDLOT PENS

Proposed 2: CATCH BASIN **Proposed 3:** ~~FEEDLOT PENS~~

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?	☑ >1 m ☐ ≤ 1 m	☑ >1 m ☐ ≤ 1 m	☑ >1 m ☐ ≤ 1 m	☑ > 1 m ☐ ≤ 1 m	☑ YES ☐ NO ☐ YES with exemption	Not in a flood plain
Surface water information	How many springs are within 100 m of the manure storage facility or manure collection area?	WC	0	0	0	☑ YES ☐ NO ☐ YES with exemption	None observed during site visit
	How many water wells are within 100 m of the manure storage facility or manure collection area?	0	0	0	0	☑ YES ☐ NO ☐ YES with exemption	No water wells registered to LLD
	What is the shortest distance from the manure collection or storage facility to a surface water body? (e.g., lake, creek, slough, seasonal)	2 miles	2 miles	2 miles	2 miles	☑ YES ☐ NO ☐ YES with exemption	Park Lake 2.8 km south of CFO
Groundwater information	What is the depth to the water table?					☐ YES ☐ NO ☑ YES with exemption condition	1.6 m, but the depth of the water table can fluctuate. A condition is included to ensure requirement is met
	What is the depth to the groundwater resource/aquifer you draw water from?					☑ YES ☐ NO ☐ YES with exemption	WW 194314 to the west UGR at 57m

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

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

WATER WELL AND SURFACE WATER INFORMATION

Well IDs: None registered to LLD _____ _____

_____ _____ _____

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

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NRCB USE ONLY

ENVIRONMENTAL RISK SCREENING INFORMATION

ERST for **proposed** facilities

Facility	Groundwater score	Surface water score	File number
Feedlot pens	Low	Low	LA25002
Catch basin	Low	Low	LA25002

ERST for **existing** facilities

Facility	Groundwater score	Surface water score	File number
Feedlot pens (60.9 m x 198.1 m)	Low	Low	LA19006
Feedlot pens (37 m x 173 m, 222 m x 40 m, 88 m x 47 m,	Low	Low	Deemed
86 m x 44 m) Catch basin	Low	Low	Deemed

ERST related comments:

Proposed facilities that meet or exceed AOPAs technical requirements are presumed to pose a low risk to surface water and groundwater. LA24018 determined the existing facilities posed a low risk to surface water and groundwater. A re-assessment of the risk is not required (see Decision Summary LA25002).

Part 2 — Technical Requirements

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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)

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

			NRCB USE ONLY				
Neighbour name(s)	**Legal land description**	**Distance (m)**	**Zoning (LUB) category**	**MDS category (1-4)**	**Distance (m)**	**Waiver attached (if required)**	**Meets regulations**
SLINGERLAND T	~~NE 15-10-22~~ NE 21-10-22	602	Rural Ag	1	600 m	Yes	Yes
SLINGERLAND C	SE 28-10-22	721	Rural Ag	1	725 m		Yes
CBTY SCHBOTEN	~~NE 22-10-22~~ NE 15-10-22		Rural Ag	1	1800 m		Yes

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

				NRCB USE ONLY	
Name of land owner(s)*	**Legal land description**	**Usable area** (ha)**	**Soil zone ***	**Usable area (ha)**	**Agreement attached (if required)**
PRAIRIE VIEW FEEDERS	~~22-10-22~~ NW & SW	280	IRRIGATION	251 ac	
TONY SLINGERLAND	NE 21-10-22	160	IRRIGATION	153 ac	Yes
FILBERT VAN HEERDEN	SE 16-10-22	65	"	65 ac	Yes
TREVOR SLINGERLAND	NE 27-10-22	160	"	153 ac	Yes
PARAGON LIVESTOCK	~~SE~~ SE 27-9-22	130	"	130 ac	Yes
			Total	752 ac	

* 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

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NRCB USE ONLY

MINIMUM DISTANCE SEPARATION

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

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

Requirements (m): Category 1: 642 m Category 2: 856 m Category 3: 1070 m Category 4: 1712 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: 702 ac irrigated

Land base listed: 795 ac irrigated

Area not suitable: 43 ac

Available area 752 ac 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 LA19006

Minimum Distance Separation (MDS) Waiver (declaration)

Applicant information NRCB application number: LA25002

Operator/operation name: PRAIRIE VIEW FEEDERS LTD

Address: Box 185 SHAUGHNESSY AB Postal Code: T0K 2A0

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

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:

  4000 FEEDERS

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

  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):

  2000 FINISHER CATTLE
  WITH NEW PENS AND CATCH BASIN

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

Permit Applicant: [redacted] Signature Date: JAN 27/25

Residence owner(s) to initial: [redacted]

Minimum Distance Separation (MDS) Waiver (declaration)

Residence owner(s) information

ALL Names on land title: ANTHONY + NELLA SLINGERLAND

Legal land location of residence(s): NE 21-10-22-W4

Telephone number(s)[1] [redacted] Email address(es)[1]: [redacted]

Address(es)[1] and Postal code(s)[1]: Box 119 SHAUGHNESSY AB T0K-2A0

[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 LA25002.

[redacted] [redacted]

Signatures of all residence owner(s) on title

Tony Slingerland Nella Slingerland

Printed names of all residence owner(s) on title

Date: Jan 27/25

Prairie View Feeders

Manure Agreement

Date April 4,2024

TREVOR SLINGERLAND agrees to take manure from Prairie View Feeders for a minimum of one year on 150 irrigated acres, land location NE 27-10-22

Land owner (signature) [redacted]

Full name (printed) TREVOR SLINGERLAND

Address Box 15 Irricana, AB

T0K 2A0

Prairie View Feeders LTD [redacted]

Prairie View Feeders

Manure Agreement

Date April 4,2024

PARAGON LIVESTOCK agrees to take manure from Prairie View Feeders for a minimum of one year on 130 irrigated acres, land location SE 27-9-22 W4

Land owner (signature) [redacted]

Full name (printed) BERT VAN HEERDEN

Address Box 459

COALHURST AB T0L 0V0

Prairie View Feeders LTD [redacted]

Prairie View Feeders

Manure Agreement

Date April 4,2024

ELBERT VAN HEERDEN agrees to take manure from Prairie View Feeders for a minimum of one year on 65 irrigated acres, land location SE 16-10-22

Land owner (signature) [redacted]

Full name (printed) ELBERT VAN HEERDEN

Address Box 1762

Lethbridge, AB

Prairie View Feeders LTD [redacted]

Prairie View Feeders

Manure Agreement

Date April 4,2024

TONY SLINGERLAND agrees to take manure from Prairie View Feeders for a minimum of one year on 150 irrigated acres, land location NE 21-10-22

Land owner (signature) [redacted]

Full name (printed) TONY SLINGERLAND

Address Box 119 Shaughnessy

AB TOK 2A0

Prairie View Feeders LTD [redacted]

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 27, 2025	

CORRESPONDENCE WITH MUNICIPALITIES AND REFERRAL AGENCIES

Date deeming letters sent: February 18, 2025

Municipality: Lethbridge County

☑ letter sent ☑ response received ☑ written/email ☐ verbal ☐ no comments received

Alberta Health Services: ☑ **N/A**

☐ 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: Lethbridge North Irrigation District (LNID) ☐ N/A

☑ letter sent ☑ response received ☑ written/email ☐ verbal ☐ no comments received

Other: Atco Gas, Aplha Bow Energy, Lethbridge North County Potable Water Coop ☐ N/A

☑ letter sent ☐ response received ☐ written/email ☐ verbal ☑ no comments received

Part 2 — Technical Requirements

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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. FEEDLOT PENS (one row comprised of 6 pens)
2.

Manure storage capacity

	Length (m)	Width (m)	Depth below ground level (m)	NRCB USE ONLY Estimated storage capacity (m^3)
1.	980' 299 m	226' 69 m	0	
2.				
			TOTAL CAPACITY	Feedlot pens are considered 9 months of storage

☐ 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

Naturally occurring protective layer details

Thickness of naturally occurring protective layer	1.6 (m)	Provide details (as required)	
Soil texture	38 % sand	25 % silt	37 % clay
Hydraulic conductivity - naturally occurring protective layer	Depth and type of soil tested: 3m clay loam	Hydraulic conductivity (cm/s): 2.6×10^{-8}	Describe test standard used: 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

The applicant is planning on placing roller compacted concrete (RCC) as a secondary liner.

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: 1.6 m Requirements met: ☑ YES ☐ NO

Depth to uppermost groundwater resource: 57 m Requirements met: ☑ YES ☐ NO

ERST completed: ☑ see ERST page for details

Surface water control systems

Requirements met: ☑ YES ☐ NO Details/comments:

Proposed catch basin will capture manure contaminated run-off from the proposed feedlot pens.

Naturally occurring protective layer details

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

See attached report

Part 2 — Technical Requirements

NRCB Natural Resources Conservation Board

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. CATCH BASIN
2. _____
3. _____

Determination of runoff area

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

Catch basin capacity

	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)
1.	25	55	4	4	3-1	3-1	4-1	1,799 m3
2.								
3.								
							TOTAL CAPACITY	1,799 m3

Naturally occurring protective layer details

Thickness of naturally occurring protective layer	3.1 m (m)	Provide details (as required)	
Soil texture	35 % sand	25 % silt	40 % clay
Hydraulic conductivity - naturally occurring protective layer	Depth and type of soil tested: 8.5 m Clay	Hydraulic conductivity (cm/s): 1.0 X 10 -8	Describe test standard used: modified falling head

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

RUNOFF CONTROL CATCH BASIN: Naturally occurring protective layer (cont.)

NRCB USE ONLY

Catch basin calculator. Total volume @ freeboard level: 1,799 m3 Runoff capacity requirements met: ☑ YES ☐ NO

Calculation of the volume attached: ☑ YES ☐ NO

Depth to water table: 1.6 m (but can fluctuate) Requirements met: ☐ YES ☐ NO

Condition included to ensure requirement is met (see LA25002 Decision Summary)

Depth to uppermost groundwater resource: 57 m Requirements met: ☑ YES ☐ NO

ERST completed: ☑ See ERST page for details

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

See attached report

Leakage detection system required: ☐ YES ☑ NO If yes, please explain.

Catch Basin Storage Volume Calculator

Construction Dimensions of Catch Basin

*** Only cells in blue can be changed.**

CFO Name [1]	Prairie View Feeders
Land Location [1]	

Overall Dimensions of Catch Basin			Catch Basin Dimensions	
Total Length*[4]	25.0	m	82	ft
Total Width*[4]	55.0	m	180	ft
Total Depth*[4]	4.0	m	13	ft
Design Capacity Depth	*3.50*	m	11	ft
End Slope*[4]	3	run:rise	3	run:rise
Side Slope*[4]	3	run:rise	3	run:rise
Length of Bottom	1.0	m	3	ft
Width of Bottom	31.0	m	102	ft
Capacity @ top of Bank	*2,428*	m^3	*Capacity (@tob)* *85,744*	ft^3
			534,085	*Imp. Gal.*

Design Capacity of Catch Basin (freeboard level)			Design Capacity (freeboard level)	
Length (design capacity depth)	22.0	m	72	ft
Width (design capacity depth)	52.0	m	171	ft
Total Depth	*4.0*	m	*13*	ft
Design Capacity Depth	3.50	m	11	ft
End Slope	3	run:rise	3	run:rise
Side Slope	3	run:rise	3	run:rise
Design Capacity (freeboard level)	**1,799**	m^3	63,531	ft^3
			395,725	Imp. Gal.
level)	*1,144*	m^2	*12,314*	ft^2

Paved Runoff Catchment Area(s)

Area [2]	Length (m)	Width (m)	Area (m^2)
1	299	69	20,631.0
2			0.0
3			0.0
4			0.0
5			0.0
		Total Area (m^2)	**20,631**

Unpaved Runoff Catchment Area(s)

Area [2]	Length (m)	Width (m)	Area (m^2)
6			0.0
7			0.0
8			0.0
9			0.0
10			0.0
		Total Area (m^2)	**0**

Rainfall (Select Town [3])

Picture Butte 85

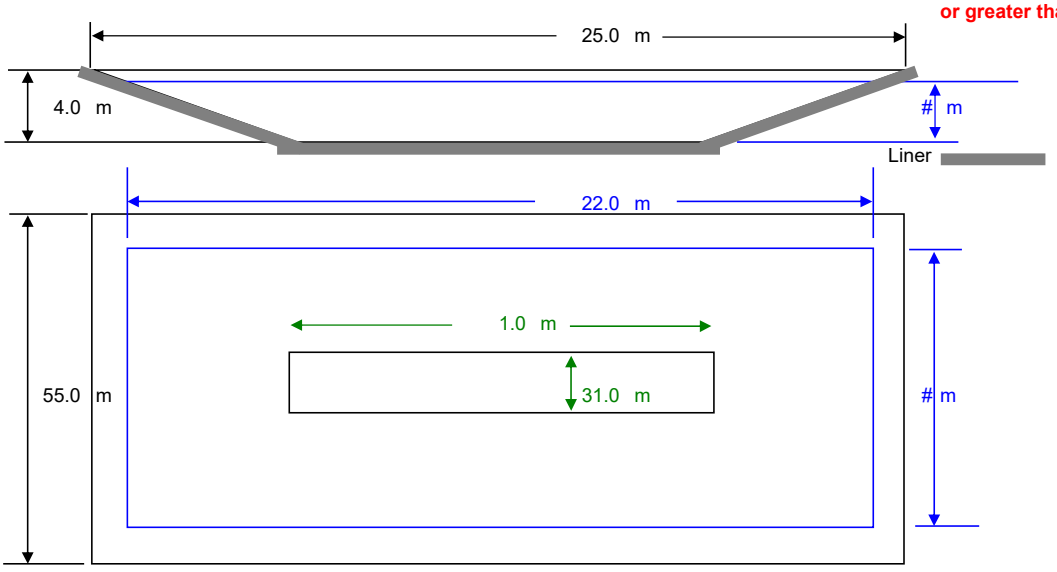
AOPA Design Rainfall **85 mm**

Minimum Catchbasin Storage Volume Required

1,754 m^3 ** **61929.036 ft^3**

385745.62 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

The proposed catch basin has sufficient volume if the pens are lined with roller compacted concrete (RCC).

JLECS

5 February 2025

J Lobbezoo Engineering & Consulting Services Ltd.
PO Box 96, Monarch, AB T0L1M0

JLECS File: P25008

Prairie View Feeders Ltd.
PO Box 185
Shaughnessy, Alberta T0K 2A0

Attention: Mr. Henry Van Hierden

Re: Geotechnical Review and Evaluation
NRCB Permitting of Proposed Catch Basin & Pen Expansion
NW-22-010-22-W4M, near Shaughnessy, Alberta

As requested, J Lobbezoo Engineering & Consulting Services Ltd. (JLECS) 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 the site soil conditions to support a permit application related to a proposed catch basin and pen expansion at the east side of the existing feedlot at the above captioned site (refer to Figure 1, attached).

In order to demonstrate the suitability of the naturally existing soils for consideration as a naturally occurring protective layer to the groundwater resource, six boreholes were advanced at the site on January 29, 20250. The boreholes were advanced at the approximate locations denoted as PV1-25 to PV5-25 on Figure 1, attached.

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 9.2 m below the existing grade. The boreholes were logged by Larry Delong of Chilako Drilling Services.

In general, the natural mineral soils encountered in the boreholes consisted of lacustrine clay and silty clay overlying stiff, medium plastic clay till to the termination depths of all the boreholes. While minor perched groundwater (seepage) was noted at 8.75 m depth in borehole PV1-25 and 1.6 m depth at PV5-25, no groundwater resource (as defined by the AOPA) was encountered within the 9.2 m investigation depth at this site.

Samples of soil collected from the screened zones of boreholes PV2-25 and PV5-25, as well as samples from similar depths at the other boreholes were all subjected to grain size analyses, which was carried out by Down to Earth Laboratories in Lethbridge, Alberta. The lab report is attached, for reference. The results indicate a soil texture breakdown of:

Table 1: Soil Texture Analyses

Borehole/Depth	% Sand	% Silt	% Clay
PV1-24 / 6.5 – 8.5 m	30	28	42
PV2-24 / 6.5 – 8.5 m	35	25	40
PV3-24 / 6.5 – 8.5 m	28	22	50
PV4-24 / 3.0 – 3.5 m	36	24	40
PV5-24 / 2.0 – 3.0 m	38	25	37
PV6-24 / 2.5 – 3.0 m	40	27	33
Average:	*35*	*25*	*40*

To measure the *in situ* permeability of the subsurface soils, 50 mm diameter PVC monitoring wells were constructed in boreholes PV2-25 (proposed catch basin) and PV5-25 (proposed pen expansion area). Test well PV2-25 was screened from 5.8 m to 8.9 m depth while PV5-25 was screened from 1.4 m to 3.0 m depth. Well saturation of the 50 mm diameter monitoring wells was carried out by filling the monitoring wells to the top for several consecutive days. After three days of testing, the following 24-hour water drop were determined: 0.30 m drop at PV2-25; and 0.15 m at PV5-25.

To calculate the permeability of the screened portion of the clay strata at the test well locations, 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 attached In Situ Permeability Test reports. The results of the permeability testing indicated an *in situ* hydraulic conductivity (k_s) of 1.0×10^{-8} cm/s at PV2-25 (proposed catch basin) and k_s of 2.6×10^{-8} cm/s at PV5-25 (proposed pen expansion area.

Using the measured permeability of the clay at this site, the 3.1 m of clay screened at test hole PV2-25 is estimated to represent the equivalent of over 100 m of naturally occurring materials having a hydraulic conductivity of 1×10^{-6} cm/s (the reference standard in AOPA). At PV5-25, the 1.6 m of clay screened is estimated to represent the equivalent of approximately 61 m of naturally occurring materials having a hydraulic conductivity of 1×10^{-6} cm/s. This represents natural material protection in excess of the minimum requirements outlined by the AOPA for catch basins (minimum 5 m, Section 9.5-b) and solid manure storage (minimum 2 m, Section 9.5-c).

JLECS

Conclusion

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

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

Yours truly,

J Lobbezoo Engineering & Consulting Services Ltd.

PROFESSIONAL ENGINEER ALBERTA JOHN P. LOBBEZOO 110450

5 Feb 2025

John Lobbezoo, P.Eng.
Principal Geotechnical Engineer

PERMIT TO PRACTICE
J LOBBEZOO ENGINEERING & CONSULTING SERVICES LTD.
RM SIGNATURE:
RM APEGA ID #: 110450
DATE: 5 Feb 2025
PERMIT NUMBER: P016456
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

Attachments
- Figure 1 Borehole Locations
- In Situ Permeability Test Calculations
- Down to Earth Soil Texture Results
- Soil Profile and Parent Material Description, Chilako Drilling Services

Site map also includes boreholes drilled in 2018 (those end in "-18"). Boreholes for LA25002 expansion end in "-25".

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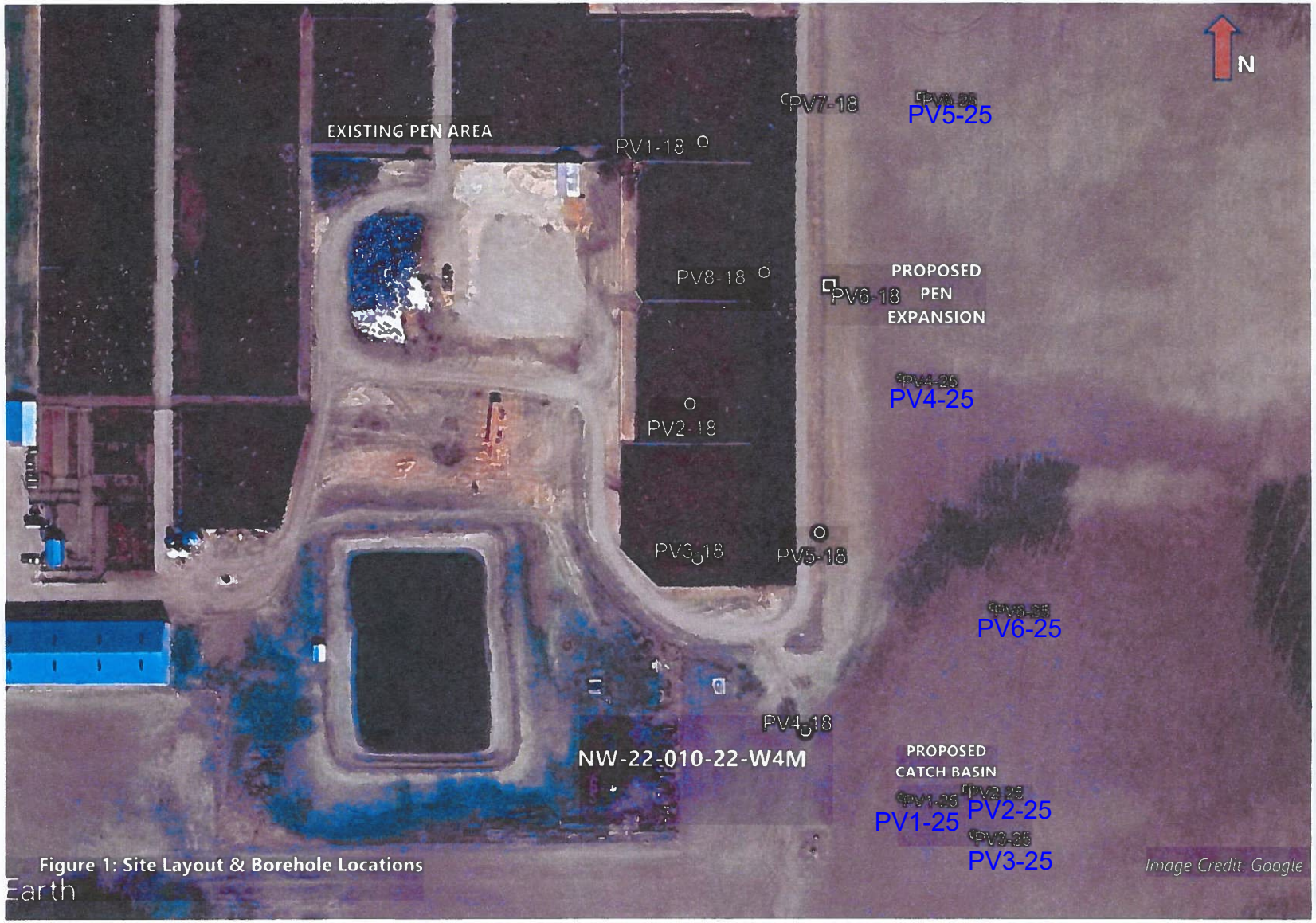

Figure 1: Site Layout & Borehole Locations

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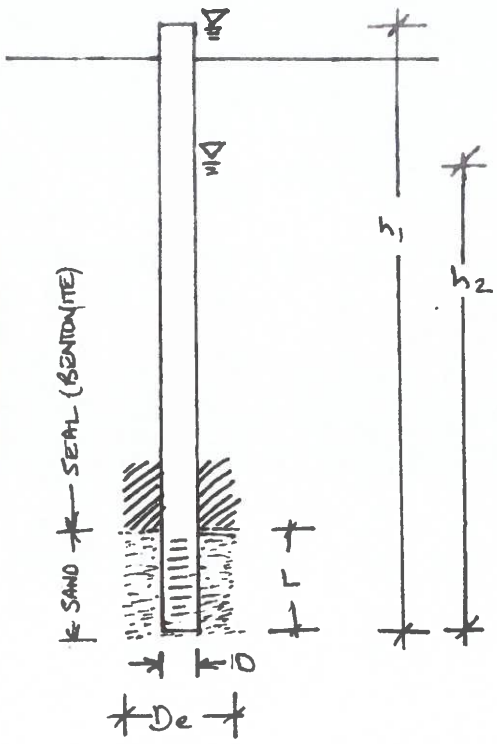
PV2-25

In Situ Permeability Test

Modified Falling Head Permeability Equation

$$K_s = \frac{r^2}{2\ell\Delta t}\left[\frac{\sinh^{-1}\frac{\ell}{r_e}}{2}\ln\left[\frac{2H_1-\ell}{2H_2-\ell}\right]-\ln\left[\frac{2H_1H_2-\ell H_2}{2H_1H_2-\ell H_1}\right]\right]$$

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



PV2-25 - Prairie View Feeders Ltd.

JLECS File: P25008

INPUT VARIABLES	Terms	Value	Definition
	D	0.0520	diameter of standpipe (m)
	De	0.1500	diameter of borehole (m)
	L	3.10	length of sand section (m)
	h1	9.05	initial height of water above base of hole (m)
	h2	8.75	final height of water above base of hole (m)
	t	24.0	time of test (h)

k_s =	1.0E-08	cm/sec

JLECS

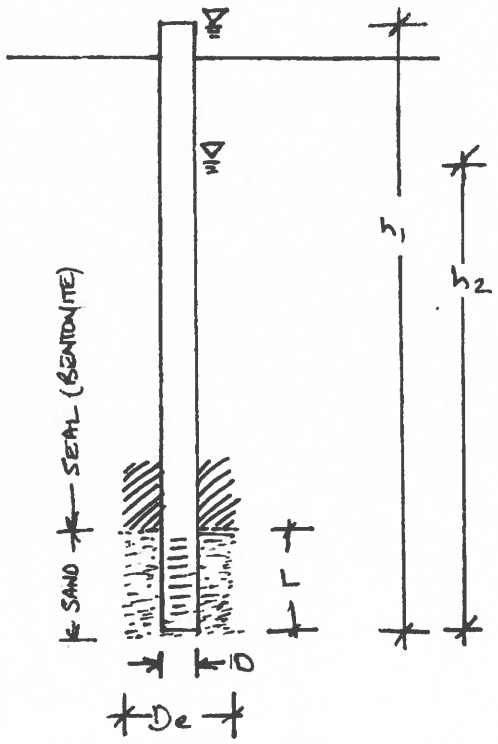
PV5-25

In Situ Permeability Test

Modified Falling Head Permeability Equation

$$K_s = \frac{r^2}{2\ell\Delta t}\left[\frac{\sinh^{-1}\frac{\ell}{r_e}}{2}\ln\left[\frac{2H_1-\ell}{2H_2-\ell}\right]-\ln\left[\frac{2H_1H_2-\ell H_2}{2H_1H_2-\ell H_1}\right]\right]$$

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



PV5-25 - Prairie View Feeders Ltd.

JLECS File: P25008

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	3.00	final height of water above base of hole (m)
t	24.0	time of test (h)

k_s = **2.6E-08 cm/sec**

Down To Earth Labs Inc.

The Science of Higher Yields

J. Lobbezoo Engineering + Consulting Services
Box 96
Monarch, Alberta T0L 1M0

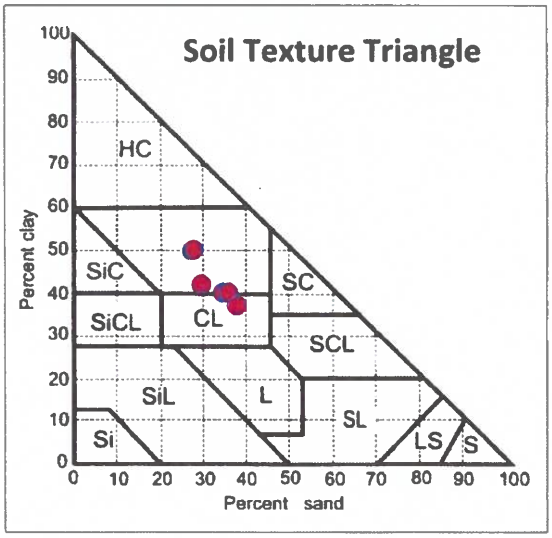
Report #: 202409
Report Date: 2025-02-04
Received: 2025-01-31
Completed: 2025-02-04
Test Done: ST

Project : Prairie View Feeders

PO:

3510 6th Ave North
Lethbridge, AB T1H 5C3
403-328-1133
www.downtoearthlabs.com
info@downtoearthlabs.com

		Sample ID:	250131P007	250131P008	250131P009	250131P010	250131P011
		Cust. Sample ID:	PV1-25	PV2-25	PV3-25	PV4-25	PV5-25
Analyte	Units		6.5-8.5	6.5-8.5	6.5-8.5	3.0-3.5	2.0-3.0
Sand	%		30.0	35.0	28.2	36.2	38.2
Silt	%		28.0	25.0	21.7	23.7	24.8
Clay	%		42.0	40.0	50.1	40.1	37.0
Soil Texture	-		Clay	Clay	Clay	Clay	Clay Loam



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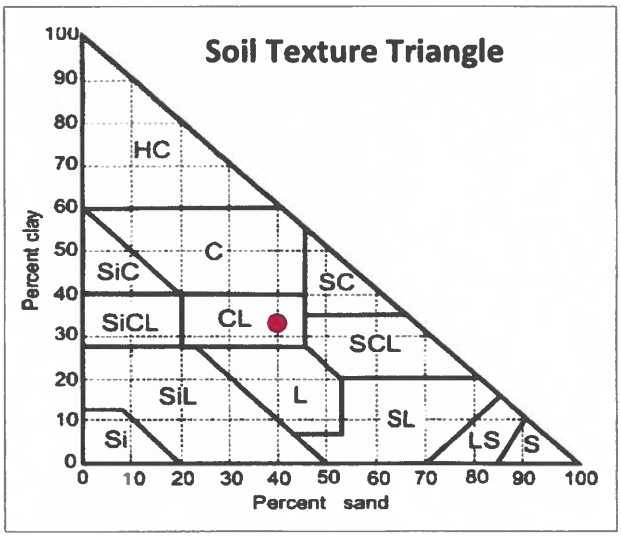
Lethbridge, AB T1H 5C3
403-328-1133
www.downtoearthlabs.com
info@downtoearthlabs.com

Sample ID:		250131P012
Cust. Sample ID:		PV6-25
Analyte	**Units**	2.5-3.0
Sand	%	40.2
Silt	%	26.8
Clay	%	33.0
Soil Texture	-	Clay Loam



Raygan Boyce - Chemist

CHILAKO DRILLING SERVICES LTD

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

SOIL PROFILE AND PARENT MATERIAL DESCRIPTION

Site Location: NW22-10-22W4, Prairieview Feeders Date: 29-Jan-25

Hole #	Location	Depth	Texture	Moisture	Geological	Sample	Remarks
PV1-25	0362844	0-0.15	CL	M	Topsoil		
	5522664	0.15-0.7	CL-SCL	M	Lac		Sand lensing
		0.7-3.1	SiC	M	Lac		Stiff, med plastic, olive brown
		3.1-9.2	C	M	Till	6.5-8.5	Stiff, med plastic, brown,
							sat sand lens @ 8.75m (free water)
	Limited options for drill locations due to two buried water lines						
PV2-25	0362864	0-0.15	CL	M	Topsoil		
	5522671	0.15-1.2	SiCL	M	Lac		V. Firm, med plastic, olive brown
		1.2-3.4	SiC	M	Lac		Stiff, med plastic, olive brown, varved
		3.4-8.9	C	M	Till	6.5-8.5	Stiff, med plastic, brown, some oxidation
							sand pocket @ 5.0m
							50mm H.C. Well installed to 8.9m BGS
							Screen: 8.9-5.9m
							Sand: 8.9-5.8m
							Bentonite: 5.8-0.0m
							Stickup: 0.15m
	Limited options for drill locations due to two buried water lines						
PV3-25	0362867	0-0.15	CL	M	Topsoil		
	5522654	0.15-1.1	CL	M	Lac		V. Firm, med plastic, yellow brown, some silt
		1.1-1.5	SiCL	M	Lac		Stiff, med plastic, olive brown
		1.5-2.5	SiC	M	Lac		Stiff, med plastic, olive brown
		2.5-9.2	C	M	Till	6.5-8.5	Stiff, med plastic, brown
	Limited options for drill locations due to two buried water lines						
PV4-25	0362846	0-0.15	CL	M	Lac		
	5522815	0.15-1.6	CL	VM	Lac		
		1.6-2.0	FSCL-CL	Sat	Lac		Soft, yellow brown
		2.0-3.6	FSCL-CL	M	Lac		V. Firm, low-med plastic, yellow brown
		3.6-4.0	CL-C	M	Till	3.0-3.5	Stiff, med plastic brown
PV5-25	0362856	0-0.15	CL	M	Lac		
	5522913	0.15-0.7	SiCL	M	Lac		
		0.7-3.0	CL-C	M	Till	2.0-3.0	Stiff, med plastic
							50mm H.C. Well installed to 3.0m BGS
							Screen: 3.0-1.5m
							Sand: 3.0-1.4m
							Bentonite: 1.4-0.0m
							Stickup: 0.6m
							Hole Diameter: 0.15m
PV6-25	0362856	0-0.15	CL	M	Lac		
	5522913	0.15-0.7	CL	M	Lac		
		0.7-2.5	CL	VM	Lac		Firm, med plastic, brown, trace sand
		2.5-3.0	CL-C	M	Till	2.5-3.0	

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