## SITE INFORMATION FORM FOR MANURE FACILITIES AT CFOS

**VERSION 1.2 - June 2015** 

(Information on how to complete this form is available in a companion document.)

CFO name: Muilwijk, Arie & Willemiek			Legal Land Location: NE 10-9-27 W4						
Date of Site Visit: November 4, 2020			Staff completing assessment: Scott Cunningham, Andy Cumming						
Who was interviewed: Arie Muilwijk									
Permit and M	lanure Information	Permit Av	ailable:	✓ Yes □No F	Permit #: LA100	54N			
Operation Type	e: V Swine V Feedlot	☐ Dairy	☐ Poult	ry Cow/Calf [	Mixed 0	Other			
Livestock: Quantity/Type:			Annual I	Manure Production (	(tonnes):	Manure type:			
Swine	250 sows farrow to	wean		7.4x250=1850		✓ Liquid	Solid		
Beef	3000 feeder calv	es		0.54x3000=1620	)	Liquid	✓ Solid		
Dairy						Liquid	Solid		
Poultry						Liquid	Solid		
Horses	rses					Liquid	Solid		
Sheep						Liquid	Solid		
Goats						Liquid	Solid		
						Liquid	Solid		
						Liquid	Solid		
Total Manure F	Production: Liquid (tonn	es): 1850		Solid (tonnes	s): 1620				
Monitoring V	Vells and Borehole L	ogs	Facilities	s Monitored:					
✓ No monitori	ng wells		# of monitoring wells:						
☐ No borehole	e logs		# of borehole logs: 4						
Uppermost C	Groundwater Resource	ce (UGR)				☐ Not A	Applicable		
Reference(s) for UGR (ie. Well I.D., borehole #'s): Borehole AM4-19									
Depth to UGR (m): 2.7 Predomin			nant Geology: VF sandy loam Subsoil			oil Texture: coarse			
Protective Layer (PL)							oplicable		
Reference(s) for PL (eg. Well I.D. borehole #'s): AM4-19									
Thickness of P	L: see ERSTs	Predomina	ant Geolo	gy: VF sandy loam	Subsoil Texture: coarse				
PL measured From (eg. surface, at specific depth):				: 1.0 To: 2.7					

Infiltration Potential and Surface Water Runoff										
Average Annual Preci	pitation (mm): 4	150-500		Soil Texture at surface: Coarse						
Notes: Application includes conversion of hogs to beef feeder calves, so both current and proposed livestock are listed above.										
Solid Manure Storage Facility (SMSF) #1										
SMSF Facility #1 Name: Open pens (2 existing) - Existing, lined with roller compacted concrete in November 2019										
Liner Type: roller compa	acted concrete	Runoff con	trol:	Yes □No	Yes ☐No Run-on Control: ✓ Yes ☐N			✓ Yes □No		
Liner 0.15 Thickness (m):	Storage L: 2/3x97	Dimensions (m): =65 W: 37		Storage Area (m²): Depth bel grade (m)			low <sub>0</sub> ):			
Liner Meets AOPA:	☐ Yes	□No ✓	Liner Ma	y Meet AOF	PA [	Concre	te no spec	S		
Visible Condition of liner: Good Damaged Uninspectable  Notes: Applicant has not demonstrated that RCC liner meets AOPA. "Liner May Meet AOPA" chosen as "best case" scenario.										
Surface Water Issue Id	dentified:	☐ Yes	<b>∠</b> No	) [	☐ Not Ap	plicable (	no SW Boo	dies within 800m)		
Name / Type / Distand Unnamed/Slough on SW	-	(m):		☐ Upslope of facility ☐ Down slope ✔ Unknown ☐ Little Human Use ☐ High Use ☐ CBW						
Name / Type / Distand Unnamed/Dugout on NE	•	(m):		<ul><li>✓ Upslope of facility</li><li>☐ Down slope</li><li>☐ Unknown</li><li>☐ Little Human Use</li><li>☐ High Use</li><li>☐ CBW</li></ul>						
Name / Type / Distand	e to SW Body	(m):		☐ Upslope of facility ☐ Down slope ☐ Unknown ☐ Little Human Use ☐ High Use ☐ CBW						
Runoff from facility:	Dispersed [	] Channelled		Vegetated	during rur	noff event	t: 🔽 > 50%	%	n	
Approximate Slope to	Surface Water	(%): 3	_ocated le	ess than 1m	above the	e 1 in 25	year floodp	olain: ∐Yes <mark>⊻</mark> No	o .	
Location and Method	of Sealing of W	ater Wells (withi	in 400 m)	☐ Not A	pplicable					
Reference Point: W ed	ge of existing pe	ns (used measurir	ng tool on h	nttp://groundv	water.alber	ta.ca/Wate	erWells/d/)			
Well I.D.		to top of terval (m):								
115735	69	driven		1.8	✓ Unkr	nown [	Upslope	☐ Down slope	Э	
					Unkr	nown [	Upslope	☐ Down slope	Э	
□ Unknown □ Upslope □ Down slope  Notes: Well id 115735 is the only water well within 400m of all facilities									Э	
Notes: Well id 115735 is the only water well within 400m of all facilities.  Well location from reference point and slough were chosen as "unknown" due to the topography; this will provide a reasonable worst case scenario score for both groundwater and surface water.  For surface water distance, used measuring tool on http://groundwater.alberta.ca/WaterWells/d/.  Over 800m to the nearest common body of water.										

Solid Manure Stora	age Facility (SM	ISF) #2	☐ Not Applicable							
SMSF Facility #2 Name: Open pens (1 new)										
Liner Type: Roller comp	pacted concrete	Runoff conti	rol:	✓ Yes □N	✓ Yes ☐No Run-on Co		Control: 🔽	] Yes	□No	
Liner Thickness (m): 0.15	Storage Dimensions (m): L: 97-65=32 W: 37				Storage Area (m <sup>2</sup> ):			ow <sub>0</sub>		
Liner Meets AOPA: ☐ Yes ☐ No ☑ Liner May Meet AOPA ☐ Concrete no specs										
Visible Condition of liner: Good Damaged Uninspectable  Notes: Applicant has not demonstrated that RCC liner meets AOPA. "Liner May Meet AOPA" chosen as "best case" scenario.										
Surface Water Issue I	dentified:	☐ Yes 🗸	No		□N	lot Applica	able (no CBV	V with	n 800m)	
Name / Type / Distance to SW bodies (m):       ☐ Upslope of facility       ☐ Down slope       ✔ Unknown         Unnamed/ Slough on SW15/ 491       ☐ Little Human Use       ☐ High Use       ☐ CBW							n			
Name / Type / Distand nnamed/Dugout on NE10	•	m):			✓ Upslope of facility ☐ Down slope ☐ Unknown ☐ Little Human Use ☐ High Use ☐ CBW					
Name / Type / Distand	ce to SW bodies (	m):		☐ Upslope of facility ☐ Down slope ☐ Unknown ☐ Little Human Use ☐ High Use ☐ CBW						
Runoff from facility:	/ Dispersed 🗌 0	Channelled		Vegetated duri	ng runoff	event: 🔽	> 50% 🔲 <	< 50%/	frozen	
Approximate Slope to	Surface Water (%	5): 3 Lo	cate	ed less than 1m a	above the	e 1 in 25 y	ear floodpla	in: 🔲	∕es <mark>✓</mark> No	
Location and Method	of Sealing of Wate	er Wells (within	400	0 m) 🔲 Not A	pplicable	•				
Reference Point: NW	corner of new pen (	used measuring	tool	on http://groundw	ater.alber	ta.ca/Wate	rWells/d/)			
Well I.D.	Distance to Well(s) (m):	Vell Sealing Method:		epth to top of en interval (m):	` ,				ce point:	
115735	75	driven		1.8	<b>☑</b> Unk	nown [	Upslope		own slope	
					Unk	nown [	Upslope		own slope	
			Unk	nown [	Upslope		own slope			
Notes:  Well id 115735 is the only water well within 400m of all facilities.  Well location from reference point and slough were both chosen as "unknown" due to the topography; this will provide a reasonable worst case scenario score for both groundwater and surface water.  For surface water distance, used measuring tool on http://groundwater.alberta.ca/WaterWells/d/.  Over 800m to the nearest common body of water.										

Catch Basin (CB) #1										
Catch Basin #1 Name: Catch basin (proposed)										
Liner Type: HDPE	torage [	Dimensions (m): L	_: 31 V	W: 21 E	D: 1.8 SI	lope: 3:1				
Liner Thickness (m): 40 mil	Depth be	elow grade (	m) :	Capacity (m <sup>3</sup> ):	:	Runoff Potential (m³):  Facility only:				
Liner Meets AOPA:	✓ Yes	□No	Lir	ner May Meet AOF	PA [	Concrete i	no specs			
Visible Condition of liner: Good Damaged Uninspectable  Notes: applied for										
Surface Water Issue I	dentified:	☐ Yes		✓ No	□N	ot Applicabl	e (no CB	W within 800m)		
Name / Type / Distand Unnamed/ Slough on SW		☐ Upslope of facili	•	Down slope High Use	✓ Unk □ CB\					
Name / Type / Distand Unnamed/Dugout on NE		<ul><li>✓ Upslope of facility</li><li>☐ Down slope</li><li>☐ Unknown</li><li>☐ Little Human Use</li><li>☐ High Use</li><li>☐ CBW</li></ul>								
Name / Type / Distand	ce to SW bodie	s (m):		☐ Upslope of facility ☐ Down slope ☐ Unknown ☐ Little Human Use ☐ High Use ☐ CBW						
Runoff from facility:	Dispersed [	] Channelle	d	Vegetated during	runoff ev	ent: <b>✓</b> > 50	% □ < 5	50%/frozen		
Approximate Slope to	Surface Water	(%): 3	Loca	ated less than 1m	above the	1 in 25 yea	r floodpla	ain: ∐Yes <b>☑</b> No		
Location and Method	d of Sealing of	Water Wel	ls (with	in <b>400 m)</b> 🗌 N	lot Applica	able				
Reference Point: NW	corner of propos	sed catch bas	in (used	measuring tool on h	nttp://groun	dwater.albert	a.ca/Wate	rWells/d/)		
Well I.D.	Distance to Well(s) (m):	Well Seali Method	_	Depth to top of open interval (m):	Location	of well(s) fr	om the re	eference point:		
115735	128	driven		1.8	<b>☑</b> Unkr	nown 🔲 l	Jpslope	☐ Down slope		
					☐ Unkr	nown 🔲 l	Jpslope	☐ Down slope		
			☐ Unkr	nown 🔲 l	Jpslope	☐ Down slope				
Notes:  Well id 115735 is the only water well within 400m of all facilities.  Well location from reference point and slough were both chosen as "unknown" due to the topography; this will provide a reasonable worst case scenario score for both groundwater and surface water.  For surface water distance, used measuring tool on http://groundwater.alberta.ca/WaterWells/d/.  Over 800m to the nearest common body of water.										

Liquid Manure Storage (LMS) #1 ☐ Not Applicable											
Liquid Manure Storage #1 Name: Lagoon 1 - east (existing)											
Liner Type: unknown			Runoff	control: Ves [	□No	Run-on	Control:	✓ Yes	□No		
Liner Thickness (m): u	ınknown		Depth b	pelow grade (m): 1.75	;						
Liner Meets AOPA:	☐ Yes	✓No		Liner May Meet AOF	PA 🗌	Concrete	no specs	3			
Visible Condition of liner: ☐ Good ☐ Damaged ☑ Uninspectable  Notes:											
Surface Water Issue I	dentified:		Yes 🗌 N	lo	□N	ot Applica	able (no C	BW withir	n 800m)		
Name / Type / Distand Unnamed/ Slough on SV	☐ Upslope of facility☐ Little Human Use		vn slope h Use	✓ Unkno □ CBW	own						
Name / Type / Distand Unnamed/Dugout on NE	✓ Upslope of facility ☐ Little Human Use		vn slope n Use	☐ Unkn	own						
Name / Type / Distand	☐ Upslope of facility☐ Little Human Use	· _									
Runoff from facility:	✓ Dispersed [	] Chanr	nelled	Vegetated during r	unoff event	: 🔽 > 50°	% □ < 50	%/frozen			
Approximate Slope to	Surface Water	· (%): 3	L	ocated less than 1m	above the	1 in 25 ye	ar floodpl	ain: ∐Ye:	s 🗾 No		
Location and Method	of Sealing of W	/ater We	ells (withi	n 400 m) 🔲 Not A	pplicable						
Reference Point: NW	corner of lagoor	n 1 (used	measurin	g tool on http://groundv	water.alberta	.ca/Water\	Wells/d/)				
Well I.D.	Distance to Well(s) (m):		Sealing hod:	Depth to top of open interval (m):	Location of well(s) from the reference point				point:		
115735	113	dri	ven	1.8	✓ Unkno	own 🗌	Upslope	☐ Dow	n slope		
					Unkno	own 🗌	Upslope	☐ Dow	n slope		
						own 🗌	Upslope	☐ Dow	n slope		
Notes: Well id 115735 is the only water well within 400m of all facilities.  Well location from reference point and slough were both chosen as "unknown" due to the topography; this will provide a reasonable worst case scenario score for both groundwater and surface water.  For surface water distance, used measuring tool on http://groundwater.alberta.ca/WaterWells/d/.  Over 800m to the nearest common body of water.											

Liquid Manure Sto	rage (LMS) #	☐ Not Applicable								
Liquid Manure Storage #2 Name: Lagoon 2 - west (existing)										
Liner Type: unknown			Runoff	control: Ves [	□No Run-on C	ontrol: ✓ Yes □No				
Liner Thickness (m): u	nknown		Depth b	elow grade (m): 2.5						
Liner Meets AOPA:	☐ Yes	✓No		Liner May Meet AOF	PA Conci	rete no specs				
Visible Condition of liner: ☐ Good ☐ Damaged ☑ Uninspectable  Notes:										
Surface Water Issue I	dentified:	☐ Y	es 🗌 N	0	☐ Not App	licable (no CBW within 800m)				
Name / Type / Distand Unnamed/ Slough on SW		s (m):		☐ Upslope of facility☐ Little Human Use	☐ Down slop	pe ☑ Unknown ☐ CBW				
Name / Type / Distand Unnamed/Dugout on NE		s (m):		<ul><li>✓ Upslope of facility</li><li>☐ Little Human Use</li></ul>	☐ Down slop☐ High Use	e				
Name / Type / Distand	e to SW bodie	s (m):		☐ Upslope of facility☐ Little Human Use	☐ Down slop☐ High Use	e				
Runoff from facility:	Dispersed [	] Channe	elled	Vegetated during re	unoff event: 🗹 >	50% □ < 50%/frozen				
Approximate Slope to	Surface Water	· (%): 3	Lo	ocated less than 1m	above the 1 in 25	5 year floodplain: □Yes ☑No				
Location and Method	of Sealing of W	/ater Wel	ls (withi	n 400 m) 🔲 Not A	pplicable					
Reference Point: NE	corner of lagoon	2 (used m	neasuring	g tool on http://groundw	/ater.alberta.ca/Wat	terWells/d/)				
Well I.D.	Distance to Well(s) (m):	Well Se Meth		Depth to top of open interval (m):	Location of well	(s) from the reference point:				
115735	113	driv	en	1.8	✓ Unknown	☐ Upslope ☐ Down slope				
					Unknown	☐ Upslope ☐ Down slope				
					Unknown	☐ Upslope ☐ Down slope				
Notes: Well id 115735 is the only water well within 400m of all facilities.  Well location from reference point and slough were both chosen as "unknown" due to the topography; this will provide a reasonable worst case scenario score for both groundwater and surface water.  For surface water distance, used measuring tool on http://groundwater.alberta.ca/WaterWells/d/.  Over 800m to the nearest common body of water.										