Technical Document LA25014

Part 2 — Technical Requirements



NRCB USE ONLY Appl	Ication number Lega	I land description
		4-4-20 W4M
Amendment Registration Lauthorization Lauthorization	10014	
APPLICATION DISCLOSURE		And a second
This information is collected under the authority of the <i>Agricultural O</i> provisions of the <i>Freedom of Information and Protection of Privacy A</i> written request that certain sections remain private.		
Any construction prior to obtaining an NRCB permit is an offer prosecution.	nce and is subject to enforcemen	t action, including
, the applicant, or applicant's agent, have read and understand the provided in this application is true to the best of my knowledge.	statements above, and I acknowledge	ge that the information
Jeb 13/25		***************************************
Date of signing	Sign	
OKC Forms	Paul Kle	iusosser
Corporate name (if applicable)	Print name	
THE AL THE ANALYSIA SPANISHANDS		
GENERAL INFORMATION REQUIREMENTS Proposed facilities: list all proposed confined feeding operation fa	scilities and their dimensions. Indica	te whether any of the
proposed facilities are additions to existing facilities. (attach addition		
Proposed facilities		Dimensions (m)
	(leng	th, width, and depth)
1800 Lange Runs	15	0.4 45 m
NACW LUYEV BUFA		
Attached Manure Storag	e 18.	6 7.8 m
Existing facilities: list ALL existing confined feeding operation fac	cilities and their dimensions	
Existing facilities	Dimensions (m)	NRCB USE ONLY
	(length, width, and depth)	
Hog Bann Dry Sow o Farrow	127 (27	All existing
		facilities confirmed
	117 × 44	
Quaratine Barn 12.2 + 23.6m · pit	12.2 x 23.6 mi Pi	+
HINCH USE ONLY		
Leaf undated, 94 May 2000		Deer of
Last updated: 31 Mar 2020		Page of
NRCB US	E OWTA	



Existing facilities continued	Dimensions (m) (length, width, and depth)	NRCB USE ONLY
Layer Barn plus Manure Storage	94.16.5	
Pallet Barn plus Manure Storage	80 K/6	
Pallet Barn plus Manure Storage Compost Area (solid manure storage)	60 x 40	
Catch Basin	50 V32.25	Devot
Sheltera Pon	16 x a 6 m.	
Duck Barn	12 × 16.8	
Hog Lagoon	112 m x 113 m x 4.6	Deen
Dairy barn	25 m x 11 m	
	ordinant distriction	

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NRCB USE ONLY	

Convert to Pullet Barm



□ N/A

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

If a new facility is replacing an old facility, please explain what will happen to the old facility and when.

Construction completion date for proposed facili	ties Octo	her 2028	
additional information			
comment: Applicant is proposing to decommis ge) approximately 35 m South-East from its a basin was constructed for a feedlot, that has ure impacted run-off, it is able to be decomm	current location to acco s since been decommis	ommodate the propose sioned. As the catch ba	d new layer barn.
Livestock numbers: Complete only if livestock num livestock numbers increase in your Part 2 application priority for minimum distance separation (MDS). Livestock category and type (Available in the Schedule 2 of the Part 2 Matters Regulation)			
Same as part 1		(ii applicable)	
Chicken Layers	20,000	+30,000	50,000
Chicken Pullets	25,000	+25,000	50,000
Curina Farmanu ta Finiah	600	0	600
Swine Farrow to Finish	70	-67	3
Milking Cows (plus dries & replacements)		-60	10
	70	1	700
Milking Cows (plus dries & replacements)	70	0	
Milking Cows (plus dries & replacements) Beef Feeders		700	700



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

	d thisday of, 20 Signature of Applicant or Agent
_	Signature of Applicant of Agent
P	ON 2: Processing the AOPA permit and Water Act licence separately
L.	(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.	(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.
١.	(we) acknowledge that any construction or actions to populate the CFO with livestock pursuant to an AOPA permit in the
5.	absence of a Water Act licence will not be relevant to AEP's consideration of whether to grant the Water Act licence application (we) acknowledge that any such construction or livestock populating will be at the CFO's sole risk if the Water Act licence application is denied or if the operation of the CFO is otherwise deemed to be in violation of the Water Act. This risk includes being required to depopulate the CFO and/or to cease further construction, or to remove "works" or "undertakings" (as define 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 close to new surface water allocations.
iar	d this day of, 20
3	
. •	n this AOPA application.
۱.	ON 3: Additional water licence not required (we) declare that the CFO will not need a new licence from AEP under the Water Act for the development or activity propose in this AOPA application.
igr	ON 3: Additional water licence not required (we) declare that the CFO will not need a new licence from AEP under the Water Act for the development or activity propose in this AOPA application. d this3 day of
igr	(we) declare that the CFO will not need a new licence from AEP under the Water Act for the development or activity propose in this AOPA application. If this
igr	(we) declare that the CFO will not need a new licence from AEP under the Water Act for the development or activity propose in this AOPA application. If this time, I (we) do not know whether a new water licence is needed from AEP under the Water Act licence is needed, I (we) request that the NRCB process the AOPA application independently of AEP's
igr (P)	ON 3: Additional water licence not required (we) declare that the CFO will not need a new licence from AEP under the Water Act for the development or activity propose in this AOPA application. If this time, I (we) do not know whether a new water licence is needed from AEP under the Water Act for the development of activity proposed in this AOPA application. 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. In making this request, I (we) recognize that, if this AOPA application is granted by the NRCB, the NRCB's decision will not be
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	(we) declare that the CFO will not need a new licence from AEP under the Water Act for the development or activity propose in this AOPA application. If this itime, I (we) do not know whether a new water licence is needed from AEP under the Water Act for the development of activity proposed in this AOPA application. 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. 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. If (we) acknowledge that any construction or actions to populate the CFO with additional livestock pursuant to an AOPA perm in the absence of a Water Act licence will not be replevant to AEP's consideration of whether to grant my Water Act licence application, if a new water licence is needed.
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91 P	ON 3: Additional water licence not required (we) declare that the CFO will not need a new licence from AEP under the Water Act for the development or activity propose in this AOPA application. d this 3 day of
igr (P) 1. 2. 3.	(we) declare that the CFO will not need a new licence from AEP under the Water Act for the development or activity propose in this AOPA application. If this time, I (we) do not know whether a new water licence is needed from AEP under the Water Act for the development of activity proposed in this AOPA application. 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. 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. If (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. If (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 to the construction or construction, or to remove "works" or "undertakings" (as defined to the construction of the CFO and/or to cease further construction, or to remove "works" or "undertakings" (as defined to the construction of the CFO and/or to cease further construction, or to remove "works" or "undertakings" (as defined to the construction and the construction, or to remove "works" or "undertakings" (as defined to the construction and the construction or to the construction, or to remove "works" or "undertakings" (as defined to the construction to the construction or to remove "works" or "undertakings" (as defined to the con

NRCB USE ONLY



AND SURFACE	WATER INFORMATI	ON		
No water wells or	n site			
ed concerns from d	irectly affected parties or ref	erral agencies:		YES NO
d concerns from di	rectly affected parties or refe	erral agencies:		☐ YES ☑ NO
2 N/A				
otion for 100 m dis	tance requirements applied:	YES NO Condition	required:	☐ YES ☐ NO
Z N/A				
otion for 30 m dista	ance requirements applied:	YES NO Condition	required:	☐ YES ☐ NO
ption Screening T	Tool 🛭 N/A			
Well ID	Preliminary Screening	Secondary Screening		Facility
	Score	Score		
urface water rela	ated comments:			
	ed concerns from did concerns from did concerns from di N/A Dition for 100 m distanti di N/A Dition for 30 m distanti di N/A Dition Screening 1 Well ID	ed concerns from directly affected parties or refer do concerns from directly affected parties or refer N/A option for 100 m distance requirements applied: N/A option for 30 m distance requirements applied: Option Screening Tool	ed concerns from directly affected parties or referral agencies: d concerns from directly affected parties or referral agencies: N/A Otion for 100 m distance requirements applied: YES NO Condition N/A Otion for 30 m distance requirements applied: YES NO Condition Otion Screening Tool N/A Well ID Preliminary Screening Secondary Screening Score Score	ed concerns from directly affected parties or referral agencies: d concerns from directly affected parties or referral agencies: N/A Detion for 100 m distance requirements applied: YES NO Condition required: N/A Detion for 30 m distance requirements applied: YES NO Condition required: Detion Screening Tool N/A Well ID Preliminary Screening Secondary Screening Score Score

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

NRCB Natural Resources
Conservation Board

GENERAL ENVIRONMENTAL INFORMATION

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Existing:	409 Lagoon			Propose	d 1: 1/64	Proposed 1: New layer	Born
Proposed 2:	d 2:			Proposed 3:	d 3:		
	Escility and environmental rick		Facilities	ities			NRCB USE ONLY
	information	Existing	Proposed 1	Proposed 2	Proposed 3	Meets requirements	Comments
	What is the height of the floor of the lowest manure storage or	. 1 m	U >1 m		> 1 m	VES NO	Not in a known flood plain
Flood pseudoni	collection racility above the 1:25 year flood plain or the highest known flood level?	□ 8.1 1.3 1.3	□ × 1 m	N 1 m	□ × 1 m	☐ YES with exemption	
	How many springs are within 100 m					VES NO	None observed on site
	of the manure storage facility or manure collection area?	2	None			☐ YES with exemption	
vate	How many water wells are within		Y W			VES NO	None on site. Water wells in
	100 m of the manure storage		4			☐ YES with	Alberta Water Wells database
-	racility or manure collection area?	Nene	Nona			exemption	B20055
	What is the shortest distance from					TYES NO	New proposed location of solid
	tne manure collection of storage facility to a surface water body?					☐ YES with	intermittent stream that flows into
	(e.g., lake, creek, slough, seasonal)	2600 Met	600 Meter 2600 Meter	4		exemption	Ridge Reservoir
	What is the depth to the water					TYPES NO	Water table between 0.7 m -
	table?		,			TYES with	2.1 m below grade
		A CONTRACTOR OF STREET	(meters			exemption	
uno	What is the depth to the					VES NO	UGR 30.48 m below grade
	groundwater resource/aquifer you	,,,				☐ YES with	from water well ID# 118651
	draw water from?	To Meter	40 Moton			exemption	

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

Mar 2020 NRCB LISE ONLY



Facility	Groundwater score	Surface water score	File number
New layer barn with attached manure storage	Low	Low	LA25014
Relocation of solid manure storage	Low	Low	LA25014
ERST for existing facilities			File
Facility	Groundwater score	Surface water score	File number
Dry sow & farrow barn	Low	Low	LA16031
Grower & finisher barn	Low	Low	LA16031
Swine quarantine barn	Low	Low	LA16031
Layer barn with manure storage (converting to pullet barn)	Low	Low	LA16031
Pullet barn with manure storage	Low	Low	LA16031
Duck barn	Low	Low	LA16031
Hog lagoon	Low	Low	LA16031
Dairy barn	Low	Low	LA16031
ERST related comments:			
Shelter & pens	Low	Low	LA16031



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

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

					NRCB USE ONLY		
Neighbour name(s)	Legal land description	Distance (m)	Zoning (LUB) category	MDS category (1-4)	Distance (m)	Walver attached (if required)	Meets regulations
Gordie Sawotary	SW 25-04-20 W4	2 miles	Agriculture	1	>2,700 m	N/A	Yes
Ridge Park	NW 06-05-19 W4	4miles	GCR	4	>3,800 m	N/A	Yes
Dr Johnson	NW 24 -04-20 W4	3 3 miles	Agriculture	1	>3,100 m	N/A	Yes

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

				NRCB U	NRCB USE ONLY
Name of land owner(s)*	Legal land description	Usable area** (ha)	Soil zone ***	Usable area (ha)	Agreement attached (If required)
AO Comment: See attached map on hext page for	next page for land base for mai	land base for manure application provided by appli	ovided by appli		N/A
cant. All land highlighted with a solid colour is owned by the applicant and is dryland (brown) and	colour is owned by the applica	nt and is dryland (orown) and		
			Total	6,130 acres	

* If you are not the registered landowner, you must attach copies of land use agreements signed by all landowners.

** Available manure spreading area (excluding setback areas from residences, common bodies of water, water wells, etc. as identified in Agdex 096-5 Manure Spreading Regulations)

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

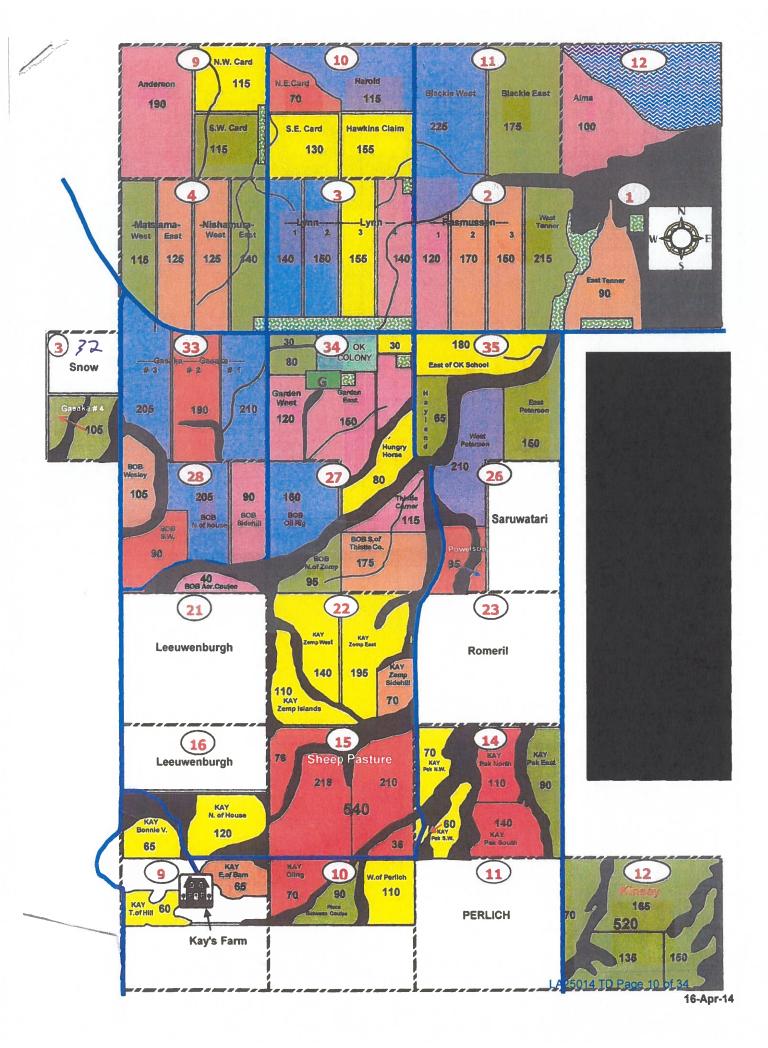
Additional information (attach any additional information as required)

AO Comment: Grouped Country Residential abbreviated to "GCR".

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Name Address Legal Land Location

MDS Spreadsheet based on 2006 AOPA Regulations

Category of	Type of Livestock	Factor A	Technology	MU	LSU	National of	LSU
Livestock	Type of Livestock	1 actor A	Factor	1010	Factor	Animals	200
LIVESTOCK			1 40101		1 40101	Commission.	
Feedlot	Beef Cows/Finishers (900+ lbs)	0.700	0,700	0.910	0.4459		
Animals	Beef Feeders (450 - 900 lbs)	0.700	0.700	0.500	0.2450	100	2.5
Allillais	Beef Feeder Calves (<550 lbs)	0.700	0.700	0.275	0.1348		2.0
	Horses - PMU	0.650	0.700	1.000	0.4550		
	Horses - Feeders > 750 lbs	0.650	0.700	1.000	0.4550		
	Horses - Foals < 750 lbs	0.650	0.700	0.300	0.4355		
	Mules	0.600	0.700	1.000	0.4200		
	Donkeys	0.600	0.700	0.670	0.4200		
	Bison	0.600	0.700	1.000	0.4200		
	DISON	0.000	0,700	1.000	0.4200		
Dairy		0.800	1,100	2.000	1.7600		5.3
Dairy	Free Stall - Lactating Cows with all	0.000	1.100	2.000	1.7000	(8)	5.0
(*count	associated dries, heifers, and calves*						
lactating	Free Stall - Lactating Cows with Dry	0.800	1,100	1.640	1.4432		-
cows only)	Cows only*	0.000	1.100	1.040	1.4402		_
cows only)	Free Stall – Lactating Cows only	0.800	1.100	1,400	1.2320		-
	Tie Stall - Lactating Cows only	0.800	1.000	1.400	1.1200		-
	The Otali – Eactating Cows only	0.800	1.000	1.400	1.1200		
	Loose Housing - Lactating Cows only	0.000	1.000	1.400	1.1200		_
	Dry Cow	0.800	0.700	1.000	0.5600		_
	,	0.000	0.700	1,000	5.5000		_
	Replacements - Bred Heifers	0.800	0.700	0.875	0.4900		
	(Breeding to Calving)	0.800	0.700	0.013	0.4500		_
	Replacements - Growing Heifers	0.800	0,700	0.525	0.2940		-
	(350 lbs to breeding)	0.000	0.700	0.525	0.2340		-
	Calves (< 350 lbs)	0.800	0.700	0.200	0.1120		-
	Caives (< 350 lbs)	0.800	0.700	0.200	0.1120		
Curino	Farrow to finish *	2.000	1.100	1.780	3.9160	E0/0	2.349.6
	Farrow to wean *	2.000	1.100	0.670	1.4740	- 1000	2,349.0
	Farrow to wear	2.000	1.100	0.530	1.1660		-
	Feeders/Boars	2.000	1.100	0.200	0.4400		-
Swine F Liquid F (*count F sows only) F V Swine F	Growers/Roasters	2.000	1.100	0.200	0.2600		$\overline{}$
	Weaners	2.000	1.100	0.055	0.1210		-
	vveaners	2.000	1.100	0.055	0.1210		
Curino	Farrow to finish *	2.000	0.800	1.780	2.8480		-
Solid	Farrow to lillish	2.000	0.800	0.670	1.0720		
(*Count	Farrow only *	2.000	0.800	0.530	0.8480		-
	Feeders/Boars	2.000	0.800	0.200	0.3200		
sows only)	Growers/Roasters	2.000	0.800	0.200	0.3200		-
	Weaners	2.000		0.055	0.0880		
	vveariers	2.000	0.800	0.000	0.0000		
Poultry	Chicken - Breeders - Solid	1.000	0.700	0.010	0.0070		
r outry	Chicken - Layers - Liquid (includes	2.000	1,100	0.008	0.0076		-
	associated pullets)	2.000	1.100	0.008	0.0176	11 11	_
	Chicken - Layers - (Belt Cage)	2.000	0.700	0.008	0.0112		560.0
	Chicken - Layers - (Belt Cage) Chicken - Layers - (Deep Pit)	2.000	0.700	0.008	0.0112		500.0
	Chicken - Layers - (Deep Pit) Chicken - Pullets/Broilers	1.000	0.700	0.002	0.0014		71.0
	Turkey - Toms/Breeders	1.000	0.700	0.002	0.0014		71.0
	Turkey - Hens (light)	1.000		0.020	0.0140		-
	Turkey - Hens (light) Turkey - Broilers	1.000		0.013	0.0091		
	LIUINEY - DIOIRIS	1.000			0.0070		4.9
		1.000				- UU	4.3
	Ducks	1.000	0.700	0.010			
		1.000 1.000		0.010			-
Shoon and	Ducks Geese	1.000	0.700	0.020	0.0140		-
Sheep and	Ducks Geese Sheep - Ewes/Rams	1.000 0.600	0.700	0.020	0.0140		-
Sheep and Goats	Ducks Geese Sheep - Ewes/Rams Sheep - Ewes with lambs	0.600 0.600	0.700 0.700 0.700	0.020 0.200 0.250	0.0140 0.0840 0.1050		-
	Ducks Geese Sheep - Ewes/Rams Sheep - Ewes with lambs Sheep - Lambs	0.600 0.600 0.600	0.700 0.700 0.700 0.700	0.020 0.200 0.250 0.050	0.0140 0.0840 0.1050 0.0210		-
	Ducks Geese Sheep - Ewes/Rams Sheep - Ewes with lambs Sheep - Lambs Sheep - Feeders	0.600 0.600 0.600 0.600	0.700 0.700 0.700 0.700 0.700	0.020 0.200 0.250 0.050 0.100	0.0140 0.0840 0.1050 0.0210 0.0420		-
	Ducks Geese Sheep - Ewes/Rams Sheep - Ewes with lambs Sheep - Lambs Sheep - Feeders Goats - Meat/Milk (per Ewe)	0.600 0.600 0.600 0.600 0.700	0.700 0.700 0.700 0.700 0.700 0.700	0.020 0.200 0.250 0.050 0.100 0.170	0.0140 0.0840 0.1050 0.0210 0.0420 0.0833		- - - -
	Ducks Geese Sheep - Ewes/Rams Sheep - Ewes with lambs Sheep - Lambs Sheep - Lambs Goats - Meat/Milk (per Ewe) Goats - Nannies/Billies	1.000 0.600 0.600 0.600 0.700 0.700	0.700 0.700 0.700 0.700 0.700 0.700 0.700	0.020 0.200 0.250 0.050 0.100 0.170 0.140	0.0140 0.0840 0.1050 0.0210 0.0420 0.0833 0.0686		-
	Ducks Geese Sheep - Ewes/Rams Sheep - Ewes with lambs Sheep - Lambs Sheep - Feeders Goats - Meat/Milk (per Ewe)	0.600 0.600 0.600 0.600 0.700	0.700 0.700 0.700 0.700 0.700 0.700 0.700	0.020 0.200 0.250 0.050 0.100 0.170 0.140	0.0140 0.0840 0.1050 0.0210 0.0420 0.0833 0.0686		-
Goats	Ducks Geese Sheep - Ewes/Rams Sheep - Ewes with lambs Sheep - Lambs Sheep - Lambs Sheep - Feeders Goats - Meat/Milk (per Ewe) Goats - Nannies/Billies Goats - Feeders	1.000 0.600 0.600 0.600 0.600 0.700 0.700	0.700 0.700 0.700 0.700 0.700 0.700 0.700 0.700	0.020 0.250 0.050 0.100 0.170 0.140 0.077	0.0140 0.0840 0.1050 0.0210 0.0420 0.0833 0.0686 0.0377		-
	Ducks Geese Sheep - Ewes/Rams Sheep - Ewes with lambs Sheep - Lambs Sheep - Lambs Sheep - Feeders Goats - Meat/Milk (per Ewe) Goats - Nannies/Billies Goats - Feeders Elk	1.000 0.600 0.600 0.600 0.700 0.700 0.700	0.700 0.700 0.700 0.700 0.700 0.700 0.700 0.700	0.020 0.250 0.050 0.100 0.170 0.140 0.077	0.0140 0.0840 0.1050 0.0210 0.0420 0.0833 0.0686 0.0377		-
Goats	Ducks Geese Sheep - Ewes/Rams Sheep - Ewes with lambs Sheep - Lambs Sheep - Lambs Sheep - Feeders Goats - Meat/Milk (per Ewe) Goats - Nannies/Billies Goats - Feeders	1.000 0.600 0.600 0.600 0.600 0.700 0.700	0.700 0.700 0.700 0.700 0.700 0.700 0.700 0.700	0.020 0.250 0.050 0.100 0.170 0.140 0.077	0.0140 0.0840 0.1050 0.0210 0.0420 0.0833 0.0686 0.0377		
Goats	Ducks Geese Sheep - Ewes/Rams Sheep - Ewes with lambs Sheep - Lambs Sheep - Learnbs Sheep - Feeders Goats - Meat/Milk (per Ewe) Goats - Nannies/Billies Goats - Feeders	1.000 0.600 0.600 0.600 0.700 0.700 0.700 0.600 0.600	0.700 0.700 0.700 0.700 0.700 0.700 0.700 0.700 0.700	0.020 0.200 0.250 0.050 0.100 0.170 0.140 0.077	0.0140 0.0840 0.1050 0.0210 0.0420 0.0833 0.0686 0.0377 0.2520 0.0840		
Goats	Ducks Geese Sheep - Ewes/Rams Sheep - Ewes with lambs Sheep - Lambs Sheep - Lambs Sheep - Feeders Goats - Meat/Milk (per Ewe) Goats - Nannies/Billies Goats - Feeders Elk	1.000 0.600 0.600 0.600 0.700 0.700 0.700	0.700 0.700 0.700 0.700 0.700 0.700 0.700 0.700 0.700 0.700	0.020 0.200 0.250 0.050 0.100 0.170 0.140 0.077	0.0140 0.0840 0.1050 0.0210 0.0420 0.0833 0.0686 0.0377 0.2520 0.0840		

Total 2,993.2

For New Operations
Dispersion Factor

	l ·	Dista	ance
Category	Odour Objective	Feet	Metres
1	41.04	2,500	762
2	54.72	3,334	1,016
3	68.4	4,167	1,270
4	109.44	6,667	2,032

For Expanding Operations
Dispersion Factor
Expansion Factor

		Distance				
Category	Odour Objective	Feet	Metres			
1	41.04	1,925	587			
2	54.72	2,567	782			
3	68.40	3,209	978			
4	109.44	5,134	1,565			

Name OKC Farms Address Legal Land Location NE 34-4-20 W4

0

Landbase Requirements (heatems) based on 2006 ACRA requirements

	Requirements (hectares) base		Dark Brown	Grey	Black	Imigatod
	Type of Livestock	Animals	& Brown	Wooded	(ha)	Imigated (ha)
Livestock		Allifiais	(ha)	(ha)	(IIa)	(IIa)
Animals Fee Fee Hor Hor Hor Mul Dor ('count lactating cows only) Free (35(Cal Swine Liquid ('count sows only) Fan Liquid ('count sows only) Fan Fan Go Go		20		, ,		
Animals Fe He	Cows/Finishers (900+ lbs)	0.0	0.0	0.0	0.0	0.0
Animals F H H H M D B Dairy F (*count alactating cows only) F T L	Feeders (450 - 900 lbs)	10.0 0.0	0.8	0.7 0.0	0.5	0.4
						0.0
		0.0	0.0	0.0	0.0	
Free Stall – Lactating Cows with all associated dries, heifers, and calves Free Stall – Lactating Cows with Dry Cows only * Free Stall – Lactating Cows with Dry Cow Stall – Lactating Cows only * Tie Stall – Lactating Cows only * Loose Housing – Lactating Cows onl Dry Cow (Solid manure) Dry Cow (Liquid manure) Replacements – Bred Heifers (Breeding to Calving)	0.0	0.0	0.0	0.0	0.0	
		0.0	0.0	0.0	0.0	0.0
Horses - Foals < 750 lbs Mules Donkeys Bison Arrive Stall - Lactating Cows with all associated dries, heifers, and calves Free Stall - Lactating Cows with Dry Cows only * Free Stall - Lactating Cows only * Tie Stall - Cactating Cows with all associated dries, heifers, and calves only * Tie Stall - Lactating Cows with all associated dries, heifers, and calves only * Tie Stall - Lactating Cows with Division only * Tie Stall - Lactating Cows only * Tie Stall - Lactating Cows only * Tie Stall - Cactating Cows only * Tie Stall - Lactating Cows only	0.0	0.0	0.0	0.0	0.0	
	Horses - Feeders > 750 lbs Horses - Foals < 750 lbs Mules Donkeys Bison Free Stall - Lactating Cows with all associated dries, helfers, and calve Free Stall - Lactating Cows with Dr. Cows only* Free Stall - Lactating Cows only* Tie Stall - Lactating Cows only* Loose Housing - Lactating Cows only Loose Housing - Lactating Cows only Cow (Solid manure) Dry Cow (Liquid manure) Replacements - Bred Heifers (Breeding to Calving) Replacements - Growing Heifers (350 lbs to breeding) Calves (< 350 lbs) wine Farrow to finish * Farrow to wean * Farrow to wean * Farrow to wean * Farrow to wean * Farrow to finish * Farrow to finish * Farrow to finish * Farrow to wean * Farrow to finish * Farrow to finish * Farrow to finish * Farrow to finish * Farrow to wean * Farrow to finish * Farrow to wean * Farrow to finish *	0.0	0.0	0.0	0.0	0.0
	Bison	0.0	0.0	0.0	0.0	0.0
	Filling	0.0				
Dairy		3.0	4.5	3.7	2.8	2.2
				0.0		
count ctating by so only) respectively count associated dries, free Stall – Lacte Cows only * Free Stall – Lacte Tie Stall – Lacte Tie Stall – Lacte Loose Housing – Dry Cow (Solid m Dry Cow (Liquid n Replacements – (Breeding to Calve Replacements - (350 lbs to breed Calves (< 350 lbs to breed Calves (< 350 lbs to breed Calves (< 350 lbs famow to finish * Famow to finish * Famow only *		0.0	0.0	0.0	0.0	0.0
Cows only * Free Stall – Lactatin Tie Stall – Lactatin Loose Housing – L Dry Cow (Solid ma Dry Cow (Liquid ma Replacements – Bi (Breeding to Calvin Replacements - G						
Free Stall – Lactating Cows only* Tie Stall – Lactating Cows only Loose Housing – Lactating Cows or Dry Cow (Solid manure) Dry Cow (Liquid manure) Replacements – Bred Heifers (Breeding to Calving)	0.0	0.0	0.0	0.0	0.0	
	Tie Stall - Lactating Cows only	0.0	0.0	0.0	0.0	0.0
	l	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0
Swine F Liquid (*Count sows only)		0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0
			oxdot			
		0.0	0.0	0.0	0.0	0.0
			·			
	Calves (< 350 lbs)	0.0	0.0	0.0	0.0	0.0
	Short I have been been been been been been been be	0.0				
Swine	Farrow to finish *	600.0	401.0	334.2	250.7	200.
_iquid	Farrow to wean *	0.0	0.0	0.0	0.0	0.0
*count	Farrow only *	0.0	0.0	0.0	0.0	0.0
sows only)		0.0	0.0	0.0	0.0	0.0
sows only) F		0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0
	Other III and the Control of the Control	0.0				
Swine	Farrow to finish *	0.0	0.0	0.0	0.0	0.0
Solid		0.0	0.0	0.0	0.0	0.0
*Count		0.0	0.0	0.0	0.0	0.0
sows only)		0.0	0.0	0.0	0.0	0.0
,	Growers/Roasters	0.0	0.0	0.0	0.0	0.0
	Weaners	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0		
Poultry	Chicken - Breeders - Solid	0.0	0.0	0.0	0.0	0.0
Juliy	Chicken - Layers - Liquid (includes	0.0	0.0	0.0	0.0	0.0
	associated pullets)	0.0	0.0	0.0	0.0	0.0
	Chicken - Layers - (Belt Cage)	50000.0	275.0	230.0	170.0	140.0
	Chicken - Layers - (Deep Pit)	0.0	0.0	0.0	0.0	0.0
	Chicken - Pullets/Broilers	50700.0	164.8	137.4	102.9	82.0
	Turkey - Toms/Breeders	0.0	0.0	0.0	0.0	0.0
	Turkey - Hens (light)	0.0	0.0	0.0	0.0	0.0
	Turkey - Hens (light) Turkey - Broilers	0.0	0.0	0.0	0.0	0.0
	Ducks	700.0	1.1	0.0	0.0	0.0
	Geese	0.0	0.0	0.9	0.0	0.0
	Geese		0.0	0.0	0.0	0.0
Canta	Chan Euro/Pari	0.0				
Goats and	Sheep - Ewes/Rams	0.0	0.0	0.0	0.0	0.0
Sheep	Sheep - Ewes with lambs	0.0	0.0	0.0	0.0	0.0
	Sheep - Lambs	0.0	0.0	0.0	0.0	0.0
	Sheep - Feeders	0.0	0.0	0.0	0.0	0.
	Goats - Meat/Milk (per Ewe)	0.0	0.0	0.0	0.0	0.
	Goats - Nannies/Billies	0.0	0.0	0.0	0.0	0.
	Goats - Feeders	0.0	0.0	0.0	0.0	0.
	Burg of the contract of the co	0.0				
	Elk	0.0	0.0	0.0	0.0	0.
Cervid			0.0	0.0	0.0	0.
Cervid	Deer	0.0				
	Deer Comments of the Comments	0.0			I	
		0.0	0.0	0.0	0.0	
Cervid Wild Boar	Deer Comments of the Comments	0.0	0.0	0.0	0.0 0.0	
	Deer Feeders	0.0				
	Deer Feeders	0.0 0.0				
	Deer Feeders Sow (farrowing)	0.0 0.0		0.0		0.
	Deer Feeders	0.0 0.0	0.0	0.0	0.0	0.0



NRCB USE ONLY			
MINIMUM DISTAN	CE SEPARATIO		
		able): Google Eartr	
			4.270
Requirements (m): Categ	ory 1: 762	Category 2:1,016	
Technology factor:			YES V NO
Expansion factor:			☐ YES ☑ NO
MDS related concerns from	m directly affected pa	arties or referral agenci	ies: YES 🔽 NO
LAND DAGE FOR M	ANUDE AND CO	MROCT APPLICA	TION
			ATION
		winy durk brown)	
		own/dark brown)	Requirement met: VES NO
			Requirement met. 2 725 2 No
Land spreading agreemer			
Manure management plan	n: □	YES NO	If yes, plan is attached:
PLANS			
Submitted and attached of	construction plans:		
Submitted aerial photos:			
Submitted photos:		☐ YES ☑ NO	
GRANDFATHERING	3		
Already completed:		☑ YES ☐ NO	N/A
MINIMUM DISTANCE SEPARATION Methods used to determine distance (if applicable): Google Earth Margin of error (if applicable): +/- 5 m Requirements (m): Category 1: 762			



Q

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

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

concrete liner)	for EACH barn, feedlot, and si	torage facility for solid manure, co	mposting materials, or compost with
cility description / name (as indicated on site plan)	1. New Layer +	Barn
		2. with attehe	d Manure Stor
nure storage capacity			
Length (m)	Width (m)	Depth below grade to the bottom of the liner (m)	NRCB USE ONLY Estimated storage capacity (m³)
152,4	45 meters	0 m below grade	
18.6	7.8 meters	0 m below grade	
		TOTAL CAPACITY	Sufficient storage
All under	grity of the liner will be mainta	ined	
ekeek	K for crac	Ks a segl as	needed
		NRCB USE ONLY	equirements met. VES \(\text{NO} \)
			equirements met: YES NO



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

Concrete liner (cont.)	
Concrete liner details	I Marked of a Library and all
Concrete thickness	Method of sulphate protection:
Ginches	Type so
Concrete strength	Concrete reinforcement size and spacing
30 mpg Concrete requirements can be found in Technical Guideli	rebare à mim 12 on certr
Concrete requirements can be found in Technical Guideli Guideline minimums:	ine Agdex 096-93 NRCB USE ONLY
Solid manure: 25MPa (D)	Requirements met: YES NO
Solid manure (wet): 30MPa (C) Method of sulphate protection:	Condition required: VES NO
Type 50 or Type 10 with fly ash or equivalent	Report attached: YES NO
dditional information (attach as required)	
NRCB USE ONLY	
Nine month manure storage volume requirements met	YES YES With STMS NO
Depth to water table: 0.7 m - 2.1 m below gr	Requirements met: YES NO
Depth to Uppermost groundwater resource: 30.48 m	below grade Requirements met:
ERST completed: see ERST page for details	
Surface water control systems	
Requirements met: ✓YES □ NO Details/commer	nts:
Concrete liner details	
	g the applicant to provide proof that the concrete will meet the dry) as outlined in Technical Guideline Agdex 096-93 "Nonction and Storage Areas".
Leakage detection system required: ☐ YES ☑ NO	If yes, please explain why.
Last updated: 31 Mar 2020	Page of

NRCB USE ONLY

Kelsoy. peddle enreb. ca

Part 2 — Technical Requirements



cility description / nam	ne (as indicated on site plan)	1. Compost	Area (solid manure store
		2.	
nure storage capacity			
Length (m)	Width (m)	Depth below ground level (m	NRCB USE ONLY Estimated storage capacity (m³)
60	40	0	
		TOTAL CAPACI	TY Sufficient capacity
rface water control systems. The systems of the sys		will put Bur	m around
escribe the run-on and ru	inoff control system	will put Bur	m around
	inoff control system	Provide details (as required) Clay till tested from 0 m	- 3 m below grade
turally occurring prote	ctive layer details	Provide details (as required) Clay till tested from 0 m	- 3 m below grade
turally occurring prote	ctive layer details	Provide details (as required) Clay till tested from 0 m	- 3 m below grade (



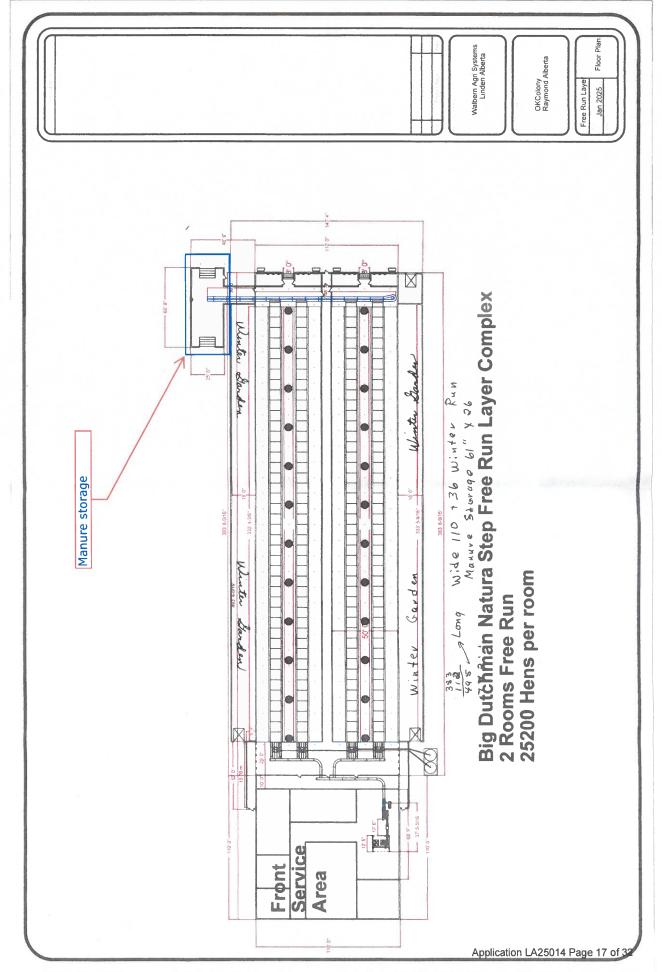
Application under the Agricultural Operation Practices Act for a confined feeding operation, manure collection area and/or manure storage facility(ies)

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

Naturally occurring protective layer (cont.)
NRCB USE ONLY
Nine month manure storage volume requirements met: ☑ YES ☐ YES With STMS ☐ NO
Depth to water table: 0.7 m - 2.1 m below grade Requirements met: VES NO
Depth to uppermost groundwater resource: 30.48 m below grade Requirements met: YES NO
ERST completed: see ERST page for details
Surface water control systems
Requirements met: YES NO Details/comments:
AO Comment: Applicant is containing run-off by constructing berms around the solid manure storage.
Naturally occurring protective layer details
Layer specification comments (e.g. sand lenses; layering uniform or irregular; number and location of boreholes):
AO Comment: According to UMA report, soil profile located from 0 m - 6 m below grade meets AOPA requirements for a naturally occurring protective layer.



NRCB USE ONLY						
ALL SIGNATURES	IN FILE	YES []no			
DATES OF APPROV	AL OFFICER SITE V	ISITS				
February 12, 2025						
CORRESPONDENCE	WITH MUNICIPAL	ITIES AN	ID REFERRAL	AGENCI	ES	
Date deeming letters sent	March 26, 2025			_		
Municipality: County	y of Warner			_		
letter sent	response received	writter	n/email \Box	verbal		no comments received
Alberta Health Service	s: Ø N/A					
letter sent	response received	☐ writter	n/email	verbal		no comments received
Alberta Environment a	nd Parks:					
☑ letter sent	response received	writter writter	n/email	verbal		no comments received
Alberta Transportation	:					
letter sent	response received	writter	n/email \Box	verbal		no comments received
Alberta Regulatory Ser	vices: N/A					
☑ letter sent	response received	☐ writter	n/email \Box	verbal		no comments received
Triple W Natur	al Gas Coop Ltd. and Fo	rtis Alberta	a I td.			
Other:	ar cab coop tear and re				N/A	
letter sent	response received	writter writter	n/email	verbal		no comments received
Other: Raymond Irrig	ation District				N/A	
☑ letter sent	response received	☐ writter	n/email	verbal		no comments received



Consulting
 Engineering
 Construction
 Management Services

AO Comment: Soil investigation report to accompany relocation of compost area.



August 5, 2003

Project Number: E998-001-00-0500

Paul Kliensasser
OK Hutterite Brethren
PO Box 504
Raymond, AB T0K 2S0

Dear Paul:

RE: Geotechnical Investigation, Proposed Catchment Facility and Poultry Facility

As requested, UMA Engineering Ltd. recently completed a geotechnical investigation for the above project. This letter provides the results of the drilling program and recommendations for the construction of the catchment and poultry facilities.

1. Field Investigation and Laboratory Testing

The field investigation was done on June 17, 2003 and consisted of the drilling of five testholes as shown on Drawing 01-B-1001 attached. The testholes were drilled to completion depths of between 5.0 m and 6.1 m below existing grade. One testhole (TH03-01) was drilled at the proposed poultry facility. Three testholes (TH03-02, TH03-03, and TH03-04) were drilled to install monitoring wells around the existing lagoons. The final testhole (TH03-05) was drilled at the location for the proposed catchment facility. Split spoon samples with SPT tests were taken in TH03-01. Disturbed grab samples were taken in TH03-02 to TH03-05. Standpipe piezometers were installed in all five testholes.

The testholes were logged in the field by a geotechnical technician from UMA Engineering Ltd.

Laboratory testing consisted of moisture content determinations on all samples and two permeability tests. The results of the laboratory testing are included on the testhole logs.

2. Subsurface Conditions

Poultry Facility

The soils at the proposed poultry facility consisted of a 0.6 m thick layer of clay fill over organics to a depth of 1.5 m. At 1.5 m the soils were a medium to low plastic clay till that was stiff to very stiff in consistency. The groundwater level measured in the standpipe on June 20, 2003 was 2.1 m below grade.

Lagoon

The primary soil logged in the three lagoon testholes was clay. Topsoil layers were found in TH03-02 and TH03-03 at depths of 0.7 m and 0.65 m, respectively. The topsoil layer in TH03-02 was 0.3 m thick. In TH03-03, the layer was 1.35 m thick. The native soil in the three testholes

August 5, 2003
Paul Kliensasser
OK Hutterite Brethren
Page 2

uma

was silty, sandy, medium plastic clay till. A thin sand pocket (0.3 m) was logged within the clay till at 2.7 m in TH03-02.

Catchment Facility

In the catchment facility (TH03-05) the stratigraphy was 1.5 m of low to medium plastic clay; 4.0 m of silty, sandy medium plastic clay till; and medium to fine grained sand from 5.5 m to the end of the testhole. The permeability tests showed that the native clays had permeabilities of between 1.7×10^{-7} cm/sec and 2.6×10^{-8} cm/sec.

3. Evaluation and Recommendations

Based on the results of the drilling, the soils are suitable for the construction of both the poultry facility and the catchment facility.

It is understood that the poultry facility will be a single storey structure without a basement. Therefore, shallow strip and spread footings are suitable foundations for the structure. The footings should be placed on native clay at 1.5 m below grade and should be designed for an allowable bearing capacity of 100 kPa. Based on the type of soils, Type 50 cement should be used to construct the footings and floor slab.

If you have any questions regarding the above or need further recommendations, please call the undersigned at (403) 270-9277.

Ms. C. D. Fried P. Eng. Geoteshnica Base der ggriffin@umagroup.com

GDG:mve Encls.

PERMIT TO PRACTICE UMA ENGINEERING LTD.

Signature

PERMIT NUMBER: P 329

The Association of Professional Engineers, Geologists and Geophysicists of Alberta

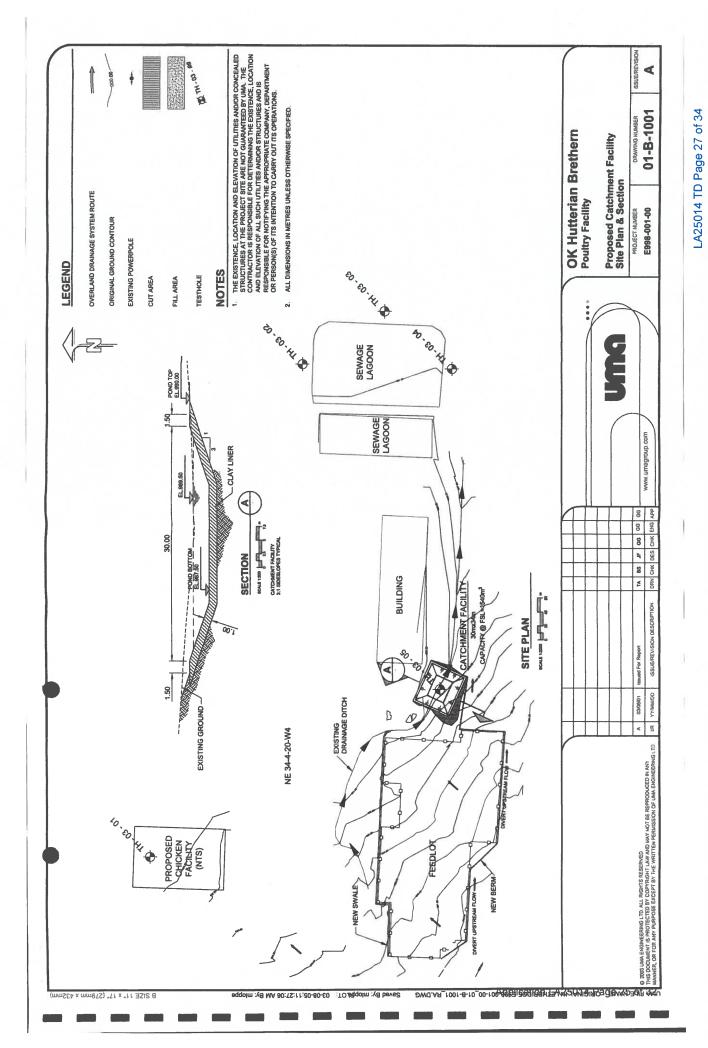
PROJECT: Proposed Poultry Facility CLIENT: OK Hutterite Bretheren TESTHOLE NO: 03-01 LOCATION: See Site Plan PROJECT NO.: E998-001-00 CONTRACTOR: Chilako Drilling Services METHOD: Solid Stem Auger **ELEVATION (m):** SAMPLE TYPE SHELBY TUBE SPLIT SPOON BULK NO RECOVERY CORE **BACKFILL TYPE** BENTONITE SLOUGH GRAVEL GROUT CUTTINGS SAND SLOTTED PIEZOMETER SYMBOL. SAMPLE TYPE DEPTH (m) DEPTH (m) SOIL DESCRIPTION COMMENTS ◆ SPT (Standard Pen Test) ◆ SOIL (Blows/300mm) 40 60 CLAY (FILL) - silty, sandy, brown, moist CI ORGANICS (TOPSOIL) - silty, brown to dark brown, damp OL CLAY (TILL) - silty, sandy, trace gravel, stiff, medium plastic, brown, moist 10 Groundwater Level 2.1 m June 20, 2003 CLAY (TILL) - silty, sandy, very stiff, low to medium plastic, brown, moist to wet, 3 -5 **END OF TESTHOLE AT 5.0 m** -6 OK COLONY LOGS, GPJ UMA, GDT 1/8/03 OG OF TESTHOLE LOGGED BY: JDF COMPLETION DEPTH: 5.00 m REVIEWED BY: GDG LA250 & GMP FETGON 2ATE 347/6/03
PROJECT ENGINEER: GARAGE CONTROL A25014 Page 20 of 32 Page 20 of 32 Page 20 of 32 Page 20 of 32 Page 30 of

PROJECT:	Prop	osed F	Poultry Facility		CLIENT	: "OK Hutterite Bro	etheren				TESTHOLE	NO: 03-02	
LOCATION:	See	Site F	Plan								PROJECT N	O.: E998-001-00	
CONTRACT	OR:	Chilal	to Drilling Services			D: Solid Stem Au	Party State of the last of the		ELEVATION (m):				
SAMPLE TY	PE		GRAB	SHELBY 1	TUBE	SPLIT SPOON		BULK			NO RECOVERY		
BACKFILL 1	YPE		BENTONITE	GRAVEL		SLOUGH		GROUT	-		CUTTINGS	SAND	_
DЕРТН (m)	nsc	SOIL SYMBOL		SOIL DES	SCRIP	TION		SAMPLE TYPE	SAMPLE #	PLASTIC	M.C. L1QUID	COMMENTS	
	CLAY (FILL) CI Groundwater Level 0.8 m June 20, 2003 ORGANICS (TOPSOIL) CLAY (TILL) - silty, sandy, trace gravel, medium plastic, bro					ic, brown, wet			1		1		
2 1000	CI SP		SAND - some gravel, som	e fines, brown, sa	aturated				2				
اماموموموموم	SP		CLAY (TILL) - silty, sandy,			lium plastic, brown, m	oist						
14 15	а		- seepage										:
-6			END OF TESTHOLE AT 6	.1 m				2					
-8													
- 10			Um			11	OGGED	RY: IDE			COMPL	ETION DEPTH: 6.10 54609 9A7E347/6/0 Page 21 of 32 Page 21 of 32	'n

LOCATION: See Side Plan ONTRACTOR: Chilako Drilling Services METHOD: Solid Stem Auger ELEVATION (m): ELEVA			The Street West, Street, or other Designation of the Contract	STATE OF THE PERSON.	Poultry Facility	CLIE	NT: OK Hutterite Breth	eren		THOLE NO: 03	-
SAMPLE TYPE BROCKFILL TYPE BENTONITE GRAVEL GRAVEL	-	-		-		METI	AOD: Solid Stom Augo				18-001-00
BACKFILL TYPE SENTONTE GRAVEL SOIL DESCRIPTION SOIL DESCRIPTION COMMENTS COMMENTS COMMENTS COMMENTS COMMENTS CLAY (FILL) - silty, medium plastic, brown CLAY (TILL) - silty, surdy, stiff, medium plastic, brown, moiet to weet CLAY (TILL) - silty, surdy, stiff, medium plastic, brown, moiet to weet END OF TESTHOLE AT 6.1 m END OF TESTHOLE AT 6.1 m	-			Jimar					The second secon		Псове
SOIL DESCRIPTION Solid Description CLAY (FILL) - silty, medium plassic, brown CLAY (TILL) - silty, sardy, salf, medium plassic, brown, most to wet CLAY (TILL) - silty, sardy, salf, medium plassic, brown, most to wet END OF TESTHOLE AT 6.1 m END OF TESTHOLE AT 6.1 m			-	-							
CLAY (FILL) - silty, medium plastic, brown CLAY (FILL) - silty, medium plastic, brown Groundwater Level 1.4 m June 20, 2003 CLAY (TILL) - silty, sandy, stiff, medium plastic, brown, moist to wet CLAY (TILL) - silty, sandy, stiff, medium plastic, brown, moist to wet END OF TESTHOLE AT 6.1 m END OF TESTHOLE AT 6.1 m	DEPTH (m)		OSC	SOIL SYMBOL		SOIL DESCRI	PTION			CON	
CLAY (TILL) - silty, sandy, stiff, medium plastic, brown, moist to wet CLAY (TILL) - silty, sandy, stiff, medium plastic, brown, moist to wet -5 END OF TESTHOLE AT 6.1 m	0		а			um plastic, brown					
CLAY (ILLL) - sitly, sandy, stirt, medium plastic, brown, most to wet -5 -6 -7 -8 -8	1	2 2 Y	OL			June 20, 2003					
END OF TESTHOLE AT 6.1 m	-2	1000			CLAY (TILL) - silty, sandy	r, stiff, medium plastic, bro	own, moist to wet	1			
END OF TESTHOLE AT 6.1 m	-3							2			
END OF TESTHOLE AT 6.1 m	-4		a		- seepage						
END OF TESTHOLE AT 6.1 m	-5										
-8	-6				END OF TESTHOLE AT	6.1 m					
-8 -9	7										
_9	-8									9 9	
	9										

-	THE REAL PROPERTY.	_	The second liverage in con-	Poultry Facility	CLIE	NT: OK Hutterite Bre	lheren				TESTHOLE	NO: 03-04	
OCAT	_	-	-	Name and Address of the Owner, when the Parket of the Owner, where the Parket of the Owner, where the Owner, which is the Owner, where the Owner, which is the Owner							PROJECT N	O.: E998-001-00	
		_	Chila	iko Drilling Services		HOD: Solid Stem Aug					ELEVATION	(m):	
AMPL	-	Total Ballion		GRAB	SHELBY TUBE	SPLIT SPOON	ВВ				NO RECOVER	CORE	
ACKF	ILL 1	YPE		BENTONITE	GRAVEL	SLOUGH	G	ROU	T		CUTTINGS	SAND	
DEPTH (m)		OSU	SOIL SYMBOL	CLAY (TILL) - silty, sand	SOIL DESCR			SAMPLE TYPE	SAMPLE#	PLASTIC 10 2	M.C. LIQUID	COMMENTS	
		а		Groundwater Level 1.1 n - moist to wet - moist		osec, orom, mast			3				
				END OF TESTHOLE AT	6.1 m				5				
							GGED BY:					TION DEPTH: 6.10 r	

		-	-	Poultry Facility		CLIEN	T: OK Hutterite Breth	eren			TESTHOLE	NO: 03-05
LOCA		-	-									NO.: E998-001-00
-	-	-	Chila	ko Drilling Services		_	OD: Solid Stem Auge	and the same of th			ELEVATIO	
SAMP	-	-		GRAB	SHELBY		SPLIT SPOON	BU			☑NO RECOVE	
BACK	FILL T	YPE		BENTONITE	GRAVEL		SLOUGH	GR	OUT		CUTTINGS	SAND
DEPTH (m)	SLOTTED PIEZOMETER	OSC	SOIL SYMBOL		SOIL DE				SAMPLE TYPE	SAMPLE #	STIC M.C. LIQUID	COMMENTS
1		CI-CL		CLAY - silty, sandy, firm to Groundwater Level 0.7 m		o low plast	ic, brown, moist to wet			1	80 30 40	
-2				CLAY (TILL) - silty, sandy,	trace gravel, ve	ry stiff, me	edium plastic, damp to moi	st		2		
-3 -4		а										
-5			000	SAND - medium to fine gr	ained, brown, sa	turated			400000000000000000000000000000000000000			
-6	郡	SP	000	END OF TESTHOLE AT 6	3.1 m							
-7												
-8												
-9												
10				Um			Tipo	GED BV.	IDE		COMP	ETION DEPTH: 6.10



EXPLANATION OF FIELD & LABORATORY TEST DATA

The field and laboratory test results, as shown for each hole, are described below.

1. NATURAL MOISTURE CONTENT

The relationship between the natural moisture content and depth is significant in determining the subsurface moisture conditions. The Atterberg Limits for a sample should be compared to its natural moisture content and plotted on the Plasticity Chart in order to determine the soil classification.

2. SOIL PROFILE AND DESCRIPTION

Each soil strata is classified and described noting any special conditions. The Modified Unified Classification System (MUCS) is used. The soil profile refers to the existing ground level at the time the hole was done. Where available, the ground elevation is shown. The soil symbols used are shown in detail on the soil classification chart.

3. TESTS ON SOIL SAMPLES

Laboratory and field tests are identified by the following and are on the logs:

- Standard Penetration Test (SPT) Blow Count. The SPT is conducted in the field to
 assess the in situ consistency of cohesive soils and the relative density of noncohesive soils. The N value recorded is the number of blows from a 63.5 kg hammer
 dropped 760 mm which is required to drive a 51 mm split spoon sampler 300 mm
 into the soil.
- SO₄ Water Soluble Sulphate Content. Expressed in percent. Conducted primarily to determine requirements for the use of sulphate resistant cement. Further details on the water soluble sulphate content are given in Section 6.
- γ_D <u>Dry Unit Weight</u>. Usually expressed in kN/m³.

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- γ_T Total Unit Weight. Usually expressed in kN/m³.
- Qu <u>Unconfined Compressive Strength</u>. Usually expressed in kPa and may be used in determining allowable bearing capacity of the soil.
- Cu <u>Undrained Shear Strength</u>. Usually expressed in kPa. This value is determined by either a direct shear test or by an unconfined compression test and may also be used in determining the allowable bearing capacity of the soil.
- C_{PEN} <u>Pocket Penetrometer Reading</u>. Usually expressed in kPa. Estimate of the undrained shear strength as determined by a pocket penetrometer.

The following tests may also be performed on selected soil samples and the results are given on separate sheets enclosed with the logs:

- Grain Size Analysis
- Standard or Modified Proctor Compaction Test
- California Bearing Ratio Test
- Direct Shear Test
- Permeability Test
- Consolidation Test
- Triaxial Test

4. SOIL DENSITY AND CONSISTENCY

The SPT test described above may be used to estimate the consistency of cohesive soils and the density of cohesionless soils. These approximate relationships are summarized in the following tables:

Table 1 Cohesive Soils

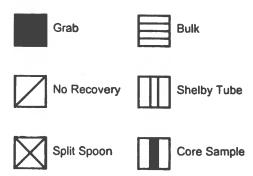
N	Consistency	C _u (kPa) approx.
0 - 1	Very Soft	<10
1 - 4	Soft	10 - 25
4 - 8	Firm	25 - 50
8 - 15	Stiff	50 - 100
15 - 30	Very Stiff	100 - 200
30 - 60	Hard	200 - 300
>60	Very Hard	>300

Table 2 Cohesionless Soils

N	Density
0 - 5	Very Loose
5 - 10	Loose
10 - 30	Compact
30 - 50	Dense
>50	Very Dense

5. SAMPLE CONDITION AND TYPE

The depth, type, and condition of samples are indicated on the logs by the following symbols:



WATER SOLUBLE SULPHATE CONCENTRATION 6.

The following table, from CSA Standard A23.1-00, indicates the requirements for concrete subjected to sulphate attack based upon the percentage of water-soluble sulphate as presented on the logs. CSA Standard A23.1-00 should be read in conjunction with the table.

Table 3 Requirements For Concrete Subjected to Sulphate Attack*

Class of exposure	Degree of exposure	Water-soluble sulphate (SO ₄) in soil sample,	Sulphate (SO ₄) In ground water samples, mg/L	Minimum Specified 56 d compressive strength, MPa†	Maximum water/cementing materials ratio‡	Air content category §	Cementing materials to be used "††
S-1	Very severe	over 2.0	over 10,000	35	0,40	2	50
S-2	Severe	0.20 - 2.0	1,500 - 10,000	32	0.45	2	50
S-3	Moderate	0.10 - 0.20	150 - 1,500	30	0.50	2	20E11, 40, or 50E

For sea water exposure see Clause 15.4

7. **GROUNDWATER TABLE**

The groundwater table is indicated by the equilibrium level of water in a standpipe installed in a testhole or test pit. This level is generally taken at least 24 hours after installation of the standpipe. The groundwater level is subject to seasonal variations and is usually highest in the spring. The symbol on the logs indicating the groundwater level is an inverted solid triangle $(\underline{\mathbf{V}}).$

[†] Where supplementary cementing materials are used, the owner may also specify other test ages.

¹ See Clause 15.1.4

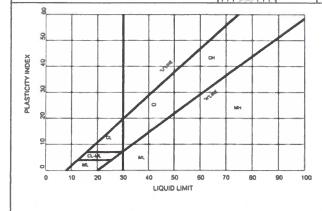
For steel trowelled interior slabs on grade, subject to sulphate attack but not freeze-thaw, air entrainment is not required.
"See Clause 15.1.5

^{††} Cementing material combinations with equivalent performance may be used (see Clauses 3.2, 3.3, and 3.4) ## Type 20E cement with moderate sulphate resistance (see Clause 3.1.2)

Note: Type 50E cement shall not be used in reinforced concrete exposed to both chlorides and sulphates. Refer to Clause 15.4.

	MAJOR DIVISION	ON	UMA LOG SYMBOLS	MUCS	TYPICAL DESCRIPTION	LABORATORY CL CRITE	
		CLEAN GRAVELS	A D D	GW	WELL GRADED GRAVELS, LITTLE OR NO FINES	C D. > 4 C	$\frac{(D_{\infty})^2}{D_{\infty} \times D_{\infty}} = 1 \text{ to } 3$
OILS	GRAVELS (MORE THAN HALF COARSE GRAINS	(LITTLE OR NO FINES)		GP	POORLY GRADED GRAVELS AND GRAVEL- SAND MIXTURES, LITTLE OR NO FINES	NOT MEETIN REQUIREM	
ED SC	LARGER THAN 4.75 mm)	DIRTY GRAVELS		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES	CONTENT OF FINES EXCEEDS	ATTERBERG LIMITS BELOW 'A' LINE Wp LESS THAN 4
RAINE		(WITH SOME FINES)		GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES	12%	ATTERBERG LIMITS ABOVE 'A' LINE W _p MORE THAN 7
E GR		CLEAN SANDS (LITTLE OR NO		SW	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES	C, D ₁₀ > 6 C _c - [$(D_{30})^3$ $D_{10} \times D_{00} = 1 \text{ to } 3$
ARSE	SANDS (MORE THAN HALF	FINES)		SP	POORLY GRADED SANDS, LITTLE OR NO FINES	NOT MEETIN REQUIREM	
00	COARSE GRAINS SMALLER THAN 4.75 mm)	DIRTY SANDS (WITH SOME		SM	SILTY SANDS, SAND-SILT MIXTURES	CONTENT OF	ATTERBERG LIMITS BELOW 'A' LINE W _p LESS THAN 4
	,	FINES)		sc	CLAYEY SANDS, SAND-CLAY MIXTURES	12%	ATTERBERG LIMITS ABOVE A LINE W _p MORE THAN 7
	SILTS (BELOW 'A' LINE	W _L < 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY SANDS OF SLIGHT PLASTICITY	CLASSIFICATION IS PLASTICITY (SEE BEI	CHART
OILS	NEGLIGIBLE ORGANIC CONTENT)	W _L > 50		МН	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS		
S		W _L < 30		CL	INORGANIC CLAYS OF LOW PLASTICITY, GRAVELLY, SANDY, OR SILTY CLAYS, LEAN CLAYS		
RAINED	CLAYS (ABOVE 'A' LINE NEGLIGIBLE ORGANIC CONTENT)	30 < W _L < 50		CI	INORGANIC CLAYS OF MEDIUM PLASTICITY, SILTY CLAYS	WHENEVER THE NATURE OF THE CONTENT HAS NOT BEEN DETERMINED, IT IS DESIGNATE	
0		W _L > 50		СН	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS	BY THE LETTER 'F' E.G SF IS A MIXTURE OF SAND W SILT OR CLAY	
FINE	ORGANIC	W _L < 50		OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY		
	SILTS & CLAYS (BELOW 'A' LINE)			ОН	ORGANIC CLAYS OF HIGH PLASTICITY		
	HIGHLY ORGANIC	CSOILS		Pt	PEAT AND OTHER HIGHLY ORGANIC SOILS	STRONG COLOUR (OFTEN FIBROL	
	BEDROCK			BR	SEE REPORT DES	SCRIPTION	

JULY 1996



		SOIL COI	MPONENTS				
FRAC	CTION	SIEVE S	SIZE (mm)	DEFINING RANGES OF PERCENTAGE BY WEIGHT OF MINOR COMPONENTS			
		PASSING	RETAINED	PERCENT	IDENTIFIER		
GRAVEL	COARSE	75	19	60.06	AND		
	FINE	19	4.75	50 - 35			
SAND	COARSE	4.75	2.00	25 00			
	MEDIUM	2.00	0.425	35 - 20			
	FINE	0.425	0 080	20 - 10	SOME		
SILT (no	n-plastic)			20-10	SOME		
or CLAY (plastic)		0 080		10 - 1	TRACE		
		OVERSIZE	MATERIALS		-		
COBB	DED OR SUB-ROU LES 75 mm TO 20	0 mm	nm o		ANGULAR ROCK FRAGMENTS		

NOTE:

1. BOUNDARY CLASSIFICATION POSSESSING CHARACTERISTICS OF TWO GROUPS ARE GIVEN GROUP SYMBOLS, E.G. GW-GC IS A WELL GRADED GRAVEL MIXTURE WITH CLAY BINDER BETWEEN 5% AND 12%

MODIFIED UNIFIED CLASSIFICATION SYSTEM FOR SOILS

Uma

PERMEABILITY TEST

uma

CLIENT:	OK COLONY		011.17							
PROJECT:		POULTRY FA	CILITY							
JOB No. :	E998-001-00									
LOCATION:	CATCHMEN				SAMPLE: #1					
BOREHOLE:	TEST HOLE	4			DEPTH:					
DATE:	20-Jun-03				TECHNICIAN:	CB				
				SAMPLE DA	TA					
Sample Descripti										
Sample Diameter	(mm):				Cross Section Ar	ea (cm²)				
nitial Sample Ler	ngth (mm):				Initial Volume (cr					
Final Sample Ler	gth (mm)				Final Volume(cm					
					Change in Volum	e (cm³)				
	MOISTUR	E DETERMIN	ATION			DENSITY DETE	RMINATION			
			Before	After			Before	After		
Tare No. :					Mould No.					
Wt. Sample (wet	+ tare) (g)		172.4	372.1	Wt. Sample (wet	+ mould) (a)	3996.3	4046.		
Nt. Sample (dry -	tare) (g)		146.6	305.8	Wt. Mould (g)		2065.2	2065.		
Nt. Tare (g)			16.0	15.8	Wt. Sample (wet)	(g)	1931.1	1981.		
Nt. Water (g)		1.4	25.8	66.3	Volume Mould (c	m³)	938.0	938		
Nt. Sample (dry)	(g)		130.6	290.0	Wet Density (kg/s	m³)	2059	211		
Moisture Content	(%)		19.8%		Dry Density (kg/n		1719	171		
			PERM	EABILITY TE						
					Time (sec)		Permeabili	ity (cm/s)		
Date	Temp	h1	h2	Time	Elapsed Time		Initial	Average		
June 23, 2003	23	60.0	E	11:00 AM						
June 24, 2003	23		51.5	8:30 AM	86400		2.35E-07			
June 24, 2003	23	60.0	7	8:30 AM						
June 25, 2003	23		53.7	8:00 AM	86400		1.71E-07			
June 25, 2003	23	60.0		8:00 AM						
June 26, 2003	23		49.5	8:00 AM	86400		2.96E-07			
June 26, 2003	23	60.0		8:00 AM						
June 27, 2003	23		54.8	8:00 AM	86400		1.40E-07			
June 27, 2003	23	60.0		9:00 AM						
June 30, 2003	23		45.2	9:00 AM	259200		1.45E-07			
June 30, 2003	23	60.0		9:00 AM						
July 2, 2003	23		49.9	8:00 AM	172800		1.42E-07			
July 2, 2003	23	60.0		8:00 AM						
July 3, 2003	23		54.5	8:00 AM	86400		1.48E-07			
July 3, 2003	23	60.0		8:00 AM			1 12 2 2			
July 4, 2003	23		54.8	8:00 AM	86400		1.40E-07			
July 4, 2003	23	60.0	- 12.1	8:00 AM	22222		100000			
July 7, 2003	23		46.1	8:00 AM			1.35E-07			
July 7, 2003	23	60.0	516	8:00 AM			4 075 05			
July 8, 2003	23	00.0	54.9	8:30 AM			1.37E-07			
July 8, 2003	23	60.0	540	8:30 AM			1.600.07			
July 9, 2003	23	00.0	54.0	8:00 AM			1.62E-07			
July 9, 2003	23	60.0	52.71	8:00 AM			1 745 07			
July 10, 2003	23	60.0	53.7	8:00 AM			1.71E-07			
July 10, 2003	23	60.0	52.4	8:00 AM 8:00 AM			1.79E-07			
July 11, 2003	23		53.4	6:00 AM	80400		1:/9E-0/			
		 								
AVERAGE PERM	AEARII ITV EA	DR TEST					1.71E-07			
	ILVDIELL LC	AN IEGI			1		107 TE-07			
REMARKS:										

PERMEABILITY TEST



OK COLON		ACILITY							
		MUILITY							
				SAMPLE: #2					
	: 4								
20-3011-03					TP				
			SAMPLE DA	TA					
r (mm) :				Cross Section A	rea (cm²)				
ngth (mm) :				Initial Volume (cr	n³)				
ngth (mm)									
				Change in Volun	ne (cm³)				
MOISTUR	RE DETERMIN	ATION			DENSITY DETE	RMINATION			
		Before	After			Before	After		
				Mould No.					
+ tare) (g)		150.8	245.3		+ mould) (a)	4070.9	4105		
+ tare) (g)		131.6	211.8	Wt. Mould (g)		2057.1	2057		
			16.3	Wt. Sample (wet) (g)	2013.8	2048		
		19.2	33.5	Volume Mould (c	m³)	938.0	938		
(g)		116.0	195.5	Wet Density (kg/	m³)	2147	218		
(%)			17.1%	Dry Density (kg/r	n³)	1842	186		
		PERM	EABILITY TE	ST DATA					
						Permeabil	lity (cm/s)		
Temp	h1	h2	Time	Elapsed Time			Average		
23	60.0		11:00 AM	3 1/2 (20)			usuge		
	1 11	54.5	8:30 AM	86400		1.48F-07			
23	60.0		8:30 AM						
		59.0	8:00 AM	86400		2.59E-08			
23	60.0		8:00 AM						
23		59.5	8:00 AM	86400		1.29F-08			
23	60.0		8:00 AM						
		59.9	8:00 AM	86400		2.57F-09			
	60.0		9:00 AM			2.2.2.2.00			
		58.1	9:00 AM	259200		1.65E-08			
	60.0		8:00 AM						
		58.0	8:00 AM	172800		2.61F-08			
	60.0	11 11.5	8:00 AM			5.5 (2.00			
		58.5	8:00 AM	86400		3.90E-08			
	60.0		8:00 AM			5.502.00			
		59.2	8:00 AM	86400		2.07E-08			
	60.0		8:00 AM						
23		55.9	8:00 AM	259200		3.63F-08			
23	60.0		8:30 AM			3.002.00			
23		59.2	8:30 AM	86400		2.07F-08			
	60.0								
23	1 1	59.4		86400		1.55F-08			
23	60.0			33.30					
23		59.6		86400		1.03F-08			
23	60.0			50.00		1.002-00			
23	- 1	59.6		86400		1.03F-08			
			5.007.111	30,100		1.002-00			
EABILITY FO	R TEST					1.20F-08	*-		
						1.202-00			
	PROPOSEI E998-001-0 3G4 1.5-3.0 TEST HOLE 20-Jun-03 Id	PROPOSED POULTRY F, E998-001-00 3G4 1.5-3.0m TEST HOLE 4 20-Jun-03 Ide or (mm): Ingth (mm): Ingth (mm): Ingth (mm) MOISTURE DETERMIN + tare) (g) + tare) (g) (g) (g) (g) (g) (g) (g) (g) (g) (g)	PROPOSED POULTRY FACILITY E998-001-00 3G4 1.5-3.0m TEST HOLE 4 20-Jun-03 MOISTURE DETERMINATION	PROPOSED POULTRY FACILITY E998-001-00 3G4 1.5-3.0m TEST HOLE 4 20-Jun-03 SAMPLE DA Ingth (mm): Ingth (mm) MOISTURE DETERMINATION Before After	PROPOSED POULTRY FACILITY E998-001-00 SAMPLE: TEST HOLE 4 DEPTH : 20-Jun-03 TECHNICIAN : SAMPLE DATA	PROPOSED POULTRY FACILITY	PROPOSED POULTRY FACILITY		