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	LA24001	NW 6-11-7 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.

April 18 2024
Date of signing

[redacted]
Signature

N/A
Corporate name (if applicable)

Kody Traxel
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)
Feed Pens (Area of 14,400 M2)	155M X 90M (Approx odd shape)
Catch Basin 682.5 M3	7M X 65M X 1.5M

New pen dimensions
2 x 2175 m² (43 x 50)
2 x 2310 m² (46 x 50)
1 x 2198 m² } irreg.
1 x 2174 m² } shape

email May 3
Dimensions changed to 15.5 x 82 x 1.5m deep

Existing feeding operation facilities and their dimensi

Existing	Dimensions (m) (length, width, and depth)	NRCB USE ONLY
None		

NRCB USE ONLY

Last updated September 11, 2023

Part 2 — Technical Requirements

NRCB Natural Resources Conservation Board

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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 October 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**
Beef Feeders	0	1000	1000

Kody Traxel Proposed CFO Figure 1

(NE CORNER) NW 6-11-7W4

2.8KM West of Seven Persons, AB

Cypress County. Alberta

1000 HD Beef Feeders

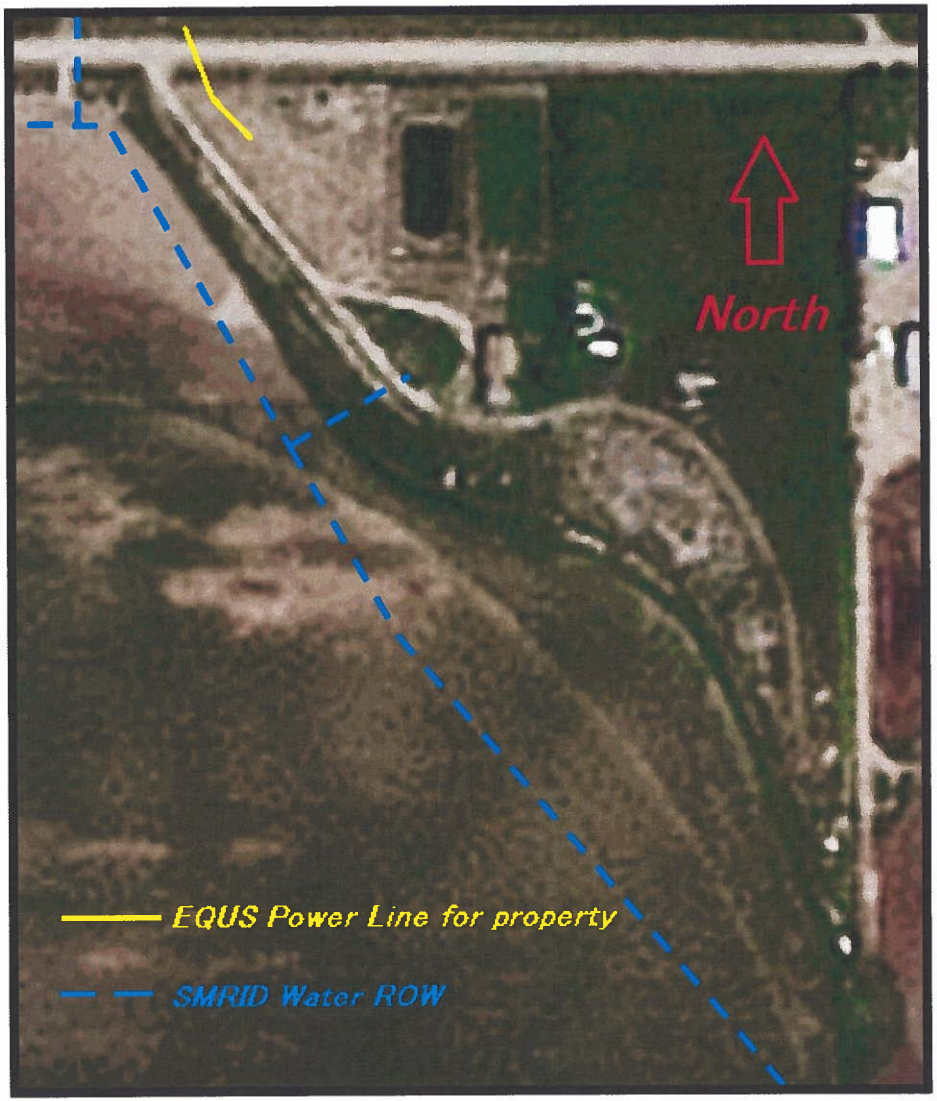
Kody Traxel Proposed CFO Figure 2

Utilities Map of Property.

SMRID into property on west side

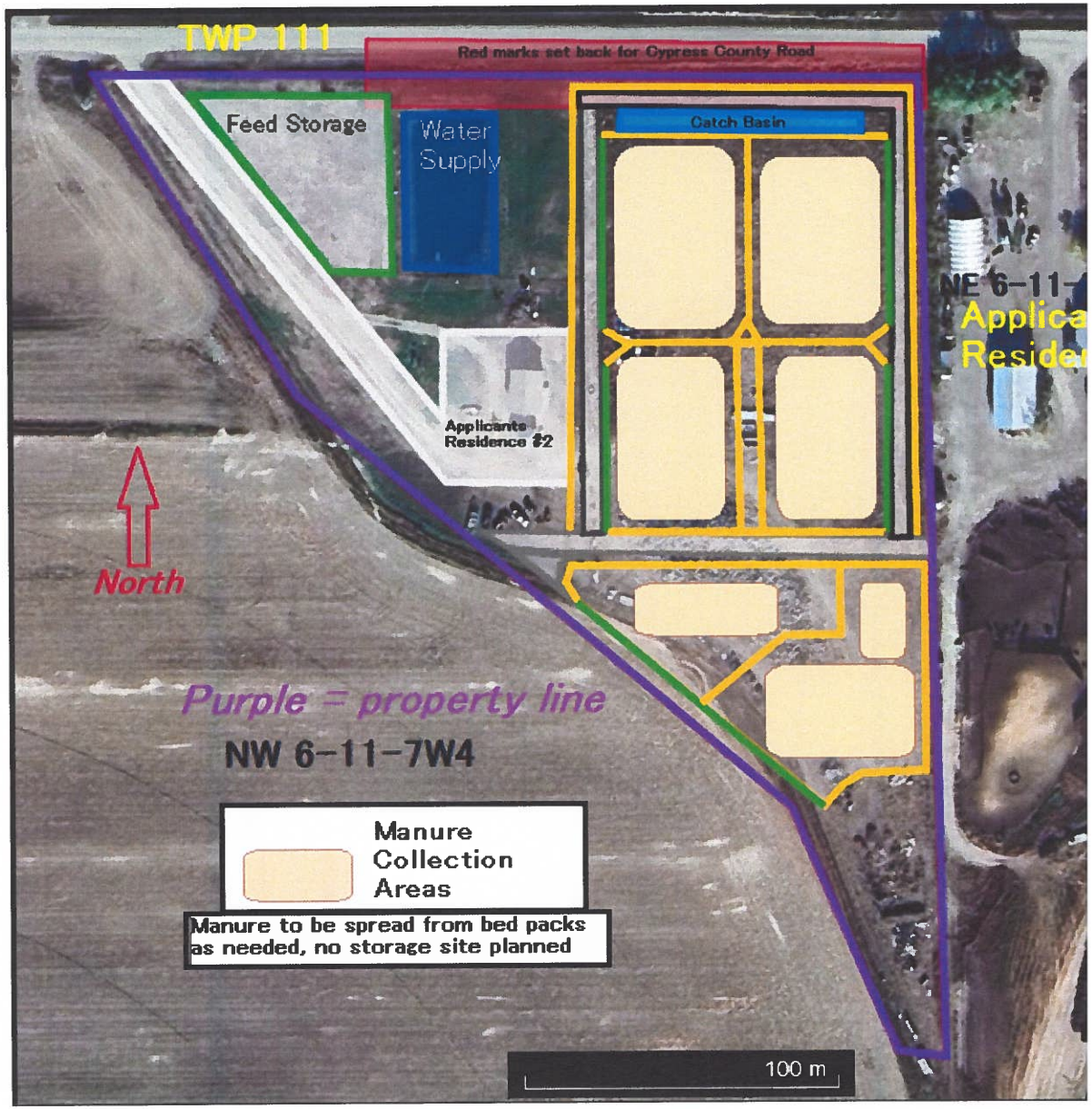
Equs Power from the North

Both utilities away from project.



Kody Traxel Proposed CFO Figure 2

Manure Collection Areas Map



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)

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 _____

Land holds 5 Acre Feet of water through SMRID Irrigation District that will be used to fill reservoir.

Signed this 18 day of April, 2024. [redacted]
Signature of Applicant or Agent

Last updated September 11, 2023

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

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)

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: N/A **Proposed 1:** Feed Pens

Proposed 2: Catch Basin **Proposed 3:**

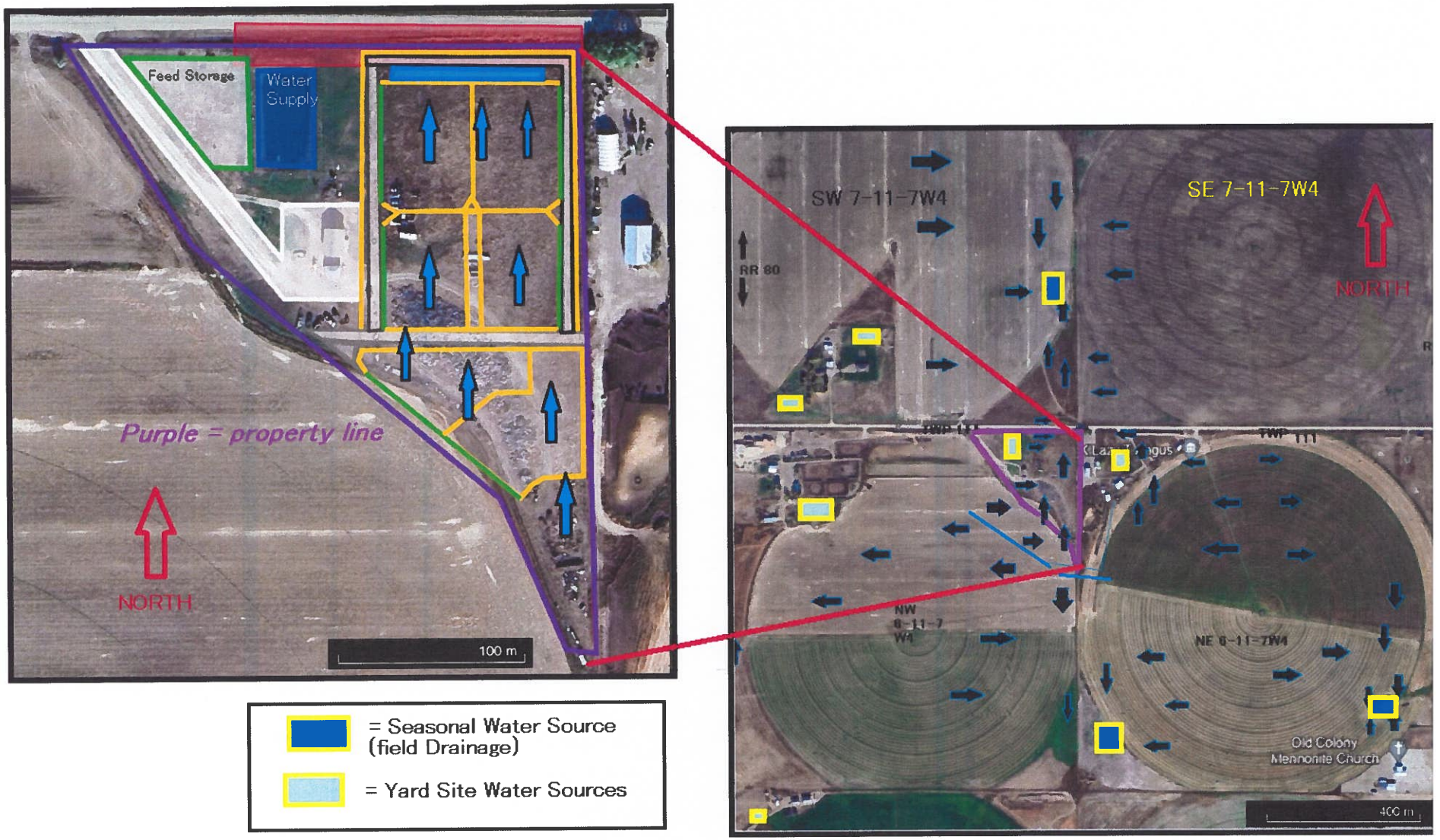
Facility and environmental risk information		Facilities				NRCB USE ONLY	
		Existing	Proposed 1	Proposed 2	Proposed 3	Meets requirements	Comments
Flood plain information	What is the elevation of the floor of the lowest manure storage or collection facility above the 1:25 year flood plain or the highest known flood level?	☐ >1 m ☐ ≤ 1 m	■ >1 m ☐ ≤ 1 m	■ >1 m ☐ ≤ 1 m	☐ > 1 m ☐ ≤ 1 m	☐ YES ☐ NO ☐ YES with exemption	
Surface water information	How many springs are within 100 m of the manure storage facility or manure collection area?	0	0	0	0	☐ YES ☐ NO ☐ YES with exemption	
	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	
	What is the shortest distance from the manure collection or storage facility to a surface water body? (e.g., lake, creek, slough, seasonal)	0	293M	293M		☐ YES ☐ NO ☐ YES with exemption	
Groundwater information	What is the depth to the water table?	0	9.2M +	9.2M+		☐ YES ☐ NO ☐ YES with exemption	
	What is the depth to the groundwater resource/aquifer you draw water from?	0	9.2M +	9.2M+		☐ YES ☐ NO ☐ YES with exemption	

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

Attached well report from 1978 on NW 6-11-7W4, and more info on Soils report attached.

Kody Traxel Proposed CFO Figure 1

Run off patterns of area and site and surrounding water sources.



Water Well Drilling Report

View in Metric | Export to Excel

The driller supplies the data contained in this report. The Province disclaims responsibility for its accuracy. The information on this report will be retained in a public database.

GIC Well ID 203542
GoA Well Tag No.
Drilling Company Well ID
Date Report Received

GOWN ID

Well Identification and Location

Measurement in Imperial

Owner Name	Address	Town	Province	Country	Postal Code
SEITZ, LINDA M.	SEVEN PERSONS				

Location	1/4 or LSD	SEC	TWP	RGE	W of MER	Lot	Block	Plan	Additional Description
	NW	6	11	7	4				

Measured from Boundary of
ft from
ft from

GPS Coordinates in Decimal Degrees (NAD 83)
Latitude 49.884008 Longitude -110.954282
How Location Obtained
Not Verified

Elevation 2550.00 ft
How Elevation Obtained
Estimated

Additional Information

Measurement in Imperial

Distance From Top of Casing to Ground Level in
Is Artesian Flow
Rate igpm
Is Flow Control Installed
Describe

Recommended Pump Rate 0.00 igpm
Recommended Pump Intake Depth (From TOC) 0.00 ft
Pump Installed Depth ft
Type Make H.P.
Model (Output Rating)

Did you Encounter Saline Water (>4000 ppm TDS) Depth ft
Gas Depth ft
Remedial Action Taken
Well Disinfected Upon Completion
Geophysical Log Taken
Submitted to ESRD
Sample Collected for Potability
Submitted to ESRD

Additional Comments on Well
DRILER REPORTS HARD WATER

Yield Test

Taken From Ground Level
Depth to water level

Measurement in Imperial

Test Date	Start Time	Static Water Level
1974/12/28	12:00 AM	28.00 ft

Pumping (ft)	Elapsed Time Minutes:Sec	Recovery (ft)

Method of Water Removal

Type Bailer
Removal Rate 20.00 igpm
Depth Withdrawn From 0.00 ft

If water removal period was < 2 hours, explain why

Water Diverted for Drilling

Water Source	Amount Taken	Diversion Date & Time
	ig	

Contractor Certification

Name of Journeyman responsible for drilling/construction of well
UNKNOWN NA DRILLER

Company Name
SCHLAGL GAS & OIL

Certification No
1

Copy of Well report provided to owner

Date approval holder signed

Water Well Drilling Report

View in Metric | Export to Excel

The driller supplies the data contained in this report. The Province disclaims responsibility for its accuracy. The information on this report will be retained in a public database.

GIC Well ID 203542
GoA Well Tag No.
Drilling Company Well ID
Date Report Received

GOWN ID

Well Identification and Location

Measurement in Imperial

Owner Name	Address	Town	Province	Country	Postal Code
SEITZ, LINDA M.	SEVEN PERSONS				

Location	1/4 or LSD	SEC	TWP	RGE	W of MER	Lot	Block	Plan	Additional Description
	NW	6	11	7	4				

Measured from Boundary of
ft from
ft from

GPS Coordinates in Decimal Degrees (NAD 83)
Latitude 49.884008 Longitude -110.954282
How Location Obtained
Not Verified

Elevation 2550.00 ft
How Elevation Obtained
Estimated

Drilling Information

Method of Drilling
Rotary

Proposed Well Use
Domestic

Type of Work
New Well

Formation Log

Measurement in Imperial

Depth from ground level (ft)	Water Bearing	Lithology Description
10.00		Topsoil
32.00		Brown Sandy Clay
54.00		Gray Hard Clay
68.00		Sandy Clay
80.00		Gravel

Yield Test Summary

Measurement in Imperial

Recommended Pump Rate 0.00 igpm

Test Date	Water Removal Rate (igpm)	Static Water Level (ft)
1974/12/28	20.00	28.00

Well Completion

Measurement in Imperial

Total Depth Drilled	Finished Well Depth	Start Date	End Date
80.00 ft		1974/12/27	1974/12/28

Borehole

Diameter (in)	From (ft)	To (ft)
0.00	0.00	80.00

Surface Casing (if applicable)
Steel
Size OD : 4.50 in
Wall Thickness : 0.225 in
Bottom at : 75.00 ft

Well Casing/Liner
Size OD : 0.00 in
Wall Thickness : 0.000 in
Top at : 0.00 ft
Bottom at : 0.00 ft

Perforations

From (ft)	To (ft)	Diameter or Slot Width(in)	Slot Length (in)	Hole or Slot Interval(in)

Perforated by

Annular Seal Cement/Grout
Placed from 0.00 ft to 0.00 ft
Amount

Other Seals

Type	At (ft)

Screen Type Stainless Steel
Size OD : 4.50 in

From (ft)	To (ft)	Slot Size (in)
75.00	80.00	0.020

Attachment Attached To Casing
Top Fittings
Bottom Fittings

Pack
Type Natural
Grain Size
Amount

Contractor Certification

Name of Journeyman responsible for drilling/construction of well
UNKNOWN NA DRILLER

Company Name
SCHLAGL GAS & OIL

Certification No
1

Copy of Well report provided to owner
Date approval holder signed

Printed on 4/20/2024 11:45:40 AM

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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**
Darcy English (Map #1)	SE 12-11-8W4	768 m					
Keith, Amanda Traxel (Map #2)	NW 6-11-7W4	548 m					
Bob Richardson (Map #3)	E 1/2 SW 7-11-7W4	482 m					
TJ Lovell (Map #3)	E 1/2 SW 7-11-7W4	392 m					
Applicant Properties (#4) (#5)	NE 6-11-7W4	14M/41M					

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)**
Kody Traxel, Owner	NE 6-11-7W4	52	Irrigated		
Kody Traxel, Owner	NE 1-11-8W4	28	Irrigated		
Kody Traxel, Owner	SW 7-11-7W4	23	Irrigated		
			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)

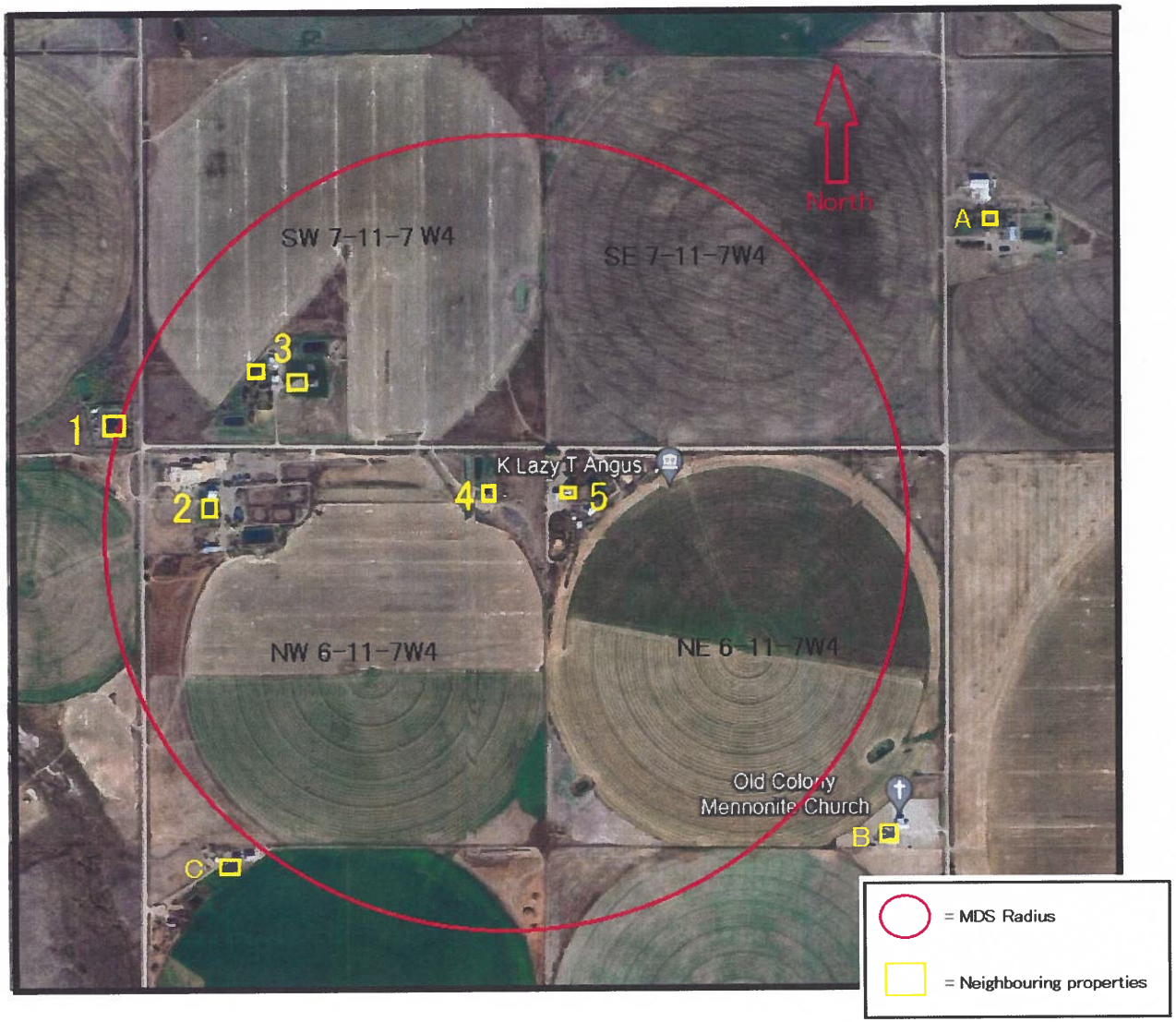
*** Brown, dark brown, black, grey wooded, or irrigated

Additional information (attach any additional information as required)

Manure application map attached.

Kody Traxel Proposed CFO Figure 1

MDS Seperation.



Residence distance from edge of proposed CFO inside

1. 768 M Country Residential
2. 567 M Agriculture Zoned
3. 482 M / 392 M Agriculture Zoned
4. 14 M Agriculture Zoned
5. 41 M Agriculture Zoned

Closest Hamlet Seven Persons AB, 2.8 KM from pro

Residence distance from edge of proposed CFO outsi

A. 1150 M Agriculture Zoned
B. 990 M Commercial Purposes Zoned
C. 895 M Agriculture Zoned

Notification radius

0.5 miles

MDS Category for residences on land zoned for:

1. Agricultural Purposes

MDS: 306 m (1003 ft)
MDS with expansion factor*: 235 m (772 ft)

2. Non-Agricultural Purposes

MDS: 408 m (1337 ft)
MDS with expansion factor*: 314 m (1030 ft)

3. High Use Recreational or Commercial Purposes

MDS: 509 m (1671 ft)
MDS with expansion factor*: 392 m (1287 ft)

4. Large Scale Country Residential, Rural, Hamlet, Village, Town or City

MDS: 815 m (2674 ft)
MDS with expansion factor*: 628 m (2059 ft)

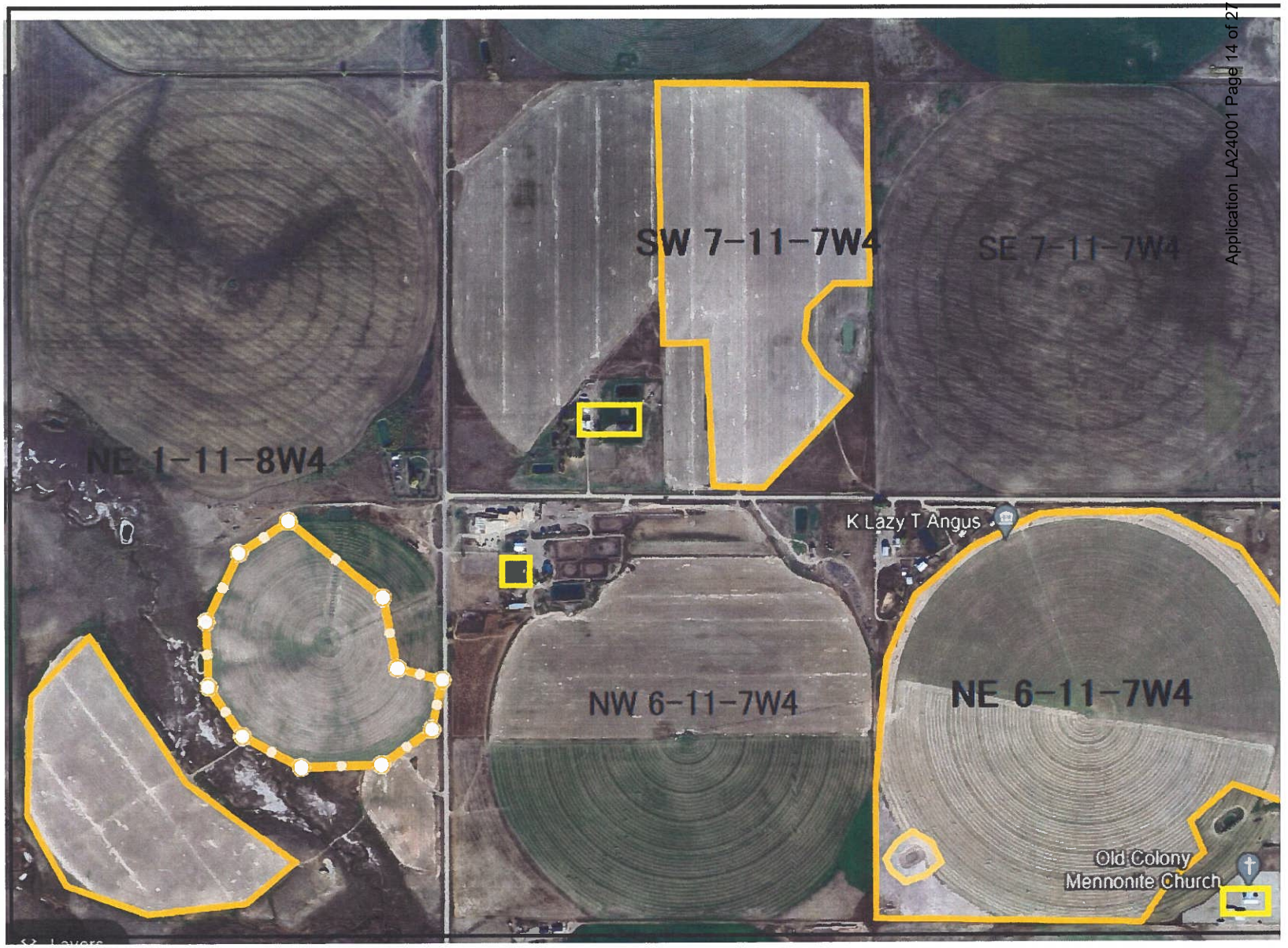
* The expansion factor can only be used if 3 or more years hav
since the completion of the most recent construction arising o
AOPA permit

Land Base Required - Soil Type | Area

Irrigated (ha) | 40.0 hectares (98.8

ly Traxel Proposed CFO Figure 2

nure Application Lands Map



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	1,000	245.0
	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		-
							-
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		245.0

For New Operations

Dispersion Factor: 1

Category	Odour Objective	Distance Feet	Distance Metres
1	41.04	1,003	306
2	54.72	1,337	408
3	68.4	1,671	509
4	109.44	2,674	815

For Expanding Operations

Dispersion Factor: 1
Expansion Factor: 0.77

Category	Odour Objective	Distance Feet	Distance Metres
1	41.04	772	235
2	54.72	1,030	314
3	68.40	1,287	392
4	109.44	2,059	628

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)	1000	80	67	50	40
	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	-	-	-	-
	Other	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	-	-	-	-
	Other	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/Breeders	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	-	-	-	-
	Other	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
	Other	0				
Wild Boar	Feeders	0	-	0	0	0
	Sow (farrowing)	0	-	-	-	-
	Other	0				
	Total Hectares		80.0	67.0	50.0	40.0
	Total Acres		197.7	165.6	123.6	98.8

Name	0
Address	0
Legal Land	
Location	0

Animal Units to Determine Affected Party Radius

Category of Livestock	Type of Livestock	Number of Animals	Animal Unit Factor	Animal Units
Beef	Cows/Finishers (900+ lbs)	-	1.1	0.0
	Feeders (450 - 900 lbs)	1,000	2	500.0
	Feeder Calves (<550 lbs)	-	3.6	0.0
	Other	-		0.0
Dairy (*count lactating cows only)	*Free Stall – Lactating Cows with all associated dries, heifers, and calves	-	0.5	0.0
	*Free Stall – Lactating cows with Dry Cows only	-	0.6	0.0
	Free Stall – Lactating Cows only	-	0.7	0.0
	Tie Stall – Lactating cows only	-	0.5	0.0
	Loose Housing – Lactating cows only	-	0.5	0.0
	Dry Cow (Solid manure)	-	1	0.0
	Dry Cow (Liquid manure)	-	1	0.0
	Replacements – Bred Heifers (Breeding to Calving)	-	1.15	0.0
	Replacements - Growing Heifers (350 lbs to breeding)	-	1.9	0.0
	Calves (< 350 lbs)	-	5	0.0
	Other	-		0.0
Swine Liquid (*count sows only)	Farrow to finish *	-	0.56	0.0
	Farrow to wean *	-	1.5	0.0
	Farrow only *	-	1.9	0.0
	Feeders/Boars	-	5	0.0
	Growers/Roasters	-	8.5	0.0
	Weaners	-	18.2	0.0
	Other	-		0.0
Swine Solid (*Count sows only)	Farrow to finish *	-	0.56	0.0
	Farrow to wean *	-	1.5	0.0
	Farrow only *	-	1.9	0.0
	Feeders/Boars	-	5	0.0
	Growers/Roasters	-	8.5	0.0
	Weaners	-	18.2	0.0
	Other	-		0.0
Poultry	Chicken - Breeders - Solid	-	100	0.0
	Chicken - Layers - Liquid (includes associated pullets)	-	125	0.0
	Chicken - Layers - (Belt Cage)	-	150	0.0
	Chicken - Layers - (Deep Pit)	-	150	0.0
	Chicken - Pullets/Broilers	-	500	0.0
	Turkey - Toms/Breeders	-	50	0.0
	Turkey - Hens (light)	-	75	0.0
	Turkey - Broilers	-	100	0.0
	Ducks	-	100	0.0
	Geese	-	50	0.0
	Other	-		0.0
Horses	PMU	-	1	0.0
	Feeders > 750 lbs	-	1	0.0
	Foals < 750 lbs	-	3.3	0.0
	Mules	-	1	0.0
	Donkeys	-	1.5	0.0
	Other	-		0.0
Sheep	Ewes/Rams	-	5	0.0
	Ewes with lambs	-	4	0.0
	Lambs	-	21	0.0
	Feeders	-	10	0.0
	Other	-		0.0
Goats	Meat/Milk (per Ewe)	-	6	0.0
	Nannies/Billies	-	10	0.0
	Feeders	-	13	0.0
	Other	-		0.0
Bison	Bison	-	1	0.0
	Other	-		0.0
Cervid	Elk	-	1.7	0.0
	Deer	-	5	0.0
	Other	-		0.0
Wild Boar	Feeders	-	6	0.0
	Sow (farrowing)	-	1.25	0.0
	Other	-		0.0
	Total Animal Units			500.0
	Affected Party Radius			0.5 miles

Affected Party radius is measured from the boundary of the parcel of land where the cfo is located to land that is within the affected party radius.

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.** _____

New dimensions:
2 x 2175 m² (43 x 50)
2 x 2310 m² (46 x 50)
1 x 2198 m² (irreg. shape)
1 x 2174 m²

Manure storage capacity

	Length (m)	Width (m)	m)	NRCB USE ONLY Estimated storage capacity (m³)
1.				
2.				
			TOTAL CAPACITY	

☐ 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

Naturally occurring protective layer details

Thickness of naturally occurring protective layer	_____(m)	Provide details (as required)	
Soil texture	26 % sand	34 % silt	40 % clay
Hydraulic conductivity - naturally occurring protective layer	Depth and type of soil tested: 7.5 m	Hydraulic conductivity (cm/s): 5.5 x 10⁻⁸	Describe test standard used

Additional information *(attach copies of soil test reports)*

NRCB USE ONLY

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

Kody Traxel Proposed CFO Figure 2

(NE CORNER) NW 6-11-7W4 Plot Plan

Catch Basin

Catch Basin Storage Volume Calculator

Construction Dimensions of Catch Basin

* Only cells in blue can be changed.

Overall Dimensions of Catch Basin			Catch Basin Dimensions
Total Length*	155	m	51 ft
Total Width*	82.0	m	269 ft
Total Depth*	1.5	m	5 ft
Design Capacity Depth	1.00	m	3 ft
End Slope*		run:rise	3 run:rise
Side Slope*		run:rise	3 run:rise
Length of Bottom	6.5	m	21 ft
Width of Bottom	73.0	m	240 ft
Capacity @ top of Bank	1,289	m^3	Capacity (Brook) 45,536 ft^3 283,351 Imp. Gal

Design Capacity of Catch Basin (freeboard level)			Design Capacity (freeboard level)
Length (design capacity depth)	12.5	m	41 ft
Width (design capacity depth)	79.0	m	259 ft
Total Depth	1.5	m	5 ft
Design Capacity Depth	1.00	m	3 ft
End Slope	3	run:rise	3 run:rise
Side Slope	3	run:rise	3 run:rise
Design Capacity (freeboard level)	726	m^3	25,603 ft^3 159,478 Imp. Gal.
level)	888	m^3	31,629 ft^3

CFO Name: Traxel
Land Location:

Paved Runoff Catchment Area(s)

Area	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

Paved Runoff Catchment Area(s)

Length (ft)	Width (ft)	Area (ft^2)
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
	Total Area (ft^2)	0

Paved Catchment Area Runoff

0 m^3 0 ft^3
0 Imp. Gal.

Unpaved Runoff Catchment Area(s)

Area	Length (m)	Width (m)	Area (m^2)
6	155	90	13,950.0
7			0.0
8			0.0
9			0.0
10			0.0
		Total Area (m^2)	13,950

Unpaved Runoff Catchment Area(s)

Length (ft)	Width (ft)	Area (ft^2)
509	295	150,157
0	0	0
0	0	0
0	0	0
0	0	0
	Total Area (ft^2)	150,157

Unpaved Catchment Area Runoff

711 m^3 25,125 ft^3
156,497 Imp. Gal.

Rainfall (Select Town)

Medicine Hat 85

AOPA Design Rainfall 85 mm

Minimum Catchbasin Storage Volume Required

711 m^3 ** 25124.62 ft^3
156497.06 Imp. Gal.

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. _____

2. _____

_____

Catch Basin (new dimensions) 15.5 × 82 m × 1.5 deep

Determination of runoff area

Provide a plan and show how you calculated the [illegible] 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.								
2.								
3.								
							TOTAL CAPACITY	

Naturally occurring protective layer details

Thickness of naturally occurring protective layer	_____(m)	Provide details (as required)	
Soil texture	46 % sand	28 % silt	26 % clay
Hydraulic conductivity - naturally occurring protective layer	Depth and type of soil tested: 7.5 m	Hydraulic conductivity (cm/s): 2.7×10^{-8}	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

----JLECS----

J Lobbezoo Engineering & Consulting Services Ltd.
Box 96, Monarch, AB T0L 1M0

18 April 2024

JLECS File: P24006

Kody Traxel
7515 TWP 111
Cypress County, Alberta T0K 1Z0

Attention: Kody Traxel

Re: Geotechnical Review and Evaluation
NRCB Permitting of Proposed Feedlot Pens and Catch Basin
NW-06-011-07-W4M, near Seven Persons, 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 site soil conditions to support a permit application related to proposed feedlot pens and a catch basin to be located in the northeast corner area of NW-06-011-07-W4M (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, five boreholes were advanced at the site on March 5, 2024. The boreholes were advanced at the approximate locations denoted as KT1-24 to KT5-24 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 ranging between 3.0 m and 9.2 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 consisted of a thin layer of topsoil underlain by stiff medium plastic clay till to the termination depth of the boreholes. No evidence of free groundwater or a groundwater resource (as defined by the AOPA) was identified within the 9.2 m investigation depth at the proposed lagoon site.

Samples of soil collected from the screened zone of boreholes KT1-24 to KT5-24 were subjected to textural analyses, which was carried out by Down to Earth Laboratories in Lethbridge, Alberta. The results indicate a textural breakdown of:

Table 1: Soil Textural Analyses

Borehole/Depth	% Sand	% Silt	% Clay
KT1-24 / 1.5-3.0m	43	28	30
KT2-24 / 1.5-3.0m	34	36	30
KT3-24 / 2.3-3.0m	26	34	40
KT4-24 / 6.5-7.5m	46	28	26
KT4-24 / 6.5-7.5m	44	29	27

----JLECS----

To measure the *in situ* permeability of the subsurface soils, a 50 mm diameter PVC monitoring well was constructed in boreholes KT3-24 (pen area) and KT4 (catch basin area). Test Well KT3-24 was screened from 2.2 m to 3.8 m depth, while Test Well KT4-24 was screened from 4.4 m to 7.5 m depth. Well saturation of the 50 mm diameter monitoring wells was carried out by filling the monitoring well to the top for several consecutive days. After several days of testing, a 24-hour water drop of 0.43 m was determined at KT3-24, and a 24-hour water drop of 0.66 m was determined at KT4-24.

To calculate the permeability of the screened portion of the clay till 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 report. The results of the permeability testing indicate an *in situ* hydraulic conductivity, k_s, of 5.5×10^{-8} cm/s at KT3-24, and an *in situ* hydraulic conductivity, k_s, of 2.7×10^{-8} cm/s at KT4-24.

Using the measured permeability of the clay stratum, the 1.6 m of clay screened at KT3-24 is estimated to represent the equivalent of approximately 29 m of naturally occurring materials having a hydraulic conductivity of 1×10^{-6} cm/s (the reference standard in AOPA), while the 3.1 m of clay screened at KT3-24 is estimated to represent the equivalent of over 100 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 solid manure storage (minimum 2 m, Section 9.5-c), and catch basins (minimum 5 m, Section 9.5-b).

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 JLECS's opinion that the naturally occurring materials at the site satisfy the AOPA requirements for permitting the proposed solid manure storage lagoon and catch basin 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
ID 110450
18 April 2024

John Lobbezoo, P.Eng.
Principal Geotechnical Engineer

PERMIT TO PRACTICE
J LOBBEZOO ENGINEERING & CONSULTING SERVICES LTD.
RM SIGNATURE:
RM APEGA ID #: 110450
DATE: 18 April 2024
PERMIT NUMBER: P016456
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

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

Figure 1
Borehole Locations
Proposed Pens & Catch Basin
Kody Traxel
JLECS File: P24006
April, 2024

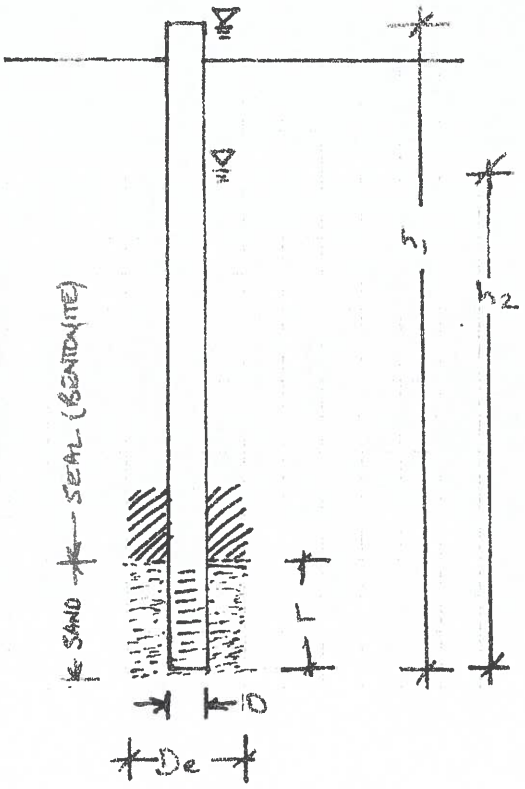
KT3-24

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)



KT3-24 - Kody Traxel

JLECS File: P24006

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	4.20	initial height of water above base of hole (m)
h2	3.77	final height of water above base of hole (m)
t	24.0	time of test (h)

k_s = 5.5E-08 cm/sec

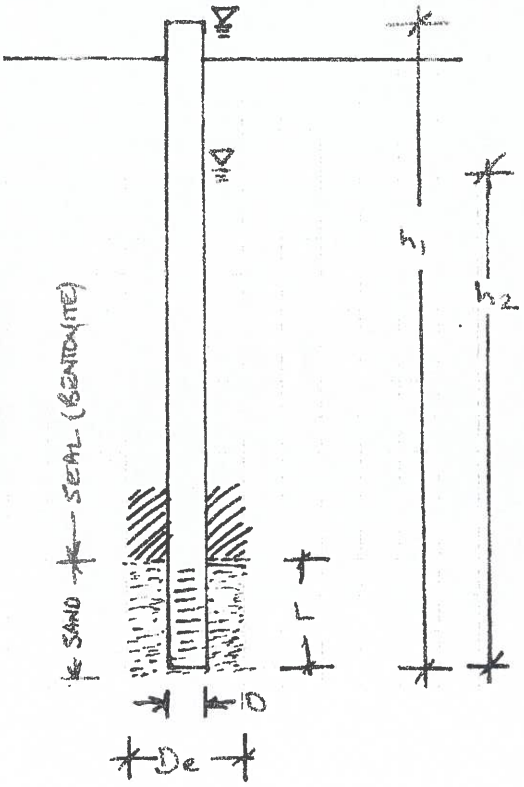
KT4-24

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)



KT4-24 - Kody Traxel

JLECS File: P24006

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	8.10	initial height of water above base of hole (m)
	h2	7.44	final height of water above base of hole (m)
	t	24.0	time of test (h)

k_s =	2.7E-08 cm/sec

CHILAKO DRILLING SERVICES LTD

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

SOIL PROFILE AND PARENT MATERIAL DESCRIPTION

Site Location: NW6-11-7W4, Kody Traxel Date: 05-Mar-24

Hole #	Location	Depth	Texture	Moisture	Geological	Sample	Remarks
KT1-24	0503644	0-0.15	CL	F	Topsoil		
	5525978	0.15-0.8	CL	M	Till		Stiff, med plastic, brown, sand streaks
		0.8-3.0	CL	M	Till	1.5-3.0	
KT2-24	0503629	0-0.15	CL	F	Topsoil		
	5526059	0.15-3.0	CL	M	Till	1.5-3.0	Stiff, med plastic, brown, sand streaks
KT3-24	0503654	0-0.15	CL	F	Topsoil		
	5526019	0.15-2.1	CL	M	Till		Stiff, med plastic, brown, sand streaks
		2.1-3.8	CL	M	Till	2.3-3.0	Stiff, med plastic, brown
							50mm H.C. Well installed to 3.8m BGS
							Screen: 3.8-2.3m
							Sand: 3.8-2.2m
							Bentonite: 2.2-0.0m
							Stickup: 0.4m
							Hole Diameter: 0.15m
KT4-24	0503615	0-0.15	CL	F	Topsoil		
	5526142	0.15-3.8	CL	M	Till		Stiff, med plastic, brown
		3.8-7.5	CL-C	M	Till	6.5-7.5	Stiff, med plastic, brown, iron staining
							50mm H.C. Well installed to 7.5m BGS
							Screen: 7.5-4.5m
							Sand: 7.5-4.4m
							Bentonote: 4.4-0.0m
							Stickup: 0.6m
							Hole Diameter: 0.15m
KT5-24	0503658	0-0.15	CL	F	Topsoil		
	5526121	0.15-2.4	CL	M	Till		Stiff, med plastic
		2.4-2.5	CL	M	Till		Sand lensing
		2.5-9.2	CL-C	M	Till	6.5-7.5	Stiff, med plastic, brown, iron staining

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