Technical Document LA21053

Part 2 – Technical Requirements



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

NRCB USE ONLY	Application number	Legal land description
🛛 Approval 🗌 Registration 🗌 Authorization 🔤	LA21053	S½ 8-21-24 W4M <u>N½ 5-21-24 W4M</u>
Amendment		

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.

516 CKtober 2021

Date of signing

John Schooten and Sons

Corporate name (if applicable)

GENERAL INFORMATION REQUIREMENTS

Signature

Cody Schooten

Print name

80m x 65m
200m x 90m x 3m

Existing facilities		Dimensions (m) (length, width, and depth)	NRCB USE ONLY		
Pens		80m x 65m	Overall footprint of all pens: 1412 m x 650 m		
Holding Pens (Barn A)		70m x 60m			
Barn A		70m x 40m			
NRCB USE ONLY	The holding pens and barns (Barn A area. It is assumed that they are po 096-94, June 2018)	A-E) are not considered part of the manu pulated only temporarily (See Technical	ure collection Guideline Agdex		

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 NRCB
 Natural Resources

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

Existing facilities	continued	Dimensions (m)	NRCB USE ONLY		
Barn B		85m x 70m			
Barn C		50m x 75			
Barn D		50m x 65m			
Holding Pens (Barr	ו D)	104m x 20m & 32m x 25m			
Barn E		54m x 75m & 58m x 20m			
Pond 1	(3555 m³)	42m x 44m x 8m	confirmed		
Pond 2	(11445 m³)	56m x 70m x 8m	confirmed		
Pond 3	(9443 m3)	50m x 60m x 8m	confirmed		
Pond 4	(7605 m3)	60m x 70m x 8m	confirmed		
Pond 5	(9443 m3)	60m x 70m x 8m	confirmed		
Pond 6	(18630 m3)	50m 120m x 8m	confirmed		
Pond 7	(2828 m3)	34m x 110m x 8m	confirmed		
	·				

AO comment: These are the existing pens. The existing catch basins are located to the south of the feedlot pens (bottom of page). The wells are noted in blue with a white label added by myself to add clarity.

	-3-11			-							£ -	- 1	Wells	1 an	d 5				3 2 1			WEST	DRTH EAS
	il		eight Pit	lune	() Shayi	rgs			E. j Bales	Stacks	1	Silage	Ferrit Ferrit	ed Mill		Fresh V Torbin	tator Cathan	We	II Quash	ibay, Stieg Michter	. Office ount	so Solution	UTH
A P		1001	911	901	811	801	711	701	611	601	511	501	411	401	311	301	211	201	111	101			
		1002	912	902	812	802	712	702	612	602	512	502	412	402	312	302	212	202	112	102		KEY: Wells F MCC/De	ctrical [2
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- 1		1004	914	904	314	504	714	704	614	604	514	504	414	404	314	304	214	204	114	104			
		1005	915	905	815	We	4 15	705	615	605	515	505	415	405	915	305	215	205	115	105 1			
		1005	916	905	815	506	716	705	616	606	516	506	415	405	316	306	216	205	115	105			
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If a new facility is replacing an old facility, please explain what will happen to the old facility and when.

Construction completion date for proposed facilities

Additional information

Construction will commence once approval has been granted.

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
Finisher Cattle	(see Decision Summary L	A21053)	75,000

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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 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 llvestock 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 25 day of Actober 20²¹.

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

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*).
- 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

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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)

Old

Existing:

Proposed 1: <u>New</u>

Proposed 2: _____ Proposed 3: _____

Facili	tv and environmental risk		Faci	lities			NRCB USE ONLY]
	information	Existing	Proposed 1	Proposed 2	Proposed 3	Meets requirements	Comments	1
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 INO YES with exemption	not in flood plain	
ы г	How many springs are within 100 m of the manure storage facility or manure collection area?	0	0	0		YES NO	None recorded in AEP database of during site visit	or observed
Irface wat	How many water wells are within 100 m of the manure storage facility or manure collection area?	0	0	0		YES NO	Wells 1 and 5 are 156 m north of p Wells 2,3,4 are within 100m of exi None within 100m of new facilities	ens sting facilities. (see below)
L R	What is the shortest distance from the manure collection or storage facility to a surface water body? (e.g., lake, creek, slough, seasonal)	150m to spring run off	250m to road ditch	850m to road ditch		YES NO	65 m to ephemeral drain connecte Creek. 756 m from new facilities	d to Arrowwood
lwater Iation	What is the depth to the water table?		10.8 m	10.8 m		YES NO YES with exemption	Below 10.7 m drilling depth (see re	eport)
inform abolic	What is the depth to the groundwater resource/aquifer you draw water from?	67m				YES NO YES with exemption	30.8 m (well 1476616)	

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

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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)

NRCB USE ONLY

ENVIRONMENTAL RISK SCREENING INFORMATION

ERST for proposed facilities

Facility	Groundwater score	Surface water score	File number
New feedlot pens	low	low	LA21053
New catch basin	low	low	LA21053

ERST for existing facilities

Facility	Groundwater score	Surface water score	File number
Existing pens	Moderate	low	LA21053
Existing row of catch basins	Moderate	low	LA21053

ERST related comments:

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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)

NRCB USE ONLY	ر L AND SURFACE	WATER IN	FORMATI	ON						
Well IDs:	Well 1 (north): 14	76616	Well 2 (of	fice) 237499	W	ell 3 (Catch	basin) 236945			
weir ibs.	Well 4 (feedlot pe	ns) 237542	Well 5 (n	orth) 1305283		·				
Surface water rela	ated concerns from di	irectly affected	parties or ref	erral agencies:		X] yes □ no			
Groundwater rela	ted concerns from dir	ectly affected p	arties or refe	rral agencies:		X) yes 🗖 no			
Water wells	N/A The p	proposed feed	lot pens and	l catch basin ar	e not within	100 m of a	water well			
If applicable, exe	mption for 100 m dist	ance requireme	ents applied:	🗆 yes 🗆 no	Condition re	quired:	YES 🗆 NO			
Surface water	Surface water 🛛 N/A The proposed feedlot pens and catch basin are not within 30 m of a surface water body									
If applicable, exe	mption for 30 m dista	nce requiremen	nts applied:	🗆 yes 🗌 no	Condition re	quired:] yes 🗖 no			
Water Well Exe	mption Screening T	ool 🕅 N/A								
Wate	er Well ID	Preliminary	Screening	Secondary Sc	reening	F	acility			
		SCO	re	Score						
Groundwater or	r surface water rela	ted comments	5:		·					
The feedlot well monito	pens and catch bas ring requirements a	sin score in th are carried ove	e lower ran er and expa	ge of the mode nded.	erate risk cat	egory. The	existing groundwate			
Only existir	ng facilities - as per	mitted under	developme	nt permit 98-0-	12 are with	in 100m of	a water well.			
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DISTANCE OF ANY MANURE STORAGE FACILITY (EXISTING OR PROPOSED) TO NEIGHBOURING RESIDENCES

					NRCB USE ON	LY	
Neighbour name(s)	Legal land description	Distance (m)	Zoning (LUB) category	MDS category (1-4)	Distance (m)	Waiver attached (if required)	Meets regulations
John Schooten and Sons	SE 5 21 24 4	745	Ag	1		Not required	
John Schooten and Sons	NE 8 21 24 4	981	Ag	1		Not required	
Tim Prince	NW 32 20 24 4	1500	Ag	1	1,435 m	yes	Yes with waive
Ken Burke	SW 16 21 24 4	1150	Ag	1	1,044 m	yes	Yes with waive

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)
John Schooten and Sons	See Field Acres		Dark Brown / Irr		
Bernie Mcwilliams	See Spreading Agreement	3031	Dark Brown		
lan Donovan		518	n .		
Brett Brooks	ıt.	463			
Rob Beagle		1352	m		
			Total	See analysis below	

See analysis below

* 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)



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 ON	LY	
Neighbour name(s)	Legal land description	Distance (m)	Zoning (LUB) category	MDS category (1-4)	Distance (m)	Waiver attached (if required)	Meets regulations
2163459 Alberta Ltd	section 6-21-24 W4		AG	1	1,850 m		yes
David Ray	SW 1-21-25 W4		AG	1	2,633 m		yes
Golden Valley Grain	E 4-21-24 W4		AG	1	2,076 m		yes

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

				NRCB US	E ONLY
Name of land owner(s)*	Legal land description	Usable area** (ha)	Soil zone ***	Usable area (ha)	Agreement attached (if required)
Robert Lee	See Spreading Agreement	372	Dark Brown		
David Bexte	u	235	Irr		
			Total		-

See analysis below

 * 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)

Last updated February 26, 2021

Name
Address
Legal Land
Location

MDS Spreadsheet based on 2006 AOPA Regulations

Category Livestock Factor A Fector Fector Fector Pactor P		causileet based on 2000 AOI P	riogulatic	/110				
Livestock Factor Factor Pactor Animals Beef CowsFinishers (900+ bs) 0.700 0.700 0.500 0.246 75.000 33.4421 Feeder Calves (450: 900 bs) 0.700 0.700 0.200 0.235 0.135 0.100 Dairy **res stall - Lactating cons with all assisting cons with program (100) 0.700 1.000 1.000 1.000 1.200 1.200 1.200 0.120 0.100 ("count in constraining cons with Drog constraining cons with Drog Constraining cons with Drog Constraining constrai	Category of	Type of Livestock	Factor A	Technology	MU	LSU	Number of	LSU
Beref CosselFinishers (900+ bs) 0.700 0.970 0.970 0.970 0.926 7.500 33.442.7 Feeders (450-900 bs) 0.700 0.700 0.500 0.246 7.500 33.442.7 Feeders (450-900 bs) 0.700 0.700 0.275 0.355 0.135 0.135 Other Calver (4500 bs) 0.800 1.100 2.000 1.760 0.000 1.760 0.000 1.760 </td <td>Livestock</td> <td></td> <td></td> <td>Factor</td> <td></td> <td>Factor</td> <td>Animals</td> <td></td>	Livestock			Factor		Factor	Animals	
Beef Cows/Finishers (900+ bis) 0.700 0.700 0.970 0.970 0.9246 7.000 33.4422 Feeder Calves (560 - 900 (bis) 0.700 0.700 0.500 0.275 0.135 - - Onliny **restall - Exating cows with all end of the stating cows with By cows 0.000 1.100 1.240 1.222 -<								
Design interiors (200 in bit) 0.000 1.000 0.000 1.000 <t< td=""><td>Roof</td><td>Cowe/Einichore (000+ lbc)</td><td>0 700</td><td>0 700</td><td>0.010</td><td>0.446</td><td>75.000</td><td>22 442 5</td></t<>	Roof	Cowe/Einichore (000+ lbc)	0 700	0 700	0.010	0.446	75.000	22 442 5
Feederal (value) 0.700 0.700 0.700 0.723 0.135 Dairy *rres Sall - Lactaring Conventinal and calces 0.800 1.100 2.000 1.766 - (*res Sall - Lactaring conventinal and calces * 0.800 1.100 1.640 1.443 - (*res Sall - Lactaring conventinal and calces 0.800 1.100 1.600 1.400 1.222 - - (*res Sall - Lactaring conventing conventing convention 0.800 1.000 1.400 1.122 - - (*res Sall - Lactaring conventing convention 0.800 0.700 0.875 0.490 - - (*res Sall - Lactaring convention 0.800 0.700 0.875 0.490 - - (*res Sall - Lactaring convention 0.800 0.700 0.875 0.490 - - (*res Sall - Lactaring convention 0.800 0.700 0.525 0.294 - - (*res Sall - Lactaring convention 0.800 0.700 0.525 0.294 - <	Deel	Ecodora (450, 000 lba)	0.700	0.700	0.910	0.440	75,000	33,442.3
Feeder Calves (<style)< th=""> 0.700 0.700 0.725 0.135 - Dairy **ressall - Lacking cons with all constraints, and alves incontact lies, hering, and alves incon</style)<>		Feeders (450 - 900 lbs)	0.700	0.700	0.300	0.245		-
Dairy Pres Sail - Latesting Covs with all associated dris, hefers, and calves with D 2 cove and associated dris, hefers, and calves with D 2 cove and associated dris, hefers, and calves with D 2 cove and associated dris, hefers, and calves with D 2 cove and a cover and a cover and a cover and a cover and associated dris, hefers, and calves with D 2 cover and a		Feeder Calves (<550 lbs)	0.700	0.700	0.275	0.135		-
Dairy arcscale dire, befra, al calves *Free Stall - Lactaing cows with Dy Cow inclarating cows only free Stall - Lactaing cows only cows only free Stall - Lactaing cows only Lose Theoring - Lactaing cows only Dy Cox (Sold manner) Dy Cox (Other						-
Count lactating (count lactating (count lactating (coversift)) Image: coversity (coversift)) Image: coversity (coversift)) <thimage: coversity<br="">(coversift)) Image: coversity</thimage:>	Dairy	*Free Stall – Lactating Cows with all	0.800	1.100	2.000	1.760		-
"Free Sult - Lactating cows with Dry Cow (ancarding pres Sult - Lactating cows only Lose Housing - Lactating cows only Lose Housing - Lactating cows only Lose Housing - Lactating cows only Dry Cow (Sult manuer) Dry Cow		associated dries, heifers, and calves						
instant instant instant instant instant iows only Free Sall - Lactaing cows only 0.800 1.000 1.400 1.120 Dry Cow (Seid manner) Dry Cow (Seid manner) 0.800 0.700 0.875 0.490 Replacements - Bred Hoffers (Breding to Calving) 0.800 0.700 0.875 0.490 Replacements - Growing Hoffers (350 bs to Breding) 0.800 0.700 0.525 0.294 Swine Farrow to insinh * 2.000 1.100 0.787 0.490 Swine Farrow to insinh * 2.000 1.100 0.770 0.200 0.112 Swine Farrow to insinh * 2.000 1.100 0.530 1.166 Swine Farrow to insinh * 2.000 1.100 0.530 1.166 Swine Farrow to insinh * 2.000 8.000	(*count	*Free Stall - Lactating cows with Dry Cows	0.800	1.100	1.640	1.443		-
Free Sall - Lactaing cows only Lose Hossing - Lactaing cows only Dry Cow (Sold name) Dry Cow (Sold na	lactating	only						
Solution of the second secon	cows only)	Free Stall - Lactating Cows only	0.800	1.100	1.400	1.232		-
Lose Hearing - Lactaing core only Dry Core (Liquid manuer) Replacements - Pret Helfes (Reeding to Cabring) 0.800 0.700 0.875 0.490 - Replacements - Pret Helfes (Reeding to Cabring) 0.800 0.700 0.875 0.490 - Replacements - Free Helfes (Reeding to Cabres (1.50) 0.800 0.700 0.525 0.294 - Swine Liquid Cabres (1.50) 0.800 0.700 0.525 0.294 - Swine Cabres (1.50) 0.800 0.700 0.525 0.294 - - Swine Cabres (1.50) 0.800 0.700 0.630 1.166 - - Swine Crount Farrow to finish 2.000 1.100 0.410 - - Swine Sows only Farrow to finish 2.000 1.100 0.055 0.121 - - Swine Sows only Farrow to finish 2.000 0.800 0.700 0.018 - - Farrow to finish 2.000 0.800 0.701 0.722 - - Solid<	conc chily)	Tie Stall - Lactating cows only	0.800	1.000	1.400	1.120		-
by:Cow Csulid manuary 0.800 0.700 1.000 0.560		Loose Housing - Lactating cows only	0.800	1.000	1,400	1,120		-
by Conv (Liqued number) 0.000 0.0112 0.000 0.000 0.000 0.000 0.0112 0.000 0.000 0.000 0.0112 0.000 0		Dry Cow (Solid manure)	0.800	0 700	1 000	0.560		_
b) Cott Application 0.800 0.700 0.875 0.490 Beplacements - Growing Heifers (350 lbs to tocoling) 0.800 0.700 0.525 0.294 Swine Liquid Farrow to finish* 2.000 1.100 1.780 3.916 Farrow to finish* 2.000 1.100 0.530 1.474 Farrow to finish* 2.000 1.100 0.530 1.466 Farrow to finish* 2.000 1.100 0.530 1.166 Sowine Farrow to finish* 2.000 1.100 0.055 0.121 Sowine Farrow to wean* 2.000 0.800 1.780 2.848 Swine Farrow to wean* 2.000 0.800 0.530 0.848 Swine Farrow to wean* 2.000 0.800 0.007 Chicken - Layerts - Liguid (includes sociated pulleth) 2.000 0.008 <t< td=""><td></td><td>Dry Cow (Jonid manure)</td><td>0.000</td><td>0.700</td><td>1.000</td><td>0.500</td><td></td><td></td></t<>		Dry Cow (Jonid manure)	0.000	0.700	1.000	0.500		
Selection and refers (150 bits) 0.800 0.700 0.575 0.480 - Replacement - Growing Heifers (150 bits of Calves (-350 bits) 0.800 0.700 0.225 0.294 - Calves (-350 bits) 0.800 0.700 0.200 0.112 - Calves (-350 bits) 0.800 0.700 0.200 0.1121 - Liquid (row to finish* 2.000 1.100 0.870 1.744 - Convers/Roasters 2.000 1.100 0.530 1.166 - Growers/Roasters 2.000 1.100 0.555 0.211 - Ware res 2.000 1.100 0.555 0.2121 - - Growers/Roasters 2.000 0.800 0.670 1.072 - - Solid Farrow to finish* 2.000 0.800 0.553 0.848 - - Viccutt Farrow to war* 2.000 0.800 0.018 0.802 - - Viccutt Veanere		Paplacements Brad Haifars (Breading to	0 800	0 700	0.975	0.400		
Backgreenents - Growing Heifers (50 lbs to breading) 0.800 0.700 0.525 0.294 . Swine Liquid Farrow to finish * 0.800 0.700 0.200 0.112 . Swine Liquid Farrow to finish * 2.000 1.100 0.670 1.474 . . Sovine Sows only Feeders/Boars 2.000 1.100 0.530 1.166 . Swine Sows only Feeders/Boars 2.000 1.100 0.055 0.121 . . Swine Farrow to mean* 2.000 1.800 0.680 0.670 1.072 . . Swine Farrow to wean* 2.000 0.800 0.670 1.072 . . . Solid Chicken - Breeders 2.000 0.800 0.655 0.848 . . Feeders/Boars 2.000 0.800 0.0118 0.001 . . Sowing Feeders-Solid 1.000 0.700 0.018 . . Poultry Chicken - Layers - (Deep Pt)		Replacements – Bred Heners (Breeding to	0.800	0.700	0.875	0.490		-
Replacements - Growing index (50 ins. 0) 0.800 0.700 0.255 0.294 - Carves (-3.30 ins) 0.800 0.700 0.200 0.1121 - Swine Farrow to finish * 2.000 1.100 0.780 3.916 - Swine Farrow to wan * 2.000 1.100 0.670 1.741 - - (*count Farrow to wan * 2.000 1.100 0.670 1.741 - - (*count Farrow to wan * 2.000 1.100 0.040 - - (*count) Farrow to finish * 2.000 1.100 0.055 0.121 - - Swine Farrow to finish * 2.000 0.800 0.670 1.072 - - Swine Farrow to finish * 2.000 0.800 0.330 0.848 - - Swine Farrow to wan * 2.000 0.800 0.011 - - (*Count) Farrow to wan * 2.000		Calving)	0.000	0.700	0.505	0.004		
Investing Calculation 0.800 0.700 0.200 0.112 Swine Liquid Farrow to finish* 2.000 1.100 0.670 1.474 Swine Liquid Farrow no wean* 2.000 1.100 0.650 1.166 Sows only Feeders/Boars 2.000 1.100 0.650 1.166 Sows only Feeders/Boars 2.000 1.100 0.055 0.121 Swine Sows only Farrow to finish* 2.000 0.800 1.780 2.848 Swine Sows only Farrow to finish* 2.000 0.800 0.600 0.600 Farrow to finish* 2.000 0.800 0.055 0.848 Sows only Feeders/Boars 2.000 0.800 0.055 0.848 Poultry Chicken - Breeders - Solid 1.000 0.700 0.010 0.007 Chicken - Liquets (folders 1.000 0.700 0.008 0		Replacements - Growing Heiters (350 lbs to	0.800	0.700	0.525	0.294		-
Chive (-3.00 lm) 0.800 0.700 0.200 0.112 - Swine Farow to finish* 2.000 1.100 0.780 3.916 - Liquid Farow to wean* 2.000 1.100 0.670 1.474 - (*count Farow only* 2.000 1.100 0.630 1.466 - Sows only Feeders/Boars 2.000 1.100 0.055 0.121 - Weaners 2.000 1.100 0.056 0.121 - - Swine Farow to mean* 2.000 1.000 0.650 0.121 - - Swine Farow to mean* 2.000 0.800 0.530 0.848 - - (*Count Farow to wean* 2.000 0.800 0.055 0.088 - - Farow to wean* 2.000 0.800 0.055 0.088 - - Fortwers/Roasters 2.000 0.800 0.011 - - - </td <td></td> <td>breeding)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>		breeding)						
Swine Liquid Farrow to finish* 2.000 1.100 0.670 1.474 - Swine Liquid Farrow only Farrow to wean* 2.000 1.100 0.630 1.474 - Sows only Feeders/Boars 2.000 1.100 0.280 - - Growers/Roasters 2.000 1.100 0.280 - - Swine Swine Farrow to finish* 2.000 1.100 0.055 0.1211 - Swine Solid Farrow to wean* 2.000 0.800 0.670 1.072 - Swine Sows only Feeders/Boars 2.000 0.800 0.670 1.021 - Feeders/Boars 2.000 0.800 0.555 0.088 - - Forwers/Roasters 2.000 0.800 0.055 0.088 - - Fourstrow only * 2.000 0.800 0.055 0.088 - - Fourstrow only * 2.000 0.700 0.000 0.700 0.000 <td></td> <td>Calves (< 350 lbs)</td> <td>0.800</td> <td>0.700</td> <td>0.200</td> <td>0.112</td> <td></td> <td>-</td>		Calves (< 350 lbs)	0.800	0.700	0.200	0.112		-
Swine Farcw to finish * 2.000 1.100 1.780 3.916 - (*count) Farcw to wean * 2.000 1.100 0.670 1.474 - (*count) Farcw to ly * 2.000 1.100 0.530 1.166 - Sows only) Feeders/Boars 2.000 1.100 0.018 0.260 - Weaners 2.000 1.100 0.018 0.260 - - Swine Farcw to finish * 2.000 0.800 0.730 0.440 - - Solid Farcw to rean * 2.000 0.800 0.530 0.484 - - Solid Gravers/Roasters 2.000 0.800 0.018 0.489 - - Gravers/Roasters 2.000 0.800 0.010 0.008 0.011 - - Farcw to reans Solid 1.000 0.700 0.010 0.000 - - Fortwers/Roasters 2.000 0.700 0.01		Other					-	-
Liquid (count sows only) Farrow only * 2,000 1,100 0,670 1,474	Swine	Farrow to finish *	2.000	1.100	1.780	3.916		-
(*count) Farrow only* 2.000 1.100 0.530 1.166 - sows only) Feeders/Boats 2.000 1.100 0.200 0.440 - Growers/Roasters 2.000 1.100 0.118 0.266 - - Swine Farrow to finish * 2.000 1.100 0.018 - - Solid Farrow to finish * 2.000 0.800 0.670 1.072 - - Solid Farrow to finish * 2.000 0.800 0.620 0.320 - - (*Count) Farrow to wean * 2.000 0.800 0.200 0.320 - - Growers/Roasters 2.000 0.800 0.200 0.320 - - Weaners 2.000 0.800 0.011 - - - - Chicken - Layers - Liquid (includes acound) 2.000 0.700 0.008 0.011 - - Chicken - Pullets/Broliers 1.000 0.700<	Liquid	Farrow to wean *	2.000	1.100	0.670	1.474		-
sows only) 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 0.118 0.260 Swine Farrow to finish* 2.000 0.800 1.780 2.848 Solid Farrow to wean* 2.000 0.800 0.780 0.828 Farrow to mins* 2.000 0.800 0.530 0.848 Feders/Boars 2.000 0.800 0.530 0.888 Weaners 2.000 0.800 0.118 0.188 Poultry Chicken - Layers - Liquid (includes 2.000 0.000 0.001 Chicken - Layers - (Bet Cage) 2.000 0.700 0.001 Chicken - Layers - (Bet PI!) 2.000 0.700 0.020 0.011 Turkey - Broilers <td>(*count</td> <td>Farrow only *</td> <td>2.000</td> <td>1,100</td> <td>0.530</td> <td>1.166</td> <td></td> <td>-</td>	(*count	Farrow only *	2.000	1,100	0.530	1.166		-
One of the second sec	sows only)	Feeders/Boars	2 000	1 100	0.200	0 440		-
Order 2.000 1.100 0.110 0.120 - Weaners 2.000 1.100 0.055 0.121 - Swine Farrow to finish * 2.000 0.800 1.760 2.848 - Solid Farrow to wean * 2.000 0.800 0.530 0.848 - Solid Farrow to wean * 2.000 0.800 0.530 0.848 - (*Court Sarrow only* 2.000 0.800 0.230 6.868 - Weaners 2.000 0.800 0.118 0.189 - - Feeders/Boars 2.000 0.800 0.018 - - - Weaners 2.000 0.800 0.018 - - - Poultry Chicken - Layers - (legit Cage) 2.000 0.700 0.008 0.011 - Chicken - Layers - (legit Cage) 2.000 0.700 0.002 0.011 - Chicken - Layers - (legit Cage) 1.000	conc chily)	Growers/Peasters	2.000	1 100	0.200	0.260		
Weathers 2.000 1.100 0.055 0.121		Weenere	2.000	1.100	0.110	0.200		-
Swine Farrow to finish* 2.000 0.800 1.780 2.848 - Solid Farrow to wean* 2.000 0.800 0.670 1.072 - (*Count Sows only) Feeders/Boars 2.000 0.800 0.670 1.072 - Wearres 2.000 0.800 0.200 0.320 - - Poultry Chicken - Breeders - Solid 1.000 0.700 0.010 0.007 - - Chicken - Layers - Liquid (includes associated pullets) -		Other	2.000	1.100	0.055	0.121		-
Swine Farrow to kinish* 2.000 0.800 1.780 2.2481	<u>.</u> .	Other					-	-
Solid Farrow to wean* 2.000 0.800 0.670 1.072 sows only) Feeders/Boars 2.000 0.800 0.230 0.848 Growers/Roasters 2.000 0.800 0.230 0.848 Wearers 2.000 0.800 0.118 0.118 Poultry Chicken - Breeders - Solid 1.000 0.700 0.010 0.007 Chicken - Layers - Liquid (includes associated pullets) 2.000 0.700 0.008 0.011 Chicken - Layers - (Deep Ptt) 2.000 0.700 0.008 0.011 Chicken - Layers - (Deep Ptt) 2.000 0.700 0.008 0.011 Turkey - Hens (light) 1.000 0.700 0.010 0.007 Turkey - Hens (light) 1.000 0.700 0.010 0.007 Ducks 0.650 0.700 1.000 0.455	Swine	Farrow to finish *	2.000	0.800	1.780	2.848		-
"Count Farrow only * 2.000 0.800 0.530 0.848 - sows only) Feeders/Boars 2.000 0.800 0.200 0.320 - Weaners 2.000 0.800 0.055 0.088 - Poultry Chicken - Breeders - Solid 1.000 0.700 0.010 0.007 - Poultry Chicken - Layers - Cleit Cage) 2.000 0.700 0.008 0.011 - - Chicken - Layers - (Deep Pit) 2.000 0.700 0.008 0.011 - - Chicken - Pullets/Brollers 1.000 0.700 0.002 0.011 - - Turkey - Toms/Breeders 1.000 0.700 0.002 0.011 - - Turkey - Brollers 1.000 0.700 0.001 0.007 - - Ducks 1.000 0.700 0.010 0.007 - - Geese 1.000 0.700 0.010 0.425 - - <td>Solid</td> <td>Farrow to wean *</td> <td>2.000</td> <td>0.800</td> <td>0.670</td> <td>1.072</td> <td></td> <td>-</td>	Solid	Farrow to wean *	2.000	0.800	0.670	1.072		-
Sows only) 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 0.007 - - Chicken - Layers - Liquid (includes associated pullets) 2.000 0.700 0.008 0.011 - Chicken - Layers - (Bet Cage) 2.000 0.700 0.008 0.011 - - Chicken - Pullets/Broiters 1.000 0.700 0.002 0.014 - - Turkey - Fons/Breeders 1.000 0.700 0.002 0.014 - - Turkey - Hens (light) 1.000 0.700 0.010 0.007 - - Ucks 1.000 0.700 0.010 0.007 - - Ucks 0.650 0.700 1.000 0.455 - - Hores PMU	(*Count	Farrow only *	2.000	0.800	0.530	0.848		-
Growers/Roasters 2.000 0.800 0.118 0.189 - Wearers 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 1.000 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 - Forms/Breeders 1.000 0.700 0.002 0.011 - Turkey - Broilers 1.000 0.700 0.001 - - Turkey - Broilers 1.000 0.700 0.011 - - Geese 1.000 0.700 0.010 0.007 - Geese 1.000 0.700 0.000 0.455 - Feeders > 750 lbs 0.650 0.700 1.000 0.420 -	sows only)	Feeders/Boars	2.000	0.800	0.200	0.320		-
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 0.011 - Chicken - Layers - (Belt Cage) 2.000 0.700 0.008 0.011 - Chicken - Layers - (Belt Cage) 2.000 0.700 0.008 0.011 - Chicken - Pullets/Broilers 1.000 0.700 0.022 0.014 - Turkey - Toms/Breeders 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 0.010 0.007 - Feeders > 750 lbs 0.650 0.700 1.000 0.455 - Foals < 750 lbs		Growers/Roasters	2.000	0.800	0.118	0.189		-
Poultry Chicken - Breeders - Solid 1.000 0.000 0.000 0.000 0.000 - Poultry Chicken - Layers - Liquid (includes associated pullets) 2.000 1.100 0.008 0.011 - - Chicken - Layers - Belt Cage) 2.000 0.700 0.008 0.011 - - Chicken - Layers - Belt Cage) 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 0.010 0.007 - - Turkey - Honilers 1.000 0.700 0.010 0.007 - - Ducks 1.000 0.700 0.010 0.007 - - Horses PMU 0.650 0.700 1.000 0.455 - Feeders 750 lbs 0.650 0.700 1.000 0.455 - - Mules 0.600 0.700 <t< td=""><td></td><td>Weapers</td><td>2 000</td><td>0.800</td><td>0.055</td><td>0.088</td><td></td><td>-</td></t<>		Weapers	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 0.002 0.011 - - Chicken - Layers - (Deep Pit) 2.000 0.700 0.002 0.011 - - Chicken - Pullets/Broilers 1.000 0.700 0.020 0.014 - - Turkey - Fors/Breeders 1.000 0.700 0.010 0.007 - - Ducks 1.000 0.700 0.010 0.007 - - - Gese 1.000 0.700 0.010 0.007 - - - Horses PMU 0.650 0.700 1.000 0.455 - - Feeders > 750 lbs 0.650 <			2.000	0.000	0.000	0.000		-
Consty Chicken - Layers - Liquid (includes associated pullets) 2.000 0.700 0.008 0.011 - 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 - Layers - (Deep Pit) 2.000 0.700 0.002 0.0011 - Chicken - Pullets/Broilers 1.000 0.700 0.022 0.014 - Turkey - Toms/Breeders 1.000 0.700 0.020 0.014 - Turkey - Broilers 1.000 0.700 0.010 0.007 - Geese 1.000 0.700 0.010 0.007 - Geese 1.000 0.700 0.010 0.007 - Horses PMU 0.650 0.700 1.000 0.455 - Feeders > 750 lbs 0.650 0.700 1.000 0.420 - Donkeys 0.600 0.700 0.200 0.841	Poultry	Chicken - Breeders - Solid	1 000	0 700	0.010	0.007		_
Clinker Layers - Liquit (includes) 2.000 0.000 0.010 - Chicken - Layers - (Belt Cage) 2.000 0.700 0.008 0.011 - Chicken - Layers - (Deep Pit) 2.000 0.700 0.002 0.0011 - Chicken - Pullets/Broilers 1.000 0.700 0.022 0.0114 - Chicken - Pullets/Broilers 1.000 0.700 0.020 0.0144 - Turkey - Toms/Breeders 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 - Gesse 1.000 0.700 0.010 0.007 - Horses PMU 0.650 0.700 1.000 0.455 - Foals < 750 lbs	rounty	Chickon Lavors Liquid (includes	2,000	1 100	0.010	0.007		
Absoluted putters)		Chicken - Layers - Liquid (includes	2.000	1.100	0.008	0.016	-	-
Chicken - Layers - (Deer Cage) 2.000 0.700 0.008 0.011 - Chicken - Layers - (Deer Pit) 2.000 0.700 0.008 0.011 - Turkey - Toms/Breeders 1.000 0.700 0.002 0.001 - Turkey - Toms/Breeders 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 - Beese 1.000 0.700 0.010 0.007 - Horses PMU 0.650 0.700 1.000 0.455 - Foals < 750 lbs		associated pullets)	0.000	0.700	0.000	0.011		
Chicken - Layers - (Deep Pit) 2.000 0.700 0.008 0.011 - Chicken - Pullets/Broilers 1.000 0.700 0.002 0.0011 - Turkey - Toms/Breeders 1.000 0.700 0.002 0.014 - Turkey - Broilers 1.000 0.700 0.013 0.009 - Ducks 1.000 0.700 0.010 0.007 - Ducks 1.000 0.700 0.010 0.007 - Geese 1.000 0.700 0.014 - - Horses PMU 0.650 0.700 1.000 0.455 - Feeders > 750 lbs 0.650 0.700 1.000 0.455 - - Mules 0.600 0.700 0.300 0.137 - - - Feeders > 750 lbs 0.600 0.700 0.670 0.281 - - Donkeys 0.600 0.700 0.670 0.281 - -		Chicken - Layers - (Belt Cage)	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 - Broilers 1.000 0.700 0.013 0.009 - Ducks 1.000 0.700 0.010 0.007 - Geese 1.000 0.700 0.010 0.007 - Otxat - - - - - Horses PMU 0.650 0.700 1.000 0.455 - Feeders > 750 lbs 0.650 0.700 1.000 0.455 - - Mules 0.600 0.700 0.000 0.455 - - Donkeys 0.600 0.700 0.000 0.455 - - Bison 0.600 0.700 0.000 0.455 - - Conserval 0.600 0.700 0.200 0.841 - - Bison		Chicken - Layers - (Deep Pit)	2.000	0.700	0.008	0.011		-
Turkey - Toms/Breeders 1.000 0.700 0.020 0.011 - 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 - Ducks 1.000 0.700 0.010 0.007 - Geese 1.000 0.700 0.010 0.007 - Horses PMU 0.650 0.700 1.000 0.455 - Feeders > 750 lbs 0.650 0.700 0.300 0.420 - - Mules 0.600 0.700 0.300 0.420 - - Sheep Ewes/Rams 0.600 0.700 0.280 0.081 - Lambs 0.600 0.700 0.250 0.105 - - Gotas Meat/Milk (per Ewe) 0.700 0.700 0.700 0.700 -		Chicken - Pullets/Broilers	1.000	0.700	0.002	0.001		-
Turkey - Hens (light) 1.000 0.700 0.013 0.009 - Turkey - Broilers 1.000 0.700 0.010 0.007 - Bucks 1.000 0.700 0.010 0.007 - Geese 1.000 0.700 0.020 0.014 - Horses PMU 0.650 0.700 1.000 0.455 - Feeders > 750 lbs 0.650 0.700 1.000 0.455 - - Foals < 750 lbs		Turkey - Toms/Breeders	1.000	0.700	0.020	0.014		-
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 - Horses PMU 0.650 0.700 0.025 - Foads < 750 lbs		Turkey - Hens (light)	1.000	0.700	0.013	0.009		-
Ducks 1.000 0.700 0.015 0.007 - Geese 1.000 0.700 0.020 0.014 - Otroar - Geese - - - Horses PMU 0.650 0.700 1.000 0.455 - Feeders > 750 lbs 0.650 0.700 1.000 0.455 - Mules 0.600 0.700 0.300 0.137 - Donkeys 0.600 0.700 0.670 0.281 - Other - - - - Donkeys 0.600 0.700 0.670 0.281 - Sheep Ewes/Rams 0.600 0.700 0.250 0.105 - Lambs 0.600 0.700 0.250 0.042 - Goats Meat/Milk (per Ewe) 0.700 0.700 0.042 - Goats Bison 0.600 0.700 0.040 0.600 -		Turkey - Broilers	1 000	0 700	0.010	0.007		-
Bison 0.600 0.700 0.700 0.701 <th< td=""><td></td><td>Ducks</td><td>1.000</td><td>0.700</td><td>0.010</td><td>0.007</td><td></td><td>_</td></th<>		Ducks	1.000	0.700	0.010	0.007		_
Other 0.000 0.020 0.010 0.020 0.010 0.020 0.010 0.020 0.010 0.020 0.010 0.020 0.010 0.020 0.010 0.020 0.010 0.020 0.010 0.020 0.011 0 0.020 0.0137 0 0 0.050 0.700 0.000 0.0300 0.0137 0 0 0.0137 0 0.000 0.0137 0.0137 0.0137 0 0 0.0137 0.0137 0 0.0137 0 0.0137 0 0.0137 0 0.0137 0 0.0137 0.0137 0 0.0137 0.0137 0.0137 0 0.0137 0 0.0137		Geese	1.000	0.700	0.010	0.007		
Horses PMU 0.650 0.700 1.000 0.455 - Feeders > 750 lbs 0.650 0.700 1.000 0.455 - Foals < 750 lbs		Other	1.000	0.700	0.020	0.014		-
Horses PMO 0.050 0.700 0.455 - Feeders > 750 lbs 0.650 0.700 1.000 0.455 - Foals < 750 lbs			0.050	0.700	1.000	0.455		-
Feeders > /50 lbs 0.650 0.700 0.100 0.455 - Foals < 750 lbs	Horses	PMU	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 0.600 0.700 0.420 - Other 0 0.600 0.700 0.620 0.841 - Sheep Ewes/Rams 0.600 0.700 0.200 0.084 - Lambs 0.600 0.700 0.250 0.016 - - Construction 0.600 0.700 0.250 0.021 - - Lambs 0.600 0.700 0.050 0.021 - - Goats Meat/Milk (per Ewe) 0.700 0.700 0.100 0.042 - Feeders 0.700 0.700 0.100 0.042 - - Goats Meat/Milk (per Ewe) 0.700 0.700 0.100 0.069 - - Bison 0.600 0.700 0.700		reeders > / 50 lbs	0.650	0.700	1.000	0.455		-
Mules 0.600 0.700 1.000 0.420 - Donkeys 0.600 0.700 0.670 0.281 - Donkeys 0.600 0.700 0.670 0.281 - 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 0.105 0.042 - Other 0 0.700 0.170 0.083 - Goats Meat/Milk (per Ewe) 0.700 0.700 0.170 0.083 - Nannies/Billes 0.700 0.700 0.170 0.038 - - Bison Bison 0.600 0.700 0.077 0.038 - - Christ - - - - - - - Dison		Foals < 750 lbs	0.650	0.700	0.300	0.137		-
Donkeys 0.600 0.700 0.670 0.281 - Cititat -		Mules	0.600	0.700	1.000	0.420		-
Other Other <th< td=""><td></td><td>Donkeys</td><td>0.600</td><td>0.700</td><td>0.670</td><td>0.281</td><td></td><td>-</td></th<>		Donkeys	0.600	0.700	0.670	0.281		-
Ewes/Rams 0.600 0.700 0.200 0.084 - Eves with lambs 0.600 0.700 0.250 0.105 - Lambs 0.600 0.700 0.050 0.021 - Feeders 0.600 0.700 0.050 0.021 - Other 0 0 0.000 0.000 0.000 - Goats Meat/Milk (per Ewe) 0.700 0.700 0.170 0.083 - Nannies/Billes 0.700 0.700 0.170 0.083 - - Bison Bison 0.600 0.700 0.070 0.038 - - Cervid Elk 0.600 0.700 0.021 - - Wild Boar Feeders 2.000 0.800 0.140 0.222 - Wild Boar Feeders 2.000 0.800 0.140 0.224 -		Other						-
Ewes with lambs 0.600 0.700 0.250 0.105 - Lambs 0.600 0.700 0.250 0.105 - Feeders 0.600 0.700 0.050 0.021 - Goats Meat/Milk (per Ewe) 0.700 0.700 0.100 0.042 - Montes/Billies 0.700 0.700 0.110 0.083 - - Feeders 0.700 0.700 0.140 0.069 - - Freeders 0.700 0.700 0.140 0.069 - - Bison 0.600 0.700 0.042 - - - Christ - - - - - - - Bison 0.600 0.700 1.000 0.420 - - - Cervid Elk 0.600 0.700 0.600 0.252 - - Deer 0.600 0.700 0.200 0.844	Sheep	Ewes/Rams	0.600	0.700	0.200	0.084		-
Lambs 0.000 0.700 0.050 0.021 - Feeders 0.600 0.700 0.050 0.021 - Goats Meat/Milk (per Ewe) 0.700 0.700 0.100 0.042 - Moat/Milk (per Ewe) 0.700 0.700 0.100 0.042 - - Goats Meat/Milk (per Ewe) 0.700 0.700 0.140 0.069 - Feeders 0.700 0.700 0.700 0.077 0.038 - Gither - - - - - - Bison 0.600 0.700 1.000 0.420 - - Crivid Elk 0.600 0.700 0.600 - - Deer 0.600 0.700 0.600 0.252 - - Wild Boar Feeders 2.000 0.800 0.140 0.224 - Sow (farrowing) 2.000 0.800 0.371 0.594		Ewes with lambs	0.600	0 700	0.250	0 105		-
Construction 0.000		Lambs	0.000	0.700	0.200	0.001		
Increase 0.000 0.700 0.700 0.042 - 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 0.0140 0.069 - Other - - - - Bison 0.600 0.700 1.000 0.420 - Other - - - - - Bison 0.600 0.700 1.000 0.420 - - Cervid Elk 0.600 0.700 0.600 0.252 - - Deer 0.600 0.700 0.200 0.084 - - Wild Boar Feeders 2.000 0.800 0.140 0.224 - Sow (farrwing) 2.000 0.800 0.371 0.594 -		Eordorn	0.000	0.700	0.000	0.021		-
Control Control <t< td=""><td></td><td>Other</td><td>0.000</td><td>0.700</td><td>0.100</td><td>0.042</td><td></td><td>-</td></t<>		Other	0.000	0.700	0.100	0.042		-
Goals Meat/Mik (per Ewe) 0.700 0.700 0.700 0.170 0.083 - Nannies/Billies 0.700 0.700 0.700 0.069 - Feeders 0.700 0.700 0.070 0.038 - Other - - Bison 0.600 0.700 0.0420 - - Other - - - - Cervid Elk 0.600 0.700 0.600 0.252 - - Deer 0.600 0.700 0.200 0.844 - - Wild Boar Feeders 2.000 0.800 0.140 0.224 - Sow (farrowing) 2.000 0.800 0.371 0.594 - -				0.811	0.45	0.00-		-
Nannies/Billies 0.700 0.700 0.140 0.069 - Feeders 0.700 0.700 0.007 0.038 - Other - Bison 0.600 0.700 1.000 0.420 - Other - - Cervid Elk 0.600 0.700 0.252 - Deer 0.600 0.700 0.200 0.084 - Wild Boar Feeders 2.000 0.800 0.140 0.224 - Sow (farrowing) 2.000 0.800 0.371 0.594 -	Goats	Meat/Milk (per Ewe)	0.700	0.700	0.170	0.083		-
Feeders 0.700 0.700 0.077 0.038 • - Chruit 0 0 0 0 0 -		Nannies/Billies	0.700	0.700	0.140	0.069		-
Other Other <th< td=""><td></td><td>Feeders</td><td>0.700</td><td>0.700</td><td>0.077</td><td>0.038</td><td></td><td>-</td></th<>		Feeders	0.700	0.700	0.077	0.038		-
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						-
Other Other <th< td=""><td>Bison</td><td>Bison</td><td>0.600</td><td>0.700</td><td>1.000</td><td>0.420</td><td></td><td>-</td></th<>	Bison	Bison	0.600	0.700	1.000	0.420		-
Elk 0.600 0.700 0.600 0.252 - Deer 0.600 0.700 0.200 0.084 - Other 200 0.800 0.140 0.224 - Wild Boar Feeders 2.000 0.800 0.140 0.224 - Sow (farrowing) 2.000 0.800 0.371 0.594 -		Other						-
Deer 0.000 0.700 0.202 0.222 - Other 0.600 0.700 0.200 0.242 - Wild Boar Feeders 2.000 0.800 0.140 0.224 - Sow (farrowing) 2.000 0.800 0.371 0.594 -	Cervid	Elk	0.600	0 700	0.600	0.252		-
Deen 0.000 0.700 0.200 0.080 - Øther - <td>CONTRA</td> <td>Door</td> <td>0.000</td> <td>0.700</td> <td>0.000</td> <td>0.232</td> <td></td> <td>-</td>	CONTRA	Door	0.000	0.700	0.000	0.232		-
Other Constraint Constraint </td <td></td> <td></td> <td>0.000</td> <td>0.700</td> <td>0.200</td> <td>0.084</td> <td></td> <td>-</td>			0.000	0.700	0.200	0.084		-
Wild Boar Feeders 2.000 0.800 0.140 0.224 - Sow (farrowing) 2.000 0.800 0.371 0.594 - Other		Oner	0.077	0.011				-
Sow (tarrowing) 2.000 0.800 0.371 0.594 - Other	wild Boar	Feeders	2.000	0.800	0.140	0.224		-
Other		Sow (farrowing)	2.000	0.800	0.371	0.594		-
		Other						-

For New Operations Dispersion Factor

1

Total

33,442.5

Distance et Metres Odour Objective 41.04 54.72 68.4 109.44 Feet ategory 6,033 8,045 10,056 16,089 1,839 2,452 3,065 4,904 3 Δ

For Expanding Operations Dispersion Factor Expansion Factor

1 0.77

		Dista	ance
Category	Odour Objective	Feet	Metres
1	41.04	4,646	1,416
2	54.72	6,194	1,888
3	68.40	7,743	2,360
4	109.44	12,389	3,776

Landbase Requirements (hectares) based on 2006 AOPA requirements

Category of	Type of Livestock	Number of	Dark Brown	Grey	Black	Irrigated
Livestock		Animals	& Brown	Wooded	(ha)	(ha)
			(ha)	(ha)		
Beef	Cows/Finishers (900+ lbs)	75000	9375	7800	5850	4650
	Feeders (450 - 900 lbs)	0	0	0	0	0
	Feeder Calves (<550 lbs)	0	-	-	-	-
	Other	0				
Dairy	*Free Stall - Lactating Cows with all	0	0	0	0	0
	associated dries, heifers, and calves					
(*count	*Free Stail – Lactating cows with Dry Cows	0	-	-	-	-
lactating	Free Stall - Lactating Cows only	0	_	_	-	_
cows only)	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	0	-	-	-	-
	Calving)					
	Replacements - Growing Heifers (350 lbs to	0	-	-	-	-
	breeding)	0				
	Calves (< 350 lbs)	0	-	-	-	-
Swino	Other Forrow to finish *	0		0		
Liquid	Farrow to woop *	0	-	0	-	-
(*count	Farrow only *	0				
sows only)	Feeders/Boars	0	-			
	Growers/Roasters	0	-	-	-	-
	Weaners	Ő	-	-	-	-
	Other	0				
Swine	Farrow to finish *	0	-	-	-	-
Solid	Farrow to wean *	0	-	-	-	-
(*Count	Farrow only *	0	-	-	-	-
sows only)	Feeders/Boars	0	-	-	-	-
	Growers/Roasters	0	-	-	-	-
	Weaners	0	-	-	-	-
		0				
Poultry	Chicken - Breeders - Solid	0	-	-	-	-
	Chicken - Layers - Liquid (includes	0	-	0	0	0
	Chicken Levers (Polt 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	-	-	-	-
Shoop	Sules/Pama	0		0	0	0
Sneep	Ewes with Jambs	0	-	0	0	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 (larfoWing)	U	-	-	-	-
L		U	1			
	Total Hectares		9375.0	7800.0	5850.0	4650.0
	rotar nootares		3373.0	7000.0	3030.0	4050.0
	Total Acres		23165.6	19273.8	14455.4	11490.2

Name	
Address	
Legal Land	
Location	

Animal Units to Determine Affected Party Radius

Category of	Type of Livestock	Number	Animal	Animal
LIVESTOCK		OT A nimele	Unit	Units
		Animais	Factor	
Beef	Cows/Finishers (900+ lbs)	75,000	1.1	68181.8
	Feeders (450 - 900 lbs)	-	2	0.0
	Other	-	3.0	0.0
Dairy	*Free Stall – Lactating Cows with all	-	0.5	0.0
Daily	associated dries, heifers, and calves	-	0.5	0.0
(*count	*Free Stall - Lactating cows with Dry Cows	-	0.6	0.0
lactating	only			
cows only)	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
	Calving)	-	1.15	0.0
	Replacements - Growing Heifers (350 lbs to	-	19	0.0
	breeding)			0.0
	Calves (< 350 lbs)	-	5	0.0
	Other	-		0.0
Swine	Farrow to finish *	-	0.56	0.0
Liquid	Farrow to wean *	-	1.5	0.0
(*count	Farrow only *	-	1.9	0.0
sows only)	Feeders/Boars	-	5	0.0
	Growers/Roasters	-	8.5	0.0
	Weaners	-	18.2	0.0
Suring	Other	-	0.56	0.0
Solid	Farrow to weep *	-	0.00	0.0
(*Count	Farrow only *	-	1.0	0.0
sows only)	Feeders/Boars	-	5	0.0
conc chily)	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	-	125	0.0
	associated pullets)			
	Chicken - Layers - (Belt Cage)	-	150	0.0
	Chicken - Layers - (Deep Pit)	-	150	0.0
	Chicken - Pullets/Broilers	-	500	0.0
	Turkey - Toms/Breeders	-	75	0.0
	Turkey - Rojlers	-	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
	Lamps	-	21	0.0
	Other	-	10	0.0
Goate	Meat/Milk (per Ewe)	-	6	0.0
Could	Nannies/Billies	-	10	0.0
	Feeders	-	13	0.0
	Other	-		0.0
	Rison	-	1	0.0
Bison	DISUIT			
Bison	Other	-		0.0
Bison Cervid	Other Elk	-	1.7	0.0
Bison Cervid	Other Elk Deer		1.7 5	0.0 0.0 0.0
Bison Cervid	Diher Elk Deer Diher	- - - -	1.7 5	0.0 0.0 0.0 0.0
Bison Cervid Wild Boar	Cither Ci	- - - - -	1.7 5 6	0.0 0.0 0.0 0.0 0.0
Bison Cervid Wild Boar	Disting Cither Elk Deer Other Feeders Sow (farrowing)	- - - - - -	1.7 5 6 1.25	0.0 0.0 0.0 0.0 0.0 0.0

Affected Party Radius

4 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.

Residence owner(s) information				
ALL Names on land title:	Ken Burke			
Legal land location of resi	dence(s):	4 4		
Telephone number(s) ¹ :		Email address(es) ¹ :		
Address(es) ¹ and Postal c	ode(s)1:			6

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	LA21053	
Signatures/of all reside	nce owner(s) on title	
Ken Burk	یر بر sidence owner(s) on title	
Date: Cat 25	- 2021	

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Residence owner(s) information

ALL Names on land title:				
Legal land location of residence(s):	24 4			
Telephone number(s) ¹ :	Email address(es) ¹ :			
Address(es) ¹ and Postal code(s) ¹ :				

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 LA21053

Signatures of all residence owner(s) on title

Printed names of all residence owner(s) on title lim

Date: Oct 25-/21

Residence owner(s) information

ALL Names on land title:				
Legal land location of residence(s):	4			
Telephone number(s) ¹ :	Email address(es) ¹ :			
Address(es) ¹ and Postal code(s) ¹ :	TOL 0B0			

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 L 21053 Signatures of all residence owner(s) on tille John Schooten + Sons Schooten Printed names of all residence owner(s) on title Date: Oct 25 7021

Residence owner(s) information

ALL Names on land title:	John Schooten and S	ons	
Legal land location of resi	NE 8 21 24	4	
Telephone number(s)1:		Email address(es)1:	schootenandsons@gmail.com
Address(es) ¹ and Postal c	code(s)1:	TOL OBO	

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

LA21053 application number

Signatures of all residence owner(s) on title

Printed names of all residence owner(s) on title

Date: 000 25 2021



Applicant i	nformation
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NRCB application number: LA21053

Operator/operation name: John Schooten and Sons

Address: Box 148 Diamond City

Postal Code: T0K 0T0

Legal land location of confined feeding operation: SE 8 21 24 W4

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

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

Following is a summary of the proposed development:

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

150 Pens for Feeders/Finishers

- My application for a new AOPA permit proposes the following changes to the existing livestock category, type and/or capacity at my CFO:
 75,000 head of Finishers (Keef)
- 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): 76 Extra pens, 2 Hospitals, Processing Barn, Fresh Water Pond and Effluiant / Run off lagoon

I the applicant understand that the waiver is not va the residence sign this document.	lid unless ALL registered owners of
Permit Applicant:	Date: Colober 25 2021
Residence owner(s) to initial:	54

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Field Acres Mossleigh

Field	Land Location	Dryland Acres	Irrigated Acres	Classification
1	SW 7-21-24	30	130	IRR
2	NE 7-21 - 24	30	130	IRR
3	SE 7-21-24	30	130	IRR
6, 7	NE 8-21-24	32	140	IRR
8, 9, 10, 11	* 5-21-24	155	360	IRR
12, 13, 14, 15	* 9-21-24	77	560	IRR
16	SW 4-21-24	32	126	IRR
17, 18, 19, 20	* 22-21-24	140	480	IRR
21, 23	NW NE 33-20-24	55	250	IRR
22	SW 33-20-24	115		Dark Brown
24	SW 23-21-24	38	80	IRR
25, 26, 27	NW SW E 14-21-24	35	480	IRR
28, 29	NW NE 35-20-24	311		Dark Brown
30, 31	NW SW 32-20-24	48	248	IRR
32, 33, 34, 35	* 21-20-25	626		Dark Brown
36, 37, 38, 39	* 15-20-25	621		Dark Brown
40	NE 9-20-25	79		Dark Brown
41, 44	NW SW 10-20-25	250		Dark Brown
42, 43	NW SW 11-20-25	299		Dark Brown
Donovan 1/2	SW SE 31-20-24	310		Dark Brown
Total		3313	3114	

*Section



Bernie McWilliams agrees to allow John Schooten and Sons Custom Feedyards to spread manure on the following fields during 2022 - 2027 (calendar year).

Land Location	Acres	Soil zone
NE NW 35-20-25	320	DARK Brown
NW 1-21-25	160	
SW 12-21-25	160	۱,
$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	160 160 160 260 320 300 570	Listed: 3,120 acres dry
P.T.C		Application LA21053 Page 21 of 42 LA21053 TD Page 21 of 51



Bone Mewilians agrees to allow John Schooten and Sons Custom Feedyards to spread manure on the following fields during _________(calendar year).

Land Location	Acres	Soil zone
3-21-26	600	Dark Brown
2-21-26	640	<u>с</u>
10-21-26	600	()
16 - 21-26	600	
いん 15-21-20	320	15
NE 17-20-26	160	Listed: 3,070 acres dry
SE 22-20-26	150	LN

Date:

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banie Mc William agrees to allow John Schooten and Sons Custom Feedyards to spread manure on the following fields during ______ (calendar year).

Land Location	Acres	Soil zone
NE 17-20-26	150	DArk Brown
51/2 16-20-26	300	λ 、
7-20-26	550	C _N
SW 6-20-26	60	LX.
SW 11-21-20	140	1.5

Listed: 1,300 acres dry

Signed: _____ Date:____

Application LA21053 Page 23 of 42



 $\frac{1}{2} \frac{1}{2} \frac{1}$

Land Location	Acres	Soil zone
SW SE 26-20-25	320	DAR Brown
NW NE 36-20-25	320	~ ~ ~
SW JE 9-21-25	320	د ۱
NW NE 31-20-24	320	tγ

Listed: 1,280 acres dry



Date: Ju (202/

Application LA21053 Page 24 of 42



Breft Brooks agrees to allow John Schooten and Sons Custom Feedyards to spread manure on the following fields during 2022 - 3027 (calendar year).

Land Location	Acres	Soil zone
33-21-24	512	DArk Brown
20-21-24	632	L X

Listed: 1,144 acres dry

Signed:

Date: June 4, 2021

Application LA21053 Page 25 of 42



Rob Bagle agrees to allow John Schooten and Sons Custom Feedyards to spread manure on the following fields during 2022 - 2027 (calendar year).

NE-10-21-25 SW-19-21-24 Land Location	160 160 Acres	۱) ۱۱ Soil zone	
NW SW NE 14-21-25	480	DARK Brown	
NE NW SE 22.21-55	480	ι 🔨	
She se ne 15-21-85	480	۱۴	
NE 🗶 18-21-24	320	11	
Sw 17-21-24	160	Listed: 3,340 acres	s dry
NW NE 24-21-25	320	ζ	
16-21-24	620		
Sw -15 -21 - 24	(60		
Signed:	Date: J	une 2,2021	

Application LA21053 Page 26 of 42



Robert Lee agrees to allow John Schooten and Sons Custom Feedyards to spread manure on the following fields during 2022 - 2027 (calendar year).



Listed: 920 acres dry

Signed:

Date: JUNE, 05, 2021

Application LA21053 Page 27 of 42



D. VID BeHC. agrees to allow John Schooten and Sons Custom Feedyards to spread manure on the following fields during 2022 - 2027 (calendar year)

Land Location	Acres	Soll zone
NE 10-21-24-WY	160 ours	Ingelie
NE 15-21-24-64	160 ours	Irrigeted.
SE 15-21-24-W4	100 cures	Ivrigated
NW 15-21-24-W4	160 acres	Imgente

Listed: 580 acres irrigated



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LA21053 TD Page 28 of 51

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): <u>aerial pictures (google earth)</u> Margin of error (if applicable): <u>+/- 2 m</u>							
Requirements (m): Category 1: 1,839	m Category 2: 2,452 m Category	3: _3,065 m Category 4: _4,904 m					
Technology factor:		🗆 yes 🖾 no					
Expansion factor:		🗆 yes 🖄 no					
MDS related concerns from directly affe	cted parties or referral agencies:	I YES INO					
LAND BASE FOR MANURE AN Land base required: 11,490ac Land base listed: 3,694 ac Area not suitable:	D COMPOST APPLICATION res irrig. or 23,165acres dry land res irrigated and 17,487 acres dry land. acres equivalent atrion) NO YES □ NO YES □ NO If yes, plan is a	Calculation: 1 acre irrigated equals approximately 2 acres dry land. Therefore the total land base listed equals: 7,388 + 17,487= 24,875 acres Dry land= brown soil zone het: ⊠ YES □ NO httached: □					
PLANS							
Submitted and attached construction pla	ans: 🎽 YES 🗖 NO						
Submitted aerial photos:	🔀 YES 🗖 NO						
Submitted photos:	🗆 yes 🖄 no						
GRANDFATHERING							
Already completed: If already completed, see	☐ YES INO ☐ N/A Set th	ee Decision Summary LA21053 for details c e grandfathering determination.					
Last updated: 17 Dec 2020		Page of					

NRCB USE ONLY

Part 2 — **Technical Requirements**



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

NRCB USE ONLY							
ALL SIGNATURES	IN FILE	🎽 yes 🗆	NO				
DATES OF APPROVAL OFFICER SITE VISITS							
lub 7, 2021							
CODDESDONDENC		ITIES AN		<u></u>		0156	
	L January 5, 2022	ITTES AN			AGEIN	CIES	
Municipality: Vulcan	County						
Ietter sent	I response received	🗴 writter	/email		verbal		no comments received
Alberta Health Services	s:						
Ietter sent	C response received	uritter	/email		verbal	\mathbf{X}	no comments received
Alberta Environment a	nd Parks: 🛛 N/A						
🛛 letter sent	X response received	X writter	/email		verbal		no comments received
Alberta Transportation	: 🗆 N/A						
K letter sent	I response received	🗙 writter	/email		verbal		no comments received
Alberta Regulatory Ser	vices: X N/A						
Letter sent	response received	uritter	/email		verbal		no comments received
Siksika Natio	n					—	
Other:OINSING IVALIO	<u>""</u>					LI N/A	
Ietter sent	response received	📈 writter	/email		verbal		no comments received
Other: Wheatland C	County					🗆 N/A	
🛛 letter sent	X response received	🗴 writter	/email		verbal		no comments received

Last updated: 17 Dec 2020

NRCB USE ONLY

Part 2 – Technical Requirements



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

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. Ditch and 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 All pens will run to a precast ditch, located in the centre of the feedlot.

This will run west to east into the effluent pond located on the east side of the feedlot.

Catch basin capacity

				Dopth bolow	Slope run:rise		e	NRCB USE ONLY
	Length (m)	Width (m)	Total depth (m)	ground level (m)	Inside end walls	Inside side walls	Outside walls	Calculated storage capacity (excl. 0.5 m freeboard) (m ³)
· 1 ₃₀	200	90	3	18	3:1	3:1	3:1	24,336 m ³
2.								
3.								
						ΤΟΤΑΙ	CAPACITY	

Naturally occurring protective layer details

Thickness of naturally occurring protective layer	1.9(m)	Provide details (as SC 28-21	required)		
Soil texture	% sand	÷	% silt		% clay
	Depth and type of soil tested	Hydraulic conducti	vity (cm/s)	Describe	test standard used
Hydraulic conductivity - naturally occurring protective layer		4.4E-07		Modified fallin	g head
Catch Basin – Design and mana Technical Guideline Agdex 096-	gement requirements can be found in 101	NRCB USE C	DNLY		
			Require	ments met:	
If soil info differs per facility include additional soils page.			Conditio	on required:	X YES INO
			Report	attached:	🗙 yes 🗌 no



Catch Basin Storage Volume Calculator

Overall Dimensions of Catch Basi	n		Catch Basin
Total Length* ₄	200.0	m	656 ft
Total Width* ₄	90.0	m	295 ft
Total Depth*₄	3.0	m	10 ft
Design Capacity Depth	2.50	m	8 ft
End Slope* ₄	3	run:rise	3 run:ris
Side Slope* ₄	3	run:rise	3 run:ris
Length of Bottom	182.0	m	597 ft
Width of Bottom	72.0	m	236 ft
			Capacity @tob
Capacity @ top of Bank	46,494	m ³	1,641,920 ft ³
			10,227,246 Imp. Ga
Design Capacity of Catch Basin	(freeboard	d level)	Design Capacity (freeboard level)
Length (design capacity depth)	197.0	m	646 ft
	87.0	m	285 ft
Width (design capacity depth)	07.0		
Width (design capacity depth) <i>Total Depth</i>	3.0	m	<i>10</i> ft
Width (design capacity depth) <i>Total Depth</i> Design Capacity Depth	3.0 2.50	m m	10 ft 8 ft
Width (design capacity depth) <i>Total Depth</i> Design Capacity Depth End Slope	3.0 2.50 3	m m run:rise	10 ft 8 ft 3 run:ris
Width (design capacity depth) <i>Total Depth</i> Design Capacity Depth End Slope Side Slope	3.0 2.50 3 3	m m run:rise run:rise	10 ft 8 ft 3 run:ris 3 run:ris
Width (design capacity depth) <i>Total Depth</i> Design Capacity Depth End Slope Side Slope Design Capacity (freeboard level)	3.0 2.50 3 3 3 37,710	m m run:rise run:rise m ³	<i>10</i> ft 8 ft 3 run:ris 3 run:ris 1,331,716 ft ³
Width (design capacity depth) <i>Total Depth</i> Design Capacity Depth End Slope Side Slope Design Capacity (freeboard level)	3.0 2.50 3 3 3 37,710	m m run:rise run:rise m ³	10 ft 8 ft 3 run:ris 3 run:ris 1,331,716 ft ³ 8,295,037 lmp. 0

CFO Name ₁	(Enter C	FO Name Here)
Land Locatio	n ₁	XXXXXXXXXX

Paved Runoff Catchment Area(s)					
Area 2	Length (m)	Width (m)	Area (m²)		
1			0.0		
2			0.0		
3			0.0		
4			0.0		
5			0.0		
Total Area (m ²) 0					

Unpaved Runoff Catchment Area(s)						
Area 2	Length (m)	Width (m)	Area (m²)			
6	6,400	65	416,000.0			
7			0.0			
8			0.0			
9			0.0			
10			0.0			
Total Area (m ²) 416,000						

Rainfall (Select Town 3)	
Vulcan 90	
AOPA Design Rainfall	90 mm
Minimum Catchbasin St	orage Volume Required
24,336 m ³ **	859417.73 ft ³
	5353169.5 Imp. Gal.

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



Lines in Black - Overall catch basin dimensions

Lines in Blue - Design capacity depth dimensions (excludes freeboard)

NTS - Not To Scale

Part 2 – Technical Requirements



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

RUNOFF CONTROL CATCH BASIN	N: Naturally occurri	ng protective layer (cont.)	
NRCB USE ONLY			
Catch basin calculator. Total volume @ free	eboard level: <u>37,710 m3</u>	_Runoff capacity requirements met:	YES 🗆 NO
Calculation of the volume attached:	🛛 YES 🗌 NO		
Depth to water table:below 10.7 m	below ground	Requirements met:	YES 🗆 NO
Depth to uppermost groundwater resource	30.8 m	Requirements met:	X YES NO
ERST completed: 😡 See ERST page for de	tails		
Protective layer specification comments (e.	g. sand lenses; layering ur	niform or irregular; number and loca	tion of boreholes):
A total of 30 boreholes were drilled in the basin	area of the proposed feedlo	ot pens and catch basin, 5 within the	area of the proposed catch
The layering in the overall area is fairly un lensing in the upper 2 m of the boreholes.	iform, dominated by till wit	th clayloam texture. Boreholes 28, 12	2, 15, 18 report localized sand
Lookage detection system required		If yos, ploase explain	
Leakage detection system required:		n yes, please explain.	

Part 2 – Technical Requirements



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

NRCB USE ONLY						
RUNOFF CONTROL CATCH BASIN CAPACITY SUMMARY (if applicable)						
Facility 1						
Name / description	All existing catch basins together (individual dimensions and	Capacity	62,949 m ³			
Facility 2	volume listed on page 2)					
Name / description	new catch basin	Capacity	37,710 m ³			
Facility 3						
Name / description		Capacity				
Facility 4		1				
Name / description		Capacity				
	TOTAL CAPACITY		100,659 m³			
RUNOF	None					
MEETS AOPA RUN						

Catch Basin Storage Volume Calculator

Overall Dimensions of Catch E	Basin				Catch Basin	
Total Length* ₄			m		0	ft
Total Width* ₄			m		0	ft
Total Depth*₄			m		0	ft
Design Capacity Depth	-	0.50	m		-2	ft
End Slope*4		3	run:rise		3	run:rise
Side Slope* ₄		3	run:rise		3	run:rise
Length of Bottom		-	m		0	ft
Width of Bottom		-	m		0	ft
					Capacity (@tob
Capacity @ top of Bank		-	m		0	π
Design Capacity of Catch Ba	isin (f	reeboar	d level)		Design Ca (freeboard	pacity I level)
Length (design capacity depth)	-	3.0	m		-10	ft
Width (design capacity depth)	-	3.0	m		-10	ft
Total Depth		-	m		0	ft
Design Capacity Depth	-	0.50	m		-2	ft
End Slope		3	run:rise		3	run:rise
Side Slope		3	run:rise		3	run:rise
				-		
Design Capacity (freeboard level)	-	2	m ³	-	53	ft ³

CFO Na	CFO Name 1 (Ente		r CFO Name Here)		
Land Lo	cation 1		XXXXXXXXX		

Bayod Bunoff Catchmont Area(s)			
rav	<u>reu</u> Runon Ca	Chiment Area	a(5)
Area 2	Length (m)	Width (m)	Area (m²)
1			0.0
2			0.0
3			0.0
4			0.0
5			0.0
	Total Area (m ²) 0		

Unpaved Runoff Catchment Area(s)				
Area 2	Length (m)	Width (m)	Area (m²)	
6	1,412	650	917,800.0	
7			0.0	
8			0.0	
9			0.0	
10			0.0	
	Tot	tal Area (m ²)	917,800	

Rainfall (Select Town 3)	
Vulcan 90	
AOPA Design Rainfall	90 mm
Minimum Catchbasin St	orage Volume Required
53,691 m ³ **	1896090.4 ft ³
	11810430 Imp. Gal.

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

> Calculation of the minimum catch basin volume for the existing feedlot pen area



Lines in Black - Overall catch basin dimensions

Lines in Blue - Design capacity depth dimensions (excludes freeboard)

NTS - Not To Scale

Part 2 — Technical Requirements



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

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)

	Pone	
-	1 0113	

2._____

Manure storage capacity

	Length (m)	Width (m)	Depth below ground level (m)	NRCB USE ONLY Estimated storage capacity (m ³)
1.	815	605	1.1	
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 <u>Short-Term Solid Manure Storage Requirements Fact Sheet</u>.

Surface water control systems

Describe the run-on and runoff control system All pens will drain into a central catchment ditch which will divert the flow into the main effluent pond to the east.

Naturally occurring protective layer details

Thickness of naturally occurring protective layer	(m)	Provid Test SC 15 SC 23 SC 30	e details (as requ -21 -21 -21	uired)		
Soil texture	% sand			% silt		% clay
Hydraulic conductivity	Depth and type of soil tested	Hydrau	lic conductivity	(cm/s)	Describe test	standard used
- naturally occurring protective layer	1.1 - 3.8 0.9 - 3.9 0.4 - 3.0	SC 15- SC 23- SC 30-	-21 - 8.8 E-08 -21 - 2.9 E-08 -21 - 4.6 E-07		Modified falli	ing head
Additional information (a	attach copies of soil test reports)		NRCB USE ON	LY		
				Requiren	nents met:	X YES 🗋 NO
				Condition	n required:	🔀 yes 🗌 no
				Report a	ttached:	YES 🗌 NO

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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, CO Naturally occurring)MPOST, & COMPOSTING MATE	RIALS: Barns, feedl	ots, & storage facilities -
NRCB USE ONLY			
Nine month manure store	age volume requirements met: 🛛 YES	YES With STMS	□ NO
Depth to water table:	below 10.7 m below ground	Requirements met:	
Depth to uppermost grou	indwater resource:30.8 m	_ Requirements met:	X YES INO
ERST completed: 🛛 see	ERST page for details		
Surface water control	systems		
Requirements met: 🖌 Y	ES 🔲 NO Details/comments:		
Naturally occurring pro	otective layer details		
Layer specification comm	ents (e.g. sand lenses; layering uniform or	irregular; number and loca	ation of boreholes):
Fairly uniform layering o sandy loam soils (boreh	of till material. Clay loam, medium stiff, moi 10les 28, 12, 15, 18, and 23) in the upper 2	ist (due to irrigation). Loca m of the soil horizon.	lized sand lenses or

20 May 2021

Wood File: BX30492

wood.

3102 – 12 Avenue South Lethbridge, Alberta T1H 5V1 T: +1 403 327-7474 www.woodplc.com

Jon Schooten & Sons Custom Feedyard Ltd. Box 148 Diamond City, AB TOK 0T0

Attention: Mr. Cody Schooten:

Re:

Geotechnical Review and Evaluation Proposed Feedlot Expansion W¹⁄₂-08-021-24-W4M, near Mossleigh, Alberta

As requested, Wood Environment & Infrastructure Solutions (Wood) has carried out a geotechnical review and evaluation of the above-captioned site relative to the required protection of the groundwater resource, as required by the Agricultural Operation Practices Act, AB Reg. 267/2001 (hereinafter referred to as "AOPA"). This letter describes site soil conditions to support a permit application related to a series of proposed new pens in the SW quarter of Section 8 just north of the existing feedlot, and new pens encompassing about half of the NW quarter of Section 8 (see Figure 1). In addition, this report also encompasses the soil conditions associated with a proposed catch basin to be located along the east side of the proposed feedlot expansion (see Figure 1).

In order to demonstrate the suitability of the naturally existing soils for consideration as a naturally occurring protective layer to the groundwater, thirty (30) boreholes were advanced at the site on March 18, 2021 and May 5, 2021. The boreholes were advanced at the approximate locations illustrated on Figure 1 as SC1-21 to SC30-21.

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 12.2 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 comprised of medium plastic clay till, with minor and localized lacustrine fine sand loam deposits at the surface of several of the boreholes. While minor groundwater seepage below depths of 4.5 m to 10.8 m below grade was encountered, no groundwater resource (as defined by the AOPA) was identified within the 12.2 m drilling depth at the site.

In order to measure the permeability of the subsurface soils, 50 mm diameter PVC monitoring wells were constructed in five boreholes. Two monitoring wells were constructed in the area of the proposed catch basin (SC28-21 and SC29-31), while three of the monitoring wells were constructed in the proposed pen areas, and included boreholes SC15-21, SC23-21, and SC30-21, and. The pen area test wells were screened at depths of about 1.4 m to 3.9 m, while the two wells at the catch basin were screeded from 4.4 m to 6 m (SC29-21) and 5.7 m to 9.2 m (SC28-21).

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 several days, the average 24-hour water drop at SC15-21 was Application LA21053 Page 29 of 42 Jon Schooten & Sons Custom Feedyard Ltd. Geotechnical Review & Evaluation, W1/2-08-021-24-W4M, near Mossleigh, Alberta 20 May, 2021 Page 2

about 0.40 m, the average 24-hour water drop at SC23-21 was about 0.25 m, the average 24-hour water drop at SC28-21 was about 1.93 m, the average 24-hour water drop at SC29-21 was about 3.81 m, and the average 24-hour water drop at SC30-21 was about 1.98 m. During the testing, the wells were each protected from freezing.

In order to calculate the permeability of the screened portion of the clay till 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 In Situ Permeability Test report sheets, attached. As outlined on the reports, the results of the *in situ* permeability testing indicate the following hydraulic conductivity, k_s , values:

- 8.8 x 10⁻⁸ cm/s at SC15-21;(pen area)
- 2.9 x 10⁻⁸ cm/s at SC23-21;(pen area)
- 6.6 x 10⁻⁸ cm/s at SC28-21;(catch basin area)
- 4.4 x 10⁻⁷ cm/s at SC29-21; (pen/catch basin area) and
- 4.6 x 10⁻⁷ cm/s at SC30-21 (pen area).

Using the measured permeability of the clay stratum, the following equivalent natural soil thicknesses at the monitoring well locations has been estimated:

- the 0.6 m of clay screened at \$C15-21 is estimated to represent the equivalent of approximately
 6.8 m of naturally occurring materials having a hydraulic conductivity of 1 x 10⁻⁶ cm/s (the reference standard in AOPA);
 - the 1.6 m of clay screened at SC23-21 is estimated to represent the equivalent of 55 m of naturally occurring materials having a hydraulic conductivity of 1 x 10⁻⁶ cm/s;
 - the 3.5 m of clay screened at SC28-21 is estimated to represent the equivalent of 53 m of naturally occurring materials having a hydraulic conductivity of 1 x 10⁻⁶ cm/s;
 - the 1.6 m of clay screened at SC29-21 is estimated to represent the equivalent of 3.6 m of naturally occurring materials having a hydraulic conductivity of 1 x 10⁻⁶ cm/s; and
 - the 1.6 m of clay screened at SC30-21 is estimated to represent the equivalent of 3.5 m of naturally occurring materials having a hydraulic conductivity of 1 x 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 for catch basins (minimum 5 m, Section 9.5-b).

It is noted that the two different levels were assessed at the proposed catch basin, to both assess the shallower clay and the deeper clay, with the intent of demonstrating suitability of the shallower clay for solid manure storage in that area in the event that the deeper clay (as screened in SC28-21) did not meet the AOPA requirements. In this case, SC28-21 did meet the requirements of the deeper clay for relative to catch basins, while SC29-21 met the requirements of the upper clay relative to solid manure storage.

Conclusion

Based on the results of the current investigation, permeability testing, and our understanding of the site and proposed development at the site, it is Wood's opinion that the naturally occurring materials at the

> Application LA21053 Page 30 of 42 LA21053 TD Page 41 of 51

Jon Schooten & Sons Custom Feedyard Ltd. Geotechnical Review & Evaluation, W1/2-08-021-24-W4M, near Mossleigh, Alberta 20 May, 2021 Page 3



site satisfy the AOPA requirements for permitting the proposed pen and catch basin permitting at this site.

While the site meets the AOPA requirements for the naturally occurring protective layer, it is noted that minor lacustrine fine sand loam was noted within the upper 2 m of borehole SC29-21, located at the proposed catch basin. Accordingly, it is recommended that the catch basin excavation be reviewed at the time of construction, and any residual sand loam be subexcavated and replaced with compacted low-permeable clay.

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

Yours truly,

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



Associate Engineer, Geotechnical Lethbridge & Medicine Hat Area Lead

Attachments

- Figure 1 Borehole Locations
- In Situ Permeability Test Calculations

Soil Profile and Parent Material Description, Chilako Drilling Services

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

PERMIT	PRACTICE
Wood Environment &	intrastructure Solutions
Signature	17021
PERMIT NUM The Association Engineers and Geo	BER: P-04546 of Professional

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SC29-21



In Situ Permeability Test

Modified Falling Head Permeability Equation

$$K_{s} = \frac{r^{2}}{2\ell\Delta t} \left[\frac{\sinh^{-1}\frac{\ell}{r_{e}}}{2} \ln \left[\frac{2H_{1}-\ell}{2H_{2}-\ell} \right] - \ln \left[\frac{2H_{1}H_{2}-\ell}{2H_{1}H_{2}-\ell} \right] \right].$$

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

SC29-21 - Schooten & Sons (Mossleigh)

Wood File: BX30492

ES ES	Terms	Value	Definition
Б	D	0.0520	dlameter of standpipe (m)
AN AN	De	0.1500	diameter of borehole (m)
AF	L L	1.60	length of sand section (m)
2	h1	6.60	initial height of water above base of hole (m)
5	h2	2.79	final height of water above base of hole (m)
Ľ	t	24.0	time of test (h)
	X.		

	A CONTRACT OF A CONTRACTOR
Ks =	4.4E-07 cm/sec



SC15-21

In Situ Permeability Test

Modified Falling Head Permeability Equation

$$K_{s} = \frac{r^{2}}{2\ell\Delta t} \left[\frac{\sinh^{-1}\frac{\ell}{r_{e}}}{2} \ln \left[\frac{2H_{1}-\ell}{2H_{2}-\ell} \right] - \ln \left[\frac{2H_{1}H_{2}-\ell H_{2}}{2H_{1}H_{2}-\ell H_{1}} \right] \right]$$

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

SC15-21 - Schooten & Sons (Mossleigh)

Wood File: BX30492

Definition	Terms Value	🕰 Tei
20 diameter of standpipe (m)	D 0.0520	D B
00 diameter of borehole (m)	De 0.1500	≤ De
60 length of sand section (m)	L 0.60	AR L
40 initial height of water above base of hole (m)	h1 4.40	≥ h1
00 final height of water above base of hole (m)	h2 4.00	5 h2
1.0 time of test (h)	t 24.0	t t
1.0 time of test (h)	t 24.0	≜ t

Ko	-	OPE AD amplana	
ns.		0.0E-U0 CITI/Sec	



wood.



In Situ Permeability Test

Modified Falling Head Permeability Equation

$$K_{s} = \frac{r^{2}}{2\ell\Delta t} \left[\frac{\sinh^{-1}\frac{\ell}{r_{e}}}{2} \ln \left[\frac{2H_{1}-\ell}{2H_{2}-\ell} \right] - \ln \left[\frac{2H_{1}H_{2}-\ell H_{2}}{2H_{1}H_{2}-\ell H_{1}} \right] \right]$$

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

SC23-21 - Schooten & Sons (Mossleigh)

Wood File: BX30492

SC23-21

щ	Terms	Value	Definition
В	D	0.0520	diameter of standpipe (m)
Į	De	0.1500	diameter of borehole (m)
¥.	15 1	1,60	length of sand section (m)
2	h1	4.50	initial height of water above base of hole (m)
5	h2	4.25	final height of water above base of hole (m)
Å	t	24.0	time of test (h)

Ks =	2 9E-08 cm/sec



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SC30-21

wood.

In Situ Permeability Test

Modified Falling Head Permeability Equation

$$K_{x} = \frac{r^{2}}{2\ell\Delta t} \left[\frac{\sinh^{-1}\frac{\ell}{r_{e}}}{2} \ln \left[\frac{2H_{1} - \ell}{2H_{2} - \ell} \right] - \ln \left[\frac{2H_{1}H_{2} - \ell H_{2}}{2H_{1}H_{2} - \ell H_{1}} \right] \right].$$

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

SC30-21 - Schooten & Sons (Mossleigh)

Wood File: BX30492

ŝ	Terms	Value Definition
B	D	0.0520 diameter of standpipe (m)
KIA	De	0.1500 diameter of borehole (m)
AR	L	1.60 length of sand section (m)
2	h1	3.60 initial height of water above base of hole (m)
5	h2	1.62 final height of water above base of hole (m)
Ł	t	24.0 time of test (h)

4.6E-07 cm/sec	1.0-15
	4.6E-07 cm/sec



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Hole #	Location	Depth	Texture	Moisture	Geological	Sample	Remarks
SC9-21	0338189 5626774 catch basin	0-0.2 0.2-1.1 1.1-4.3 4.3-5.5 5.5-9.2	FSCL FSCL CL CL-C CL-C	F M M M	Topsoil Lac Till Till Till	1.5-3.0	Stiff, med plastic, brown Stiff, med plastic, brown, trace gravel Stiff, medhigh plastic, dark gray
SC10-21	0338095 5626651 pens	0-0.2 0.2-0.5 0.5-2.2 2.2-3.0	L-CL VFSCL VFSCL CL	F D D SM	Topsoil Lac Lac Till		Stiff, med plastic, brown, trace gravel
SC11-21	0337961 5626654 Iower area	0-0.2 0.2-1.5 1.5-3.0	CL CL CL	F SM M	Topsoil Till Till		Stiff, med plastic, brown Stiff, med plastic, brown, oxidized along fractures
SC12-21	0337830 5626657	0-0.3 0.3-1.5 1.5-2.1 2.1-3.0	CL FSCL CL CL	F M VM M	Topsoil Lac Till Till		Olive brown Firm, olive brown, VM-Sat sand lenses Stiff, med plastic, brown
SC13-21	0337717 5626713 high area	0-0.2 0.2-1.3 1.3 - 2.1 2.1-3.0	FSL-FSCL FSL-FSCL FSCL CL-C	F M M	Topsoil Lac Lac Till		Olive brown Stiff, med plastic, brown, high plastic clay layers
SC14-21	0337574 5626664	0-0.2 0.2-1.5 1.5-3.1 3.1-4.5	FSL FSL FSL CL	F M M M	Topsoil Lac Lac Till		Silty V. firm-stiff, med plastic, brown
SC15-21	0337706 5626768	0-0.2 0.2-1.1 1.1-3.8	FSCL FSCL CL	F SM SM	Topsoil Lac Till		Sand lenses Stiff, med plastic, brown 50mm H.C. well installed to 3.8m Screen: 3.8-3.3m Sand: 3.8-3.2m Bentonite: 3.2-0.0m Stickup: 0.6m Hole Diameter: 0.15m
SC16-21	0327831 5626766	0-0.2 0.2-0.9 0.9-1.9 1.9-3.0	FSL FSL FSCL CL-C	F SM SM SM	Topsoil Lac Lac Till		Stiff, med plastic, dark brown, trace gravel
SC17-21	0337963 5626765 Iow area	0-0.2 0.2-1.5 1.5-3.0	CL CL CL-C	M M M	Topsoil Till Till		Stiff, med plastic, gray, sand lensing Stiff, med plastic, gray, sand lensing
SC18-21	0337947 5626875	0-0.2 0.2-0.4 0.4-1.5	SCL SCL CL	M D D	Topsoil Lac Till		Stiff, low plastic, brown, some sand, trace gravel
		1.5-3.0	CL-C	D	∞ Till		Stiff, med plastic, dark brown, trace gravel sand lensing (M)

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SOIL PROFILE AND PARENT MATERIAL DESCRIPTION (CONTINUED)

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Hole #	Location	Depth	Texture	Moisture	Contogioal	Romala	Demostra II
	LUCAUUI	Dehru	rexture	ivioisture	Geological	Sample	Remarks
SC19-21	0337836 5626890	0-0.2 0.2-1.6 1.6-3.0	VFSL VFSL CL-C	D D SM	Topsoil Lac Till		Silty Stiff, med plastic, brown
SC20-21	0337724 5626879	0-0.2 0.2-1.1 1.1-3.0	FSL FSL-FSCL CL	M SM SM	Topsoil Lac Till		Stiff, med plastic, brown, silty
SC21-21	0337562 5626950 high area	0-0.2 0.2-0.7 0.7-1.5 1.5-2.2 2.2-4.5	VFSL VFSL VFSCL CL CL-C	M SM SM SM SM	Topsoil Lac Lac Till Till	(9)	V. firm, low-med plastic, brown Stiff, med plastic, dark brown, trace gravel
SC22-21	0338000 5627088 high area	0-0.2 0.2-0.7 0.7-3.0	FSCL FSCL-CL CL	M SM SM	Topsoil Lac Till		Stiff, med plastic, brown
SC23-21	0337886 5627091 NE of pivot	0-0.2 0.2-0.4 0.4-0.9	SiL SiL VFSL	D D D	Topsoji Lac Lac	я	Some sand Some sand
×	point	0.9-3.9	CL	D	Till		Stiff, med plastic, brown 50mm H.C. well installed to 3.9m Screen: 3.9-2.4m Sand: 3.9-2.3m Bentonite: 2.3-0.0m Stickup: 0.6m Hole Diameter: 0.15m
SC24-21	0337778 5627094	0-0.2 0.2-0.7 0.7-1.6 1.6-3.0	CL CL CL-C CL-C	M M M	Topsoil Lac Till Till		Sand lens @ 0.7m Stiff, med plastic, brown Stiff, med plastic, dark brown, some oxidation
SC25-21	0337672 5627095	0-0.2 0.2-1.0 1.0-1.6 1.6-3.0	FSL FSL CL CL-C	M SM SM SM	Topsoil Lac Till Ti ll		Stiff, med plastic, dark brown, trace gravel
SC26-21	0337555 5627099	0-0.2 0.2-1.5 1.5-3.0	CL CL CL	M SM M	Topsoil Till Till		V. firm, med plastic, brown Stiff, med plastic, brown
SC27-21	0338130 5626628 on a knell ~3.6m high area	0-0.15 0.15-0.6 0.6-1.1 1.1-1.8 1.8-3.3 3.3-4.8 4.8-7.1 7.1-7.7 7.7-12.2	CL FSCL FSCL-CL FSCL-CL FSL CL-C C C	M M M M M M M	Topsoil Eol Till Till Till Till Till TIII		Sand lensing, iron staining along fractures Stiff, med plastic, brown, trace gravel Stiff, med plastic, dark gray, basel till Stiff, med plastic, dark brown, oxidized mixed with dark gray basel till sat along fractures Free water @ 10.8m at time of drilling 25mm standpipe installed to 12 2m BGS

SOIL PROFILE AND PARENT MATERIAL DESCRIPTION (CONTINUED)

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Hole #	Location	Depth	Texture	Moisture	Geological	Sample	Remarks
SC28-21	0338181 5656643 low depressional	0-0.15 0.15-0.45 0.45-0.7 0.7-4.9 4.9-6.8 6.8-9.7 9.7-10.5 10.5-10.7	L L C C C C C C C C C C C C C C C C C C	M M M M M M	Topsoil Eol Till Till Till Till Till Till	bulk 7.0-9.0	Sand lensing Stiff, med plastic, brown, trace gravel, oxidized along fractures Stiff, med plastic, dark gray basel mixed with dark brown till Stiff, med-high plastic, dark gray basel Stiff, med plastic, brown Stiff, med plastic, brown, sat along fractures 50mm H.C. installed to 9.0m BGS Bentonite: 10.7-9.2m Screen: 9.0-6.0m Sand: 9.2-5.7m Bentonite: 5.7-0.0m Stickup: 0.3m Hole Diameter: 0.15m
SC29-21	0338156 5626729	0-0.15 0.15-1.5 1.5-2.0 2.0-6.0	FSL FSL FSCL CL	M M M	Topsoil Lac Lac Till	0.2-1.5 bulk	Stiff, med plastic, brown, bulk sample 3.0-4.5 50mm H.C. well installed to 6.0m BGS Screen: 6.0-4.5m Sand: 6.0-4.4m Bentonite: 4.4-2.8m Stickup: 0.6m Hole Diameter: 0.15m
SC30-21	0337518 5626824	0-0.15 0.15-0.4 0.4-3.0	CL CL-C	M M M	Topsoil . Till .Till	5	Stiff, med plastic, brown 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

SOIL PROFILE AND PARENT MATERIAL DESCRIPTION (CONTINUED)

Legend: L

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

Eg. VFSCL = Very Fine Sandy Clay Loam

Hole #	Location	Depth	Texlure	Moisture	Geological	Sample	Remarks
SC28-21	0338181 5656643 Iow depressional	0-0.15 0.15-0.45 0.45-0.7 0.7-4.9 4.9-6.8 6.8-9.7 9.7-10.5 10.5-10.7	L CL-C C CL-C CL-C CL-C	M M M M M M	Topsoil Eol Till Till Till Till Till Till	bulk 7.0-9.0	Sand lensing Stiff, med plastic, brown, trace gravel, oxidized along fractures Stiff, med plastic, dark gray basel mixed with dark brown till Stiff, med-high plastic, dark gray basel Stiff, med plastic, brown Stiff, med plastic, brown, sat along fractures 50mm H.C. installed to 9.0m BGS Bentonite: 10.7-9.2m Screen: 9.0-6.0m Sand: 9.2-5.7m Bentonite: 5.7-0.0m Stickup: 0.3m Hole Diameter: 0.15m
SC29-21	0338156 5626729	0-0.15 0.15-1.5 1.5-2.0 2.0-6.0	FSL FSL FSCL CL	M M M	Topsoil Lac Lac Till	0.2-1.5 bulk	Stiff, med plastic, brown, bulk sample 3.0-4.5 50mm H.C. well installed to 6.0m BGS Screen: 6.0-4.5m Sand: 6.0-4.4m Bentonite: 4.4-2.8m Stickup: 0.6m Hole Diameter: 0.15m
SC30-21	0337518 5626824	0-0.15 0.15-0.4 0.4-3.0	CL CL-C	M M M	Topsoil Tili Tili		Stiff, med plastic, brown 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

SOIL PROFILE AND PARENT MATERIAL DESCRIPTION (CONTINUED)

Legend: L

Loam С Clay S Sand

Gr. Gravel

Si Silt

F Fine (sand) Very Fine (sand)

VF

Eg. VFSCL = Very Fine Sandy Clay Loam