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	LA21033	NE 22 - 9 - 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.

August 13, 2021
Date of signing

Scott Van't Land
Signature

Double H Feeders Ltd.
Corporate name (if applicable)

Scott Van't Land
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)
2 Broiler chicken barns	87m x 23m each

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

Existing facilities	Dimensions (m) (length, width, and depth)	NRCB USE ONLY
Barn 1	86.9m x 11.9m x 2.4m	confirmed *
Barn 2	86.9m x 13.4m x 4.3m	confirmed *
Barn 3	86.9m x 15.2m x 3.0m	confirmed *

NRCB USE ONLY

These dimensions are outside dimensions

* AO comment:
The buildings are at ground level. The third number given is the height of the buildings

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)

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

These barns are meant to replace existing 2 storey barns located on NW 22-9-22 W4. Once the new facilities are operational, the old barns may be repurposed for storage or taken down. There is no intention to continue to raise livestock in the old facilities once the new facilities are operational

AO comment: Double H feeders owns three barns on the NE 22-9-22 and two barns on the NW 22-9-22.

Construction completion date for proposed facilities Jan 1, 2026

Additional information

We are pursuing this permit to verify if we are able to build on NE 22-9-22 W4. Once a permit has been obtained, we will pursue quotes on building and equipping the new facility. Since lumber prices have raised so high, we are not sure what the economics of building the new facility will be now, and in a few years. We want to leave ourselves breathing room.

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**
AO comment: the applicant stated to have approximately 55,000 broiler chicken at this CFO (NE22-9-22)			
The total number of broiler chicken at this site (including existing and proposed) is proposed to be 120,000			


NE 22-9-22
North
Pond
Current Barn 1
Current Barn 2
Current Barn 3
Proposed Barn 4
Proposed Barn 5

DECLARATION AND ACKNOWLEDGMENT OF APPLICANT CONCERNING *WATER ACT* LICENCE

issued by Alberta Environment and Parks (AEP) 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 AEP 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** AEP'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 AEP 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 AEP'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.

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 AEP under the *Water Act* for the development or activity proposed in this AOPA application.

Signed this ____ day of _____, 20____. _____

Signature of Applicant or Agent

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 AEP 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** AEP'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 AEP 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 AEP'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.

Signed this 13th day of August, 20 21. Scott Van't Land

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)

NRCB Natural Resources Conservation Board

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: Barns 1, 2 & 3 **Proposed 1:** Barns 4 & 5

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?	☑ >1 m ☐ ≤ 1 m	☑ >1 m ☐ ≤ 1 m	☐ >1 m ☐ ≤ 1 m	☐ > 1 m ☐ ≤ 1 m	☒ YES ☐ NO ☐ YES with exemption	not in flood plain
Surface water information	How many springs are within 100 m of the manure storage facility or manure collection area?	0	0			☒ YES ☐ NO ☐ YES with exemption	no springs identified at site
	How many water wells are within 100 m of the manure storage facility or manure collection area?	0	0			☒ YES ☐ NO ☐ YES with exemption	no wells identified in AEP database at this site
	What is the shortest distance from the manure collection or storage facility to a surface water body? (e.g., lake, creek, slough, seasonal)	822 m	932 m			☒ YES ☐ NO ☐ YES with exemption	278 m to road ditch leading to slough northeast
Groundwater information	What is the depth to the water table?		Unknown, > 2m			☒ YES ☐ NO ☐ YES with exemption	min 1 m under construction zone
	What is the depth to the groundwater resource/aquifer you draw water from?		Don't draw, no known wells in area			☒ YES ☐ NO ☐ YES with exemption	none identified

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


North
SW 27-9-22
SE 27-9-22
SW 26-9-22
1925 ft (587m)
Kipp Garlic
1733 FT (528m)
Kipp Hwy
2349 ft (716m)
NE 22-9-22
2240 ft (682m)
NW 22-9-22
NW 23-9-22
Runoff
1540 ft (470m)
1100 ft (335m)
SW 22-9-22
SE 22-9-22
SW 23-9-22
25

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

ENVIRONMENTAL RISK SCREENING INFORMATION

ERST for **proposed** facilities

Facility	Groundwater score	Surface water score	File number
new broiler barns (5+6)	low	low	LA21033

ERST for **existing** facilities

Facility	Groundwater score	Surface water score	File number
Existing broiler barns (1-3)	low	low	LA21033

ERST 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)

NRCB USE ONLY

WATER WELL AND SURFACE WATER INFORMATION

Well IDs: no wells in area _____ _____ _____

_____ _____ _____

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

			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**
Matt Grisnich	SE 22-9-22	335m	RUF	1	308 m		yes
Darryl Lumley	NW 22-9-22	470m	RUF	1	502 m, 548 m, 795 m		yes (3 residences)
Bob Maljaars	SE 27-9-22	528m	RUF	1	528 m		yes
Bert VanHierden	SE 27-9-22	587m	RUF	1	587 m		yes
Clifton	NW 23-9-22	682m	RUF	1	682 m		yes (2 residences)

(Rural Urban Fringe)

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)**
Double H Feeders Ltd.	N 22-9-22 W4	88 ha	Irrigated		see below
Double H Feeders Ltd.	NW 26-9-22 W4	62 ha	Irrigated		
Double H Feeders Ltd.	SW 12-10-23 W4	72 ha	Irrigated		
Double H Feeders Ltd.	W 1-10-23 W4	68 Ha	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)

AO comment:
NW 22-9-22 W4 is owned by John Van't Land (father of applicant)
All lands were also listed for the chicken operation on NW 1-10-23 W4. The CFO on NW1-10 requires 192 ha irrigated for manure spreading lands. The lands available in proximity to that CFO on NW1-10-23 amounts to 150 ha. T
The lands in proximity to the operation on NE 22-9-22 W4 amounts to 142 ha irrigated. Therefore, manure spreading lands are not sufficient to meet the land base requirements. The applicant provided a manure management plan (page 16ff)

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): aerial pictures

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

Requirements (m): Category 1: 266 m Category 2: 355 m Category 3: 444 m Category 4: 710 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: 195.6 ha or 483.3 acres irrigated

Land base listed: see comment on previous page

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: ☒

(See page 16 ff)

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 _____

A grandfathering determination has been done in conjunction with this application. See Decision summary LA21033.

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		-
	Feeder Calves (<550 lbs)	0.700	0.700	0.275	0.135		-
	Other						-
Dairy	*Free Stall – Lactating Cows with all associated dries, heifers, and calves	0.800	1.100	2.000	1.760		-
(*count lactating cows only)	*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	120,000	168.0
	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		168.0

For New Operations

Dispersion Factor 1

Category	Odour Objective	Distance Feet	Distance Metres
1	41.04	874	266
2	54.72	1,165	355
3	68.4	1,456	444
4	109.44	2,330	710

For Expanding Operations

Dispersion Factor 1
Expansion Factor 0.77

Category	Odour Objective	Distance Feet	Distance Metres
1	41.04	673	205
2	54.72	897	273
3	68.40	1,121	342
4	109.44	1,794	547

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)	0	0	0	0	0
	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	-	-	-	-
		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	120000	390.00000	325.2	243.6	195.6
	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	390.0	325.2	243.6	195.6
Total Acres	963.7	803.6	601.9	483.3

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

July 12, 2021 and October 22, 2021	

CORRESPONDENCE WITH MUNICIPALITIES AND REFERRAL AGENCIES

Date deeming letters sent: September 29, 2021

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: _____ ☐ N/A

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

Part 2 — Technical Requirements

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

SOLID MANURE, COMPOST, & COMPOSTING MATERIALS: Barns, feedlots, & storage facilities - Concrete liner

*(complete a copy of this section for **EACH** barn, feedlot, and storage facility for solid manure, composting materials, or compost with a concrete liner)*

Facility description / name *(as indicated on site plan)*

1. Proposed Barn 4

2. Proposed Barn 5

Manure storage capacity

	Length (m)	Width (m)	Depth below grade to the bottom of the liner (m)	**NRCB USE ONLY** Estimated storage capacity (m^3)
1.	87	23	.127	
2.	87	23	.127	
			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

Manure will be on concrete inside an enclosed barn. There will be no rain or external surface water in contact with it.

Liner protection

Describe how the physical integrity of the liner will be maintained

Liner will be constructed of concrete.

NRCB USE ONLY

Requirements met: ☒ YES ☐ NO

SOLID MANURE, COMPOST, & COMPOSTING MATERIALS: Barns, feedlots, & storage facilities - Concrete liner (cont.)

Concrete liner details

Concrete thickness .127m	Method of sulphate protection: Type 50 Concrete
Concrete strength 32 MPa	Concrete reinforcement size and spacing At least 10mm on a 0.610m grid

Concrete requirements can be found in Technical Guideline Agdex 096-93
Guideline minimums:
Solid manure: 25MPa (D)
Solid manure (wet): 30MPa (C)
Method of sulphate protection:
Type 50 or Type 10 with fly ash or equivalent

NRCB USE ONLY

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

Additional information *(attach as required)*

(AO comment: Has to meet Agdex 096-93 Category D)

NRCB USE ONLY

Nine month manure storage volume requirements met ☐ YES ☒ YES With STMS ☐ NO

Depth to water table: > 2 m (estimated) Requirements met: ☒ YES ☐ NO

Depth to Uppermost groundwater resource: none identified in area Requirements met: ☒ YES ☐ NO

ERST completed: ☒ see ERST page for details

Surface water control systems

Requirements met: ☒ YES ☐ NO Details/comments: No outside manure storage on site.

Concrete liner details Meets requirements for concrete strength but not rebar. Condition required to provide proof that concrete specs as laid out in Agdex 096-93 - Category D are met.

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

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)	-	2	0.0
	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	120,000	500	240.0
	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			240.0
	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.

Nutrient Management Plan

Double H Feeders Ltd

Overview

Double H Feeders Ltd operates a mixed farm of land and broiler chickens. Double H Feeders has access to 290 ha of irrigated crop land, managed as 4 separate fields.

Legal Land	Nickname	Size	
N 22-9-22 W4	Home	88 ha	217 acre
NW 26-9-22 W4	Veldman	62 ha	153 acre
SW 12-10-23 W4	Westview North	72 ha	178 acre
W 1-10-23 W4	Westview South	68 ha	168 acre
Total		290 ha	717 acre

Double H Feeders currently operates 3 broiler yards, with a combined one-time capacity of 226000 broiler chickens. The proposed expansion involves moving production from a set of two storey barns on Trevor's yard, to newly built barns on Scott's yard. The new construction is sized for an increase of 5%, to a total capacity of 238000 birds.

Yard Name	Current	Proposed
Scott's Yard	58000 birds	120000 birds
Trevors Yard	50000 birds	0 birds
Westview	118000 birds	118000 birds
Total	226000 birds	238000 birds

Broiler production occurs on an 8-week cycle. The birds are raised for roughly 5 ½ weeks, and then the barns are emptied and prepared for the next flock. The manure from each barn must be spread or stored every 8 weeks.

Crop Rotation

Double H Feeders Ltd manages its crop land in 4 parcels. We follow a 4-crop rotation which generally incorporates one field of canola, two fields of wheat (spring or winter), and a fourth crop which we select based on market conditions and agronomic requirements including nutrient profile and weed pressures. In the past it has typically been flax, canola, or barley which is sold as silage. The wheat is used in the broiler rations, and the other crops are sold.

Field Nutrient Management

Double H Feeders is committed to making efficient use of our manure, and to managing our crop land in a sustainable system. We utilize direct seeding to produce minimal ground disturbance. Our goal is to minimize moisture and nutrient loss, while building soil structure and resilience, encouraging soil life to thrive.

We have utilized the services of Jack Feenstra CCA 4 RNMS for 15 years to analyze and provide guidance on our nutrient management program. Jack samples each field every year to a depth of 24 inches. Soil sample analysis includes macronutrients, micronutrients, salt, and organic matter levels. Jack provides a fertilizer program for each field based on the soil test results and the target crop yields. The chicken manure from our entire operation is spread on the field which will grow canola. Canola is one of our most nutrient demanding crops, and most of the nutrients from chicken manure are available to the crop in the first year after it is spread. We purchase fertilizer to fulfill the nutrient requirements that are not provided by the chicken manure, and to balance the available nutrient profile. Jack has provided a summary letter of his services, and the results of a review of his protocols by the NRCB, which can be found in Appendix A

The nutrient levels in the fields have remained stable since we started rigorously soil sampling 15 years ago. We have neighbours who have asked for our manure for their fields. If our soil nutrient profile would ever exceed AOPA guidelines, then we would pursue this opportunity to fertilize a neighbour's field. Soil sample results from the fall of 2020 which provide a snapshot of current soil fertility levels can be found in Appendix B.

Manure Storage

Manure is spread on the field as soon as possible. During the summer, when the crops are still on the field, manure is stockpiled on a dry corner for spreading that fall. This is typically a period stretching from May until August. This manure will then be spread after harvest. After August, manure is spread straight from the barns onto the field for as long as temperature and snow conditions allow. Once the ground has frozen, manure is again stockpiled on the dry corner until it can be spread, which is generally around March. Manure is spread straight from the barns onto the field until the crops are planted in May. After May, we start stockpiling on the next field's dry corner in preparation of spreading the manure again that fall.

Conclusion

Double H Feeders works to run a sustainable mixed farming operation, using the best agronomic practices that are available to us. The chickens provide a valuable source of fertilizer, which is applied to the land to match crop requirements. The services of a Certified Crop Advisor have been retained to ensure we are making the best use of this resource, maximizing crop yield and improving soil health.

Appendix A

12 NOV, 2021

Chinook Crop Care Ltd.

Re: NRCB: To whom it may concern.

Chinook Crop Care Ltd. (CCC Ltd.) Specializes in environmental compliance of large dairies, Swine facilities and Feedlots. (references available on request)

CCC Ltd. has been engaged in nutrient management of Double H Feeders (the Vant'Land family) for over 15 years! Each parcel has been soil sampled to 24 inches every year. Analysis included both Macros & Micros, salts etc.

This Farm has been DEFICIENT in Nitrogen every year since the engagement of our services. Ever increasing yield goals (and expectations) combined with straw removal have made a very aggressive nutrient management plan a cornerstone of this business. The manure is precision applied in a four year rotation. This farm is fully AOPA compliant.

It is my professional opinion (CCA, 4 R-NMS) that this farm is Nitrogen deficient and will continue to be for the next decade.

Respectfully,

Jack Feenstra CCA 4 RNMS

January 18, 2011

Jack Feenstra
Chinook Crop Care Ltd.

Dear: Sir

Re: Nutrient Management Plans

I have reviewed your protocol for developing, recording and implementing nutrient management plans for livestock producers. The protocol you developed has done an excellent job covering all the regulatory requirements set out in the Agricultural Operation Practices Act (AOPA) and has exceeded the scope of the regulations in dealing with nutrients (both micro and macro) outside the nitrogen bases of AOPA.
It is very important that nutrient management plans both cover the requirements of existing legislation while providing for all the nutrient requirements of the crops being grown. This is to ensure that producers get the greatest value return while being environmentally responsible. The protocol you developed illustrates your excellent understanding of both requirements. It further demonstrates your continued commitment to your clients to provide them with the knowledge of the nutrient value in livestock manure to guarantee their management practices are the most economical methods to maximize yields.

I greatly appreciate your continued commitment to communicate with the Natural Resources Conservation Board for input and comments.

Any questions or concerns please contact me at 382-4439.

Sincerely,

Kevin Seward
Inspector Compliance and Enforcement
Field Services Division
Natural Resources Conservation Board

Appendix B

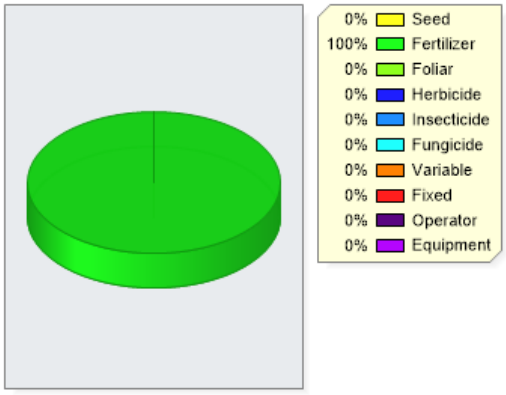
Client: **Double H Feeders**
Year: **2021**
Field: **#25383 - Circle was Home West**

Field Manager™

Field Details # 25383					
Field Name	Circle was Home West	ADS Field ID	25383		
Legal	NE 22-9-22-W4	# Acres	250	Irrigated	Yes
Crop	Canola - RR	Variety		Seeded Date	
Target Yield	90 bu/ac	Actual Yield		Harvest Date	
Notes:	Level land close to poultry barns. BRAND SPANC NEW PIVOT Spring 2013. Corners are still done by wheel line.				

Expenses Breakdown

Expense	Total Cost	Cost/Acre	Cost/Unit
Seed	$0	$0.00	$0.00
Fertilizer	$10,035	$40.14	$0.45
Foliar/Other	$0	$0.00	$0.00
Herbicide	$0	$0.00	$0.00
Insecticide	$0	$0.00	$0.00
Fungicide	$0	$0.00	$0.00
Other Variable	$0	$0.00	$0.00
Fixed Expenses	$0	$0.00	$0.00
Operator Expenses	$0	$0.00	$0.00
Equipment Expenses	$0	$0.00	$0.00
Total	**$10,035**	**$40.14**	**$0.45**



Seed

Date	Crop Type	Variety	Germ.	Mortality	Seed	Plants	Rate	Comments	Acres	Cost/Acre

Soil Test Report

Depth	OM	P	P1	P2	PM3	K	Mg	Ca	pH	pH B	CEC	% K	% Mg	% Ca	% H	% Na
0-6" - 1-A	4.5	115	323	0	413.5	594	536	5030	7.8		31.2	4.9	14.3	80.6	0	0.4
6-12" - 1-B	2.2	40	74	0	94.89	337	745	7200	8.3		43.2	2	14.4	83.3	0	0.5
12-24" - 1-C	0	0	0	0	70.99	0	0	0	0	0	0	0	0	0	0	0

Depth	Water	GPI	S	NO3	NO3 (lbs)	NH4	Zn	Mn	Fe	Cu	B	Mo	SS	Sat P%	Al	K/Mg	Cl	Na	Base Sat.	Carbonate
0-6" - 1-A		92	24	16	32	0	25	30	41	3.2	2.1	0.1	0.47	26	81	0.34	18	30		
6-12" - 1-B			44	3	6	0	0	0	0	0	0.9	0.1	0.51	6	89	0.14	11	54		
12-24" - 1-C			0	5	20	0	0	0	0	0	0	0	0	0	0		0	0		

Total Nutrients Required (lbs)

	N	P	K	S	Mg	Ca	Cl	B	Cu	Fe	Mn	Zn	Mo
Soil Requirements	74												
Notes	Chicken Manure!												

This is the nicest soil sample on the whole farm.
4.5 % OM is excellent.
P reserves are "robust" :)
K reserves are strong.
Magnesium is in a sweet spot.
K/ Mg ratio is near perfect. This is an indicator of soil health & nutrient use efficiency.
Zn needs to be over 10 PPM (due to P levels)
Cu over 3 PPM
B over 2 PPM

There is 58 # of Nitrate N left in this parcel. OM will supply 47 # of N as well. Historically we have attributed a O-Till advantage of 50 # of. Manure supply 50#.

This yield goal needs 279 # of N. We are short 74 # of N.

No other nutrients needed.

Tissue sampling will validate this strategy.

Chinook Crop Care Ltd.

Fertilizer Application

Date	Comment	Placement	Type	Actual Nutrient (lb/ac)	Acres	Rate	Product (Blend)	Cost/Acre
		Broadcast	Dry	74-0-0-0	250	160.9 lb/ac	46-0-0	40.14
			Total	**74-0-0-0**				**40.14**

Field Scouting / Product Recommendations

Date	Type	Stage	Status

Product Application

Other Expenses/Revenue

Weather and Irrigation Events

Date	Type	Amount	Comment

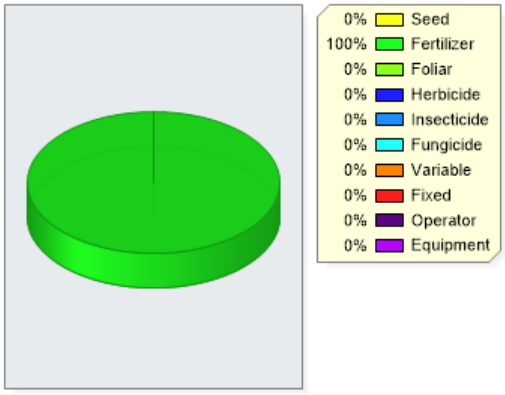
Client: **Double H Feeders**
Year: **2021**
Field: **#25385 - Veltman**

Field Manager™

Field Details # 25385					
Field Name	Veltman	ADS Field ID	25385		
Legal	NW 26-9-22-W4	# Acres	150	Irrigated	Yes
Crop	Wheat - CPS	Variety	Alduron	Seeded Date	
Target Yield	130 bu/ac	Actual Yield		Harvest Date	
Notes:	Hilly topography, NEW pivot with drop tubes . Extreme Wild Oat pressure in 2008. 2016 LL Canola. 2020 RR Can.				

Expenses Breakdown

Expense	Total Cost	Cost/Acre	Cost/Unit
Seed	$0	$0.00	$0.00
Fertilizer	$2,440	$16.27	$0.13
Foliar/Other	$0	$0.00	$0.00
Herbicide	$0	$0.00	$0.00
Insecticide	$0	$0.00	$0.00
Fungicide	$0	$0.00	$0.00
Other Variable	$0	$0.00	$0.00
Fixed Expenses	$0	$0.00	$0.00
Operator Expenses	$0	$0.00	$0.00
Equipment Expenses	$0	$0.00	$0.00
Total	**$2,440**	**$16.27**	**$0.13**



Seed

Date	Crop Type	Variety	Germ.	Mortality	Seed	Plants	Rate	Comments	Acres	Cost/Acre

Soil Test Report

Depth	OM	P	P1	P2	PM3	K	Mg	Ca	pH	pH B	CEC	% K	% Mg	% Ca	% H	% Na
0-6" - 1-A	4.4	88	233	0	298.7	683	548	5050	7.7		31.7	5.5	14.4	79.8	0	0.5
6-12" - 1-B	2.1	25	42	0	53.64	370	653	5650	8.2		34.7	2.7	15.7	81.3	0	0.5
12-24" - 1-C	0	0	0	0	19.82	0	0	0	0	0	0	0	0	0	0	0

Depth	Water	GPI	S	NO3	NO3 (lbs)	NH4	Zn	Mn	Fe	Cu	B	Mo	SS	Sat P%	Al	K/Mg	Cl	Na	Base Sat.	Carbonate
0-6" - 1-A		93	27	37	74	0	20.9	32	38	3.9	1.7	0.1	0.64	19	105	0.38	19	35		
6-12" - 1-B			16	13	26	0	0	0	0	0	0.8	0.1	0.44	3	65	0.17	14	39		
12-24" - 1-C			0	14	56	0	0	0	0	0	0	0	0	0	0		0	0		

Total Nutrients Required (lbs)

	N	P	K	S	Mg	Ca	Cl	B	Cu	Fe	Mn	Zn	Mo
Soil Requirements	30												
Notes	There is 156 # of Nitrate N left in this parcel. Om will supply 46 #. Last years manure applications will supply 70# (272 #.)												

A 130 Bu CPS will need 273#. We are short 1 # of N.

Suggestion:30 # of N sideband for a quick start.

No starter P.
K supplies are adequate.
Mg & the K/ Mg ratio are in a sweet spot.
Zinc & Copper (Cu) are awesome!
B dropped a hair below 2 PPM. I suggest alternate year applications of 70 # ES & 2 B. As we did this in 2020, we should be good this coming season.

This looks like a very economical crop!

Chinook Crop Care Ltd.

Fertilizer Application

Date	Comment	Placement	Type	Actual Nutrient (lb/ac)	Acres	Rate	Product (Blend)	Cost/Acre
		Side band	Dry	30-0-0-0	150	65.2 lb/ac	46-0-0	16.27
			Total	**30-0-0-0**				**16.27**

Field Scouting / Product Recommendations

Date	Type	Stage	Status

Product Application

Other Expenses/Revenue

Weather and Irrigation Events

Date	Type	Amount	Comment

Simplot

Simplot
1340 Veteran's Street
Pincher Creek Alberta T0K-1W0
403-627-3411

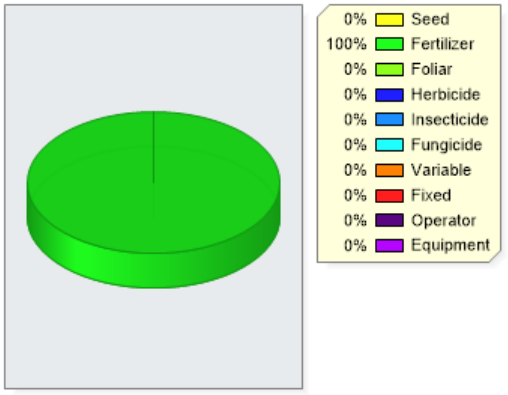
Client: **Double H Feeders**
Year: **2021**
Field: **#26324 - Westview North**

Field Manager™

Field Details # 26324					
Field Name	Westview North	ADS Field ID	26324		
Legal	NW 1-10-23-W4	# Acres	120	Irrigated	Yes
Crop	Winter Wheat	Variety		Seeded Date	
Target Yield	100 bu/ac	Actual Yield		Harvest Date	
Notes:	Roling land with pivot irrigation, Severe wild Oat investation in 2008 season.				

Expenses Breakdown

Expense	Total Cost	Cost/Acre	Cost/Unit
Seed	$0	$0.00	$0.00
Fertilizer	$2,663	$22.19	$0.22
Foliar/Other	$0	$0.00	$0.00
Herbicide	$0	$0.00	$0.00
Insecticide	$0	$0.00	$0.00
Fungicide	$0	$0.00	$0.00
Other Variable	$0	$0.00	$0.00
Fixed Expenses	$0	$0.00	$0.00
Operator Expenses	$0	$0.00	$0.00
Equipment Expenses	$0	$0.00	$0.00
Total	**$2,663**	**$22.19**	**$0.22**



Seed

Date	Crop Type	Variety	Germ.	Mortality	Seed	Plants	Rate	Comments	Acres	Cost/Acre

Soil Test Report

Depth	OM	P	P1	P2	PM3	K	Mg	Ca	pH	pH B	CEC	% K	% Mg	% Ca	% H	% Na
0-6" - 1-A	2.6	71	198	0	253.46	482	316	4500	7.9		26.4	4.7	10	85.1	0	0.3
6-12" - 1-B	1.4	17	22	0	28.23	194	297	7200	8.4		39	1.3	6.3	92.2	0	0.3
12-24" - 1-C	0	0	0	0	7.45	0	0	0	0	0	0	0	0	0	0	0

Depth	Water	GPI	S	NO3	NO3 (lbs)	NH4	Zn	Mn	Fe	Cu	B	Mo	SS	Sat P%	Al	K/Mg	Cl	Na	Base Sat.	Carbonate
0-6" - 1-A		83	25	26	52	0	18.8	34	33	4.2	2.4	0.1	0.52	15	56	0.47	21	21		
6-12" - 1-B			13	7	14	0	0	0	0	0	1	0.1	0.42	2	36	0.21	18	23		
12-24" - 1-C			0	3	12	0	0	0	0	0	0	0	0	0	0		0	0		

Total Nutrients Required (lbs)

	N	P	K	S	Mg	Ca	Cl	B	Cu	Fe	Mn	Zn	Mo
Soil Requirements	40												
Notes	This field got Chicken manure in winter - spring 2020.												

There is 78 # of Nitrate N left in this soil profile. Om will contribute 28# of N. Past manure applications...70#. (176) A 120 Bu Winter Wheat crop needs 216 # of N. We are short 40 #!

P reserves are generous. K reserves are starting to be strong!

I am concerned about Magnesium (Mg) levels as the top 2 zones are now below the 10 % attention level.

Micro nutrient levels are in a sweet spot.

Chinook Crop Care Ltd.

Fertilizer Application

Date	Comment	Placement	Type	Actual Nutrient (lb/ac)	Acres	Rate	Product (Blend)	Cost/Acre
	Fall 2020	Side band	Dry	50-0-0-0	120	108.7 lb/ac	46-0-0	22.19
			Total	**50-0-0-0**				**22.19**

Field Scouting / Product Recommendations

Date	Type	Stage	Status

Product Application

Other Expenses/Revenue

Weather and Irrigation Events

Date	Type	Amount	Comment

Simplot

Simplot
1340 Veteran's Street
Pincher Creek Alberta T0K-1W0
403-627-3411

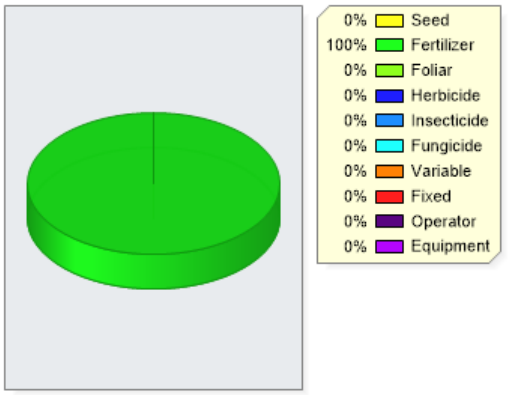
Client: **Double H Feeders**
Year: **2021**
Field: **#25382 - Westview South**

Field Manager™

Field Details # 25382					
Field Name	Westview South	ADS Field ID	25382		
Legal	W 1-10-23-W4	# Acres	175	Irrigated	Yes
Crop	Barley - 2 Row Feed	Variety		Seeded Date	
Target Yield	120 bu/ac	Actual Yield		Harvest Date	
Notes:	Rolling land, pivot irrigation with drop tubes. Severe Wild Oat challenges in 2008. Suspected Group 1 resistant Wild Oats. High Cleaver pressure (16)				

Expenses Breakdown

Expense	Total Cost	Cost/Acre	Cost/Unit
Seed	$0	$0.00	$0.00
Fertilizer	$2,658	$15.19	$0.13
Foliar/Other	$0	$0.00	$0.00
Herbicide	$0	$0.00	$0.00
Insecticide	$0	$0.00	$0.00
Fungicide	$0	$0.00	$0.00
Other Variable	$0	$0.00	$0.00
Fixed Expenses	$0	$0.00	$0.00
Operator Expenses	$0	$0.00	$0.00
Equipment Expenses	$0	$0.00	$0.00
Total	**$2,658**	**$15.19**	**$0.13**



Seed

Date	Crop Type	Variety	Germ.	Mortality	Seed	Plants	Rate	Comments	Acres	Cost/Acre

Soil Test Report

Depth	OM	P	P1	P2	PM3	K	Mg	Ca	pH	pH B	CEC	% K	% Mg	% Ca	% H	% Na
0-6" - 1-A	3.3	37	83	0	106.5	423	404	3740	7.7		23.2	4.7	14.5	80.5	0	0.5
6-12" - 1-B	1.9	7	9	0	11.92	178	347	6210	8.1		34.5	1.3	8.4	90	0	0.4
12-24" - 1-C	0	0	0	0	8.45	0	0	0	0	0	0	0	0	0	0	0

Depth	Water	GPI	S	NO3	NO3 (lbs)	NH4	Zn	Mn	Fe	Cu	B	Mo	SS	Sat P%	Al	K/Mg	Cl	Na	Base Sat.	Carbonate
0-6" - 1-A		94	18	16	32	0	19.5	47	36	2.5	1.5	0.1	0.4	7	157	0.32	24	27		
6-12" - 1-B			13	3	6	0	0	0	0	0	1	0.1	0.36	1	67	0.15	11	35		
12-24" - 1-C			0	2	8	0	0	0	0	0	0	0	0	0	0		0	0		

Total Nutrients Required (lbs)

	N	P	K	S	Mg	Ca	Cl	B	Cu	Fe	Mn	Zn	Mo
Soil Requirements	28	0	0	0				0					

Notes	The biggest challenge in this field is Cleavers. There is not many good options for Cleaver control in Flax. There is likely be a 10% yield reduction in a Wheat on Wheat rotation. There is only 46 # of Nitrate N left in this soil profile. OM will supply 44 # of N. Past manure applications are likely to contribute 50 + #. (140) A 120# Barley crop needs 168# of N. We are short 28# (for this crop & yield goal), preferably in the side band. P & K reserves are good! There is very little chance of an economical response to starter P. Micros are awesome, B could handle a touch up. For the sake of logistics I advocate to rotate ES & B applications every other year. Option B, N levels are low enough to grow PEAS here. 1, Good rotation crop 2, EARLY!!!! 3, Got combine & Flex header 4, Not great money maker.....today! Option C, Barley for silage. Chinook Crop Care Ltd.

Fertilizer Application

Date	Comment	Placement	Type	Actual Nutrient (lb/ac)	Acres	Rate	Product (Blend)	Cost/Acre
	Barley	Side band	Dry	28-0-0-0	175	60.9 lb/ac	46-0-0	15.19
			Total	**28-0-0-0**				**15.19**

Field Scouting / Product Recommendations

Date	Type	Stage	Status

Product Application

Other Expenses/Revenue

Weather and Irrigation Events

Date	Type	Amount	Comment

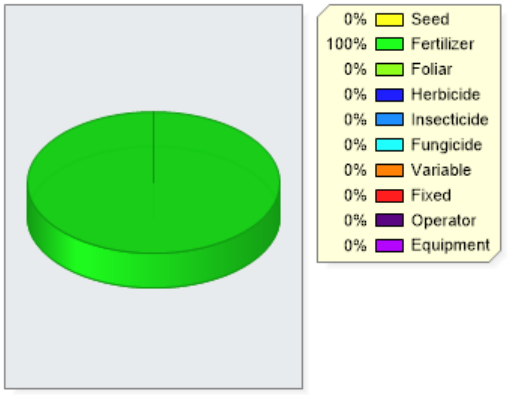
Client: **Double H Feeders**
Year: **2021**
Field: **#187277 - Westview Centre**

Field Manager™

Field Details # 187277					
Field Name	Westview Centre	ADS Field ID	187277		
Legal	NW 1-10-23-W4	# Acres	80	Irrigated	Yes
Crop	Winter Wheat	Variety		Seeded Date	
Target Yield	100 bu/ac	Actual Yield		Harvest Date	
Notes:	Lower lying area, part of West View North. Drainage in place.				

Expenses Breakdown

Expense	Total Cost	Cost/Acre	Cost/Unit
Seed	$0	$0.00	$0.00
Fertilizer	$2,170	$27.12	$0.27
Foliar/Other	$0	$0.00	$0.00
Herbicide	$0	$0.00	$0.00
Insecticide	$0	$0.00	$0.00
Fungicide	$0	$0.00	$0.00
Other Variable	$0	$0.00	$0.00
Fixed Expenses	$0	$0.00	$0.00
Operator Expenses	$0	$0.00	$0.00
Equipment Expenses	$0	$0.00	$0.00
Total	**$2,170**	**$27.12**	**$0.27**



Seed

Date	Crop Type	Variety	Germ.	Mortality	Seed	Plants	Rate	Comments	Acres	Cost/Acre

Soil Test Report

Depth	OM	P	P1	P2	PM3	K	Mg	Ca	pH	pH B	CEC	% K	% Mg	% Ca	% H	% Na
0-6" - 1-A	3	53	117	0	149.5	345	295	4040	8.1		23.6	3.7	10.4	85.6	0	0.4
6-12" - 1-B	1.3	6	8	0	9.9	149	347	7200	8.5		39.3	1	7.3	91.5	0	0.3
12-24" - 1-C	0	0	0	0	2.96	0	0	0	0	0	0	0	0	0	0	0

Depth	Water	GPI	S	NO3	NO3 (lbs)	NH4	Zn	Mn	Fe	Cu	B	Mo	SS	Sat P%	Al	K/Mg	Cl	Na	Base Sat.	Carbonate
0-6" - 1-A		81	28	19	38	0	17.6	30	34	2.7	1.5	0.1	0.47	9	82	0.36	19	20		
6-12" - 1-B			23	6	12	0	0	0	0	0	1.1	0.1	0.45	1	20	0.14	15	25		
12-24" - 1-C			0	3	12	0	0	0	0	0	0	0	0	0	0		0	0		

Total Nutrients Required (lbs)

	N	P	K	S	Mg	Ca	Cl	B	Cu	Fe	Mn	Zn	Mo
Soil Requirements	50	0											
Notes	Winter Wheat.												

There is 62 # of Nitrate N left in this soil profile.OM will supply 36 # of N as well. Past manure applications will supply 50#. (148) A 110 Bu WW crop needs 198 #..... We are short 50 # :).

P & K supplies are good (but WV is not like the Eastern parcels)

Micros are adequate.

Please roll this parcel as soon the frost is out.

Please apply N ahead of the first irrigation (or rain event in April)

Chinook Crop Care Ltd.

Fertilizer Application

Date	Comment	Placement	Type	Actual Nutrient (lb/ac)	Acres	Rate	Product (Blend)	Cost/Acre
	Fall 2020	Side band	Dry	50-0-0-0	80	108.7 lb/ac	46-0-0	27.12
			Total	**50-0-0-0**				**27.12**

Field Scouting / Product Recommendations

Date	Type	Stage	Status

Product Application

Other Expenses/Revenue

Weather and Irrigation Events

Date	Type	Amount	Comment

Simplot

Simplot
1340 Veteran's Street
Pincher Creek Alberta T0K-1W0
403-627-3411